



**TAKACHI**

**2016-17  
ENCLOSURE  
CATALOG**

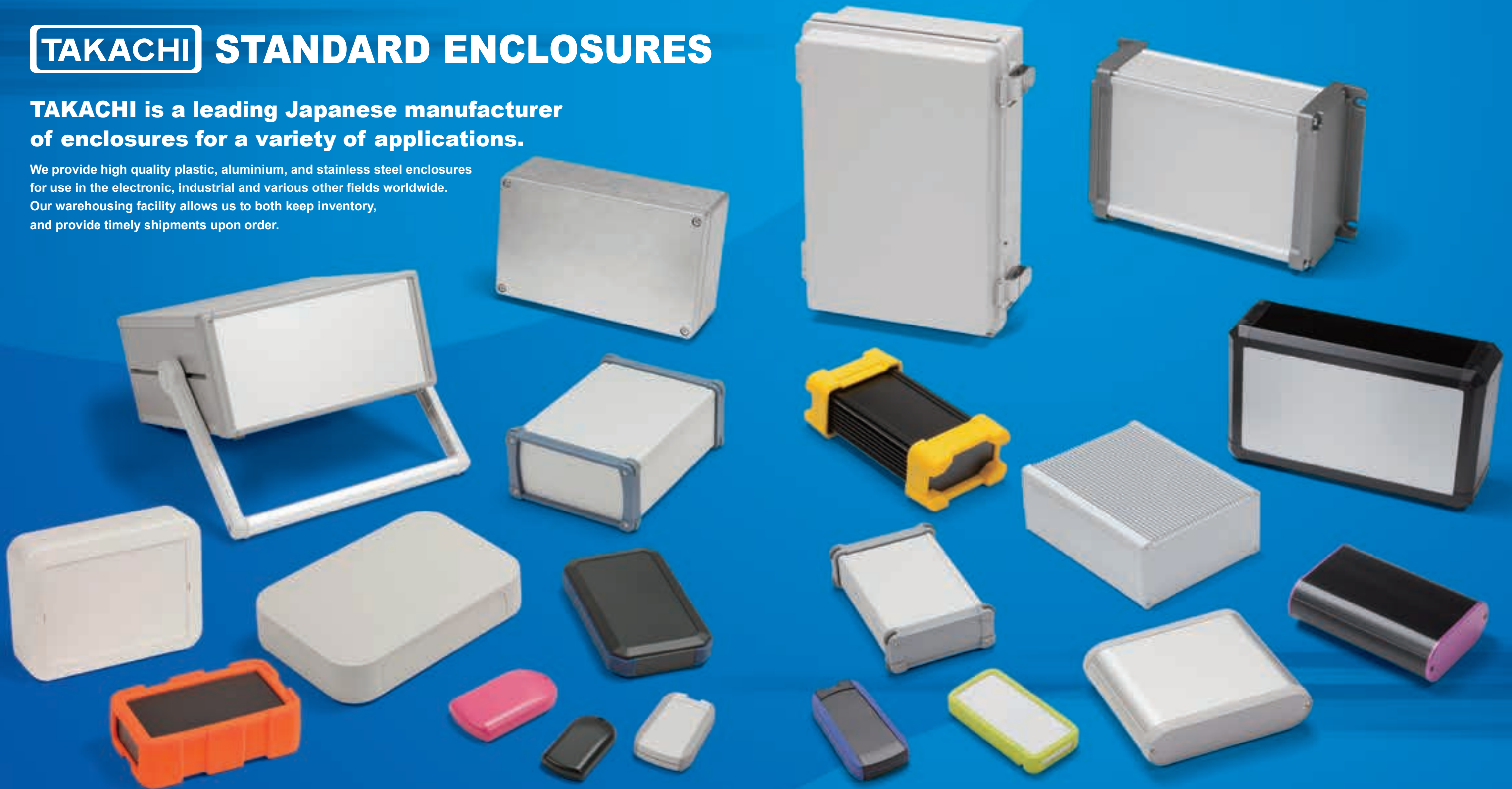
# **CASE BOX RACK & CUSTOM**

**TAKACHI ELECTRONICS ENCLOSURE CO., LTD.**

# TAKACHI STANDARD ENCLOSURES

**TAKACHI is a leading Japanese manufacturer of enclosures for a variety of applications.**

We provide high quality plastic, aluminium, and stainless steel enclosures for use in the electronic, industrial and various other fields worldwide. Our warehousing facility allows us to both keep inventory, and provide timely shipments upon order.



X-RAY FLUORESCENCE SPECTROMETER



MEASURING INSTRUMENT



DATA HUB



DIGITAL AUDIO AMPLIFIER



Wi-Fi ACCESS POINT



MEDICAL EQUIPMENT





# CUSTOMIZED ENCLOSURE

**TAKACHI can be your "one stop shop" for your customization requirements.**

We provide value-added services, such as CNC machining, inkjet printing, and many more on our available range of enclosures.

Available from 1 unit onwards with a short lead-time, we can assist you with the creation of your original design.

CAD data can also be downloaded from our website for use in your design.



CNC MACHINING on ALUMINIUM



CNC MACHINING on PLASTIC



PUNCHING PRESS



LASER CUTTING



INKJET PRINTING



DIGITAL PRINTED OVERLAY

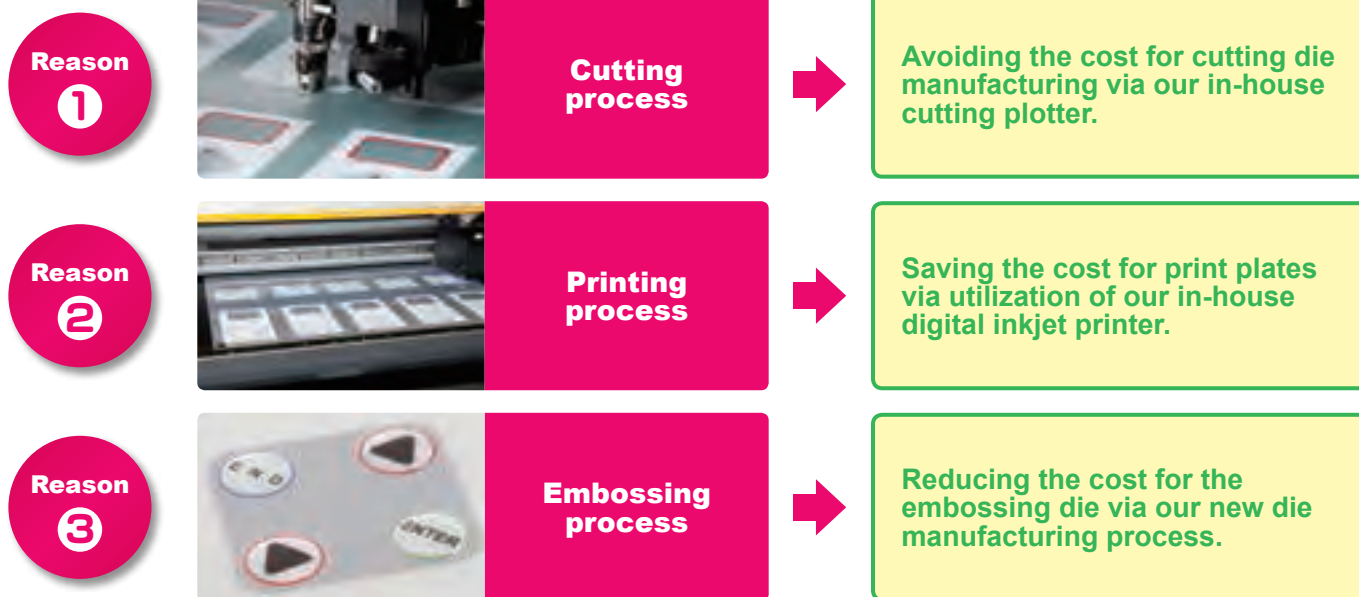




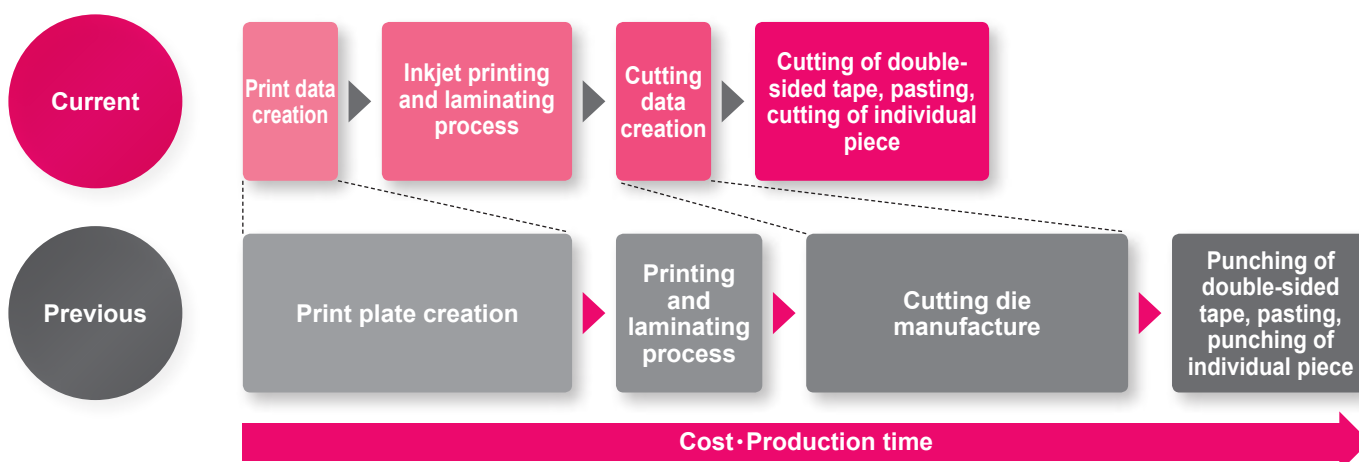
# DIGITAL PRINTED OVERLAY



## ● 3 reasons for low initial costs



## ● Comparison of current and previous manufacturing methods

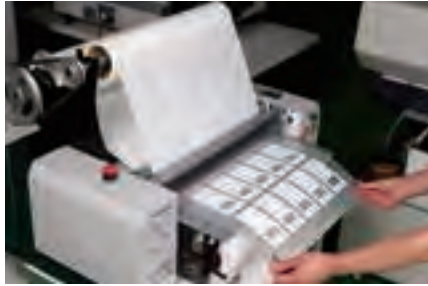




# PRODUCTION PROCESS



1. Inkjet printing on film



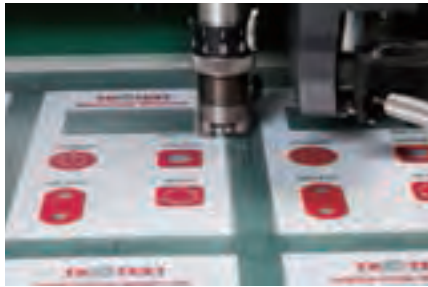
2. Laminating



3. Cutting double-sided tape



4. Sticking double-sided tape on printed film



5. Cutting the sheet to size



6. Embossing



7. Machining on enclosure



8. Sticking overlay sheet onto enclosure



9. Complete

# CUSTOMIZATION EXAMPLE

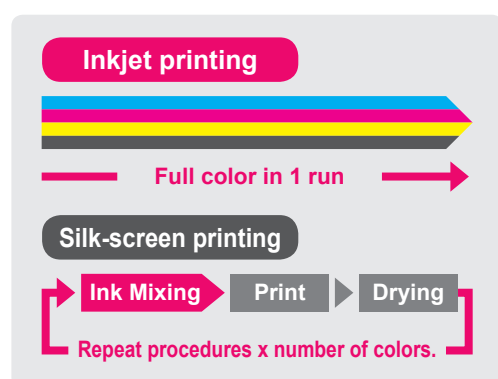




# INKJET PRINTING



Full color digitally designed image  
can be printed in 1 run.  
No cost difference regardless of the  
number of colors used.



**Low printing cost**  
Full color print possible  
in small quantities

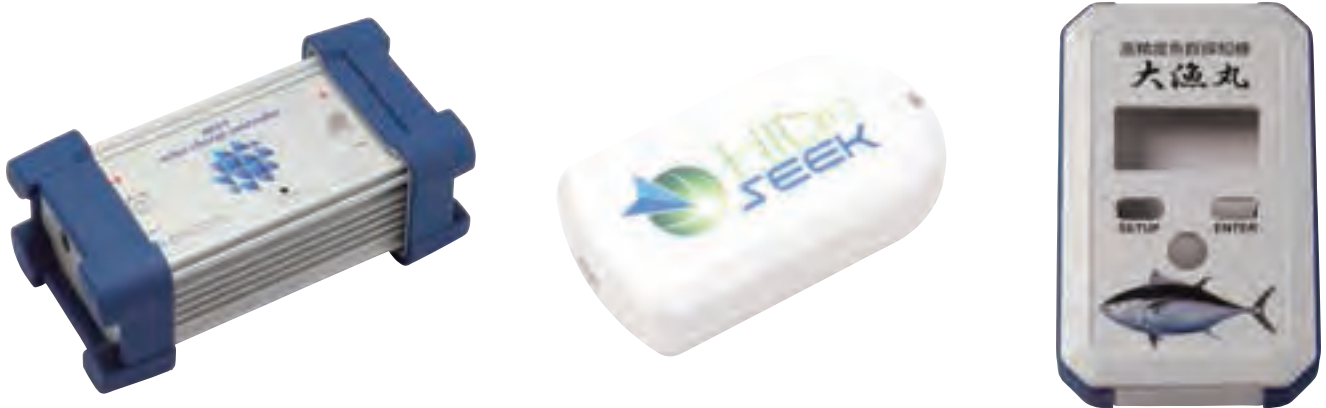
<b>Inkjet printing</b>	1 run only for full color print			
<b>Printing cost</b> Full color				
<b>Silk-screen printing</b>	Printing cost x number of colors			
Printing cost Color 1	Printing cost Color 2	Printing cost Color 3	Printing cost Color 4	



# High quality printing of photo image and color gradation.

Print photo images in maximum 1,800 x 1,800 dpi quality.

Pictures, logos and unique designs with color gradation can be recreated in a high quality print.



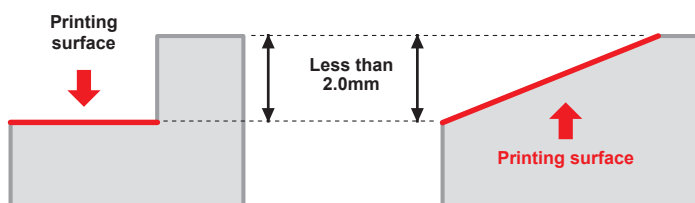
## Maximum printable enclosure size



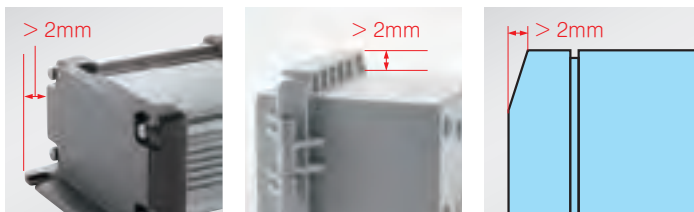
## Printable on surfaces with height differential

Printing is possible on recessed, sloped and rounded sections.

Gap difference is less than 2.0mm.



\*Not suitable if height difference is more than 2.0mm.



Printed example





# CNC MACHINING

CNC milling is a form of computer controlled machining. Similar in operation to drilling and cutting, it is able to create various hole styles and shapes by using a rotating cutting tool to bore into the object.



Extruded aluminium

- Mainly used for plastic, aluminium die-cast, and aluminium extrusion material types.
- Able to perform milling for various shapes and sizes.
- Recommended for small quantity customization.



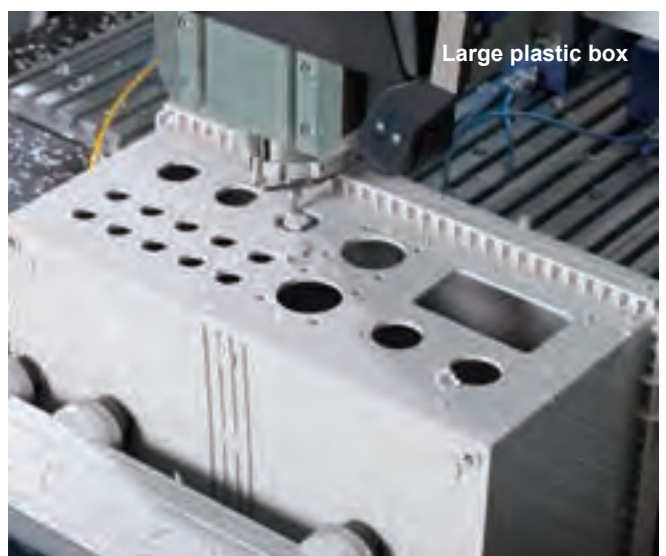
Aluminium sheet



Diecast aluminium



Plastic enclosure

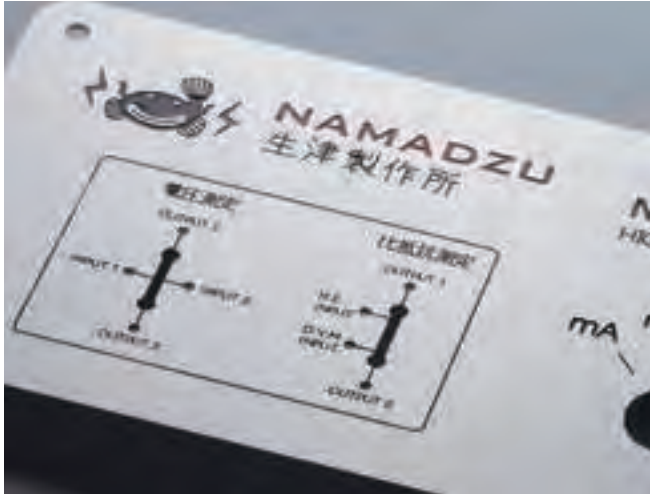


Large plastic box



# ENGRAVING

By having the drill-head slightly milling the surface, the engraving of fine text or complex designs is able to be performed on a variety of surfaces, be it flat, curved, and so on. Suitable for small batch print, and/or simple lettering. Font shall be similar to VAG Rounded font type.



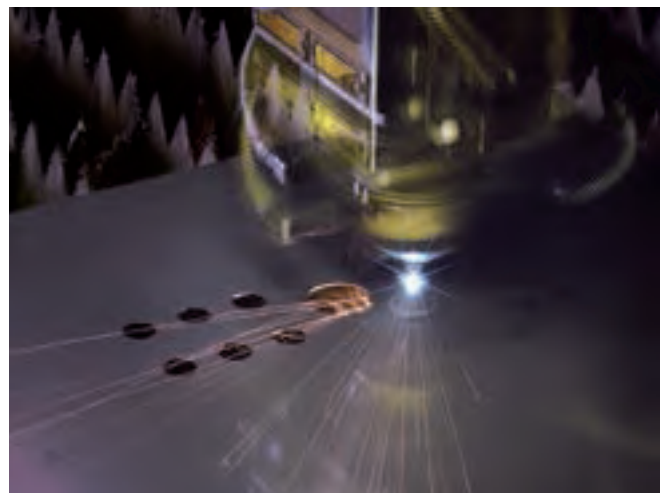
Paint filling

# PUNCHING PRESS



Mainly used for sheet metal. Quick processing speed enables it to be both time and cost efficient.

# LASER CUTTING



# PHOTO INDEX

## PLASTIC ENCLOSURE



IP67 HAND-HELD ENCLOSURE  
WH series P1-12



HAND-HELD CASE with SHOCK-PROOF SILICONE COVER  
LCT series P13-18, 25-42



HAND-HELD CASE with SILICONE COVER  
LCS series P13-14, 19-22, 25-42



HAND-HELD PLASTIC CASE  
LC series P13-14, 23-42



IP67 PORTABLE PLASTIC CASE  
WC series P43-48



PORTABLE PLASTIC CASE with SILICONE COVER  
CSS series P49-52, 55-58



PORTABLE PLASTIC CASE  
CS series P49-50, 53-58



PORTABLE PLASTIC CASE  
PS series P59-62



STRAP / KEY RING  
STPS • STP series / CR-20 series P63-64



IP67 NETWORK PLASTIC BOX  
WP series P65-76



NETWORK PLASTIC BOX  
PF series P77-88



FLANGED NETWORK PLASTIC BOX  
PFF series P89-96



PLASTIC ENCLOSURE with WALL MOUNTING FLANGE  
TWF series P97-104



PLASTIC ENCLOSURE with SILICONE PROTECTOR  
TWS series P105-112, 118-122



MULTIPURPOSE PLASTIC ENCLOSURE  
TW series P105-106, 113-122



SNAP-IN BATTERY BOX  
LD • LDN series P122



COMPACT SNAP-IN PLASTIC CASE  
SW • SW-N • SW-T series P123-126



NETWORK PLASTIC CASE  
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# PHOTO INDEX

## PLASTIC ENCLOSURE ACCESSORIES



SUSPENSION BRACKET  
WM series P129



NEODYMIUM MAGNET  
NMG series P130



BELT CLIP  
GDH • DK series P131



DIN-RAIL MOUNTING BASE  
DRA • DRT series P132



TAPPING STANDOFF  
TPS series P133



ADHESIVE STANDOFF  
T-600 • T-700 • ASR series P134



PCB MOUNT SCREW • TORX SCREW  
EM • MR series P135



LITHIUM BATTERY HOLDER  
CR2 • CR123A series P136

## EXTRUDED ALUMINIUM ENCLOSURE / HEAT-SINK ALUMINIUM ENCLOSURE



ALUMINIUM PANEL CASE with CORNER GUARD  
EXP series P137-140, 147, 149-152



ALUMINIUM EMC SHIELD CASE with CORNER GUARD  
EXPE series P137-138, 141-142, 147, 149-152



IP65 ALUMINIUM CASE with CORNER GUARD  
EXW series P137-138, 143-144, 148-152



EXTRUDED ALUMINIUM CASE  
EX series P137-138, 145-146, 149-152



MOBILE ENCLOSURE  
MX series P153-156, 159-161



ALUMINIUM MOBILE ENCLOSURE  
MXA series P153-154, 157-162



IP67 FLANGED ALUMINIUM ENCLOSURE  
AW series P163-170, 180



IP67 ALUMINIUM ENCLOSURE  
AWN series P163-164, 171-172, 175-180



IP67 ALUMINIUM ENCLOSURE with SILICONE PROTECTOR  
AWP series P163-164, 173-180

## PHOTO INDEX

### ALUMINIUM CONTROL BOX



ALUMINIUM CONTROL BOX  
FC series P181-188, 195-197, 199, 201-204



OPEN-CLOSING CONTROL BOX  
FCW series P181-182, 189-192, 195-204



CONTROL BOX with CARRYING HANDLE  
FCH series P181-182, 193-197, 199, 201-204

### HEAT-SINK ALUMINIUM ENCLOSURE



HEAT-SINK ALUMINIUM ENCLOSURE  
EXH series P137-138, 205-210



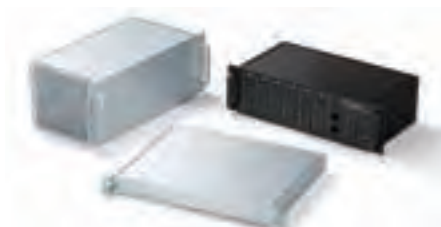
HEAT-SINK ALUMINIUM ENCLOSURE  
AWA series P211-216



HEAT-SINK ALUMINIUM ENCLOSURE  
HY series P217-220, 226



HEAT-SINK RACK MOUNTING ENCLOSURE  
HYR series P221-222, 225-226



HEAT-SINK RACK MOUNTING ENCLOSURE with HANDLE  
HYRH series P223-226



HEAT-SINK ALUMINIUM CASE  
HIT series P227-228



HEAT-SINK ALUMINIUM CASE  
HS series P229-230



HEAT-SINK ALUMINIUM CASE  
HEN series P231-232



SLOPED ENCLOSURE  
CF series P233-234

### ALUMINIUM DESK-TOP / RACK MOUNT ENCLOSURE



DESKTOP ENCLOSURE  
MS series P235-238, 249-252



DESKTOP ENCLOSURE with STAND HANDLE  
MSN series P239-242, 249-252



DESKTOP ENCLOSURE with CARRYING HANDLE  
MSY series P243-246, 249-252



RACK MOUNT ENCLOSURE  
MSR series P247-252



EIA RACK MOUNT ENCLOSURE  
ER series 253-254, 257



RACK MOUNT ENCLOSURE with HANDLE  
ERH series P255-257



# PHOTO INDEX

## ALUMINIUM RACK PANEL / CASE / CHASSIS



ALUMINIUM RACK PANEL  
AP series P258



UNIVERSAL ALUMINIUM CASE  
UC series P259-262



ALUMINIUM DESKTOP CHASSIS  
SRDSL series P263-264

## ALUMINIUM FEET



ALUMINIUM ISOLATION FEET  
AFS • AFM series P265-266



PLASTIC / ALUMINIUM FEET  
RS • TC series P267

## RUBBER FEET



RUBBER FEET  
TB • SJ-P series P268

## DIECAST ALUMINIUM BOX



DIECAST ALUMINIUM BOX  
TD series P269-270



IP67 DIECAST ALUMINIUM BOX  
BDN series P271-273



IP65 DIECAST ALUMINIUM JUNCTION BOX  
TMA series P274-276

## IP65 PLASTIC BOX



IP65 LATCH-HINGED PLASTIC BOX  
BCAP • BCPC series P277-280, 285-300



IP65 PLASTIC BOX with LOCK  
BCAF • BCPK series P277-278, 281-282, 285-300



IP65 PLASTIC BOX with OUTDOOR ROOF  
BCAR • BCPR series P277-278, 283-300



VENTILATION PARTS  
PMF • VSC • V • VF series P301-304




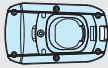
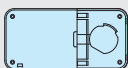


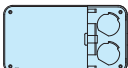


IP65 TERMINAL BLOCK JUNCTION BOX  
TMC series P305-307







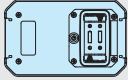
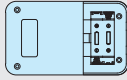
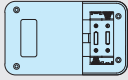
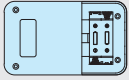
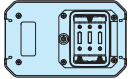
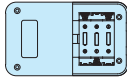
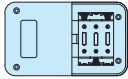
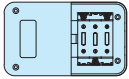
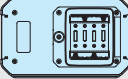
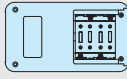
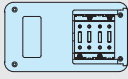
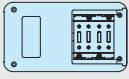
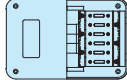
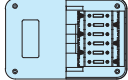
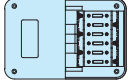
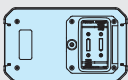



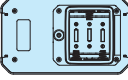

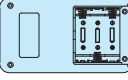
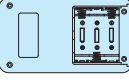

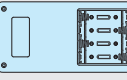
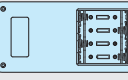
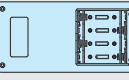
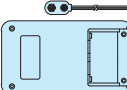
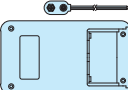
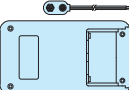
IP67-68 CABLE GLAND  
RM • RMW • AG • AGM series P308-314

# BUILT-IN BATTERY COMPARTMENT MODEL CHART

Battery Compartment	Series	WC Series Page 43 ~ 48	CS Series Page 53 ~ 56	CSS Series Page 51 ~ 52
		 IP67		
<b>CR2032 x 1</b>		 WC72-15 (43×15.5×72) WC90-15 (44.2×15.7×90)	 CS75 (35×12×75) CS90 (45×12×90)	 CSS75 (38.6×15.5×78.6) CSS90 (48.6×15.5×93.6)
<b>CR2032 x 2</b>			 CS115 (63×12×115)	 CSS115 (67.1×16×119.1)
<b>AAA x 2</b>				
<b>AAA x 3</b>				
<b>AAA x 4</b>				
<b>AAA x 6</b>				
<b>AA x 2</b>				
<b>AA x 3</b>				
<b>AA x 4</b>				
<b>9V x 1</b>				

■ Product shapes, numbers, and dimensions (W x H x D) are shown in the above chart.



WH Series Page 1 ~ 12	LC Series P23-40	LCS series Page 19 ~ 22	LCT series Page 15 ~ 18
			
 WH125-20-F2 (79×20×126) WH125-28-F2 (79×28×126)	 LC115-F2 (69×19.5×115) LC115H-F2(69×28×115)	 LCS115-F2 (74×24×120) LCS115H-F2 (74×32.5×120)	 LCT115-F2 (76×28×121.9) LCT115H-F2 (76×36.5×121.9)
 WH125-20-F3 (79×20×126) WH125-28-F3 (79×28×126)	 LC115-F3 (69×19.5×115) LC115H-F3 (69×28×115)	 LCS115-F3 (74×24×120) LCS115H-F3 (74×32.5×120)	 LCT115-F3 (76×28×121.9) LCT115H-F3 (76×36.5×121.9)
 WH145-20-F4 (88×20×146)	 LC135-F4 (76×27×135) LC135H-F4 (76×35×135)	 LCS135-F4 (81×32×141) LCS135H-F4 (81×40×141)	 LCT135-F4 (85×40×143.9) LCT135H-F4 (85×48×143.9)
	 LC145S-F6 (96×20×145) LC145-F6 (96×27×145) LC145H-F6(96×35×145)	 LCS145S-F6 (101 x 25 x 151) LCS145-F6 (101 x 32 x 151) LCS145H-F6 (101 x 40 x 151)	 LCT145S-F6 (105 x 33 x 153.9) LCT145-F6 (105 x 40 x 153.9) LCT145H-F (105 x 48 x 153.9)
 WH145-25-M2 (88×25×146) WH145-33-M2 (88×33×146)	 LC115H-M2 (69×28×115) LC135-M2 (76×27×135) LC135H-M2 (76×35×135) LC145-M2 (96×27×145) LC145H-M2 (96×35×145)	 LCS115H-M2 (74×32.5×120) LCS135-M2 (81×32×141) LCS135H-M2 (81×40×141) LCS145-M2 (101 x 32 x 151) LCS145H-M2 (101 x 40 x 151)	 LCT115H-M2 (76×36.5×121.9) LCT135-M2 (85×40×143.9) LCT135H-M2 (85×48×143.9) LCT145-M2 (105 x 40 x 153.9) LCT145H-M2 (105 x 48 x 153.9)
 WH145-25-M3 (88×25×146) WH145-33-M3 (88×33×146)	 LC135-M3 (76×27×135) LC135H-M3 (76×35×135)	 LCS135-M3 (81×32×141) LCS135H-M3 (81×40×141)	 LCT135-M3(85×40×143.9) LCT135H-M3(85×48×143.9)
 WH170-25-M4 (95×25×171) WH170-33-M4 (95×33×171)	 LC145-M4 (96×27×145) LC145H-M4 (96×35×145) LC165-M4 (80×27×165) LC165H-M4 (80×35×165)	 LCS145-M4 (101 x 32 x 151) LCS145H-M4 (101 x 40 x 151) LCS165-M4 (85 x 32 x 171) LCS165H-M4 (85 x 40 x 171)	 LCT145-M4 (105 x 40 x 153.9) LCT145H-M4 (105 x 48 x 153.9) LCT165-M4 (89 x 40 x 173.9) LCT165H-M4 (89 x 48 x 173.9)
	 LC115H-9V (69×28×115) LC135-9V (76×27×135) LC135H-9V (76×35×135)	 LCS115H-9V (74×32.5×120) LCS135-9V (81×32×141) LCS135H-9V (81×40×141)	 LCT115H-9V (76×36.5×121.9) LCT135-9V (85×40×143.9) LCT135H-9V (85×48×143.9)

\*Dimensions shown in LCS and LCT series are with silicone cover assembled.

# WH SERIES

## IP67 WATERPROOF HAND-HELD ENCLOSURE



● IEC60529 standard is a system for classifying the degrees of protection provided by the enclosures of electrical equipment, such as against dust and water.

**IP6x : No ingress of dust; complete protection against contact (dust tight).**

**IPx7 : No ingress of water when submerged up to a depth of 1 meter for 30 minutes**

### High waterproof performance with a silicone gasket

High elasticity and good durability for maintaining waterproofing capability.  
Built-in insert nut use for great long lasting water protection even after frequent opening and closing.

Battery compartment is also waterproofed.

AA x 2, AA x 3, and AAA x 4 battery compartment types are available.

### Side grip provides great protection

Elastic TPE grips provides for a more secured hold.

Side grips are designed to be on the sides and corners of the enclosure to minimize drop impact.



### Available in 10 different color combinations.





# APPLICATION EXAMPLE

Best suited for industrial measuring instrument, transceiver, controller, medical equipment and so on.



## How to make waterproof buttons and switches

Please utilize a waterproof membrane keypad or membrane switch.

Note that the waterproof performance will be lost by drilling/milling holes or cutouts for buttons or switches on waterproof enclosures.



## How to make waterproof cable hole

Please use a cable gland from our available range of cable gland accessories.

Refer to page 308 ~ 314 for more information.



## Customization services available



Contact us with your drawings

E-mail: [sales@takachi-el.co.jp](mailto:sales@takachi-el.co.jp)



## Technical Data

Protection class: IP67  
 Operating temperature: -10°C ~ +60°C  
 Recommended torque:  
 0.2N • m ~ 0.3N • m  
 (2kgf • cm ~ 3kgf • cm)



- Stylish and elegantly designed with chamfered edge construction.
- IP67 class enclosure.
- Manufactured from flame-resistant ABS UL94V-0.
- 4 different internal compartment types are available: AAA x 4, AA x 3, AA x 2, and no battery type. Battery compartments have positive (+) / negative (-) pole mark to prevent incorrect insertion.
- The TPE side grips are available in 5 unique colors, and functions as an anti-slip grip pad and drop impact protection.

## Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white • Black
2	Bottom cover	1	ABS UL94V-0	Off-white • Black
3	Battery cover (None for N-type)	1	ABS UL94V-0	Off-white • Black
4	Gasket	1	Silicone	N • F2 • F3 • M4 type: Black
5	O-ring (None for N-type)	1	Silicone	M2 type: Blue M3 • F4 type: Light gray
6	Side grip	2	TPE	Black • Light gray • Navy • Red • Yellow
7	Battery cover screw (None for N-type)	1	Stainless steel M2.5-6	Unfinished
8	Screw	6	Stainless steel M2.5-10	Unfinished
9	Battery contact (None for N-type)	1 set	Brass	Nickel plated



## Accessories (Optional parts)



PCB mounting screw  
EM-2.3  
See page 135



Cable gland  
See page 308-314



Tapping standoff  
TPS series  
See page 133



Neodymium magnet  
NMG series  
See page 130

## Battery Compartment Types

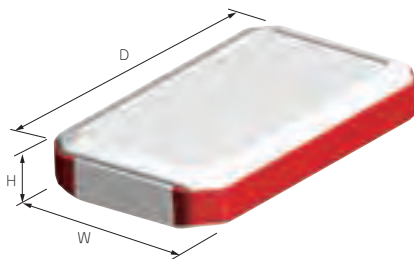
Type	N None	F2 AAA x 2	F3 AAA x 3	F4 AAA x 4	M2 AA x 2	M3 AA x 3	M4 AA x 4
Battery compartment							

## Color Type

Code	B B Black / Black	B L Black / Light gray	B N Black / Navy	B R Black / Red	B Y Black / Yellow
Color					
Code	W B Off-White / Black	W L Off-White / Light gray	W N Off-White / Navy	W R Off-White / Red	W Y Off-White / Yellow
Color					

## Product no. / Dimensions

■ Please suffix color code at the end of the product number.

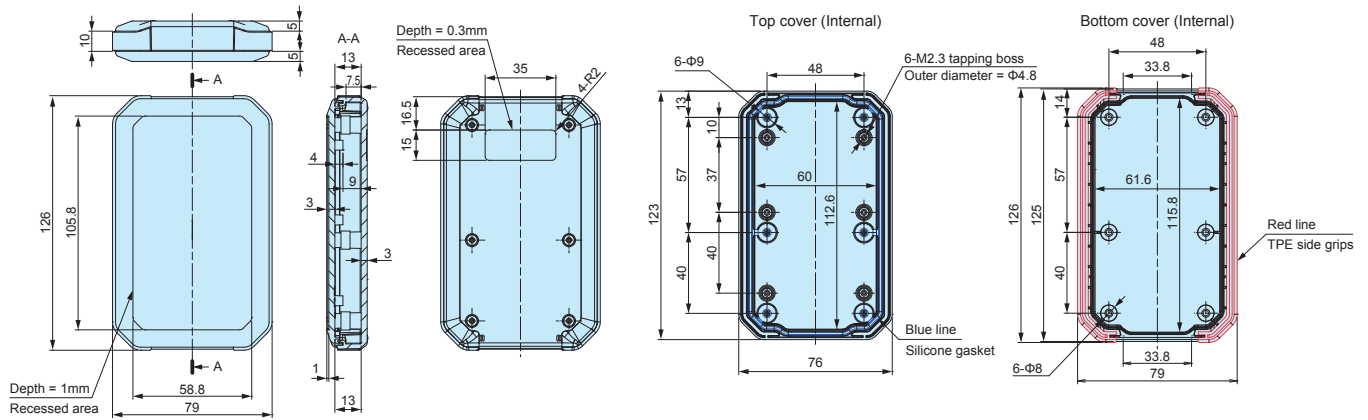


Product no.	W	H	D	Battery compartment	Weight (g)
<b>NEW</b> WH125-20-N -□□	79	20	126	None	101.0
<b>NEW</b> WH125-20-F2 -□□	79	20	126	AAA x 2	102.0
<b>NEW</b> WH125-20-F3 -□□	79	20	126	AAA x 3	109.0
<b>NEW</b> WH125-28-N -□□	79	28	126	None	119.0
<b>NEW</b> WH125-28-F2 -□□	79	28	126	AAA x 2	121.0
<b>NEW</b> WH125-28-F3 -□□	79	28	126	AAA x 3	127.0
WH145-20-N -□□	88	20	146	None	125.5
WH145-20-F4 -□□	88	20	146	AAA x 4	129.5
WH145-25-N -□□	88	25	146	None	137.5
WH145-25-M2 -□□	88	25	146	AA x 2	161.5
WH145-25-M3 -□□	88	25	146	AA x 3	159.5
WH145-33-N -□□	88	33	146	None	162.0
WH145-33-M2 -□□	88	33	146	AA x 2	180.5
WH145-33-M3 -□□	88	33	146	AA x 3	181.5
<b>NEW</b> WH170-25-N -□□	95	25	171	None	169.0
<b>NEW</b> WH170-25-M4 -□□	95	25	171	AA x 4	195.0
<b>NEW</b> WH170-33-N -□□	95	33	171	None	191.0
<b>NEW</b> WH170-33-M4 -□□	95	33	171	AA x 4	220.0

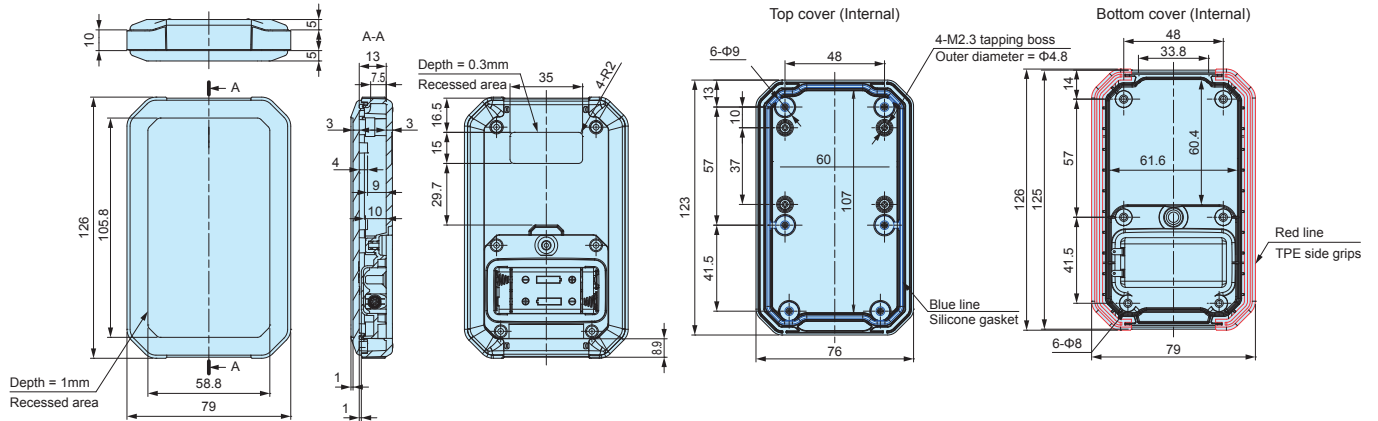
# WH dimensions

■ DXF/DWG/PDF drawings available on our website.

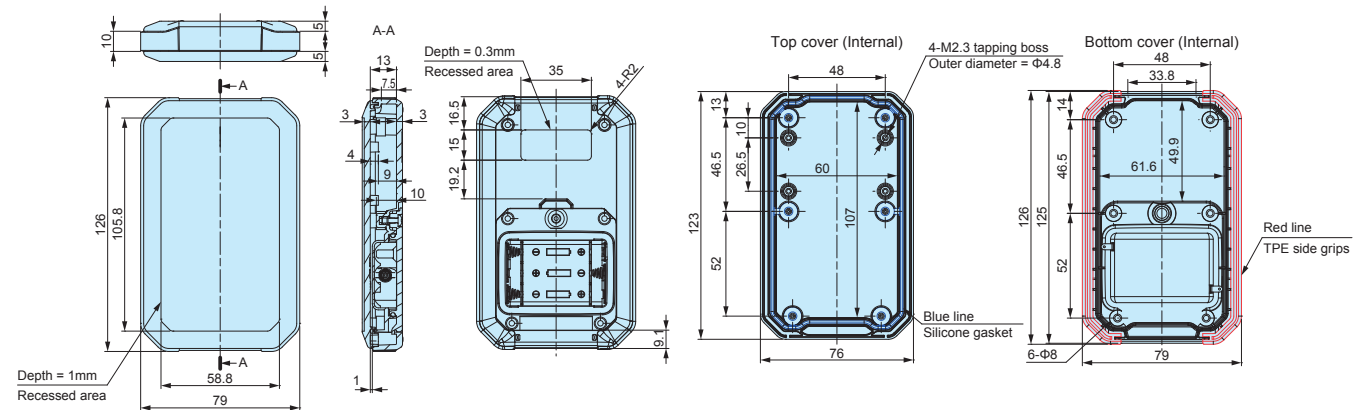
## WH125-20-N



## WH125-20-F2

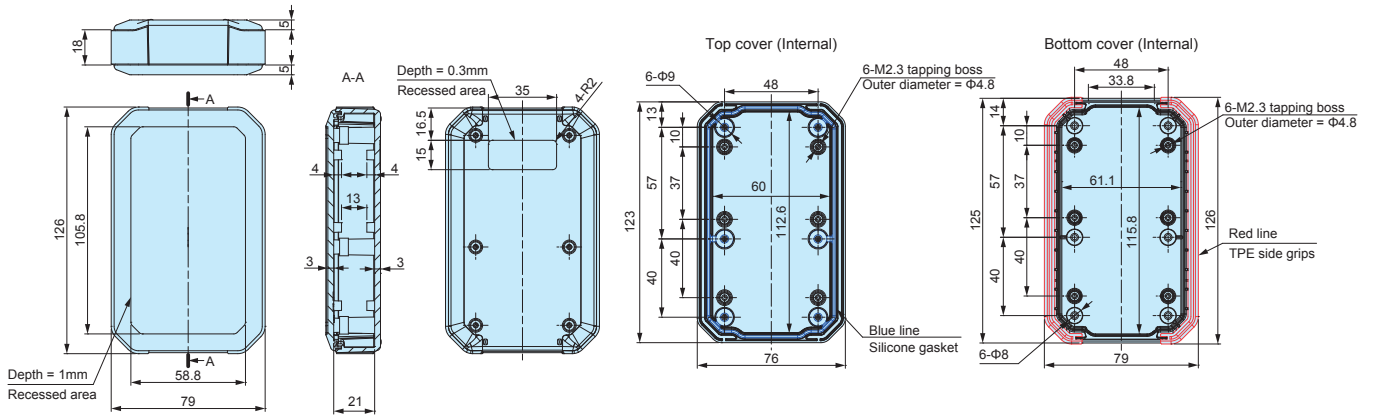


## WH125-20-F3

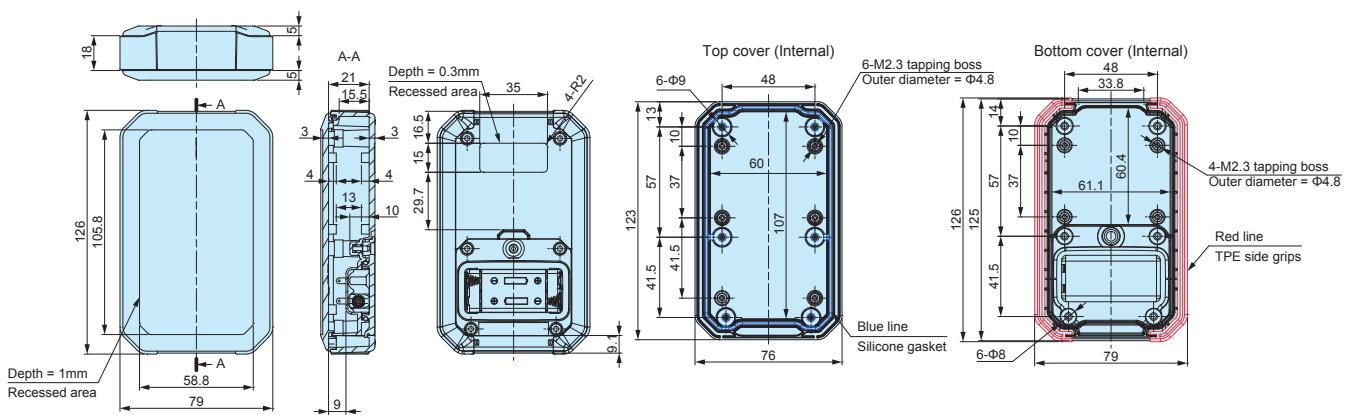




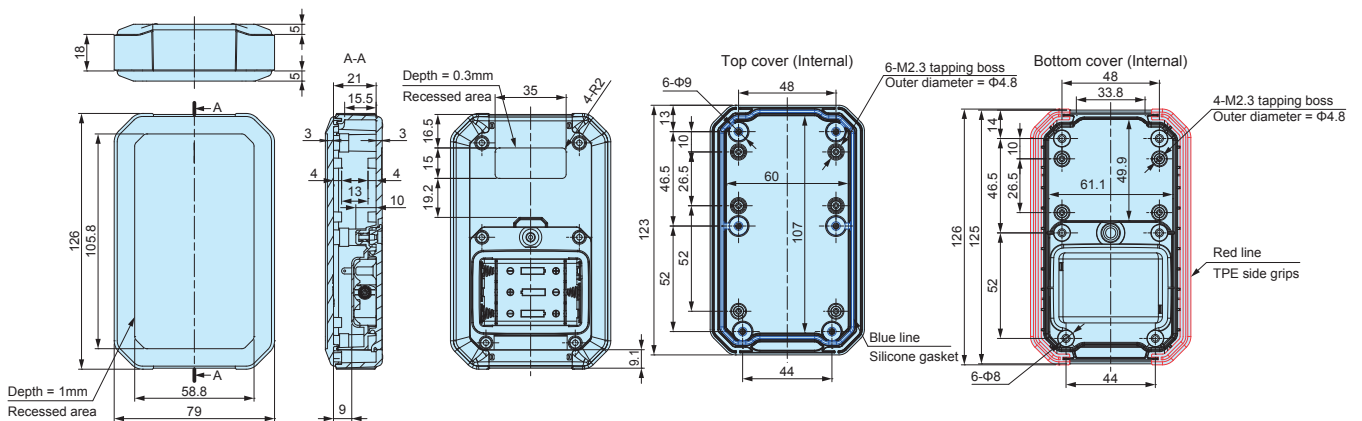
WH125-28-N



WH125-28-F2



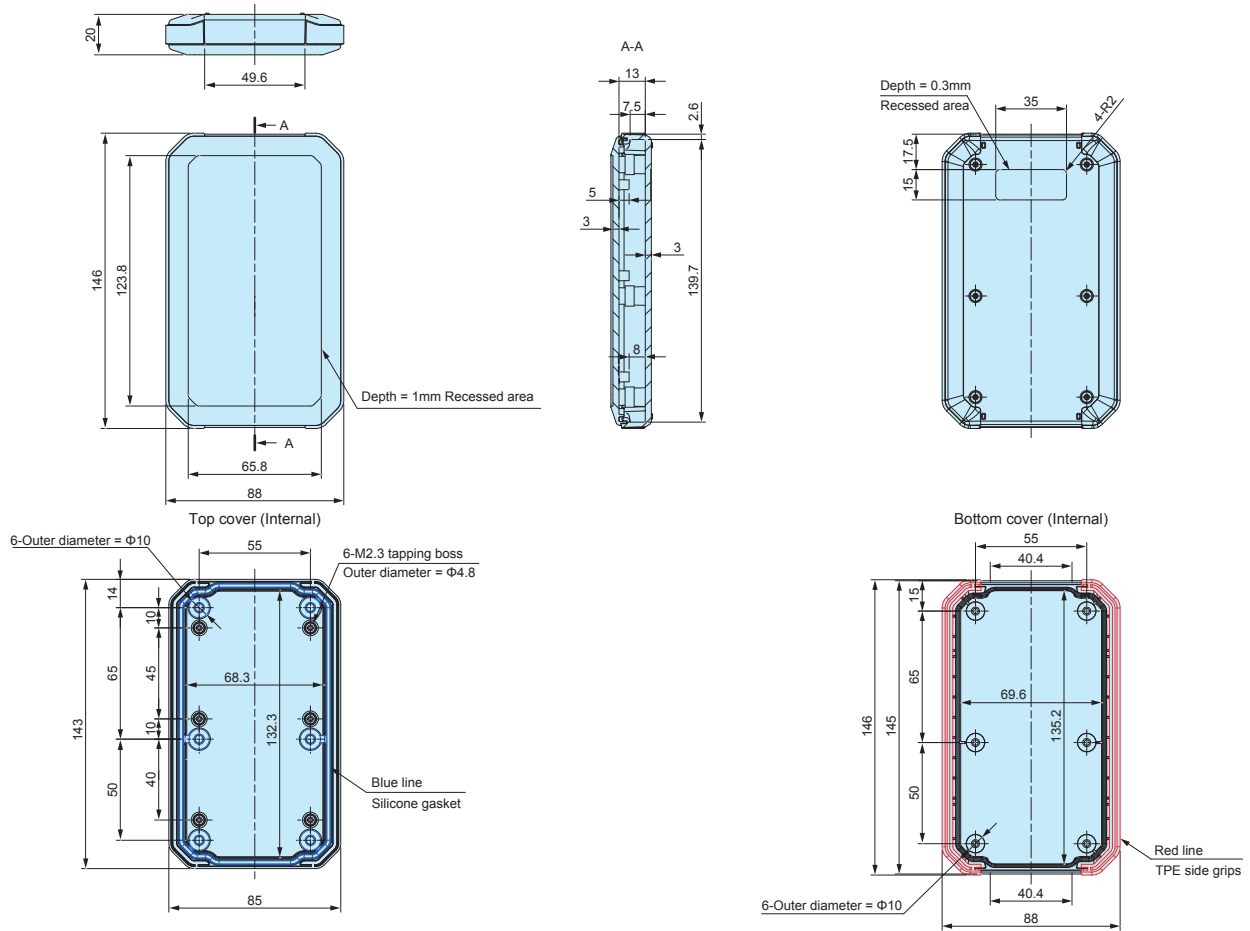
WH125-28-F3



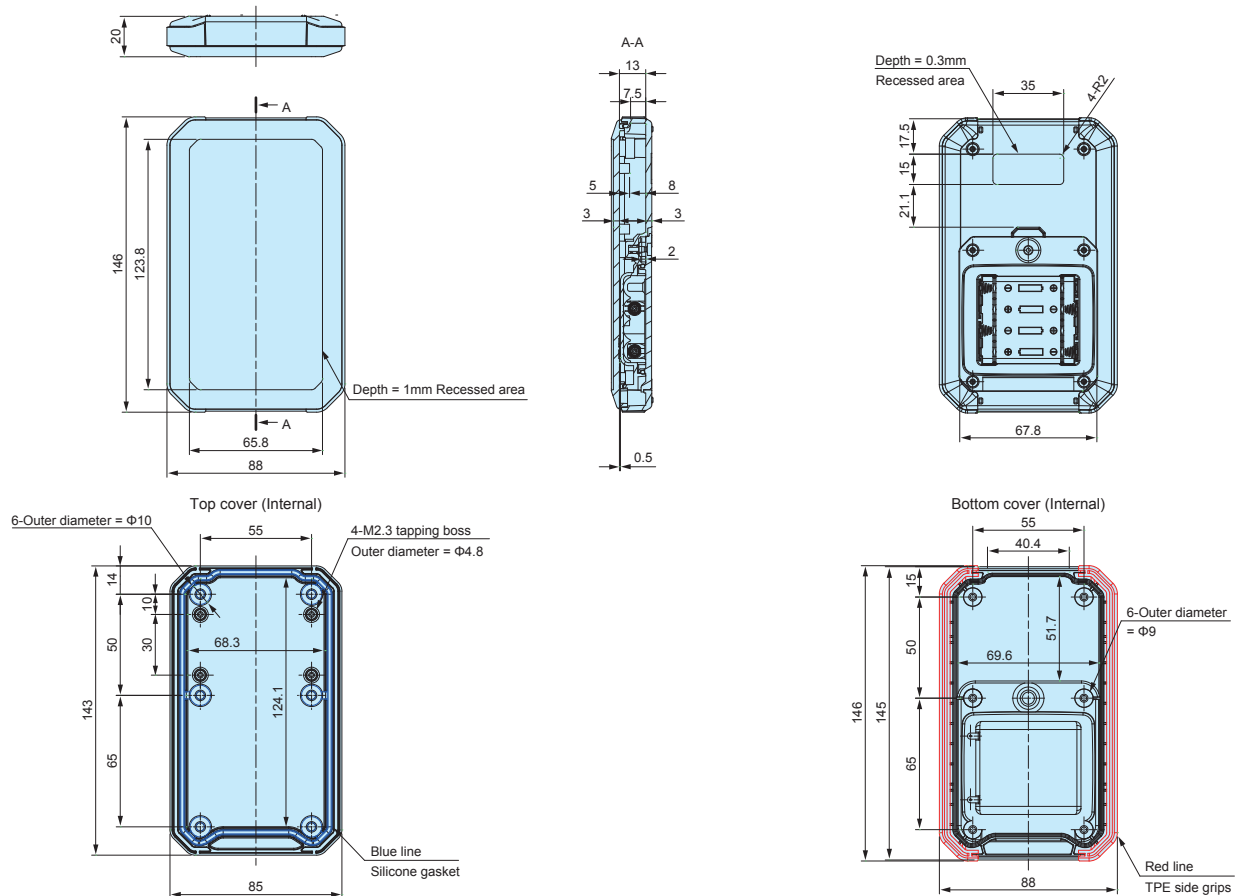
## WH dimensions

■ DXF/DWG/PDF drawings available on our website.

### WH145-20-N



### WH145-20-F4



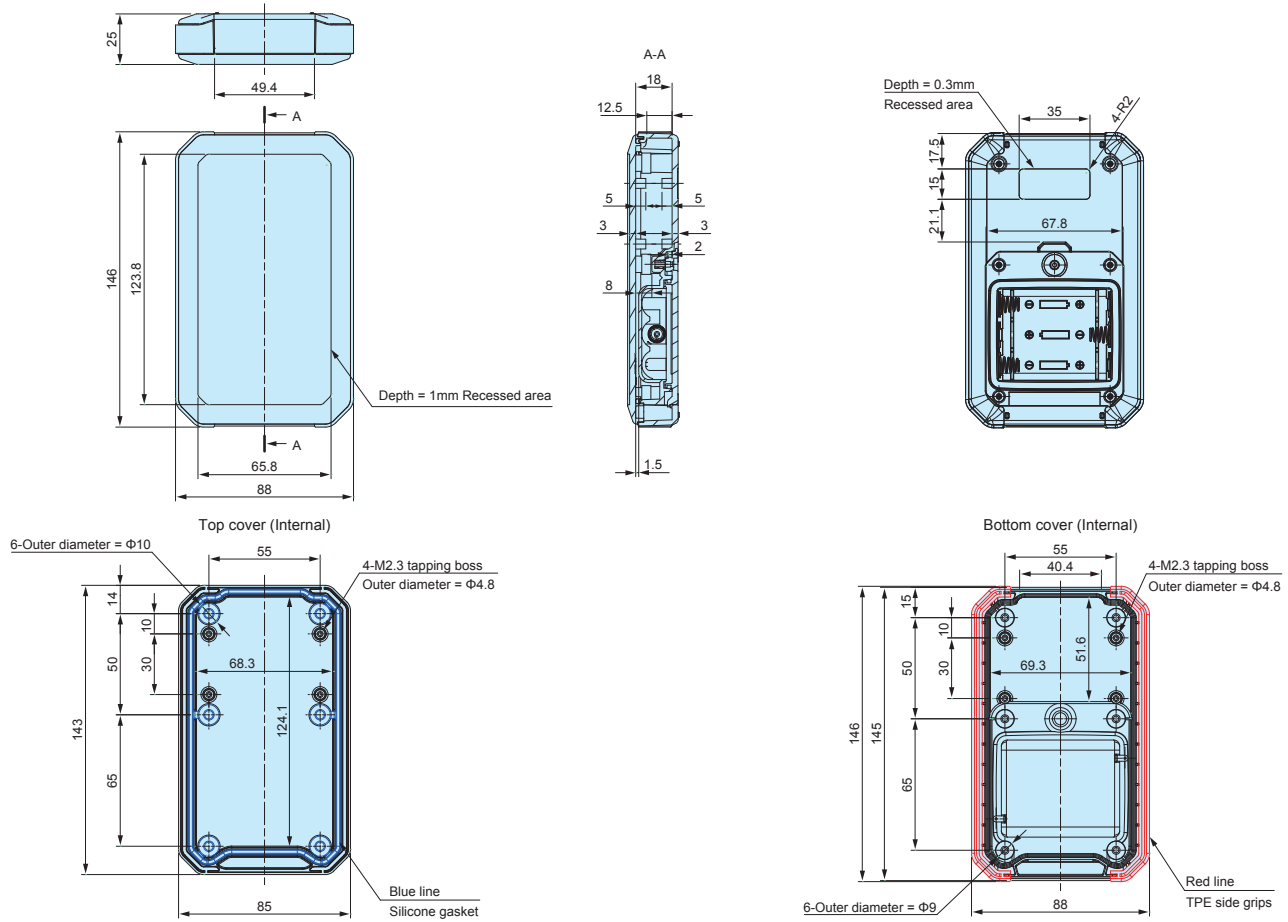




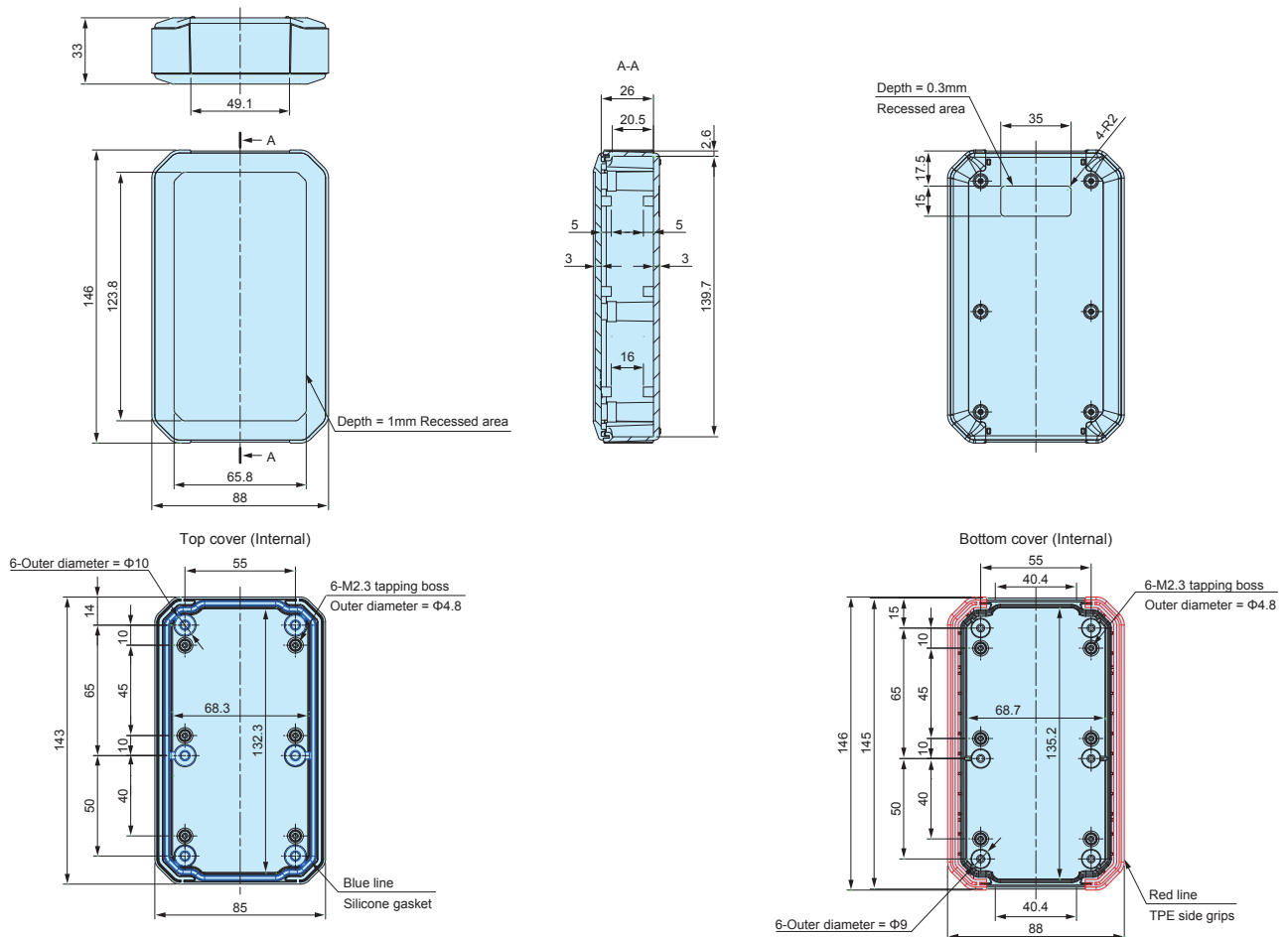
## WH dimensions

■ DXF/DWG/PDF drawings available on our website.

### WH145-25-M3

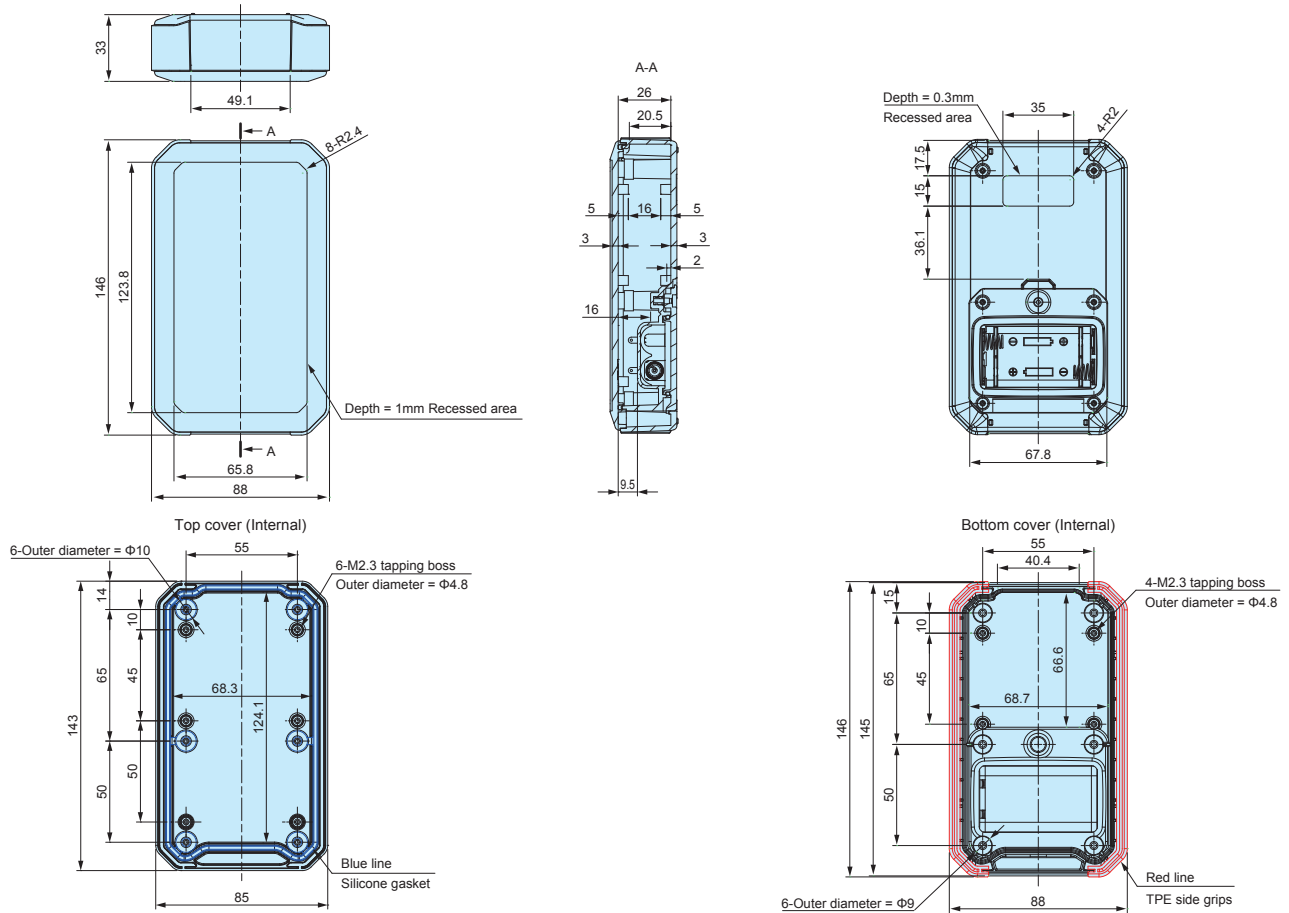


### WH145-33-N

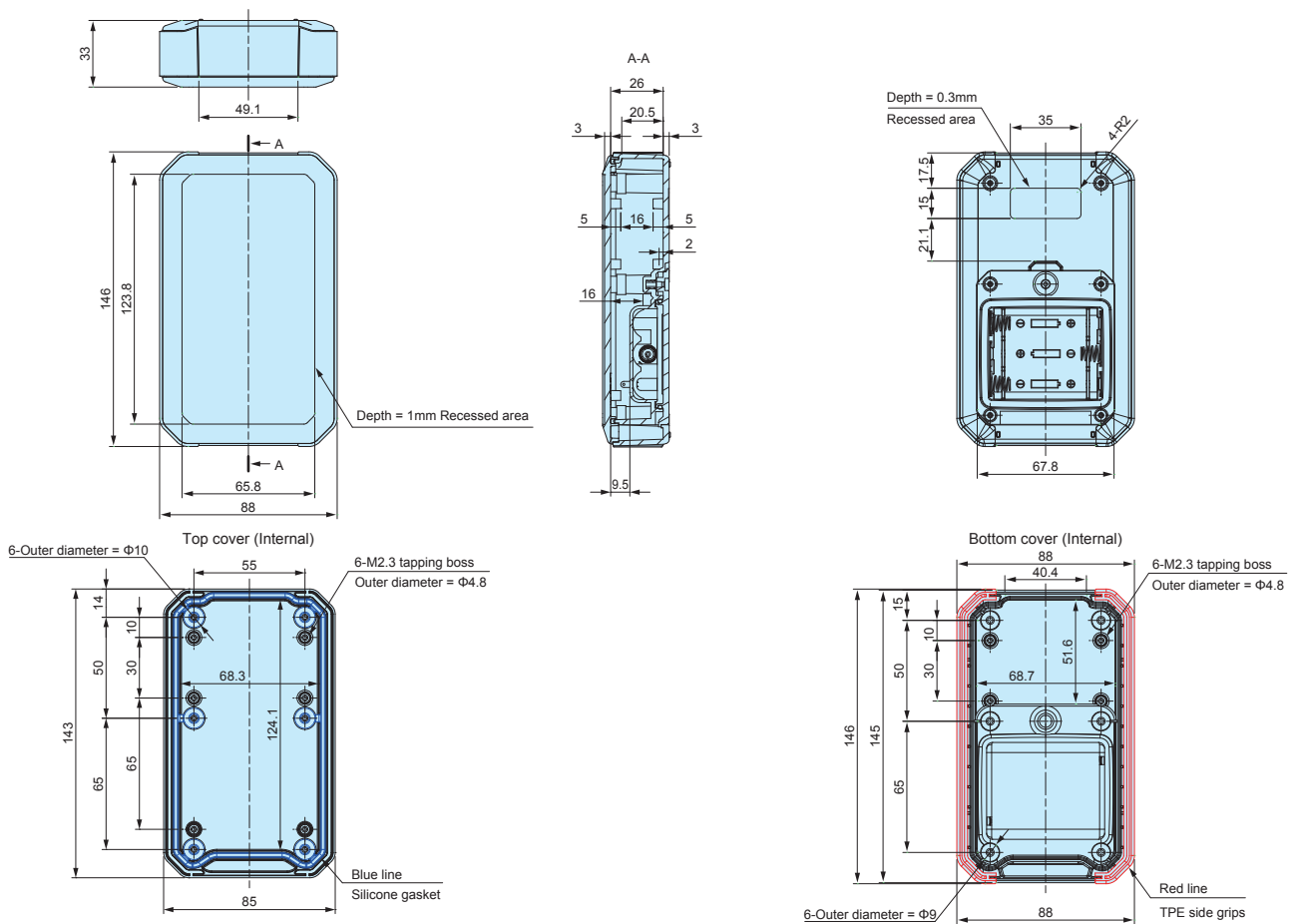




WH145-33-M2



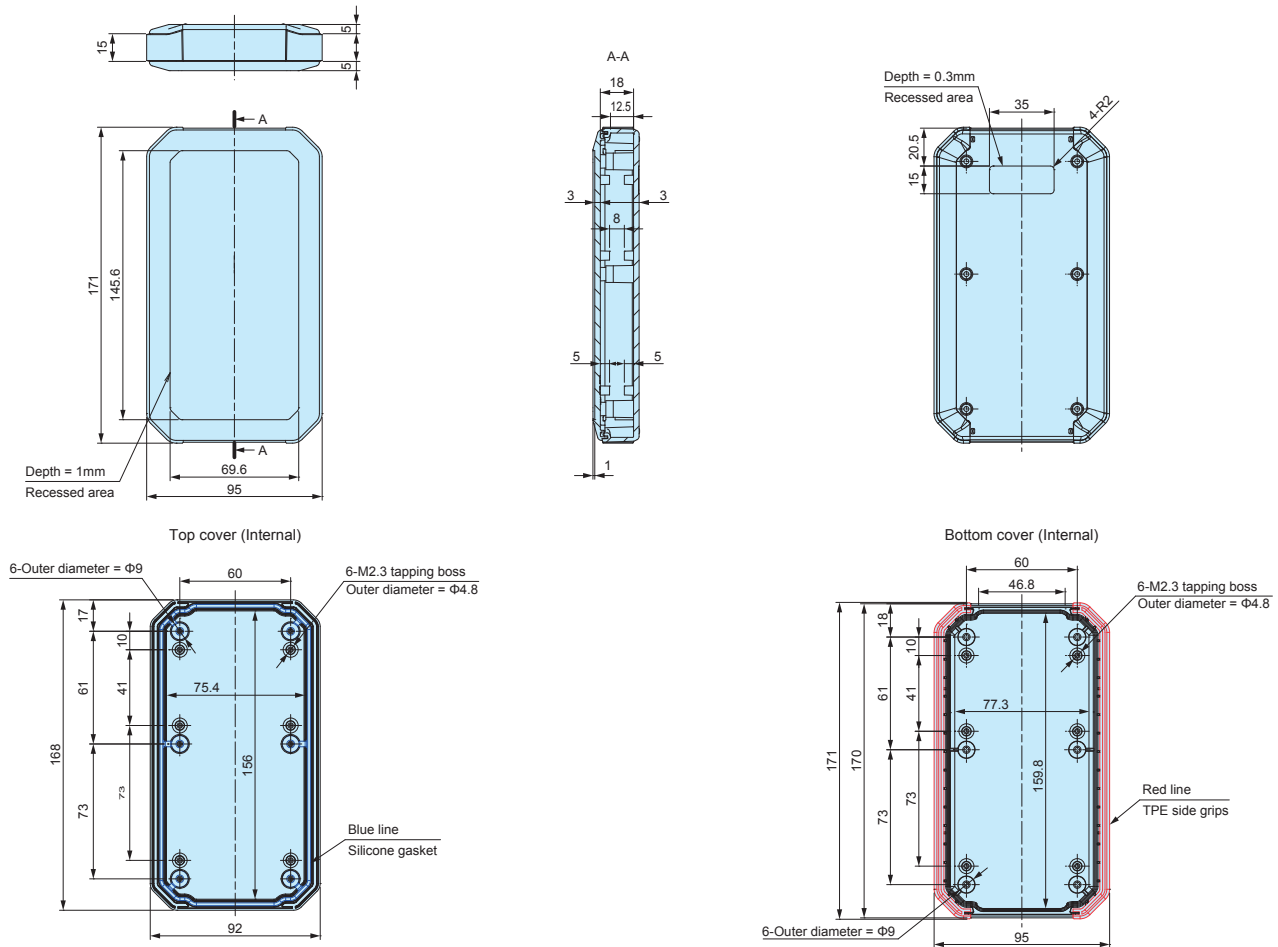
WH145-33-M3



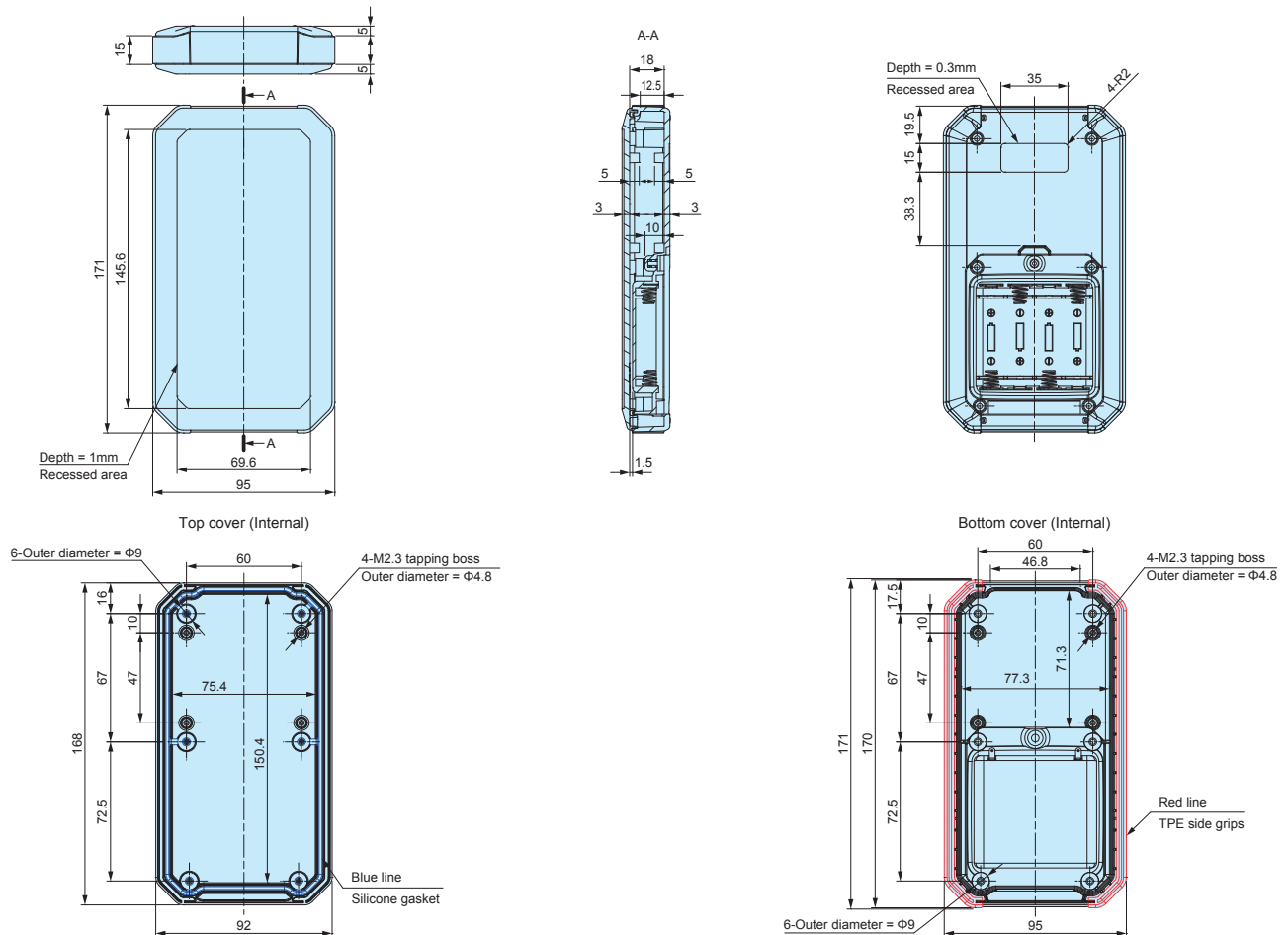
## WH dimensions

■ DXF/DWG/PDF drawings available on our website.

### WH170-25-N

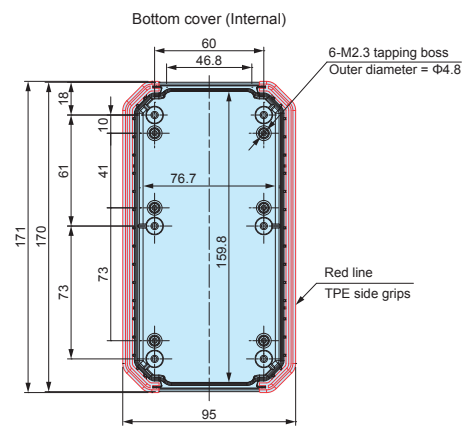
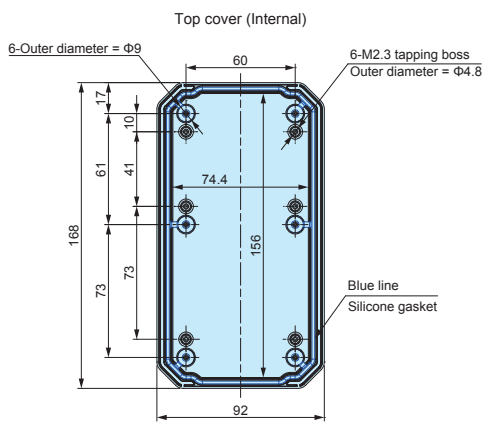
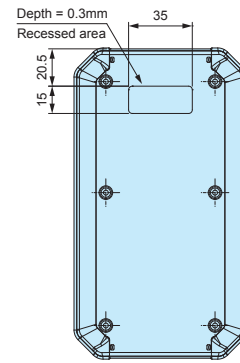
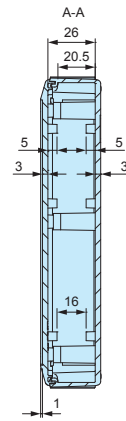
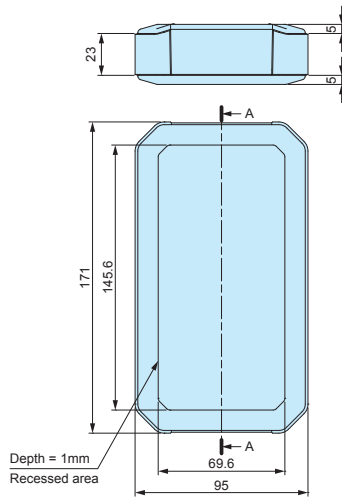


### WH170-25-M4

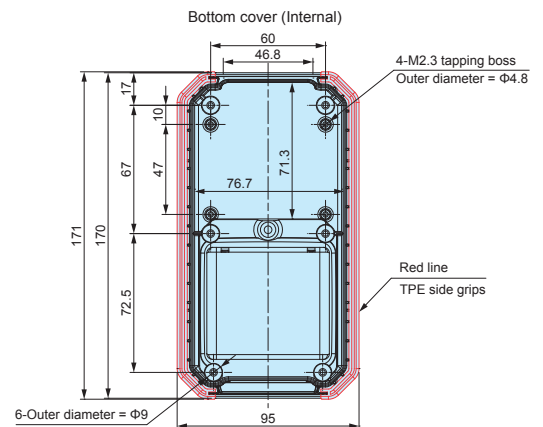
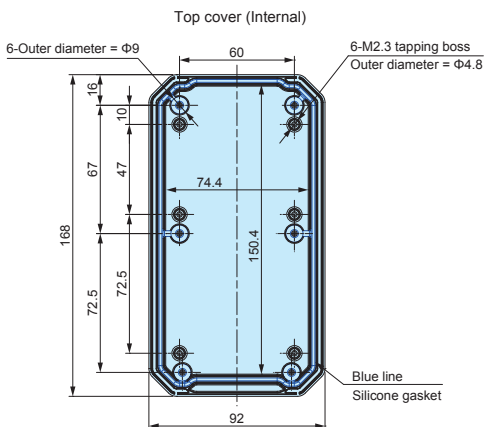
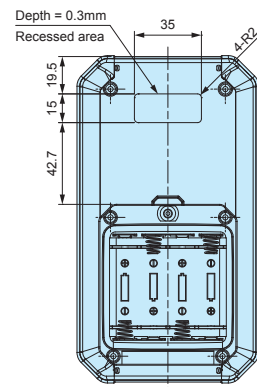
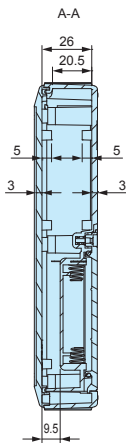
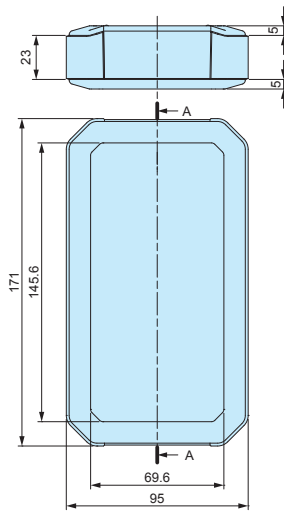




# WH170-33-N



# WH170-33-M4



# LCT·LCS·LC HAND-HELD PLASTIC CASE

Hand-held case suitable for industrial measuring equipments, wireless communication devices and medical equipments.

8 different sizes and 9 different battery compartment types are available for LC plastic case.

LCS series comes with 7 silicone cover colors for selection.

LCT series is selectable in 5 different rugged shock-proof silicone cover colors.

## LCT Plastic case with shock-proof silicone cover

Orange



Green



Navy



Dark gray



Light gray



## LCS Plastic case with silicone cover

Red



Yellow



Green



Blue



Navy



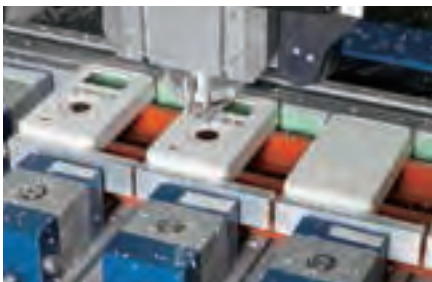
Dark gray



Light gray



## CUSTOMIZATION



Machining



Custom cut on silicone cover



Custom color, custom shaped silicone cover



Digital printed overlay



# APPLICATION EXAMPLE

## MINI SURVEY METER

Spectrometer using CsI(Tl) scintillation detector. To achieve energy compensated by the latest electronic circuits, the dose rate is displayed in the range from  $0.001\mu\text{Sv/h}$  to  $20\mu\text{Sv/h}$ . It has USB communication function as standard. Dose rate changes can shown as graph on PC by using a dedicated application. The clear display uses an organic EL display (Model TC200S).

Product by Techno AP (Japan)

Website : [techno-ap.com](http://techno-ap.com)

TC200 series



TA100 series



TC100 series



## RF SCOPE

Arrow7 Corporation (Japan)

Website : [arrow7.co.jp](http://arrow7.co.jp)



## SATELLITE FINDER



Product by NEO-Electronics (France)

Website : [neo-electronics.fr](http://neo-electronics.fr)

## WIRELESS VOLTAGE PROBE

Product by Enertronics GmbH  
(Switzerland)

Website : [enertronics.ch](http://enertronics.ch)



## PORTABLE ANEMOMETER



Product by FieldPro (Japan)

Website : [fieldpro.jp](http://fieldpro.jp)

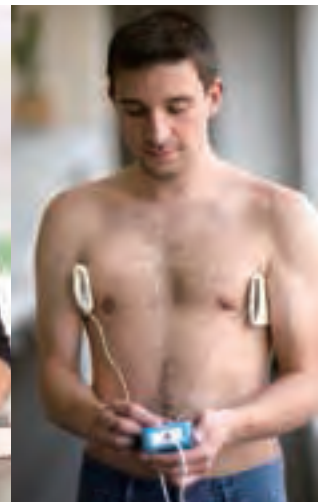
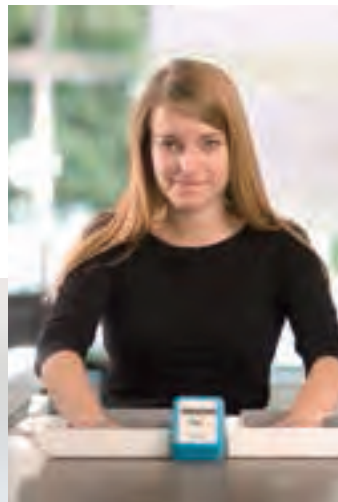


## HYPERHIDROSIS TREATMENT DEVICE

In hyperhidrosis treatment, iontophoresis is used to reduce the function of the sweat glands due to the effects of electric current, which causes protein coagulation.

Product by Merebit s.r.o. (Czech Republic)

Website : [merebit.com](http://merebit.com)





# LCT SERIES

# HAND-HELD CASE with SHOCK-PROOF SILICONE COVER



## Technical Data

Protection class: IP40  
Operating temperature: -10°C ~ +60°C

- Plastic case with shock-proof silicone cover. Protects the device from various impact.
- Manufactured with flame-resistant ABS UL94V-0 material. Selectable from a range of battery compartment types.
- Positive (+) / Negative (-) pole marks are incised on the inside of the battery compartments.
- Suitable for measuring instruments, test devices, wireless communication devices, medical devices and so on.

Battery compartment type

No battery compartment type



## Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white • Dark gray
2	Bottom cover	1	ABS UL94V-0	Off-white • Dark gray
3	Panel	1	ABS UL94V-0	Off-white • Dark gray
4	Self tapping screws	4	Steel M2.6	Nickel plated • Black trivalent chromate
5	Battery cover	1	ABS UL94V-0	Off-white • Dark gray
6	Battery contact • Battery snap	1 set	Brass • Brass : PVC	Nickel plated • Nickel plated : Black
7	Silicone cover	1	Silicone	Orange • Green • Navy • Dark gray • Light gray

## Accessories (Optional parts)



PCB mounting screw  
EM-2.3  
See page 135



TORX screw  
MR series  
See page 135



Key ring  
CR-20  
See page 64

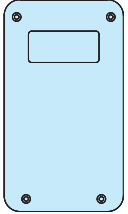
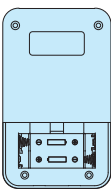
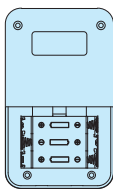
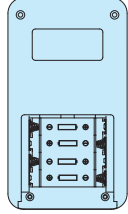
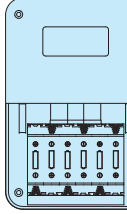
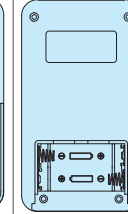
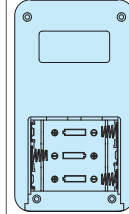
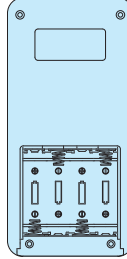
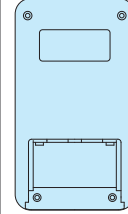


Strap  
STP series  
See page 64



Tapping standoff  
TPS series  
See page 133

## Battery Compartment Type

Type	N None	F2 AAA x 2	F3 AAA x 3	F4 AAA x 4	F6 AAA x 6	M2 AA x 2	M3 AA x 3	M4 AA x 4	9V 9V x 1
Battery compartment									

## Color Type

Code	D O Dark gray / Orange	D G Dark gray / Green	D N Dark gray / Navy	D D Dark gray / Dark gray	D L Dark gray / Light gray
Color					
Code	W O Off-white / Orange	W G Off-white / Green	W N Off-white / Navy	W D Off-white / Dark gray	W L Off-white / Light gray
Color					

## Product no. / Dimensions

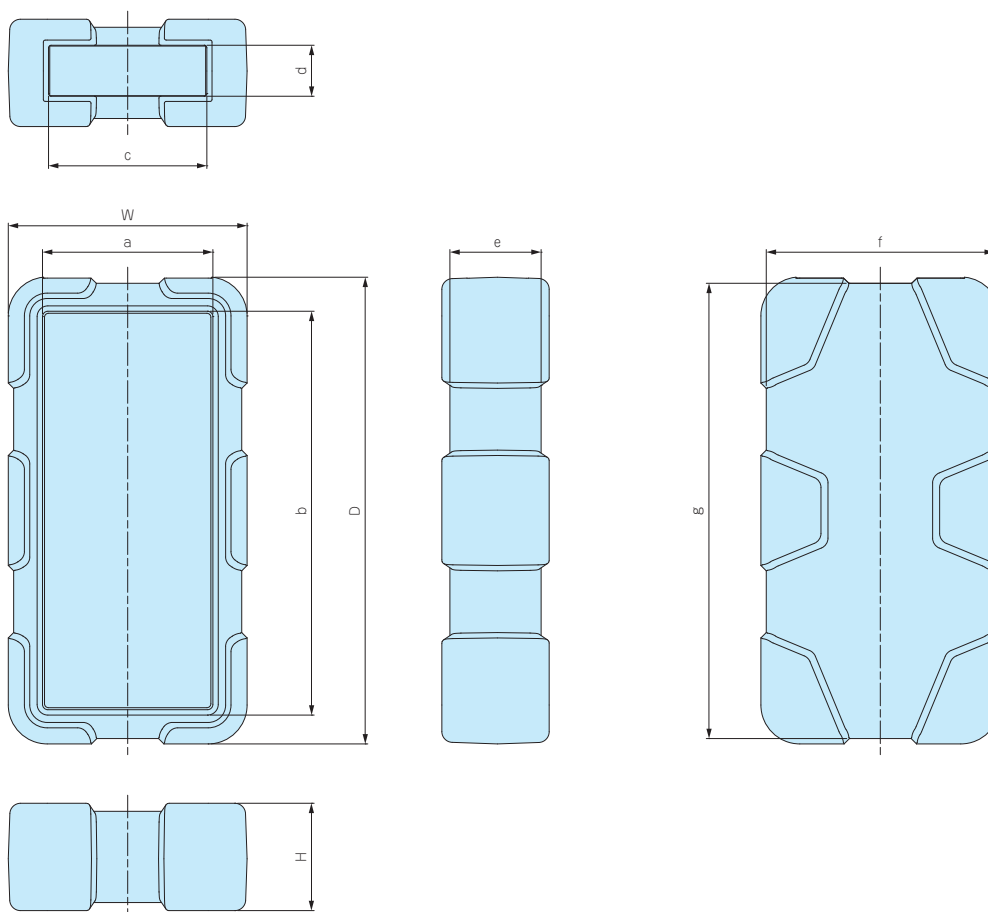
■ Please suffix color code at the end of the product number.

Product no.	W	H	D	Battery compartment	Weight (g)
LCT115 -N -□□	76(69)	28(19.5)	121.9(115)	None	123.5
LCT115 -F2 -□□	76(69)	28(19.5)	121.9(115)	AAA x 2	128
LCT115 -F3 -□□	76(69)	28(19.5)	121.9(115)	AAA x 3	130
LCT115H-N -□□	76(69)	36.5(28)	121.9(115)	None	141
LCT115H-F2 -□□	76(69)	36.5(28)	121.9(115)	AAA x 2	145.5
LCT115H-F3 -□□	76(69)	36.5(28)	121.9(115)	AAA x 3	147
LCT115H-M2 -□□	76(69)	36.5(28)	121.9(115)	AA x 2	149.5
LCT115H-9V -□□	76(69)	36.5(28)	121.9(115)	9V x 1	149
LCT135 -N -□□	85(76)	40(27)	143.9(135)	None	210.5
LCT135 -F4 -□□	85(76)	40(27)	143.9(135)	AAA x 4	225.5
LCT135 -M2 -□□	85(76)	40(27)	143.9(135)	AA x 2	223.5
LCT135 -M3 -□□	85(76)	40(27)	143.9(135)	AA x 3	229
LCT135 -9V -□□	85(76)	40(27)	143.9(135)	9V x 1	227
LCT135H-N -□□	85(76)	48(35)	143.9(135)	None	231.5
LCT135H-F4 -□□	85(76)	48(35)	143.9(135)	AAA x 4	246
LCT135H-M2 -□□	85(76)	48(35)	143.9(135)	AA x 2	245
LCT135H-M3 -□□	85(76)	48(35)	143.9(135)	AA x 3	250
LCT135H-9V -□□	85(76)	48(35)	143.9(135)	9V x 1	247.5
<b>NEW</b> LCT145S-N -□□	105(96)	33(20)	153.9(145)	None	239.1
<b>NEW</b> LCT145S-F6 -□□	105(96)	33(20)	153.9(145)	AAA x 6	259.1
<b>NEW</b> LCT145 -N -□□	105(96)	40(27)	153.9(145)	None	258.5
<b>NEW</b> LCT145 -F6 -□□	105(96)	40(27)	153.9(145)	AAA x 6	278.5
<b>NEW</b> LCT145 -M2 -□□	105(96)	40(27)	153.9(145)	AA x 2	272.5
<b>NEW</b> LCT145 -M4 -□□	105(96)	40(27)	153.9(145)	AA x 4	279.5
<b>NEW</b> LCT145H-N -□□	105(96)	48(35)	153.9(145)	None	282
<b>NEW</b> LCT145H-F6 -□□	105(96)	48(35)	153.9(145)	AAA x 6	302.5
<b>NEW</b> LCT145H-M2 -□□	105(96)	48(35)	153.9(145)	AA x 2	296
<b>NEW</b> LCT145H-M4 -□□	105(96)	48(35)	153.9(145)	AA x 4	303
LCT165 -N -□□	89(80)	40(27)	173.9(165)	None	263.5
LCT165 -M4 -□□	89(80)	40(27)	173.9(165)	AA x 4	283
LCT165H-N -□□	89(80)	48(35)	173.9(165)	None	286
LCT165H-M4 -□□	89(80)	48(35)	173.9(165)	AA x 4	305

■ ( ) value = enclosure dimension.

## Silicone cover dimensions

■ Refer to page 25 ~ 40 for detailed internal enclosure dimensions.

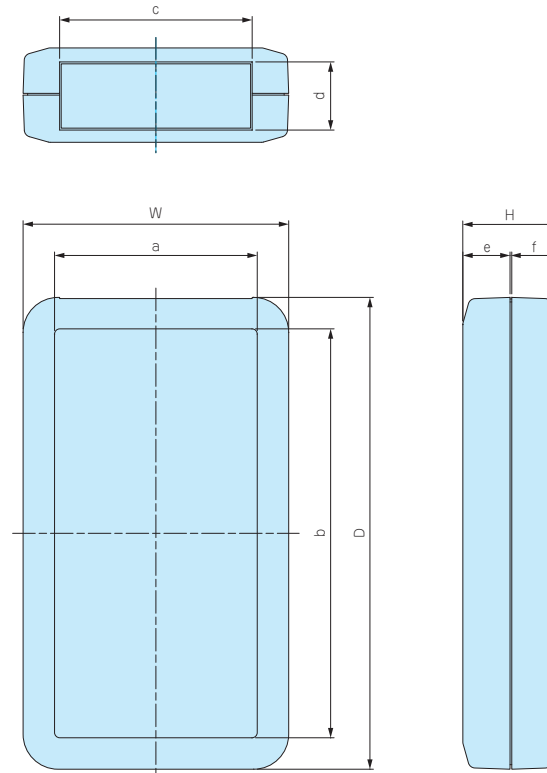


Product no.	W	H	D	a	b	c	d	e	f	g
LCT115 -N -□□	76	28	121.9	55.5	101.5	48.3	12	24	72	117.8
LCT115 -F2 -□□	76	28	121.9	55.5	101.5	48.3	12	24	72	117.8
LCT115 -F3 -□□	76	28	121.9	55.5	101.5	48.3	12	24	72	117.8
LCT115H -N -□□	76	36.5	121.9	55.5	101.5	48.3	20.5	32.5	72	117.8
LCT115H -F2 -□□	76	36.5	121.9	55.5	101.5	48.3	20.5	32.5	72	117.8
LCT115H -F3 -□□	76	36.5	121.9	55.5	101.5	48.3	20.5	32.5	72	117.8
LCT115H -M2 -□□	76	36.5	121.9	55.5	101.5	48.3	20.5	32.5	72	117.8
LCT115H -9V -□□	76	36.5	121.9	55.5	101.5	48.3	20.5	32.5	72	117.8
LCT135 -N -□□	85	40	143.9	59.5	118.5	55	19	34	81	139.7
LCT135 -F4 -□□	85	40	143.9	59.5	118.5	55	19	34	81	139.7
LCT135 -M2 -□□	85	40	143.9	59.5	118.5	55	19	34	81	139.7
LCT135 -M3 -□□	85	40	143.9	59.5	118.5	55	19	34	81	139.7
LCT135 -9V -□□	85	40	143.9	59.5	118.5	55	19	34	81	139.7
LCT135H -N -□□	85	48	143.9	59.5	118.5	55	27	42	81	139.7
LCT135H -F4 -□□	85	48	143.9	59.5	118.5	55	27	42	81	139.7
LCT135H -M2 -□□	85	48	143.9	59.5	118.5	55	27	42	81	139.7
LCT135H -M3 -□□	85	48	143.9	59.5	118.5	55	27	42	81	139.7
LCT135H -9V -□□	85	48	143.9	59.5	118.5	55	27	42	81	139.7
<b>NEW</b> LCT145S -N -□□	105	33	153.9	76.5	125.5	71	12	27	101	149.7
<b>NEW</b> LCT145S -F6 -□□	105	33	153.9	76.5	125.5	71	12	27	101	149.7
<b>NEW</b> LCT145 -N -□□	105	40	153.9	76.5	125.5	71	19	34	101	149.7
<b>NEW</b> LCT145 -F6 -□□	105	40	153.9	76.5	125.5	71	19	34	101	149.7
<b>NEW</b> LCT145 -M2 -□□	105	40	153.9	76.5	125.5	71	19	34	101	149.7
<b>NEW</b> LCT145 -M4 -□□	105	40	153.9	76.5	125.5	71	19	34	101	149.7
<b>NEW</b> LCT145H -N -□□	105	48	153.9	76.5	125.5	71	27	42	101	149.7
<b>NEW</b> LCT145H -F6 -□□	105	48	153.9	76.5	125.5	71	27	42	101	149.7
<b>NEW</b> LCT145H -M2 -□□	105	48	153.9	76.5	125.5	71	27	42	101	149.7
<b>NEW</b> LCT145H -M4 -□□	105	48	153.9	76.5	125.5	71	27	42	101	149.7
LCT165 -N -□□	89	40	173.9	63.5	148.5	59	19	34	85	169.7
LCT165 -M4 -□□	89	40	173.9	63.5	148.5	59	19	34	85	169.7
LCT165H -N -□□	89	48	173.9	63.5	148.5	59	27	42	85	169.7
LCT165H -M4 -□□	89	48	173.9	63.5	148.5	59	27	42	85	169.7



## Enclosure dimensions

■ Refer to page 25 ~ 40 for detailed internal enclosure dimensions.



■ Please suffix color code at the end of the product number.

Product no.	W	H	D	a	b	c	d	e	f	Battery compartment
LCT115 -N -□□	69	19.5	115	54	100	48.1	12	10	9	None
LCT115 -F2 -□□	69	19.5	115	54	100	48.1	12	10	9	AAA x 2
LCT115 -F3 -□□	69	19.5	115	54	100	48.1	12	10	9	AAA x 3
LCT115H-N -□□	69	28	115	54	100	48.1	20.5	18.5	9	None
LCT115H-F2 -□□	69	28	115	54	100	48.1	20.5	18.5	9	AAA x 2
LCT115H-F3 -□□	69	28	115	54	100	48.1	20.5	18.5	9	AAA x 3
LCT115H-M2 -□□	69	28	115	54	100	48.1	20.5	18.5	9	AA x 2
LCT115H-9V -□□	69	28	115	54	100	48.1	20.5	18.5	9	9V x 1
LCT135 -N -□□	76	27	135	58	117	55.1	19.5	13.5	13	None
LCT135 -F4 -□□	76	27	135	58	117	55.1	19.5	13.5	13	AAA x 4
LCT135 -M2 -□□	76	27	135	58	117	55.1	19.5	13.5	13	AA x 2
LCT135 -M3 -□□	76	27	135	58	117	55.1	19.5	13.5	13	AA x 3
LCT135 -9V -□□	76	27	135	58	117	55.1	19.5	13.5	13	9V x 1
LCT135H-N -□□	76	35	135	58	117	55.1	27.5	21.5	13	None
LCT135H-F4 -□□	76	35	135	58	117	55.1	27.5	21.5	13	AAA x 4
LCT135H-M2 -□□	76	35	135	58	117	55.1	27.5	21.5	13	AA x 2
LCT135H-M3 -□□	76	35	135	58	117	55.1	27.5	21.5	13	AA x 3
LCT135H-9V -□□	76	35	135	58	117	55.1	27.5	21.5	13	9V x 1
<b>NEW</b> LCT145S-N -□□	96	20	145	75	124	71.1	12.5	7.5	12	None
<b>NEW</b> LCT145S-F6 -□□	96	20	145	75	124	71.1	12.5	7.5	12	AAA x 6
<b>NEW</b> LCT145 -N -□□	96	27	145	75	124	71.1	19.5	14.5	12	None
<b>NEW</b> LCT145 -F6 -□□	96	27	145	75	124	71.1	19.5	14.5	12	AAA x 6
<b>NEW</b> LCT145 -M2 -□□	96	27	145	75	124	71.1	19.5	14.5	12	AA x 2
<b>NEW</b> LCT145 -M4 -□□	96	27	145	75	124	71.1	19.5	14.5	12	AA x 4
<b>NEW</b> LCT145H-N -□□	96	35	145	75	124	71.1	27.5	22.5	12	None
<b>NEW</b> LCT145H-F6 -□□	96	35	145	75	124	71.1	27.5	22.5	12	AAA x 6
<b>NEW</b> LCT145H-M2 -□□	96	35	145	75	124	71.1	27.5	22.5	12	AA x 2
<b>NEW</b> LCT145H-M4 -□□	96	35	145	75	124	71.1	27.5	22.5	12	AA x 4
LCT165 -N -□□	80	27	165	62	147	59.1	19.5	13.5	13	None
LCT165 -M4 -□□	80	27	165	62	147	59.1	19.5	13.5	13	AA x 4
LCT165H-N -□□	80	35	165	62	147	59.1	27.5	21.5	13	None
LCT165H-M4 -□□	80	35	165	62	147	59.1	27.5	21.5	13	AA x 4



## Technical Data

Protection class: IP40  
Operating temperature: -10°C ~ +60°C

- Plastic case with silicone cover providing not only comfortable and anti-slip grip, but also protection from drop impact.
- Manufactured with flame-resistant ABS UL94V-0. Several battery compartment types are available.
- Positive (+) / negative (-) pole mark are incused on the inside of the battery compartments.
- Suitable for measuring instruments, test devices, wireless communication devices, medical devices and so on.

Battery compartment type



No battery compartment type



## Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white • Dark gray
2	Bottom cover	1	ABS UL94V-0	Off-white • Dark gray
3	Panel	1	ABS UL94V-0	Off-white • Dark gray
4	Self tapping screw	4	Steel M2.6	Nickel plated • Black trivalent chromate
5	Battery cover	1	ABS UL94V-0	Off-white • Dark gray
6	Battery contact • Battery snap	1 set	Bras • Brass : PVC	Nickel plated • Nickel plated : Black
7	Silicone cover	1	Silicone	Red • Yellow • Green • Blue • Navy • Light gray • Dark gray

## Accessories (Optional parts)



PCB mounting screw  
EM-2.3  
See page 135



TORX screw  
MR series  
See page 135



Key ring  
CR-20  
See page 64



Strap  
STP series  
See page 64



Tapping standoff  
TPS series  
See page 133

## Battery Compartment Type

Type	N None	F2 AAA x 2	F3 AAA x 3	F4 AAA x 4	F6 AAA x 6	M2 AA x 2	M3 AA x 3	M4 AA x 4	9V 9V x 1
Battery compartment									

## Color Type

Code	D R Dark gray / Red	D Y Dark gray / Yellow	D G Dark gray / Green	D B Dark gray / Blue	D N Dark gray / Navy	D D Dark gray / Dark gray	D L Dark gray / Light gray
Color							
Code	W R Off-white / Red	W Y Off-white / Yellow	W G Off-white / Green	W B Off-white / Blue	W N Off-white / Navy	W D Off-white / Dark gray	W L Off-white / Light gray
Color							

## Product no. / Dimensions

■ Please suffix color code at the end of the product number.

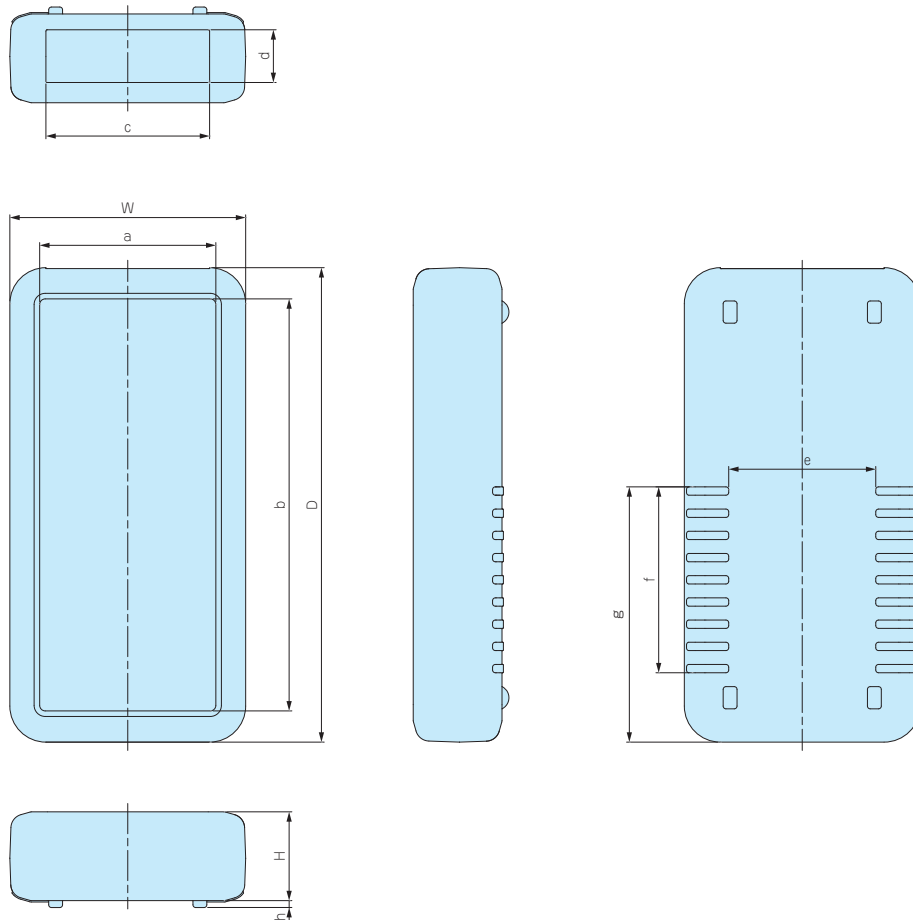
Product no.	W	H	D	Battery compartment	Weight (g)
LCS115 -N -□□	74(69)	24(19.5)	120(115)	None	113
LCS115 -F2 -□□	74(69)	24(19.5)	120(115)	AAA x 2	117.5
LCS115 -F3 -□□	74(69)	24(19.5)	120(115)	AAA x 3	119.5
LCS115H-N -□□	74(69)	32.5(28)	120(115)	None	130
LCS115H-F2 -□□	74(69)	32.5(28)	120(115)	AAA x 2	134.5
LCS115H-F3 -□□	74(69)	32.5(28)	120(115)	AAA x 3	136
LCS115H-M2 -□□	74(69)	32.5(28)	120(115)	AA x 2	138.5
LCS115H-9V -□□	74(69)	32.5(28)	120(115)	9V x 1	138
LCS135 -N -□□	81(76)	32(27)	141(135)	None	165
LCS135 -F4 -□□	81(76)	32(27)	141(135)	AAA x 4	180
LCS135 -M2 -□□	81(76)	32(27)	141(135)	AA x 2	178
LCS135 -M3 -□□	81(76)	32(27)	141(135)	AA x 3	183.5
LCS135 -9V -□□	81(76)	32(27)	141(135)	9V x 1	181.5
LCS135H-N -□□	81(76)	40(35)	141(135)	None	183
LCS135H-F4 -□□	81(76)	40(35)	141(135)	AAA x 4	197.5
LCS135H-M2 -□□	81(76)	40(35)	141(135)	AA x 2	196.5
LCS135H-M3 -□□	81(76)	40(35)	141(135)	AA x 3	201.5
LCS135H-9V -□□	81(76)	40(35)	141(135)	9V x 1	199
NEW LCS145S-N -□□	101(96)	25(20)	151(145)	None	183.4
NEW LCS145S-F6 -□□	101(96)	25(20)	151(145)	AAA x 6	203.4
NEW LCS145 -N -□□	101(96)	32(27)	151(145)	None	202
NEW LCS145 -F6 -□□	101(96)	32(27)	151(145)	AAA x 6	222
NEW LCS145 -M2 -□□	101(96)	32(27)	151(145)	AA x 2	216
NEW LCS145 -M4 -□□	101(96)	32(27)	151(145)	AA x 4	223
NEW LCS145H-N -□□	101(96)	40(35)	151(145)	None	224
NEW LCS145H-F6 -□□	101(96)	40(35)	151(145)	AAA x 6	244.5
NEW LCS145H-M2 -□□	101(96)	40(35)	151(145)	AA x 2	238
NEW LCS145H-M4 -□□	101(96)	40(35)	151(145)	AA x 4	245
LCS165 -N -□□	85(80)	32(27)	171(165)	None	203
LCS165 -M4 -□□	85(80)	32(27)	171(165)	AA x 4	222.5
LCS165H-N -□□	85(80)	40(35)	171(165)	None	220.5
LCS165H-M4 -□□	85(80)	40(35)	171(165)	AA x 4	239.5

■ ( ) value = enclosure dimension.



## Silicone cover dimensions

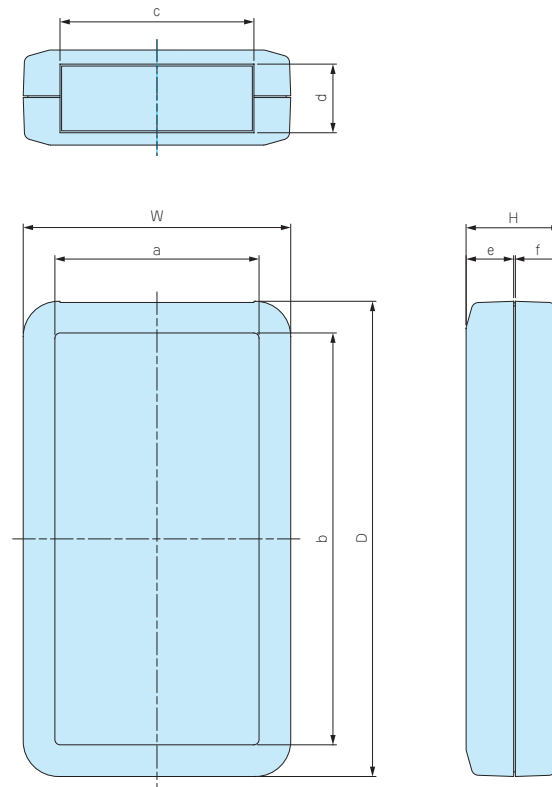
■ Refer to page 25 ~ 40 for detailed inner enclosure dimensions.



Product no.	W	H	D	a	b	c	d	e	f	g	h
LCS115 -N -□□	74	24	120	55.5	101.5	48.3	12	46	44.5	60.5	2
LCS115 -F2 -□□	74	24	120	55.5	101.5	48.3	12	46	44.5	60.5	2
LCS115 -F3 -□□	74	24	120	55.5	101.5	48.3	12	46	44.5	60.5	2
LCS115H-N -□□	74	32.5	120	55.5	101.5	48.3	20.5	46	44.5	60.5	2
LCS115H-F2 -□□	74	32.5	120	55.5	101.5	48.3	20.5	46	44.5	60.5	2
LCS115H-F3 -□□	74	32.5	120	55.5	101.5	48.3	20.5	46	44.5	60.5	2
LCS115H-M2 -□□	74	32.5	120	55.5	101.5	48.3	20.5	46	44.5	60.5	2
LCS115H-9V -□□	74	32.5	120	55.5	101.5	48.3	20.5	46	44.5	60.5	2
LCS135 -N -□□	81	32	141	59.5	118.5	55	19	53	59	79	2.5
LCS135 -F4 -□□	81	32	141	59.5	118.5	55	19	53	59	79	2.5
LCS135 -M2 -□□	81	32	141	59.5	118.5	55	19	53	59	79	2.5
LCS135 -M3 -□□	81	32	141	59.5	118.5	55	19	53	59	79	2.5
LCS135 -9V -□□	81	32	141	59.5	118.5	55	19	53	59	79	2.5
LCS135H-N -□□	81	40	141	59.5	118.5	55	27	53	59	79	2.5
LCS135H-F4 -□□	81	40	141	59.5	118.5	55	27	53	59	79	2.5
LCS135H-M2 -□□	81	40	141	59.5	118.5	55	27	53	59	79	2.5
LCS135H-M3 -□□	81	40	141	59.5	118.5	55	27	53	59	79	2.5
LCS135H-9V -□□	81	40	141	59.5	118.5	55	27	53	59	79	2.5
LCS145S-N -□□	101	25	151	76.5	125.5	71	12	71	59	81	2.5
LCS145S-F6 -□□	101	25	151	76.5	125.5	71	12	71	59	81	2.5
LCS145 -N -□□	101	32	151	76.5	125.5	71	19	71	59	81	2.5
LCS145 -F6 -□□	101	32	151	76.5	125.5	71	19	71	59	81	2.5
LCS145 -M2 -□□	101	32	151	76.5	125.5	71	19	71	59	81	2.5
LCS145 -M4 -□□	101	32	151	76.5	125.5	71	19	71	59	81	2.5
LCS145H-N -□□	101	40	151	76.5	125.5	71	27	71	59	81	2.5
LCS145H-F6 -□□	101	40	151	76.5	125.5	71	27	71	59	81	2.5
LCS145H-M2 -□□	101	40	151	76.5	125.5	71	27	71	59	81	2.5
LCS145H-M4 -□□	101	40	151	76.5	125.5	71	27	71	59	81	2.5
LCS165 -N -□□	85	32	171	63.5	148.5	59	19	53	67	92	2.5
LCS165 -M4 -□□	85	32	171	63.5	148.5	59	19	53	67	92	2.5
LCS165H-N -□□	85	40	171	63.5	148.5	59	27	53	67	92	2.5
LCS165H-M4 -□□	85	40	171	63.5	148.5	59	27	53	67	92	2.5

## Enclosure dimensions

■ Refer to page 25 ~ 40 for detailed inner enclosure dimensions.



■ Please suffix color code at the end of the product number.

Product no.	W	H	D	a	b	c	d	e	f	Battery compartment
LCS115 -N -□□	69	19.5	115	54	100	48.1	12	10	9	None
LCS115 -F2 -□□	69	19.5	115	54	100	48.1	12	10	9	AAA x 2
LCS115 -F3 -□□	69	19.5	115	54	100	48.1	12	10	9	AAA x 3
LCS115H-N -□□	69	28	115	54	100	48.1	20.5	18.5	9	None
LCS115H-F2 -□□	69	28	115	54	100	48.1	20.5	18.5	9	AAA x 2
LCS115H-F3 -□□	69	28	115	54	100	48.1	20.5	18.5	9	AAA x 3
LCS115H-M2 -□□	69	28	115	54	100	48.1	20.5	18.5	9	AA x 2
LCS115H-9V -□□	69	28	115	54	100	48.1	20.5	18.5	9	9V x 1
LCS135 -N -□□	76	27	135	58	117	55.1	19.5	13.5	13	None
LCS135 -F4 -□□	76	27	135	58	117	55.1	19.5	13.5	13	AAA x 4
LCS135 -M2 -□□	76	27	135	58	117	55.1	19.5	13.5	13	AA x 2
LCS135 -M3 -□□	76	27	135	58	117	55.1	19.5	13.5	13	AA x 3
LCS135 -9V -□□	76	27	135	58	117	55.1	19.5	13.5	13	9V x 1
LCS135H-N -□□	76	35	135	58	117	55.1	27.5	21.5	13	None
LCS135H-F4 -□□	76	35	135	58	117	55.1	27.5	21.5	13	AAA x 4
LCS135H-M2 -□□	76	35	135	58	117	55.1	27.5	21.5	13	AA x 2
LCS135H-M3 -□□	76	35	135	58	117	55.1	27.5	21.5	13	AA x 3
LCS135H-9V -□□	76	35	135	58	117	55.1	27.5	21.5	13	9V x 1
<b>NEW</b> LCS145S-N -□□	96	20	145	75	124	71.1	12.5	7.5	12	None
<b>NEW</b> LCS145S-F6 -□□	96	20	145	75	124	71.1	12.5	7.5	12	AAA x 6
<b>NEW</b> LCS145 -N -□□	96	27	145	75	124	71.1	19.5	14.5	12	None
<b>NEW</b> LCS145 -F6 -□□	96	27	145	75	124	71.1	19.5	14.5	12	AAA x 6
<b>NEW</b> LCS145 -M2 -□□	96	27	145	75	124	71.1	19.5	14.5	12	AA x 2
<b>NEW</b> LCS145 -M4 -□□	96	27	145	75	124	71.1	19.5	14.5	12	AA x 4
<b>NEW</b> LCS145H-N -□□	96	35	145	75	124	71.1	27.5	22.5	12	None
<b>NEW</b> LCS145H-F6 -□□	96	35	145	75	124	71.1	27.5	22.5	12	AAA x 6
<b>NEW</b> LCS145H-M2 -□□	96	35	145	75	124	71.1	27.5	22.5	12	AA x 2
<b>NEW</b> LCS145H-M4 -□□	96	35	145	75	124	71.1	27.5	22.5	12	AA x 4
LCS165 -N -□□	80	27	165	62	147	59.1	19.5	13.5	13	None
LCS165 -M4 -□□	80	27	165	62	147	59.1	19.5	13.5	13	AA x 4
LCS165H-N -□□	80	35	165	62	147	59.1	27.5	21.5	13	None
LCS165H-M4 -□□	80	35	165	62	147	59.1	27.5	21.5	13	AA x 4



## Technical Data

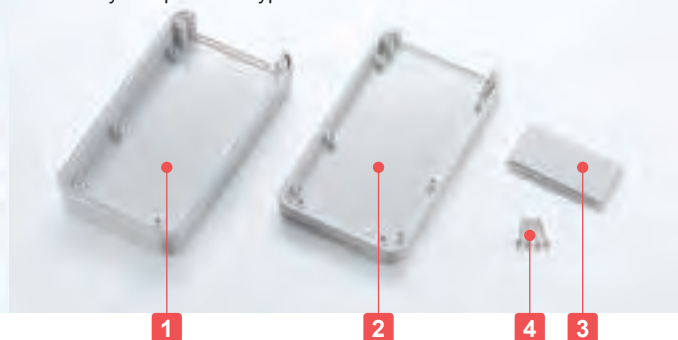
Protection class: IP40  
Operating temperature: -10°C ~ +60°C

- Designed with beveled edges and rounded corners, and manufactured from flame-retardant ABS UL94V-0 material.
- Available in 9 different compartment types: AAx2, AAx3, AAx4, AAAx2, AAAx3, AAAx4, AAAx6, 9Vx1, and no battery compartment type.
- Positive (+) / negative (-) pole mark are incused within each battery compartment.
- Recommended to be used as measurement instruments, testing devices, wireless communication gadgets, medical equipment, and so on.

Battery compartment type



No battery compartment type



## Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white • Dark gray
2	Bottom cover	1	ABS UL94V-0	Off-white • Dark gray
3	Panel	1	ABS UL94V-0	Off-white • Dark gray
4	Self tapping screw	4	Steel M2.6	Nickel plated • Black trivalent chromate
5	Battery cover	1	ABS UL94V-0	Off-white • Dark gray
6	Battery contact • Battery snap	1 set	Brass • Brass : PVC	Nickel plated • Nickel plated : Black

## Accessories (Optional parts)



PCB mounting screw  
EM-2.3  
See page 135



TORX screw  
MR series  
See page 135



Tapping standoff  
TPS series  
See page 133



Wall suspension bracket  
WM series  
See page 129



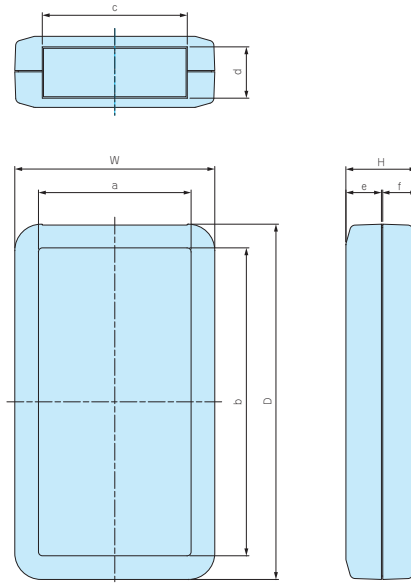
Neodymium magnet  
NMG series  
See page 130



Key ring / Strap  
CR • STP series  
See page 64



■ Refer to page 25~ 40 for detailed dimensions.



### Battery Compartment Type

Type	N None	F2 AAAx2	F3 AAAx3	F4 AAAx4	F6 AAAx6	M2 AAx2	M3 AAx3	M4 AAx4	9V 9Vx1
Battery compartment									

### Product no. / Dimensions

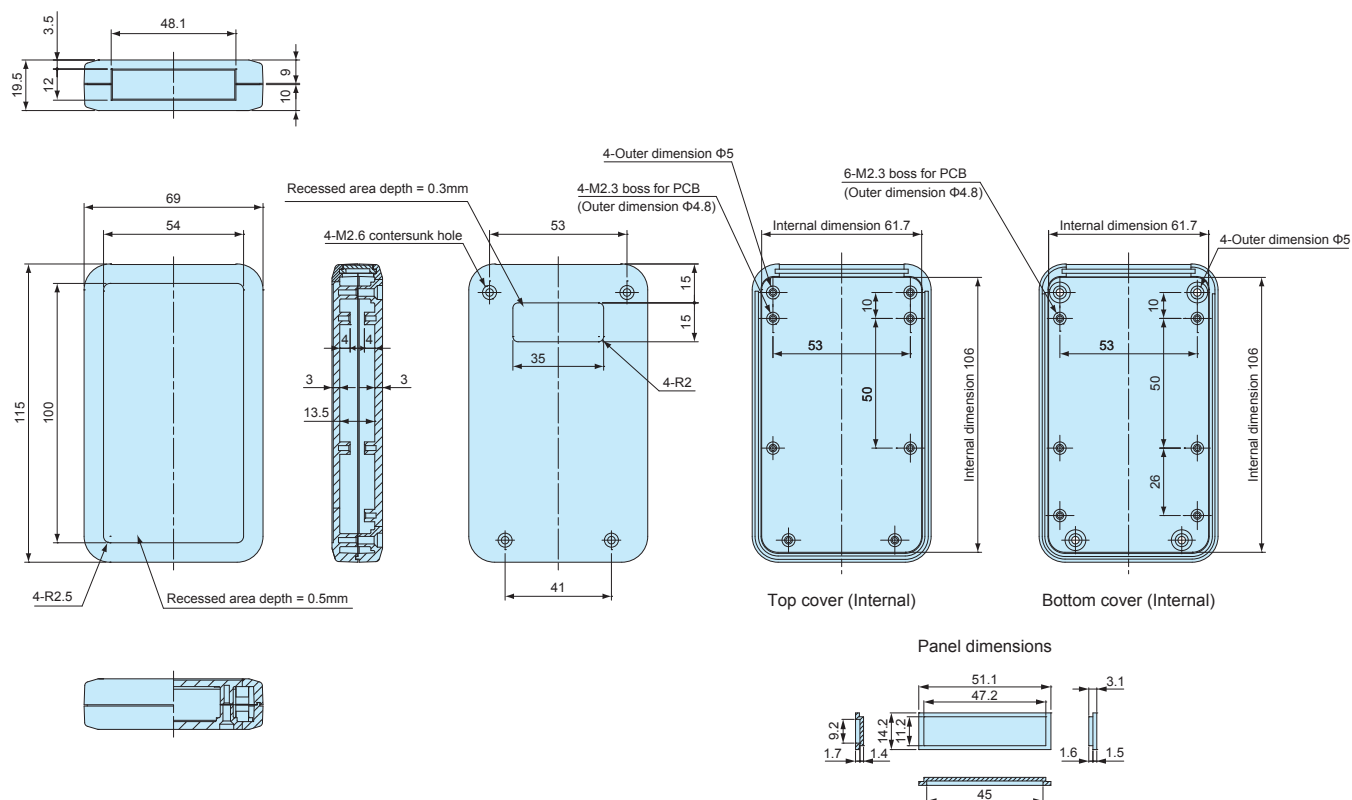
■ Please suffix color code at the end of the product number.

Product no.		W	H	D	a	b	c	d	e	f	Battery compartment	Weight (g)
● Dark gray	● Off-white											
LC115 -N -D	LC115 -N -W	69	19.5	115	54	100	48.1	12	10	9	None	70
LC115 -F2 -D	LC115 -F2 -W	69	19.5	115	54	100	48.1	12	10	9	AAA x 2	74.5
LC115 -F3 -D	LC115 -F3 -W	69	19.5	115	54	100	48.1	12	10	9	AAA x 3	76.5
LC115H -N -D	LC115H -N -W	69	28	115	54	100	48.1	20.5	18.5	9	None	80
LC115H -F2 -D	LC115H -F2 -W	69	28	115	54	100	48.1	20.5	18.5	9	AAA x 2	84.5
LC115H -F3 -D	LC115H -F3 -W	69	28	115	54	100	48.1	20.5	18.5	9	AAA x 3	86
LC115H -M2 -D	LC115H -M2 -W	69	28	115	54	100	48.1	20.5	18.5	9	AA x 2	88.5
LC115H -9V -D	LC115H -9V -W	69	28	115	54	100	48.1	20.5	18.5	9	9V x 1	88
LC135 -N -D	LC135 -N -W	76	27	135	58	117	55.1	19.5	13.5	13	None	95
LC135 -F4 -D	LC135 -F4 -W	76	27	135	58	117	55.1	19.5	13.5	13	AAA x 4	110
LC135 -M2 -D	LC135 -M2 -W	76	27	135	58	117	55.1	19.5	13.5	13	AA x 2	108
LC135 -M3 -D	LC135 -M3 -W	76	27	135	58	117	55.1	19.5	13.5	13	AA x 3	113.5
LC135 -9V -D	LC135 -9V -W	76	27	135	58	117	55.1	19.5	13.5	13	9V x 1	111.5
LC135H -N -D	LC135H -N -W	76	35	135	58	117	55.1	27.5	21.5	13	None	107.5
LC135H -F4 -D	LC135H -F4 -W	76	35	135	58	117	55.1	27.5	21.5	13	AAA x 4	122
LC135H -M2 -D	LC135H -M2 -W	76	35	135	58	117	55.1	27.5	21.5	13	AA x 2	121
LC135H -M3 -D	LC135H -M3 -W	76	35	135	58	117	55.1	27.5	21.5	13	AA x 3	126
LC135H -9V -D	LC135H -9V -W	76	35	135	58	117	55.1	27.5	21.5	13	9V x 1	123.5
<b>NEW</b> LC145S -N -D	<b>NEW</b> LC145S -N -W	96	20	145	75	124	71.1	12.5	7.5	12	None	110
<b>NEW</b> LC145S -F6 -D	<b>NEW</b> LC145S -F6 -W	96	20	145	75	124	71.1	12.5	7.5	12	AAA x 6	130
<b>NEW</b> LC145 -N -D	<b>NEW</b> LC145 -N -W	96	27	145	75	124	71.1	19.5	14.5	12	None	121
<b>NEW</b> LC145 -F6 -D	<b>NEW</b> LC145 -F6 -W	96	27	145	75	124	71.1	19.5	14.5	12	AAA x 6	141
<b>NEW</b> LC145 -M2 -D	<b>NEW</b> LC145 -M2 -W	96	27	145	75	124	71.1	19.5	14.5	12	AA x 2	135
<b>NEW</b> LC145 -M4 -D	<b>NEW</b> LC145 -M4 -W	96	27	145	75	124	71.1	19.5	14.5	12	AA x 4	142
<b>NEW</b> LC145H -N -D	<b>NEW</b> LC145H -N -W	96	35	145	75	124	71.1	27.5	22.5	12	None	135
<b>NEW</b> LC145H -F6 -D	<b>NEW</b> LC145H -F6 -W	96	35	145	75	124	71.1	27.5	22.5	12	AAA x 6	155.5
<b>NEW</b> LC145H -M2 -D	<b>NEW</b> LC145H -M2 -W	96	35	145	75	124	71.1	27.5	22.5	12	AA x 2	149
<b>NEW</b> LC145H -M4 -D	<b>NEW</b> LC145H -M4 -W	96	35	145	75	124	71.1	27.5	22.5	12	AA x 4	156
LC165 -N -D	LC165 -N -W	80	27	165	62	147	59.1	19.5	13.5	13	None	120.5
LC165 -M4 -D	LC165 -M4 -W	80	27	165	62	147	59.1	19.5	13.5	13	AA x 4	140
LC165H -N -D	LC165H -N -W	80	35	165	62	147	59.1	27.5	21.5	13	None	134.5
LC165H -M4 -D	LC165H -M4 -W	80	35	165	62	147	59.1	27.5	21.5	13	AA x 4	153.5

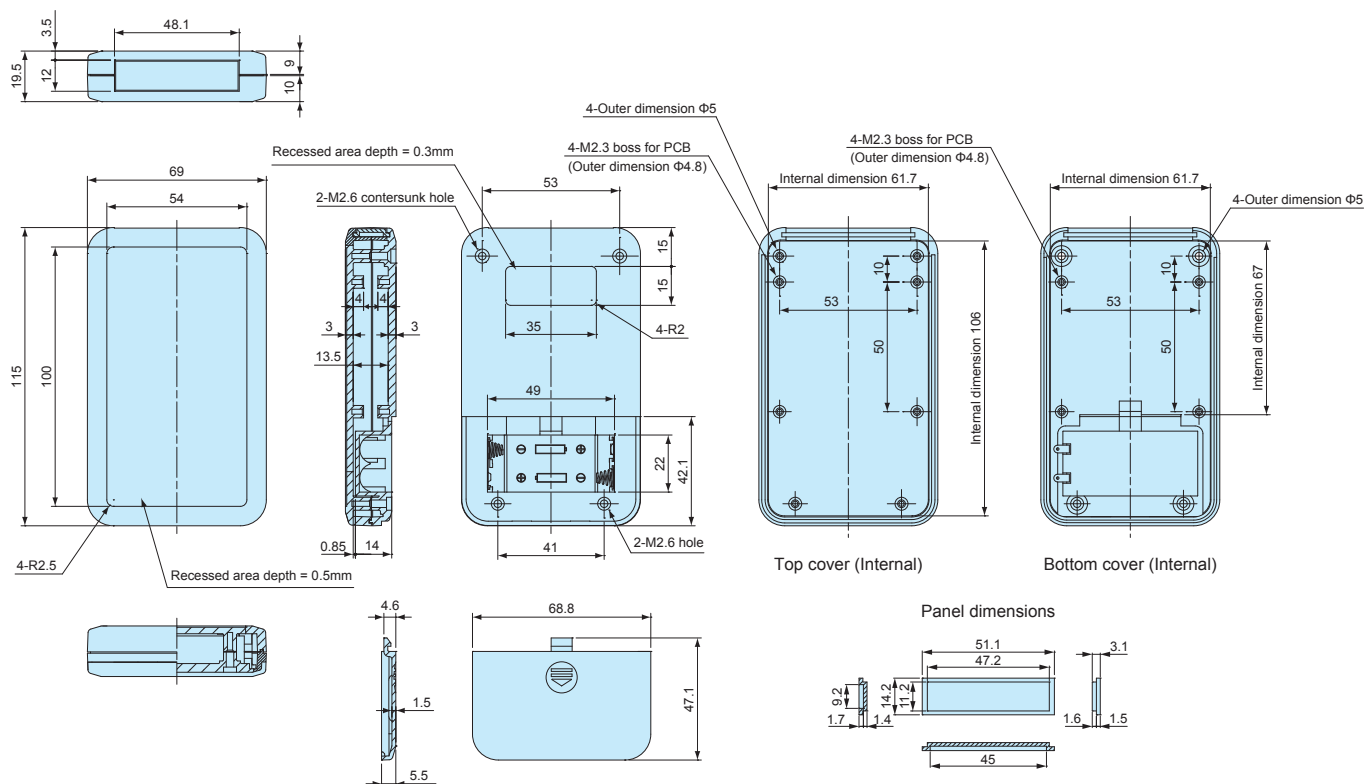
# LCT • LCS • LC dimensions

■ DXF/DWG/PDF drawings available on our website.

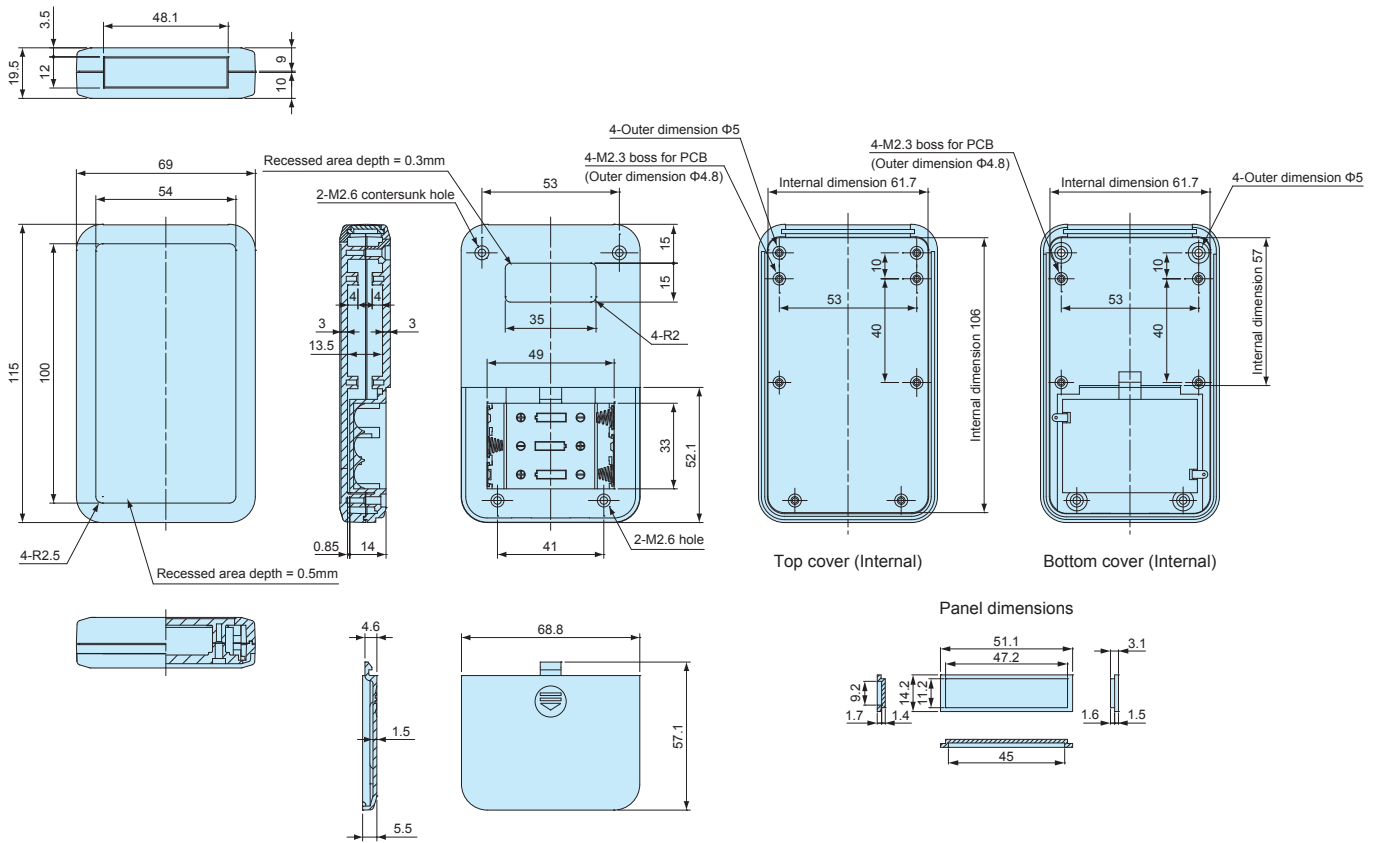
## LCT115-N / LCS115-N / LC115-N



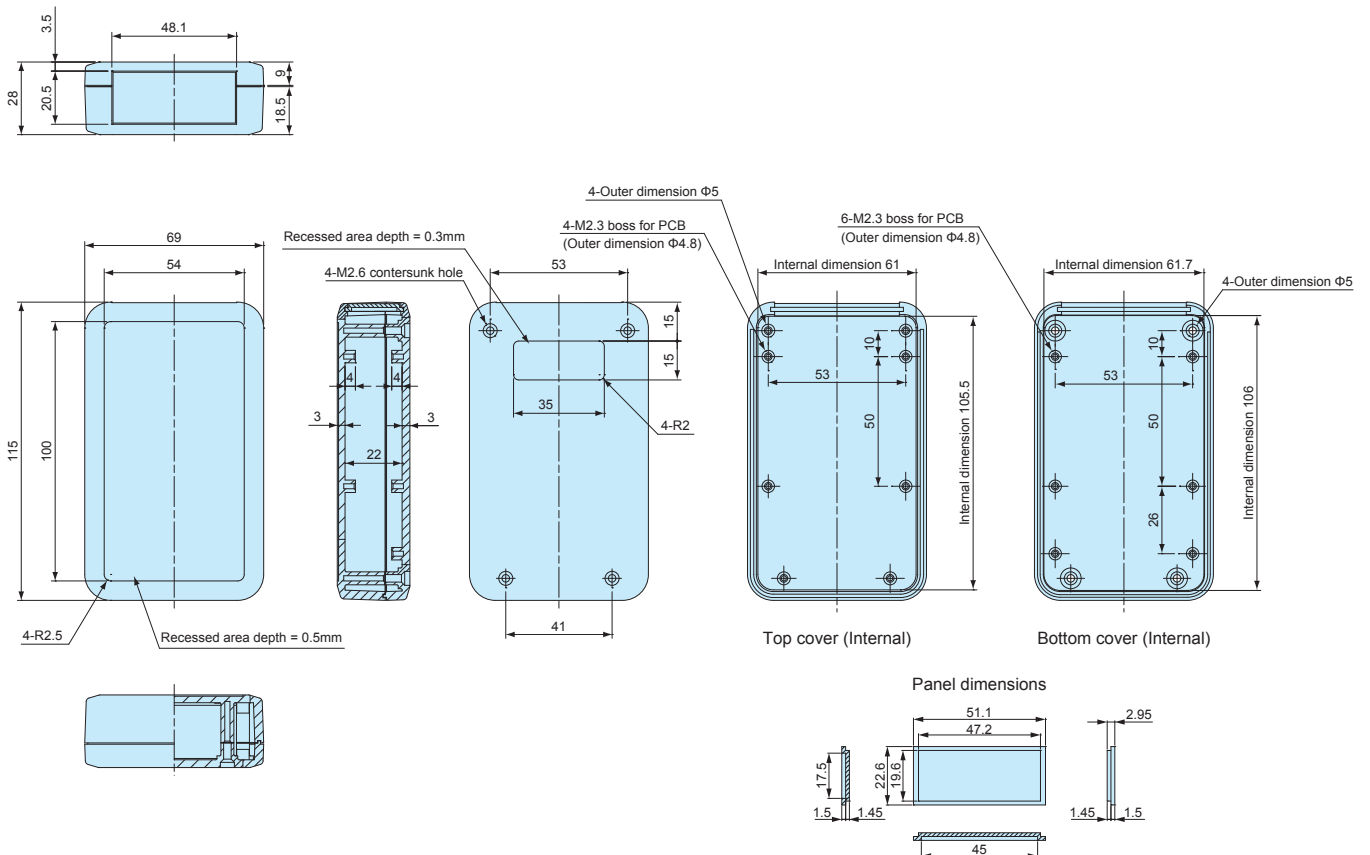
## LCT115-F2 / LCS115-F2 / LC115-F2



LCT115-F3 / LCS115-F3 / LC115-F3



LCT115H-N / LCS115H-N / LC115H-N

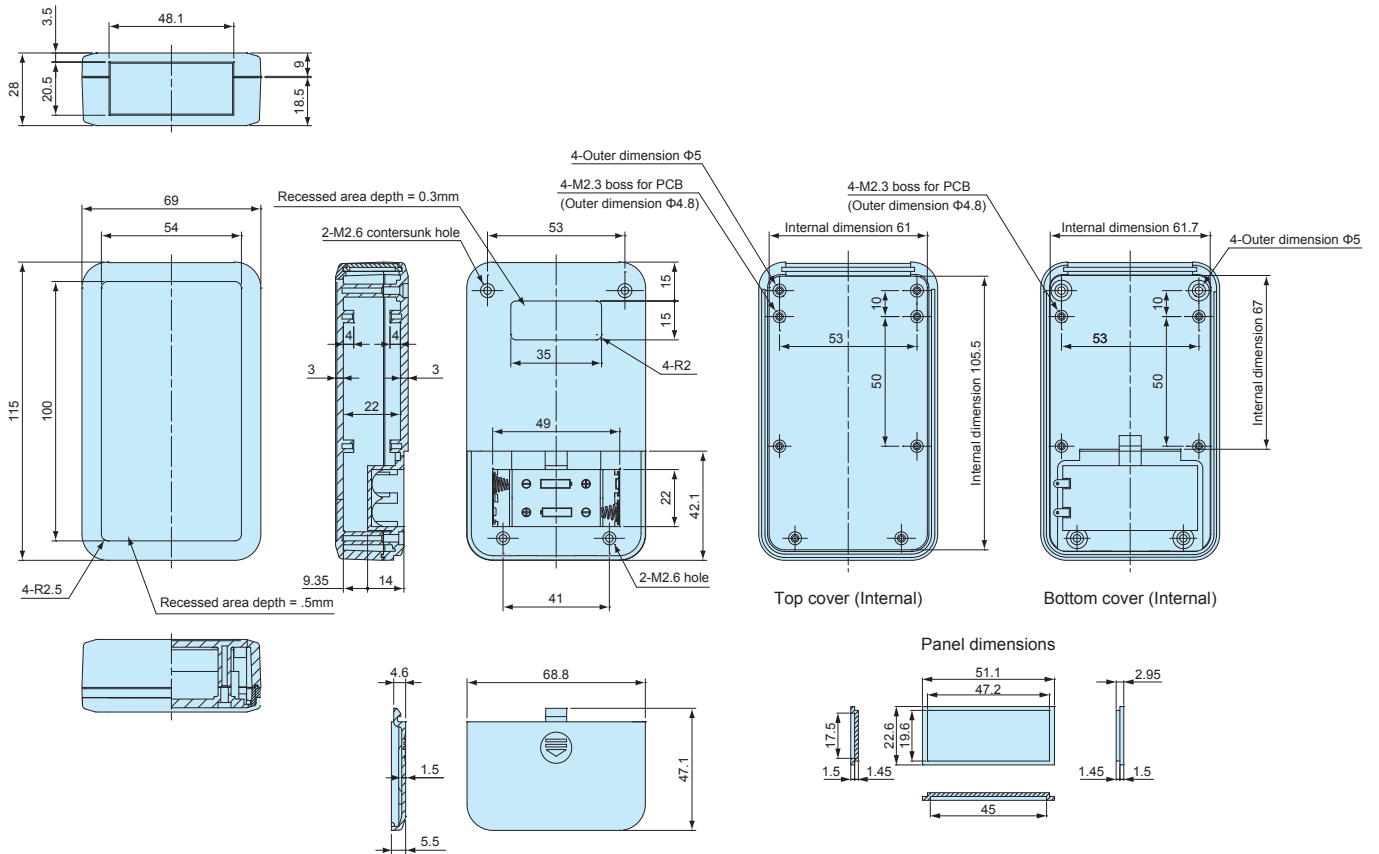




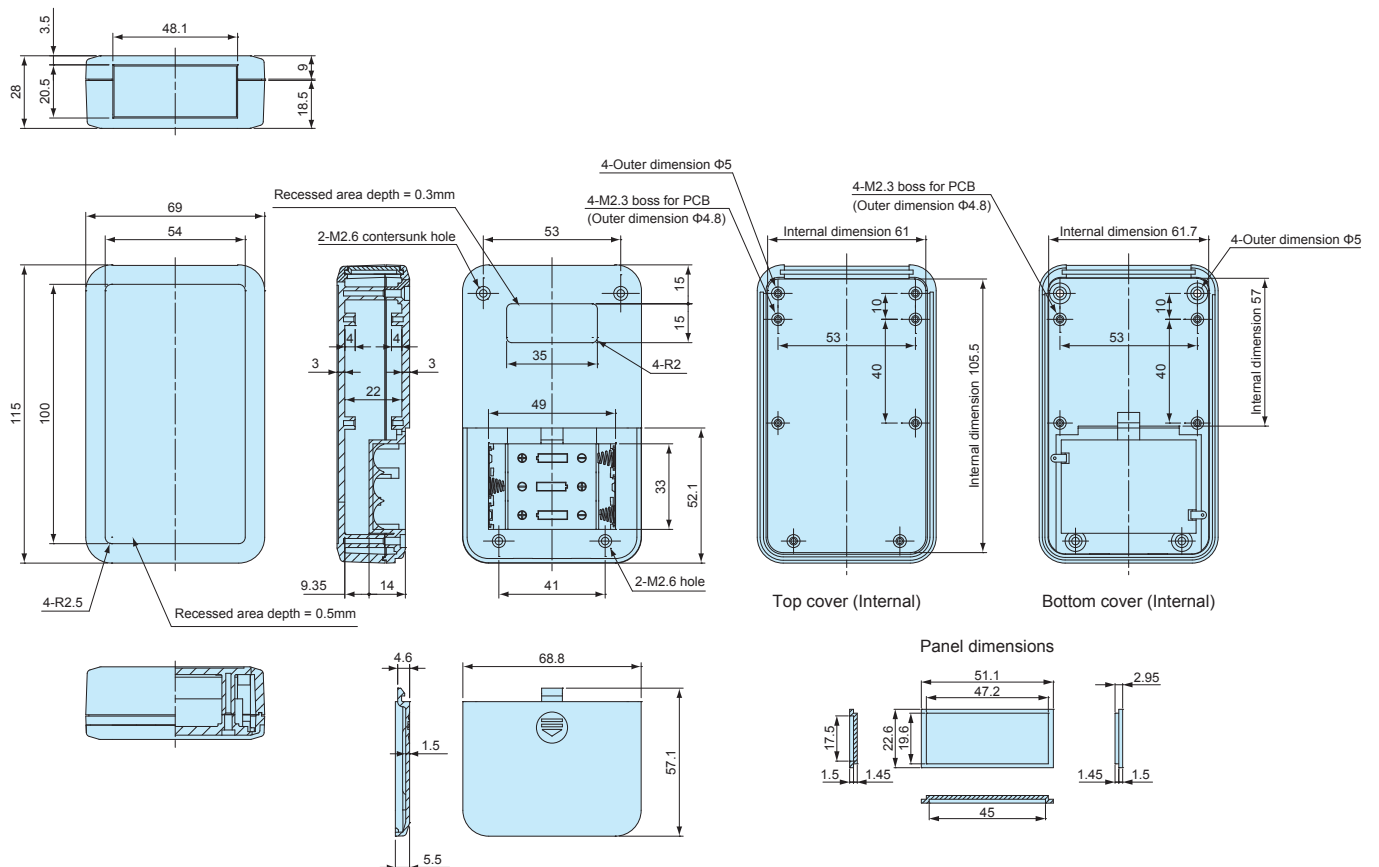
**LCT • LCS • LC dimensions**

■ DXF/DWG/PDF drawings available on our website.

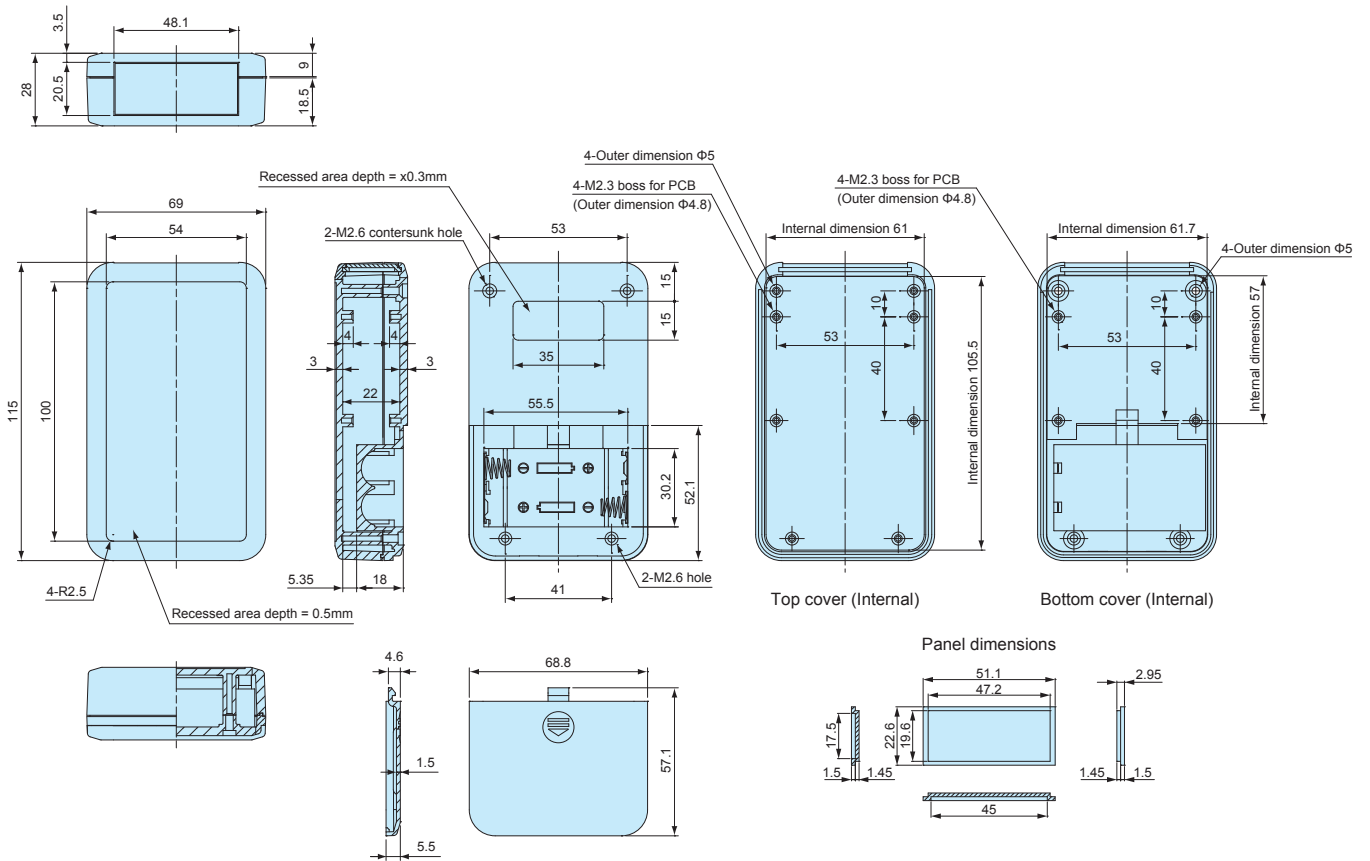
**LCT115H-F2 / LCS115H-F2 / LC115H-F2**



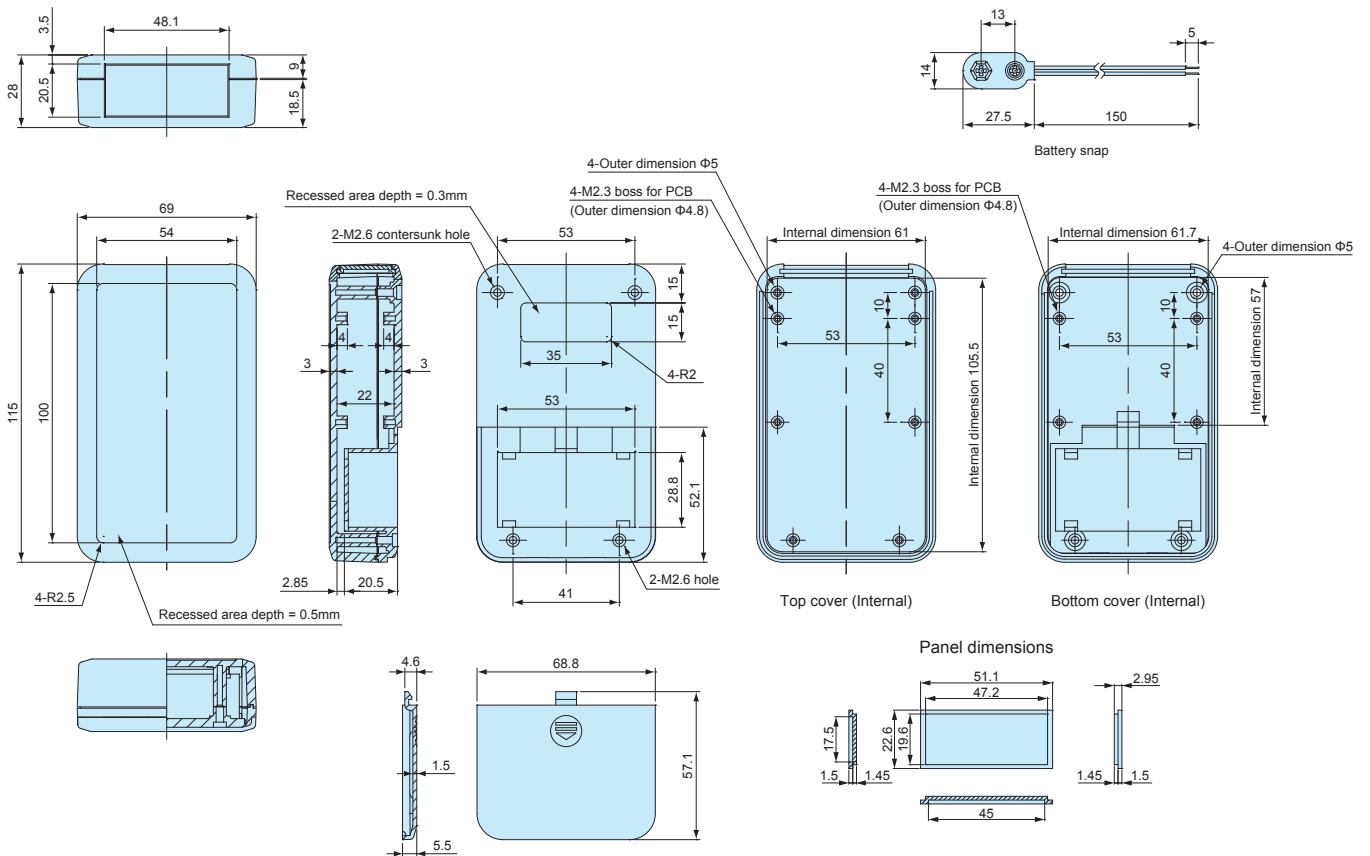
**LCT115H-F3 / LCS115H-F3 / LC115H-F3**



LCT115H-M2 / LCS115H-M2 / LC115H-M2



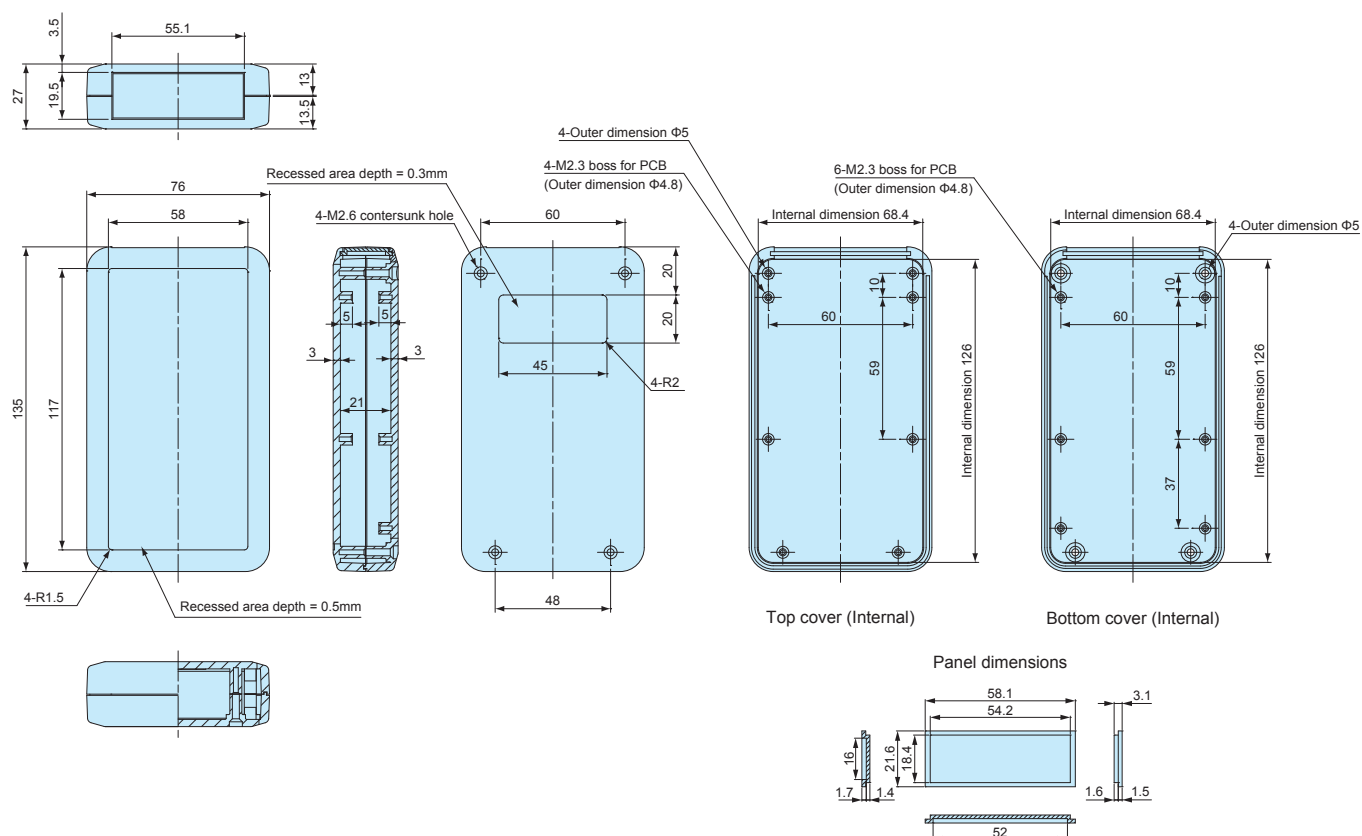
LCT115H-9V / LCS115H-9V / LC115H-9V



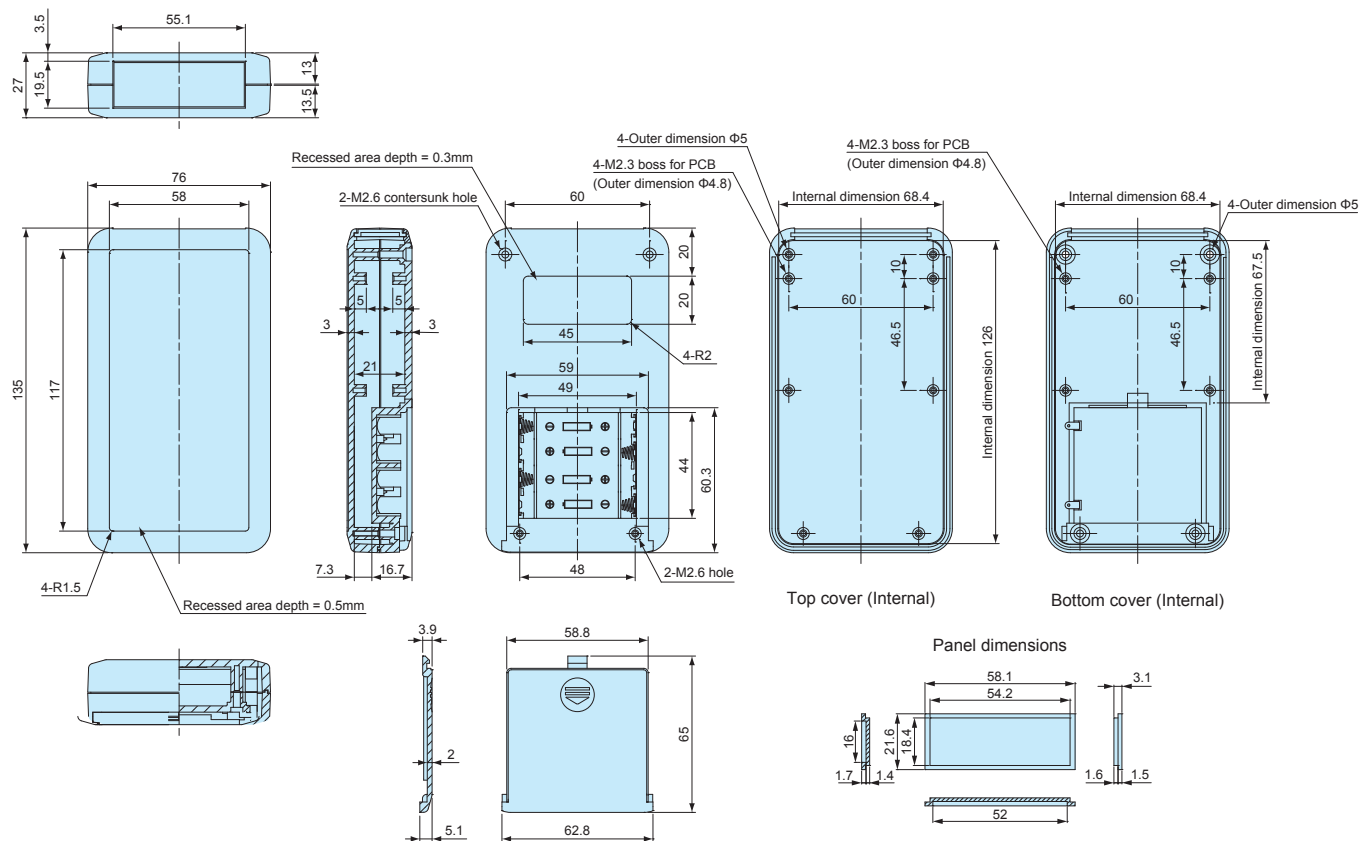
# LCT • LCS • LC dimensions

■ DXF/DWG/PDF drawings available on our website.

## LCT135-N / LCS135-N / LC135-N

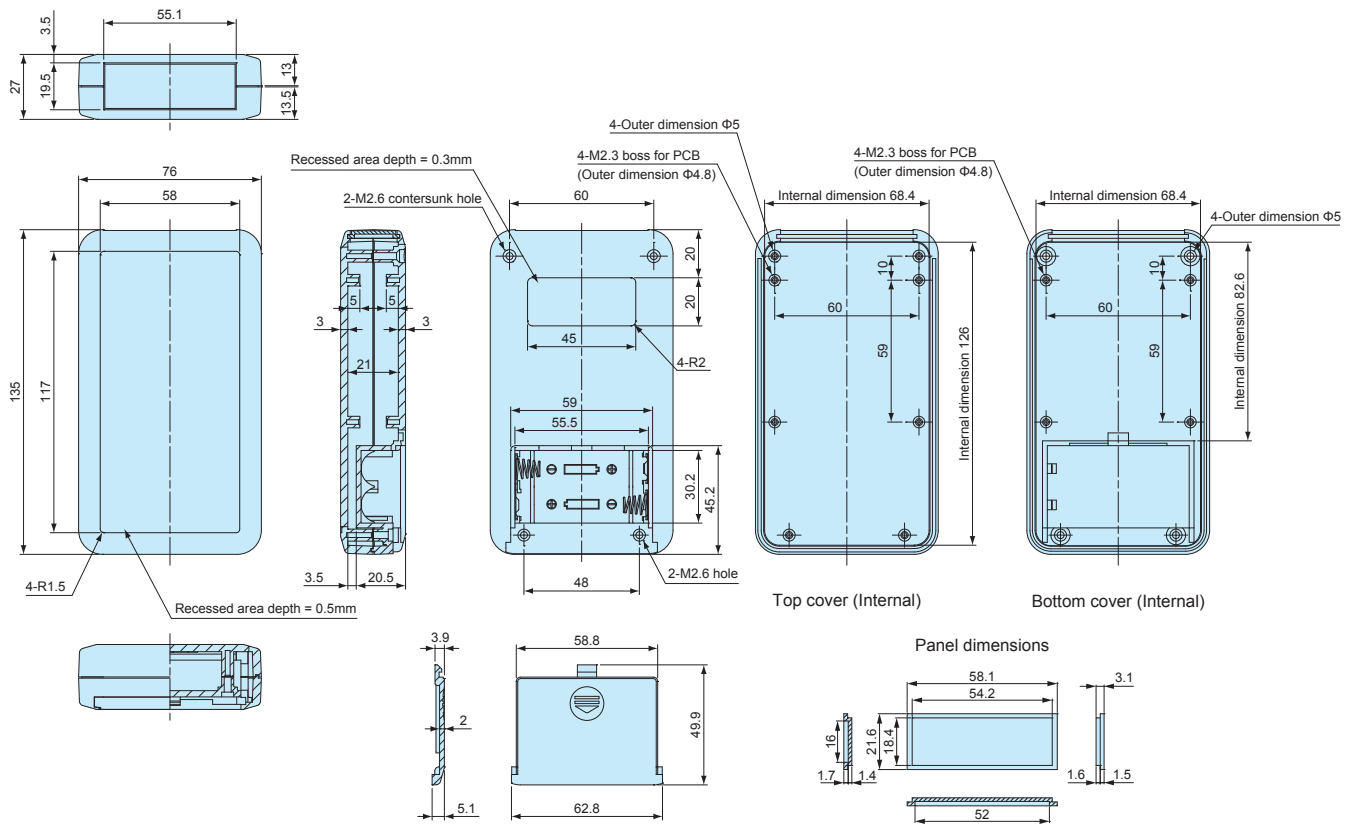


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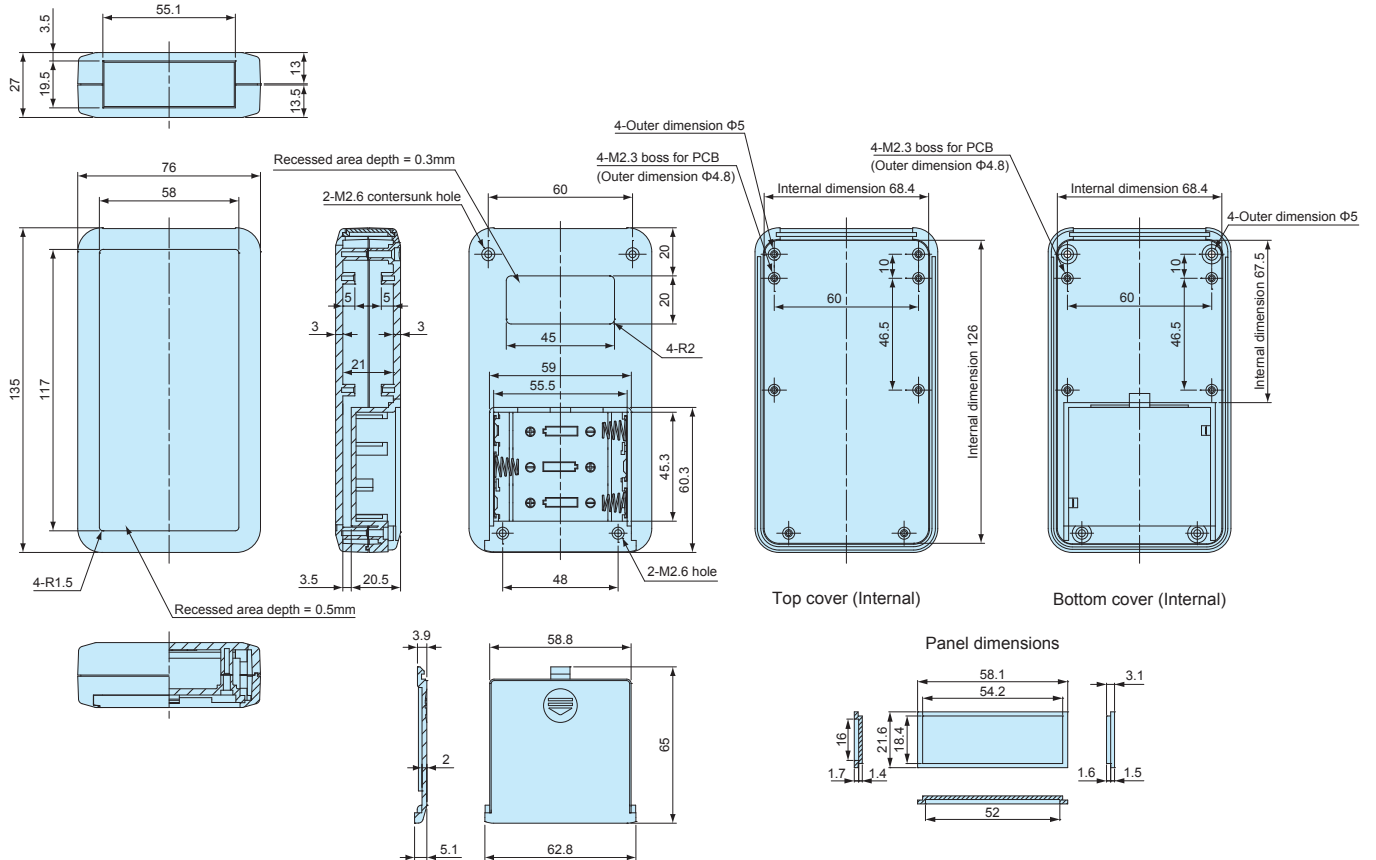




LCT135-M2 / LCS135-M2 / LC135-M2



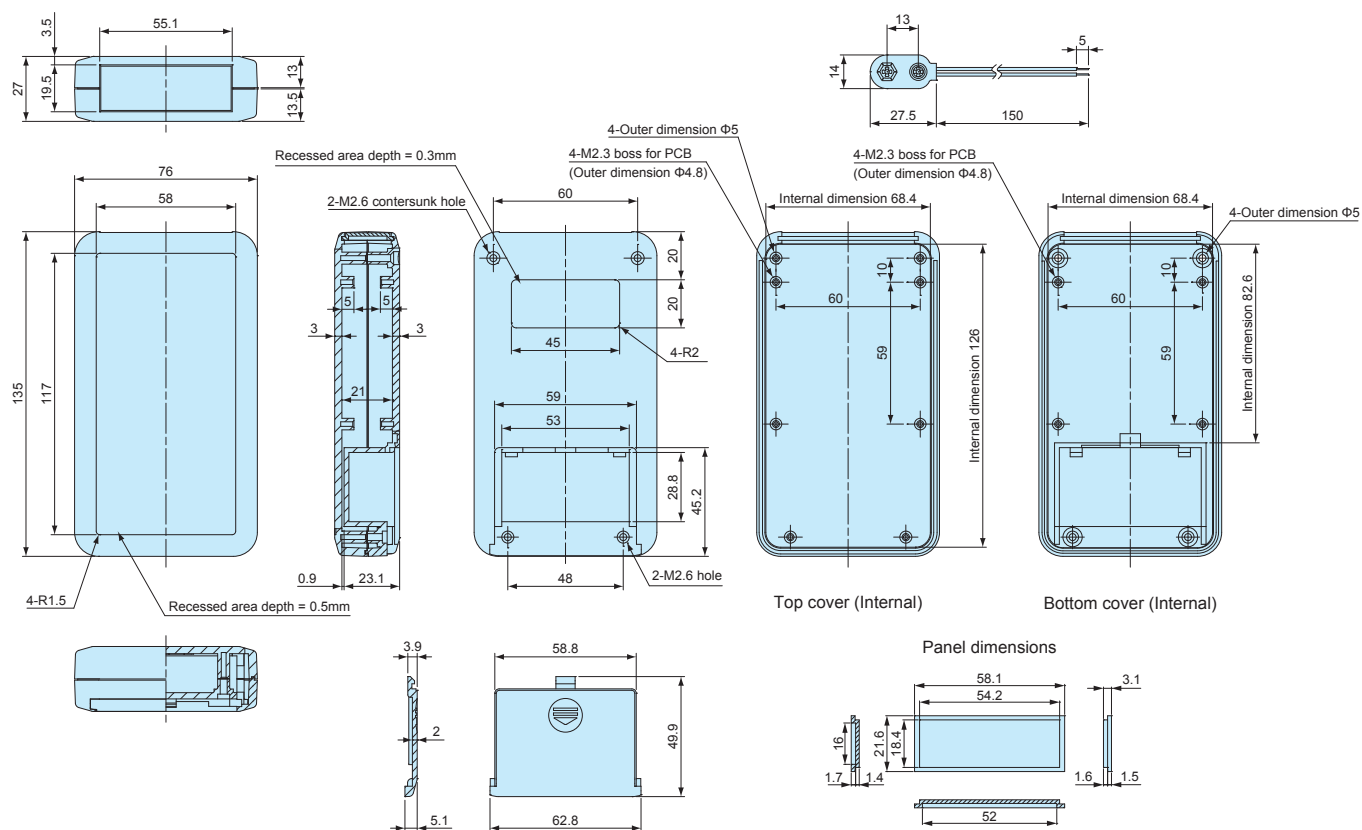
LCT135-M3 / LCS135-M3 / LC135-M3



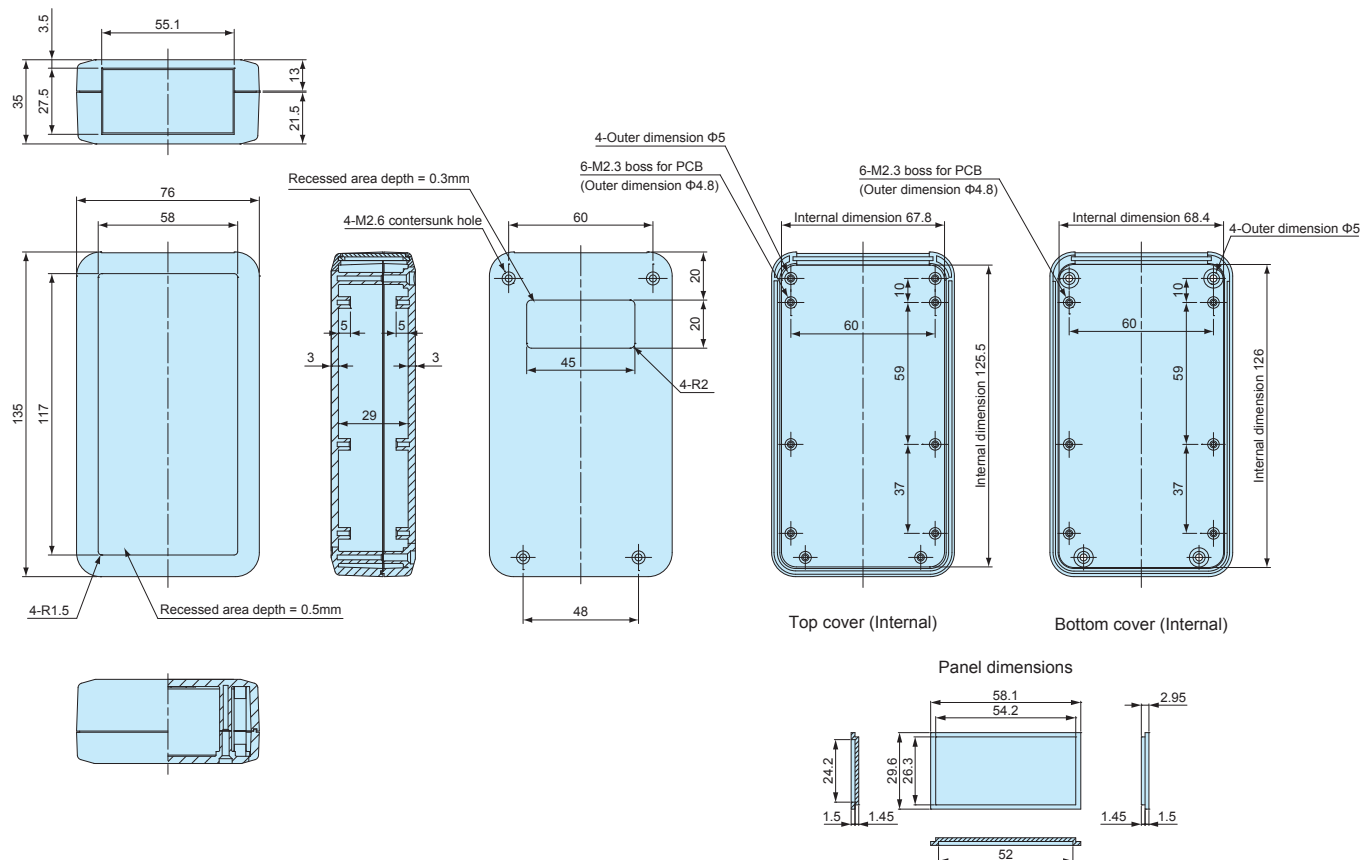
**LCT • LCS • LC dimensions**

■ DXF/DWG/PDF drawings available on our website.

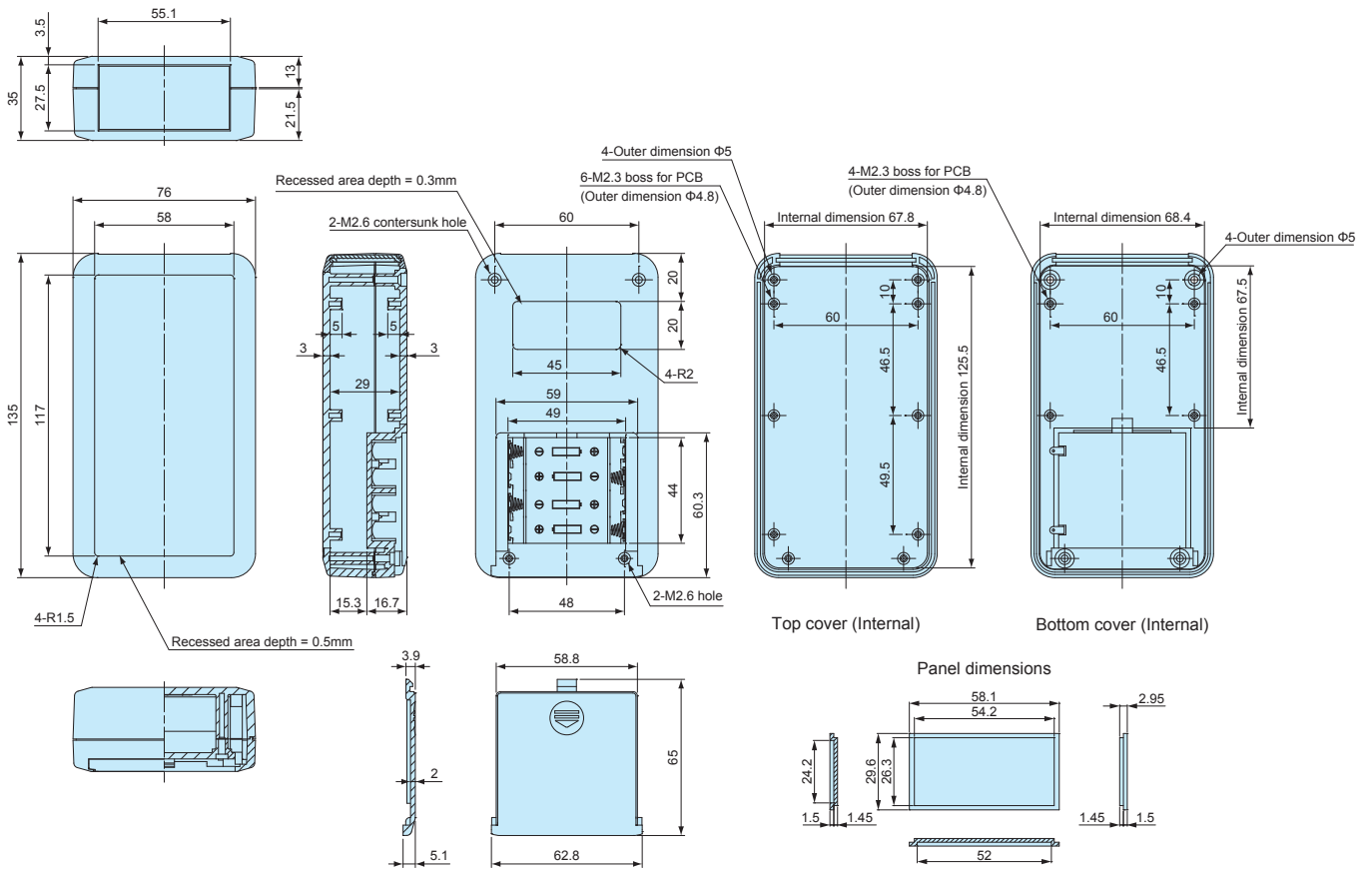
**LCT135-9V / LCS135-9V / LC135-9V**



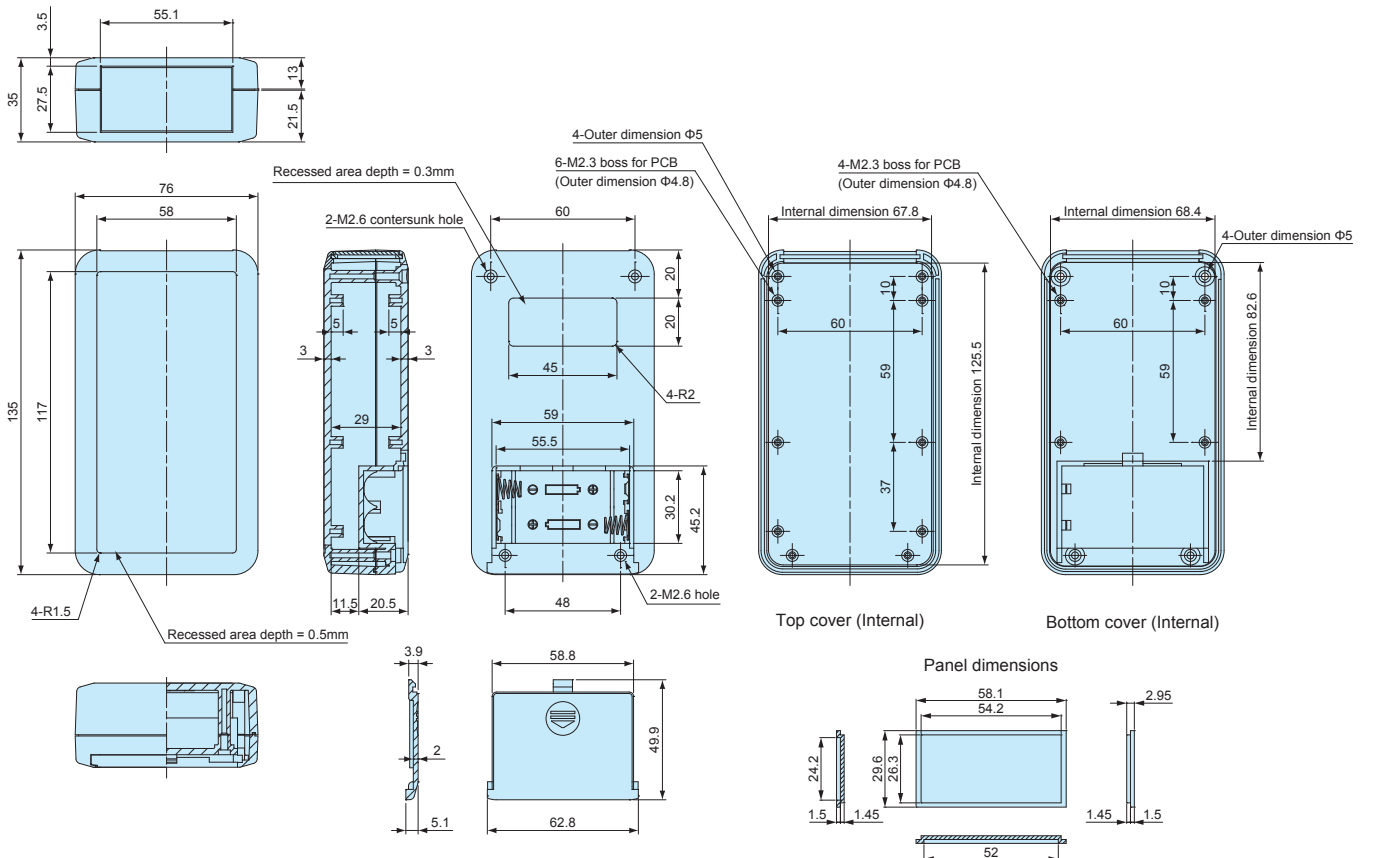
**LCT135H-N / LCS135H-N / LC135H-N**



LCT135H-F4 / LCS135H-F4 / LC135H-F4



LCT135H-M2 / LCS135H-M2 / LC135H-M2

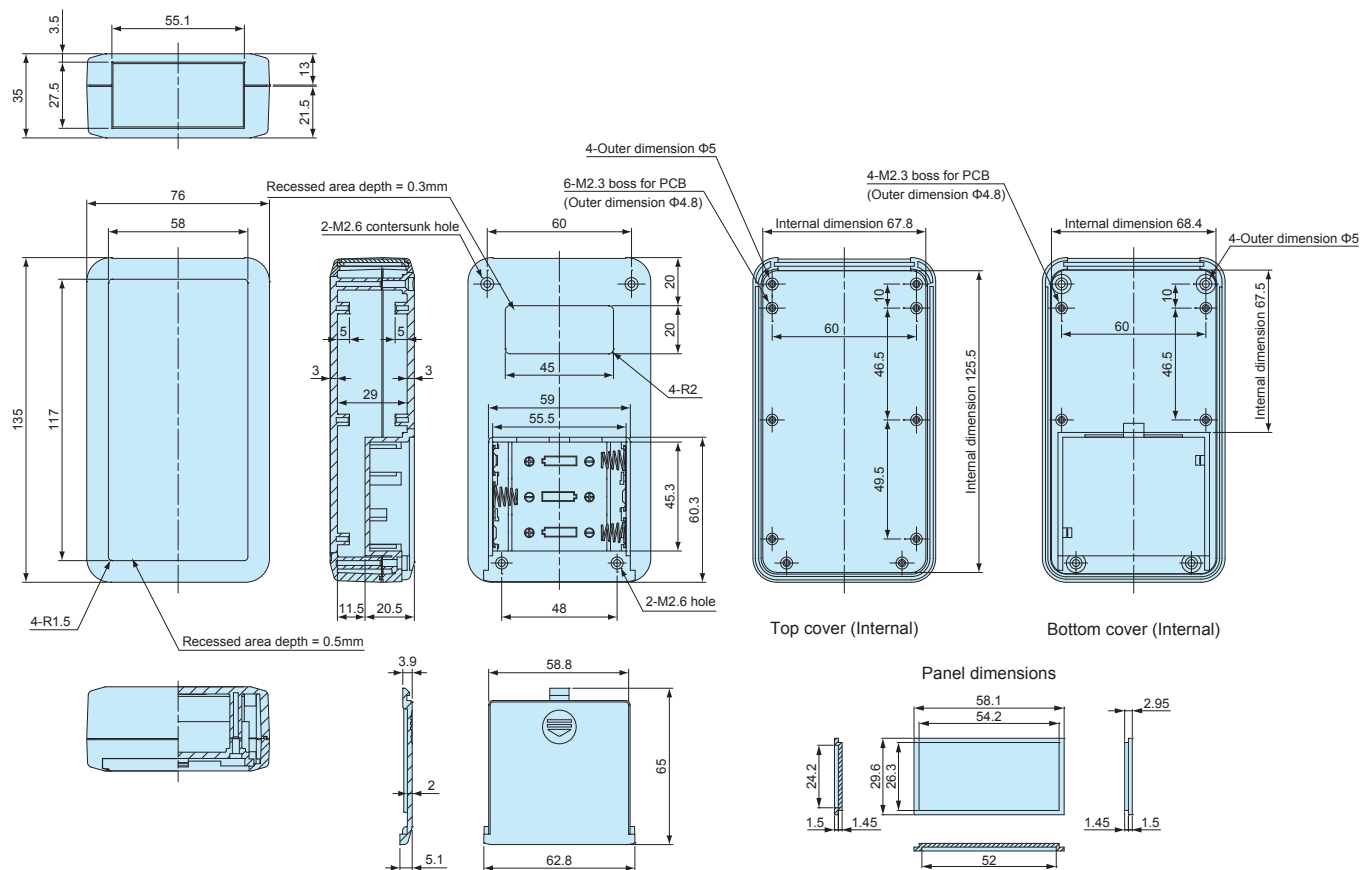




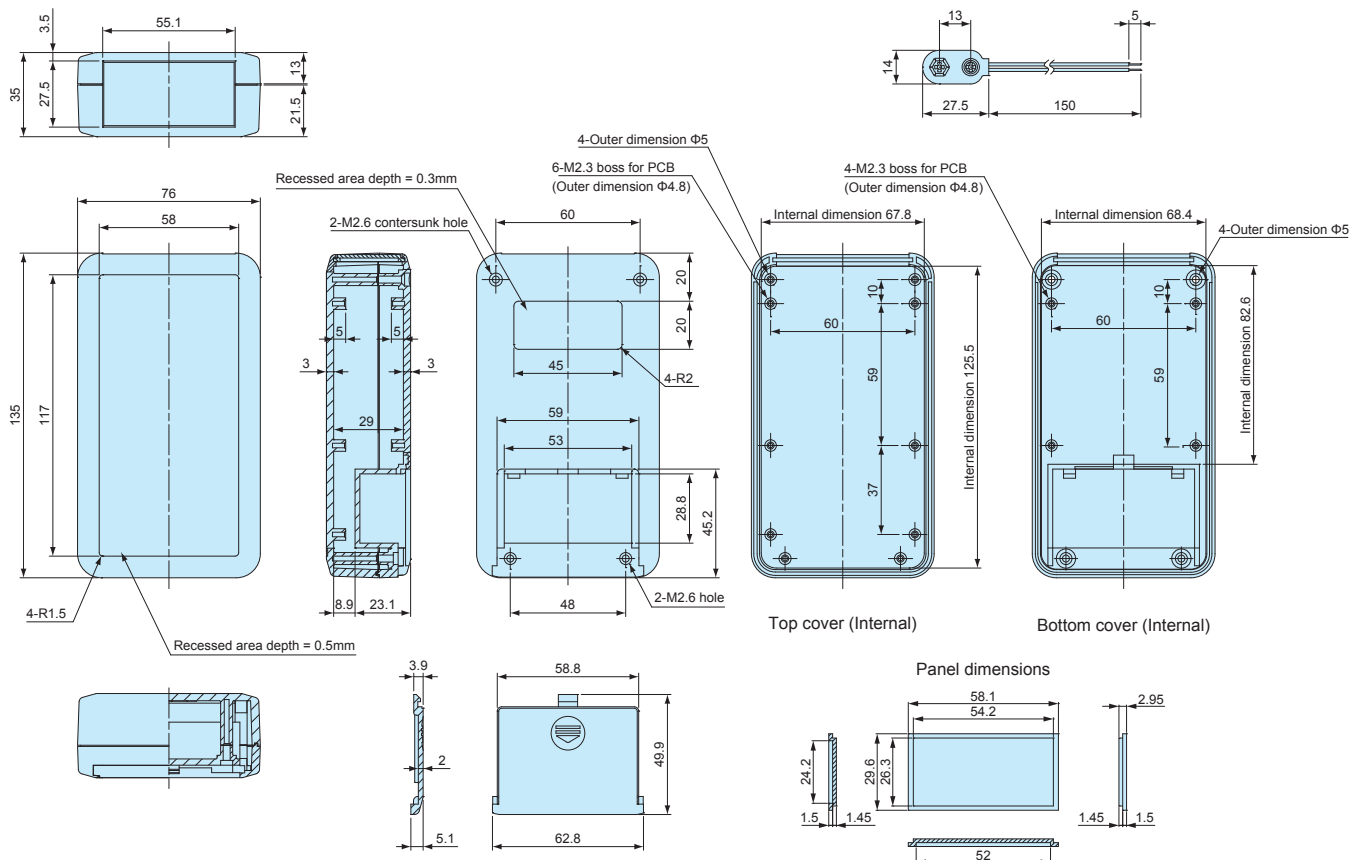
**LCT • LCS • LC dimensions**

■ DXF/DWG/PDF drawings available on our website.

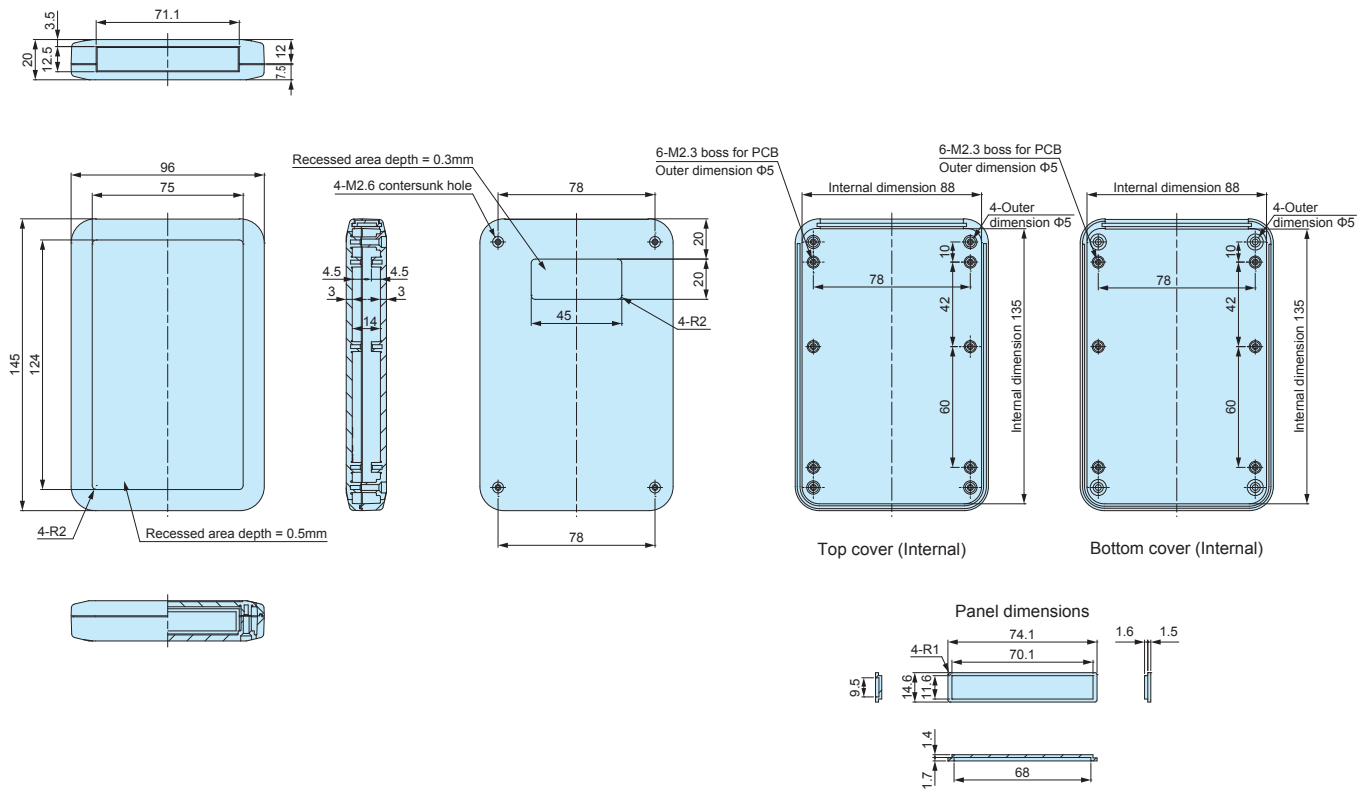
**LCT135H-M3 / LCS135H-M3 / LC135H-M3**



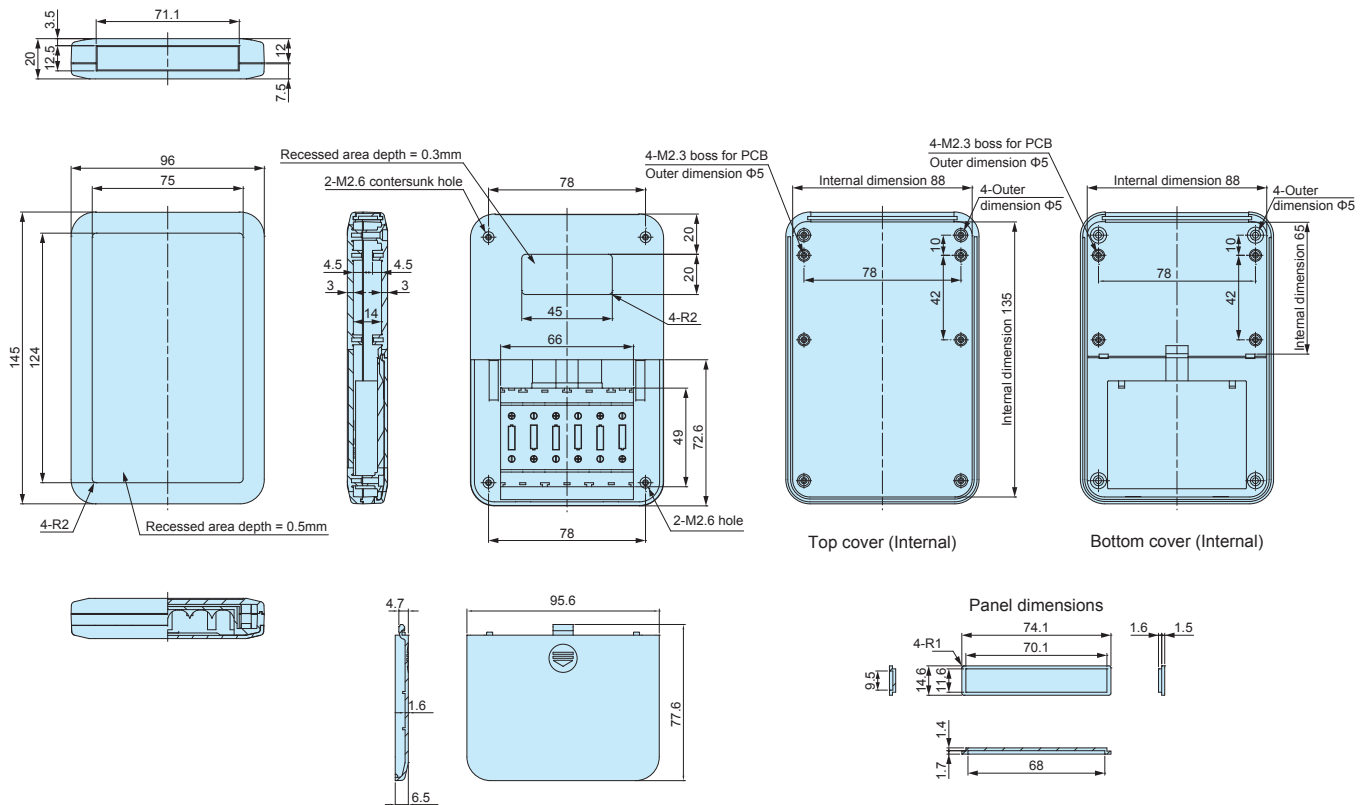
**LCT135H-9V / LCS135H-9V / LC135H-9V**



LCT145S-N / LCS145S-N / LC145S-N



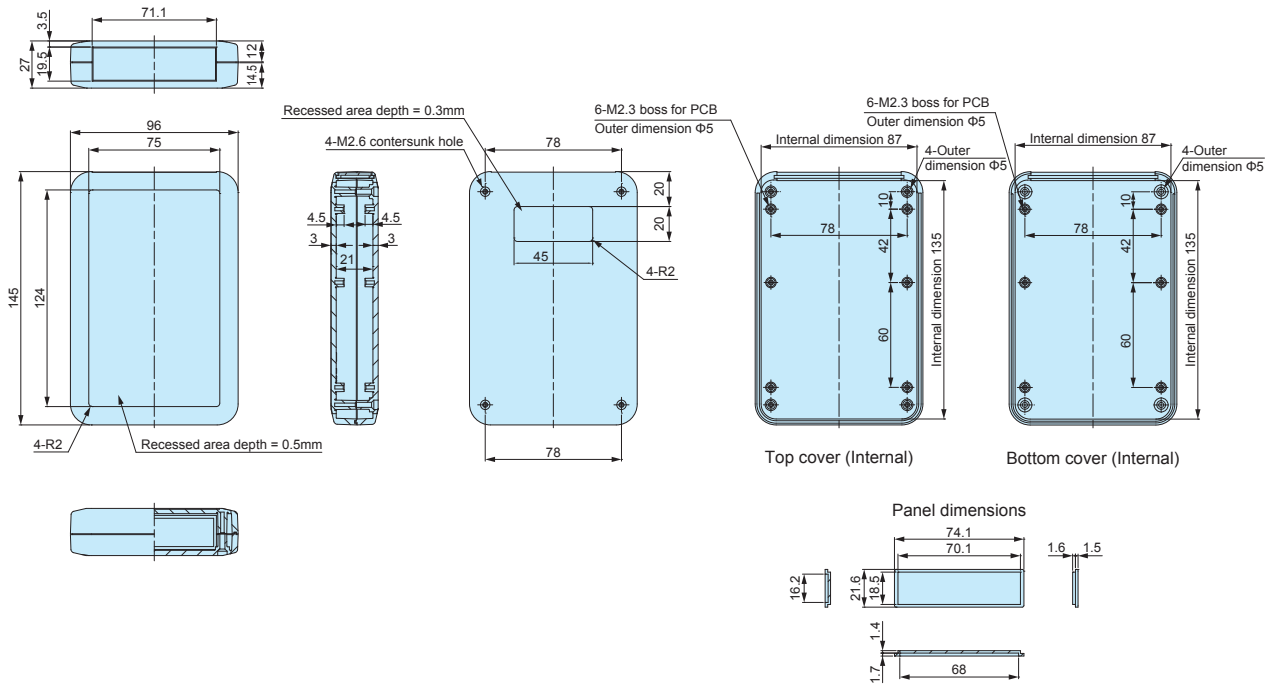
LCT145S-F6 / LCS145S-F6 / LC145S-F6



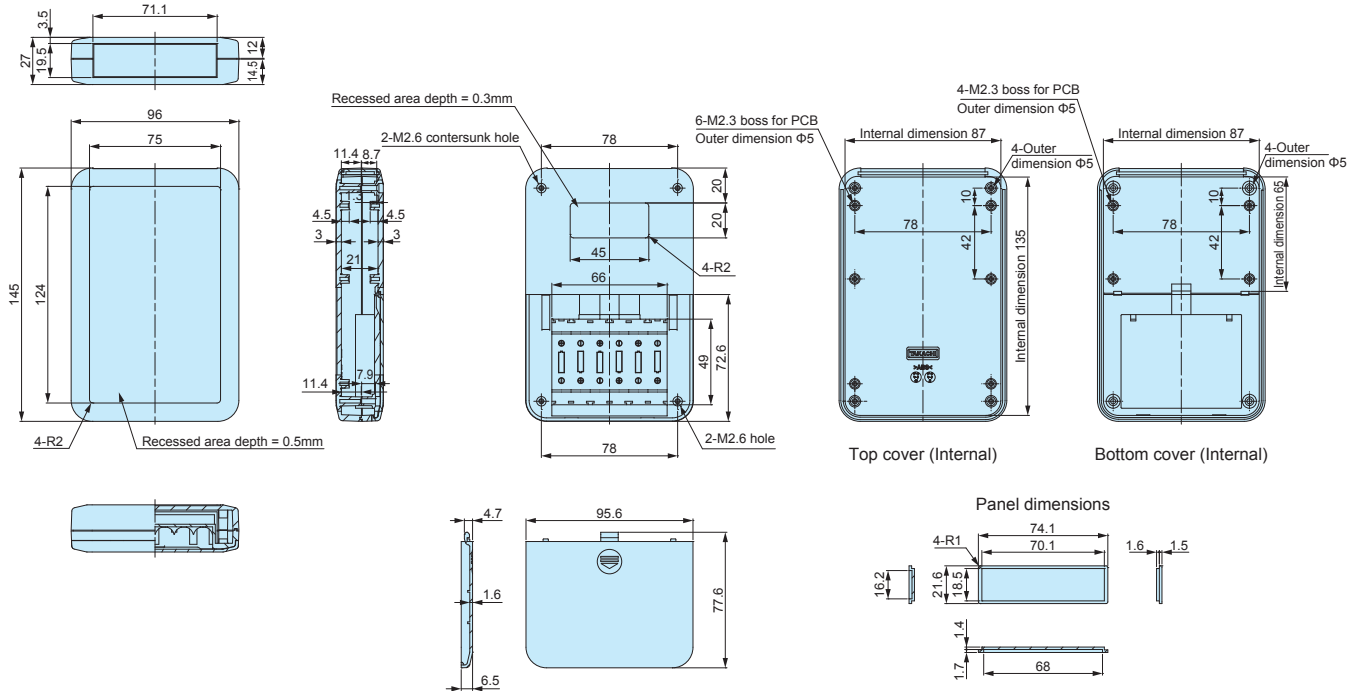
**LCT • LCS • LC dimensions**

■ DXF/DWG/PDF drawings available on our website.

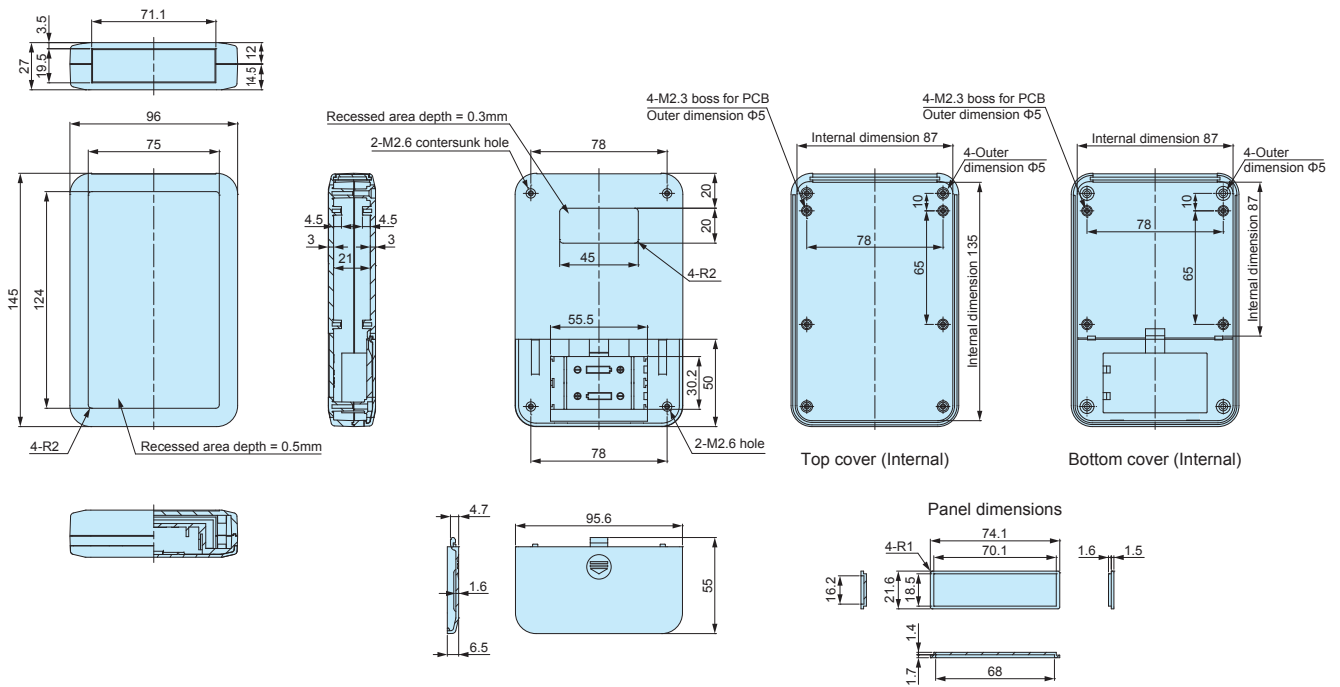
**LCT145-N / LCS145-N / LC145-N**



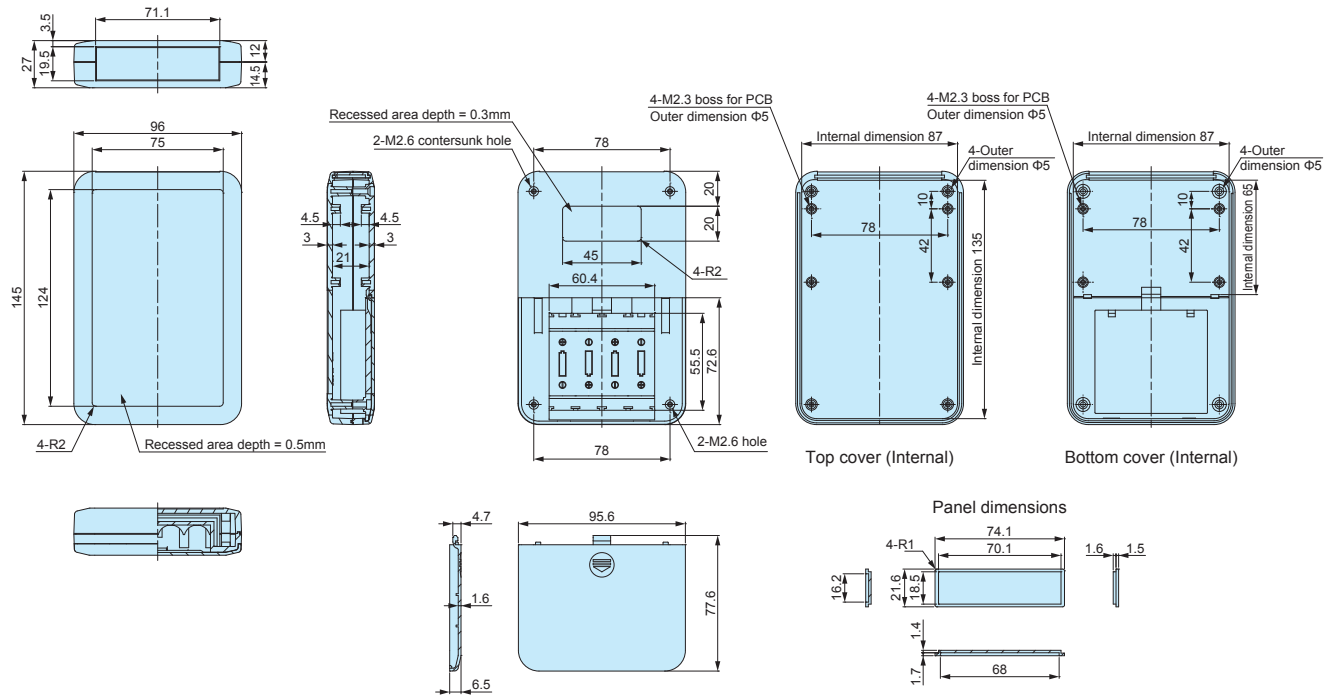
**LCT145-F6 / LCS145-F6 / LC145-F6**



LCT145-M2 / LCS145-M2 / LC145-M2



LCT145-M4 / LCS145-M4 / LC145-M4

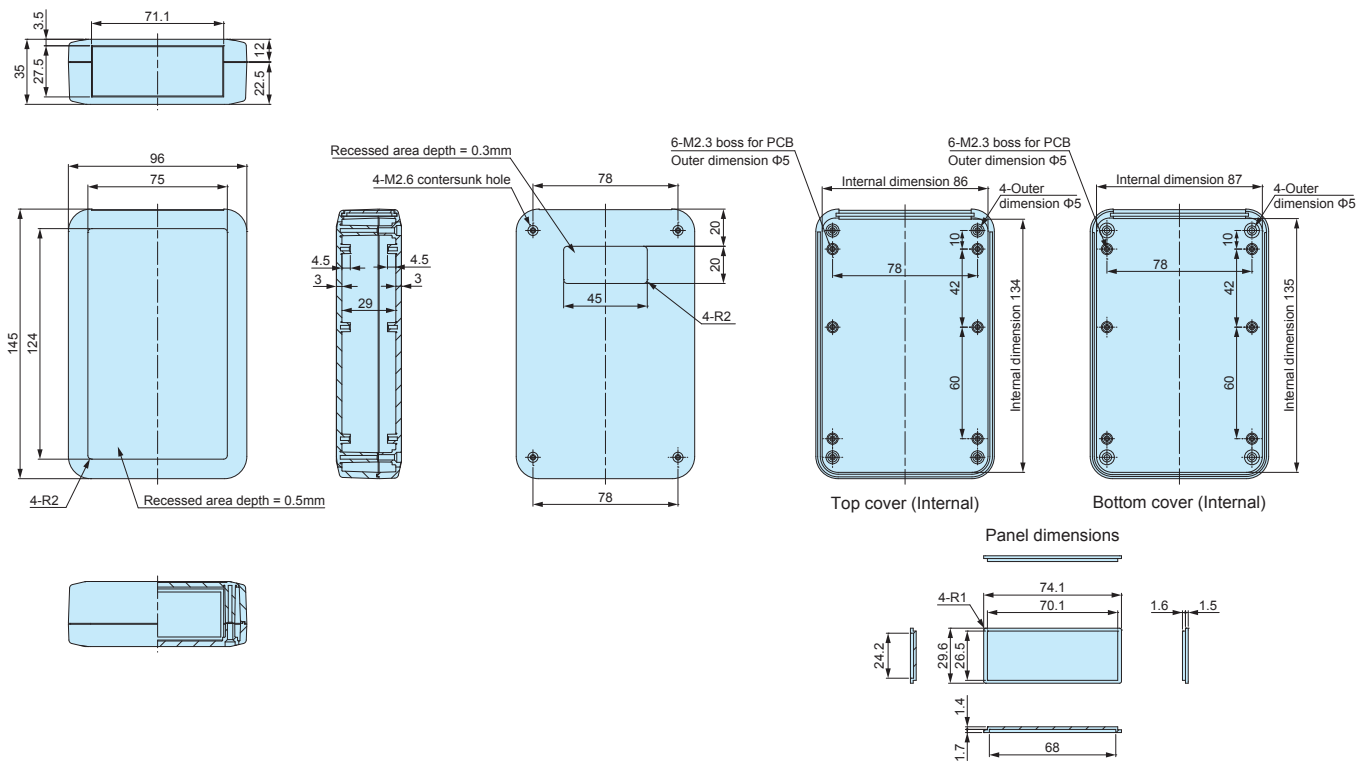




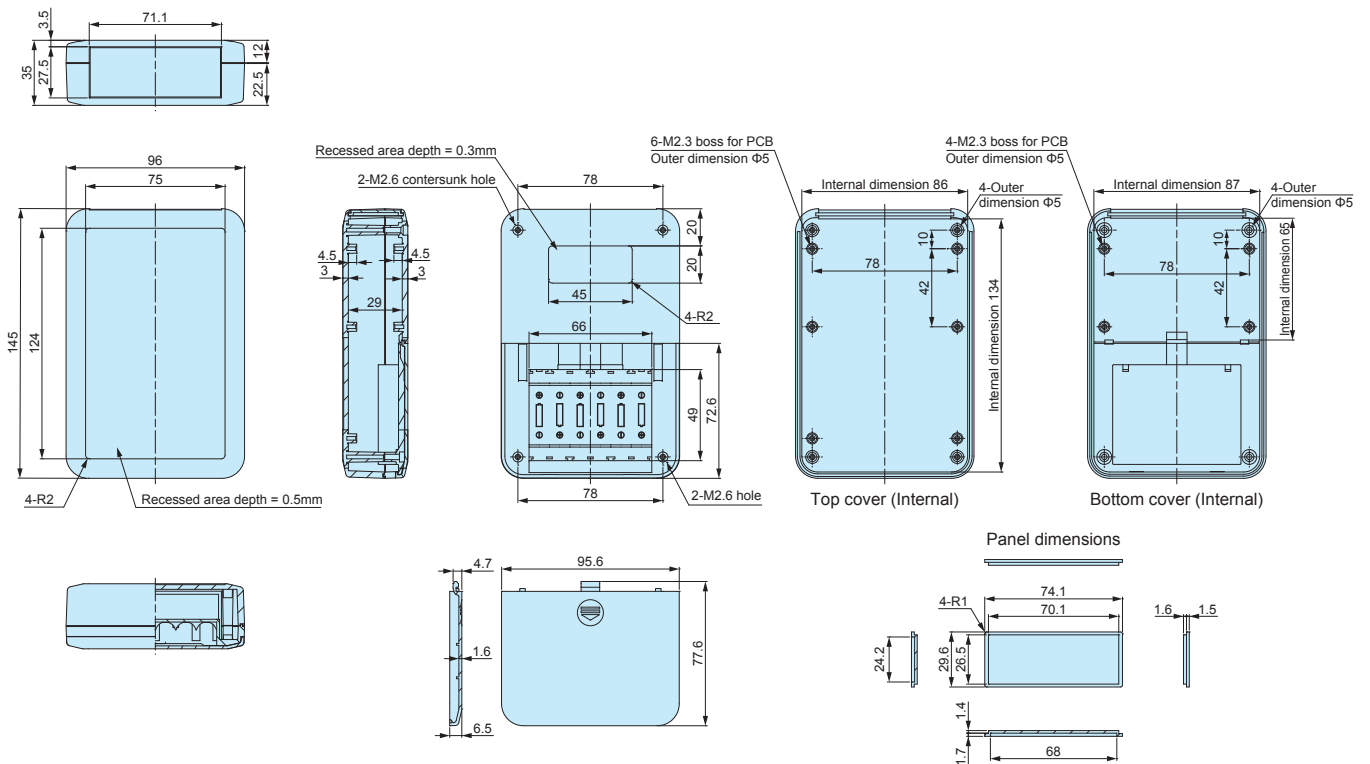
**LCT • LCS • LC dimensions**

■ DXF/DWG/PDF drawings available on our website.

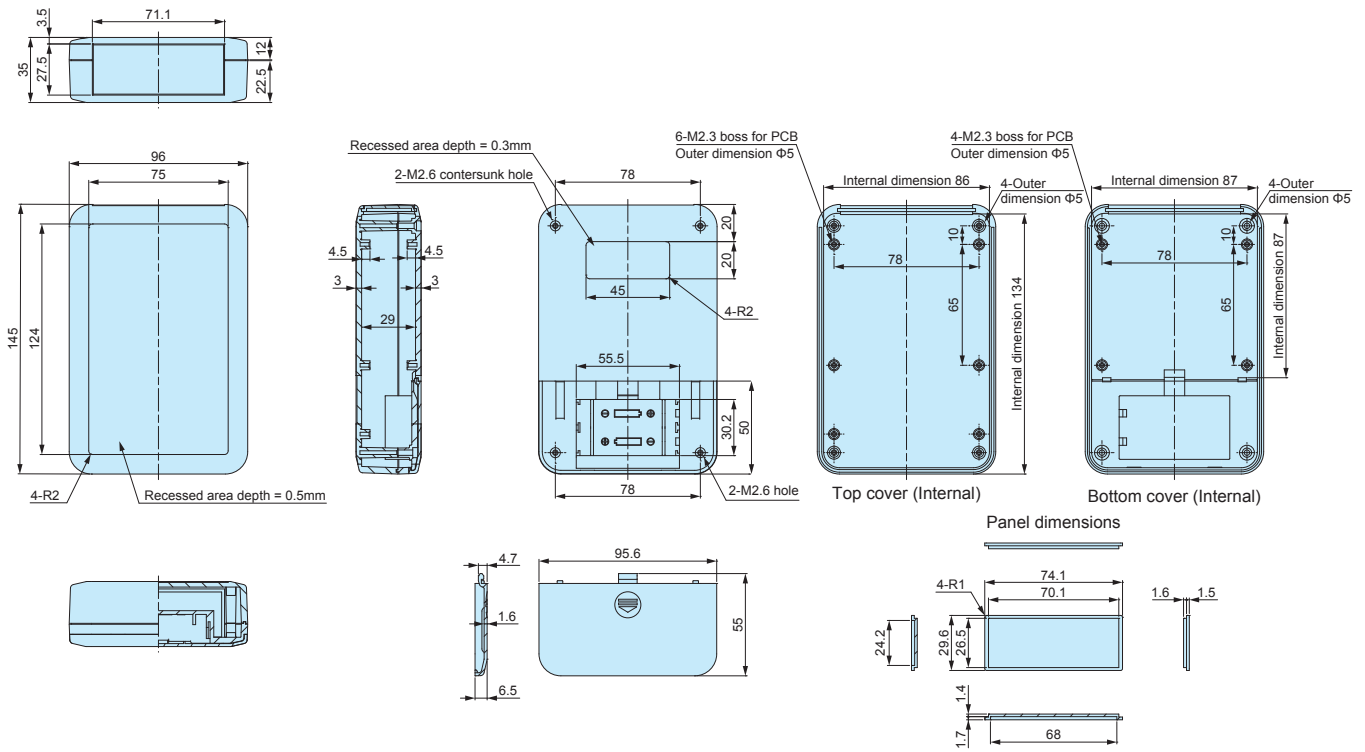
**LCT145H-N / LCS145H-N / LC145H-N**



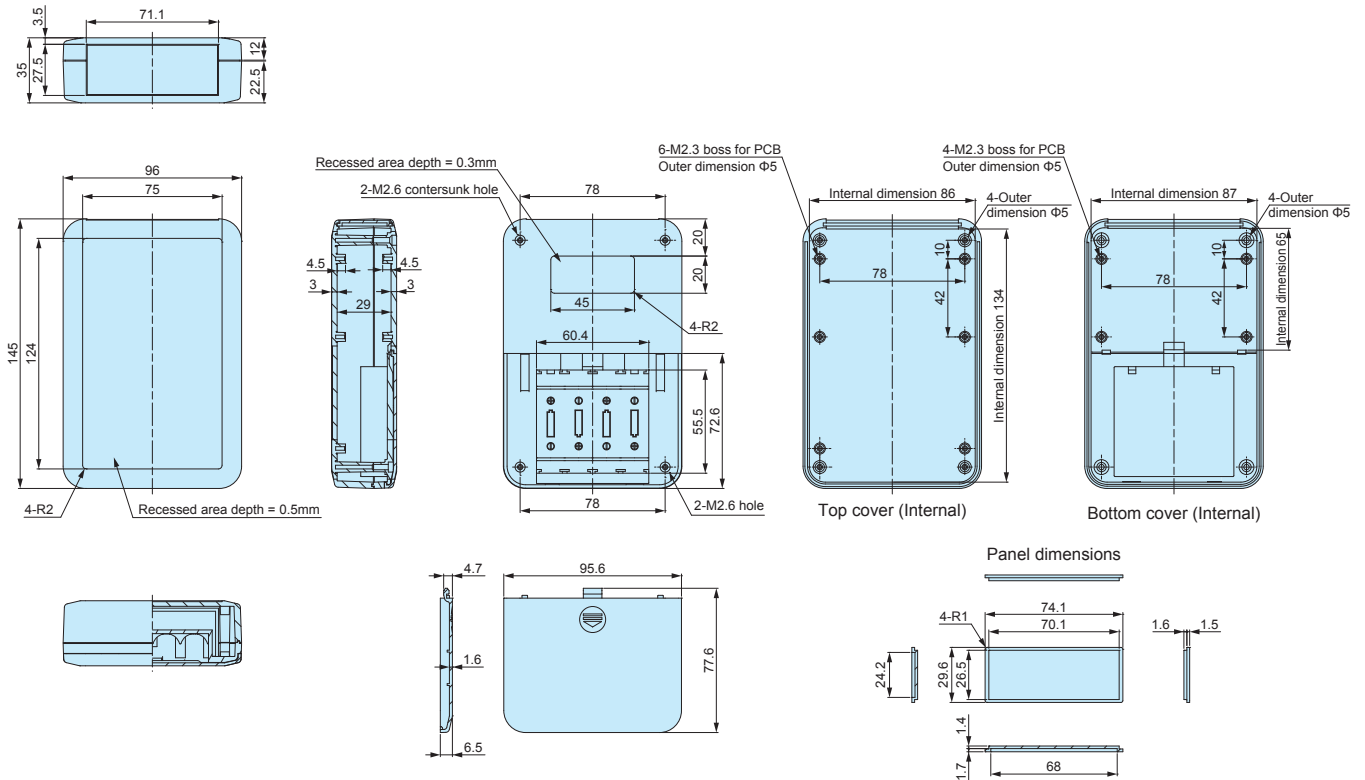
**LCT145H-F6 / LCS145H-F6 / LC145H-F6**



LCT145H-M2 / LCS145H-M2 / LC145H-M2



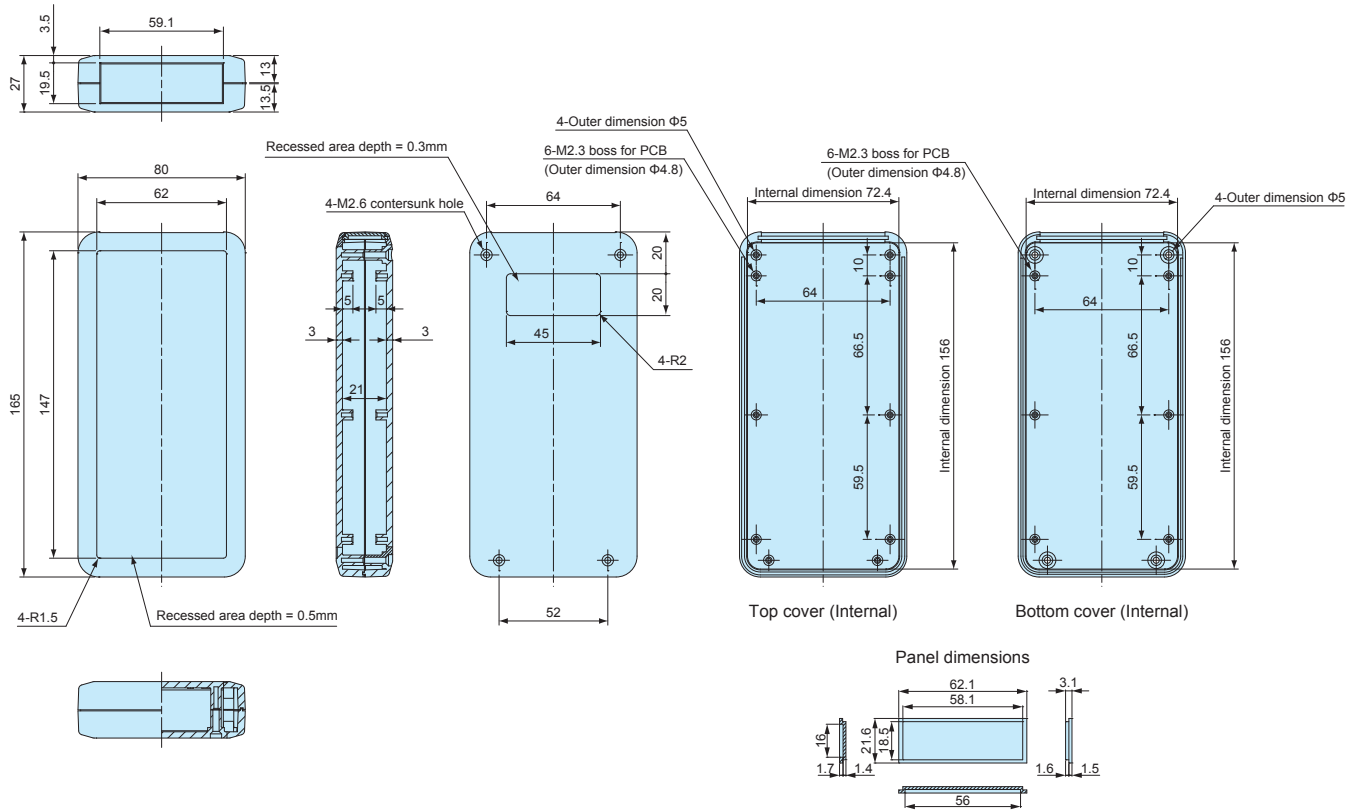
LCT145H-M4 / LCS145H-M4 / LC145H-M4



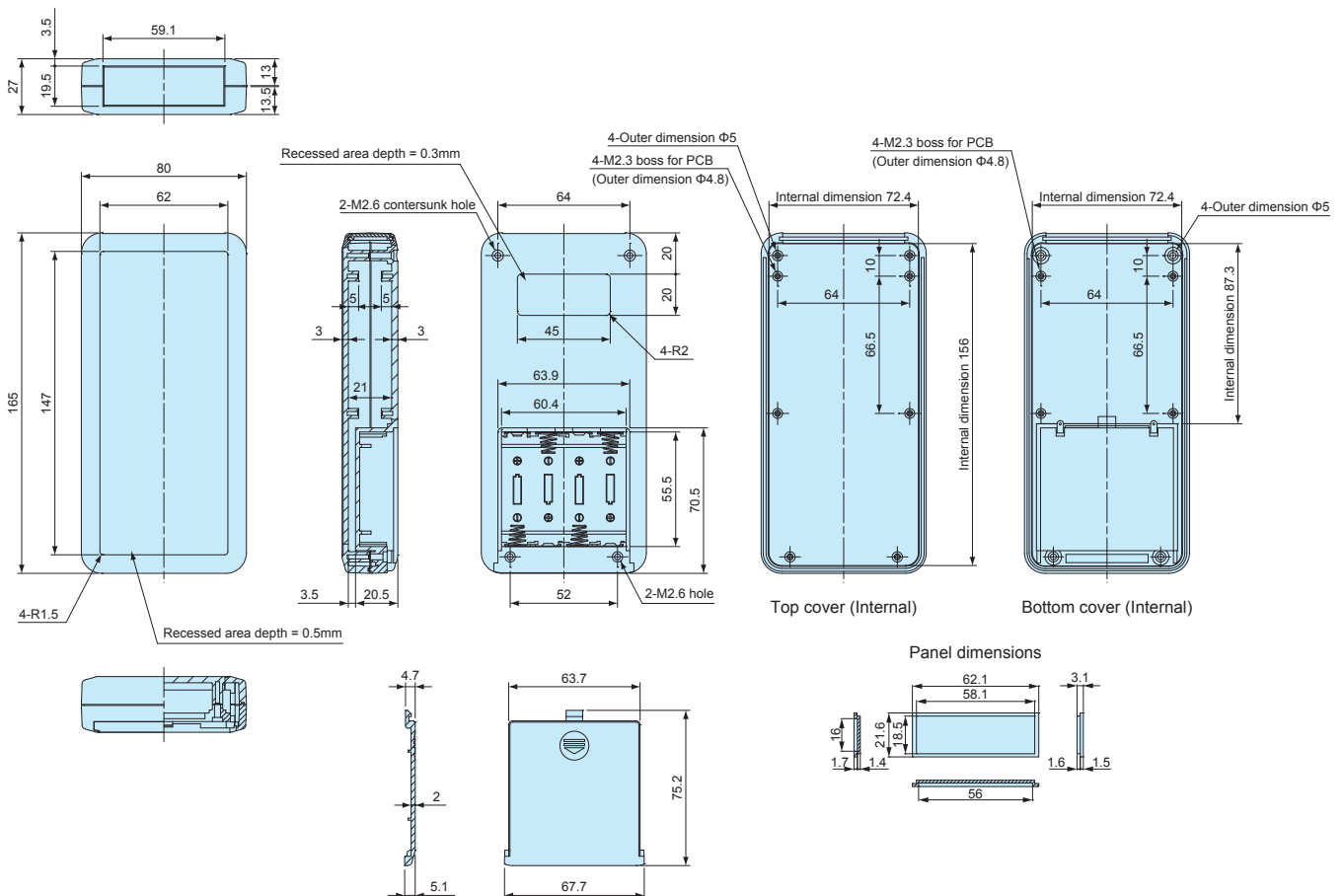
**LCT • LCS • LC dimensions**

■ DXF/DWG/PDF drawings available on our website.

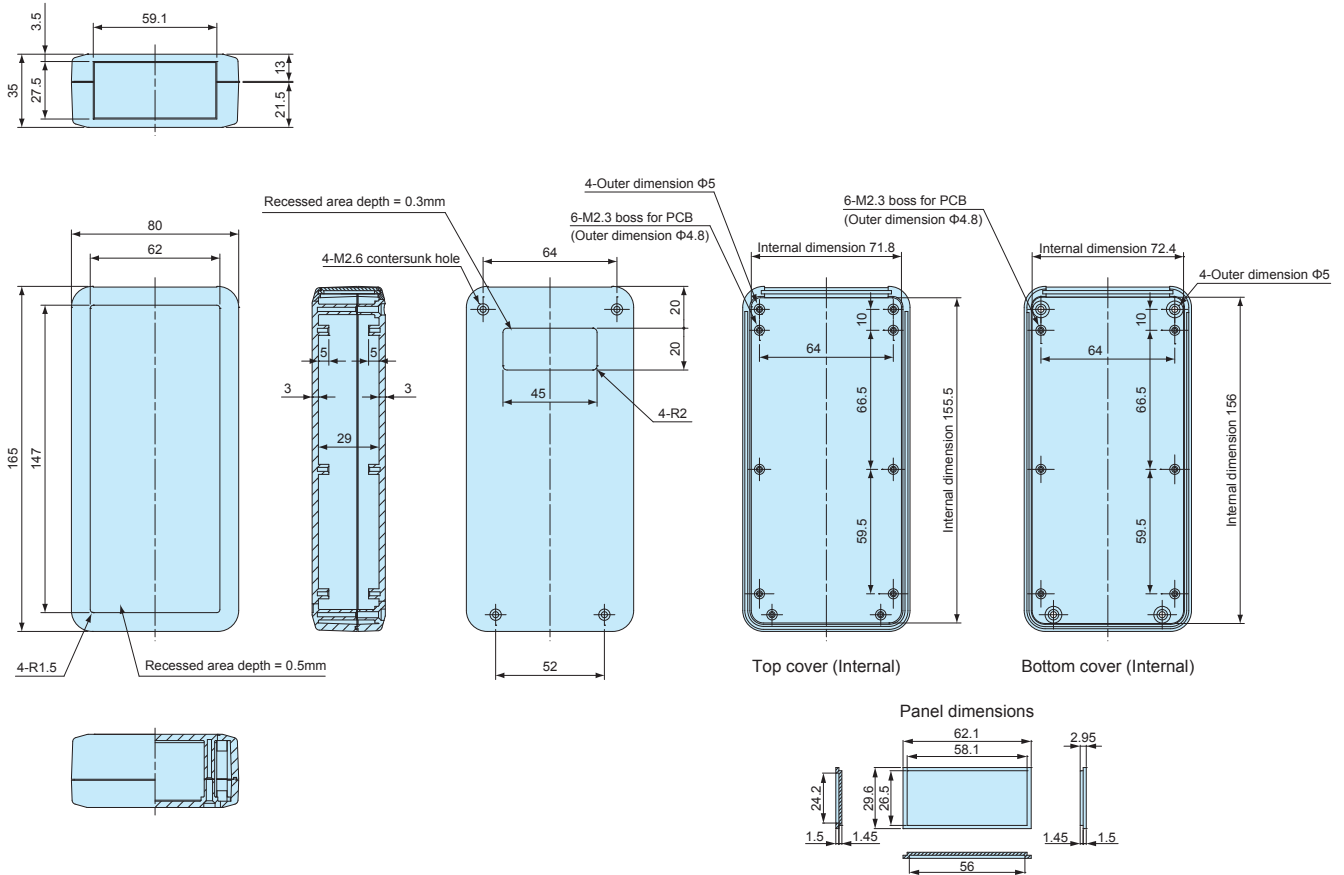
**LCT165-N / LCS165-N / LC165-N**



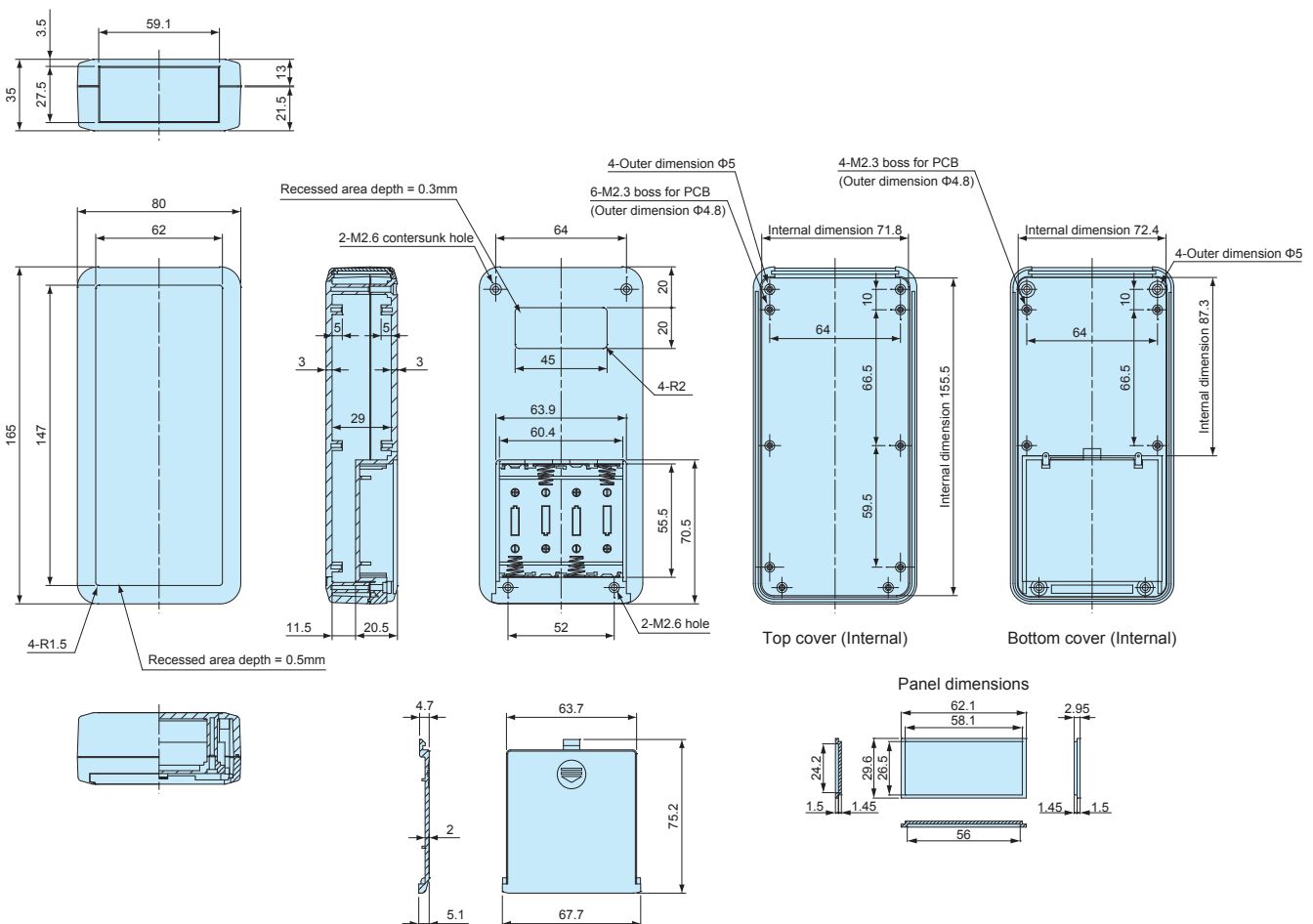
**LCT165-M4 / LCS165-M4 / LC165-M4**



LCT165H-N / LCS165H-N / LC165H-N



LCT165H-M4 / LCS165H-M4 / LC165H-M4





## LCTP SERIES

## SHOCK-PROOF SILICONE COVER

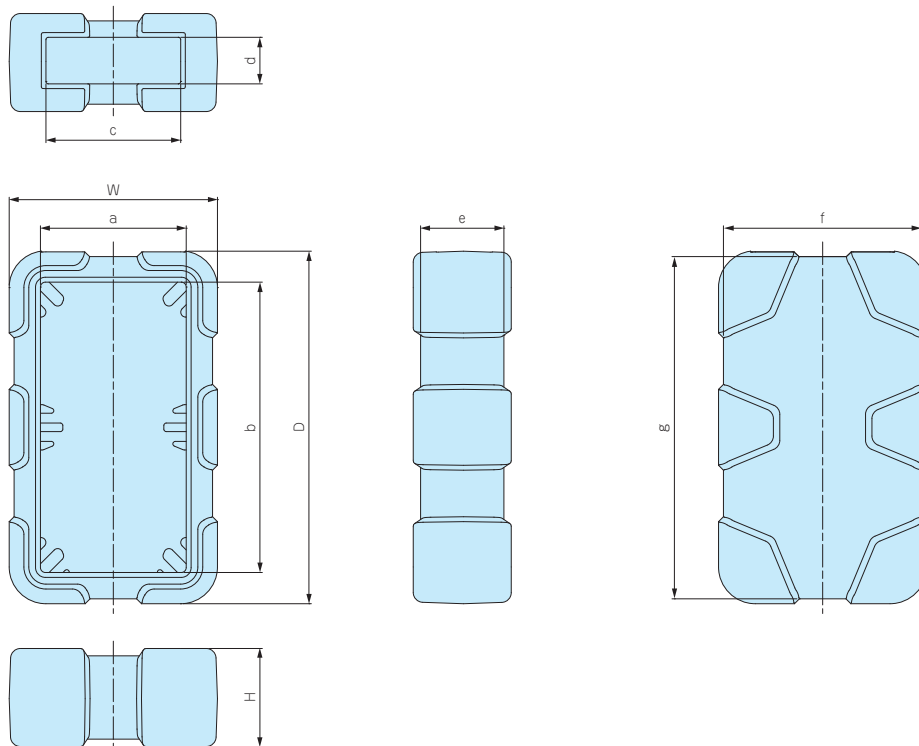


## Color Type

Code	Orange	Green	Navy	Dark gray	Light gray
Color					

- Shock-proof silicone cover for LC series. New sizes now available!
- Custom color is available from 500pcs per order batch. For custom color order, please specify **PANTONE** , RGB color number or provide your sample color.

DXF/DWG/PDF drawings available on our website.



## Components

Part name	Material	Color
Silicone cover	Silicone	Orange • Green • Navy • Dark gray • Light gray

## Product no. / Dimensions

Please suffix color code at the end of the product number.

Product no.	W	H	D	a	b	c	d	e	f	g	Suitable case	Weight (g)
LCTP115 -□	76	28	121.9	55.5	101.5	48.3	12	24	72	117.8	LC115	53.5
LCTP115H-□	76	36.5	121.9	55.5	101.5	48.3	20.5	32.5	72	117.8	LC115H	61
LCTP135 -□	85	40	143.9	59.5	118.5	55	19	34	81	139.7	LC135	115.5
LCTP135H-□	85	48	143.9	59.5	118.5	55	27	42	81	139.6	LC135H	124
<b>NEW</b> LCTP145S-□	105	33	153.9	76.5	125.5	71	12	27	101	149.9	LC145S	129.1
<b>NEW</b> LCTP145 -□	105	40	153.9	76.5	125.5	71	19	34	101	149.7	LC145	137.5
<b>NEW</b> LCTP145H-□	105	48	153.9	76.5	125.5	71	27	42	101	149.7	LC145H	147
LCTP165 -□	89	40	173.9	63.5	148.5	59	19	34	85	169.7	LC165	143
LCTP165H-□	89	48	173.9	63.5	148.5	59	27	42	85	169.6	LC165H	151.5



# LCSC SERIES

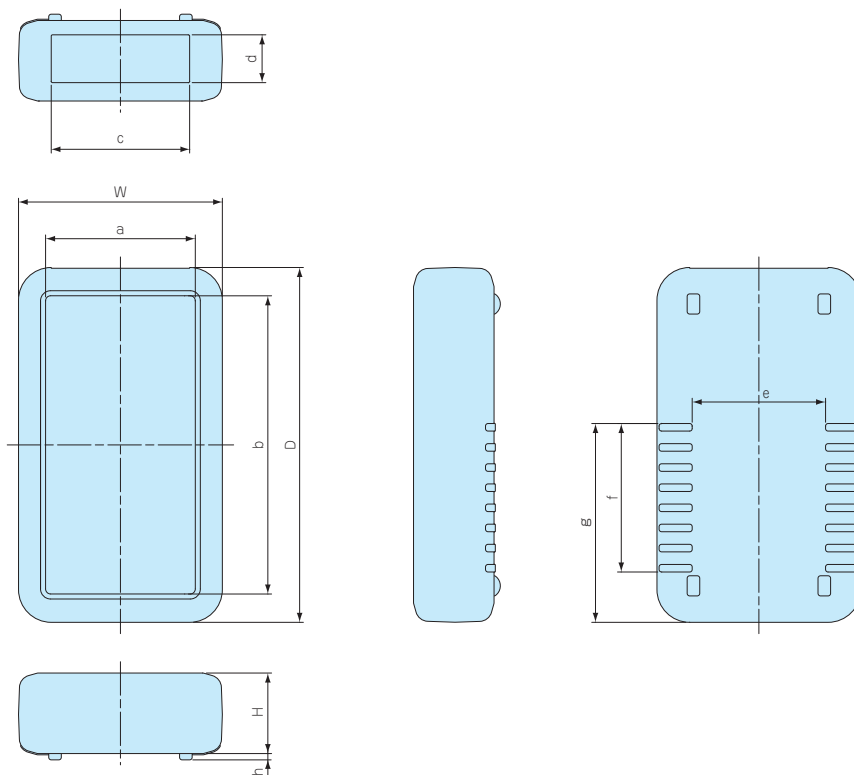
# SILICONE COVER

## Color Type

Code	[R] Red	[Y] Yellow	[G] Green	[B] Blue	[N] Navy	[D] Dark gray	[L] Light gray
Color							

- Silicone cover for LC Series. New sizes now available!
- Custom color is available from 500pcs per order batch. For custom color order, please specify **PANTONE** , RGB color number or provide your sample color.

■ DXF/DWG/PDF drawings available on our website.



## Components

Part name	Material	Color
Silicone cover	Silicone	Red • Yellow • Green • Blue • Navy • Dark gray • Light gray

## Product no. / Dimensions

■ Please suffix color code at the end of the product number.

Product no.	W	H	D	a	b	c	d	e	f	g	h	Suitable case	Weight (g)
LCSC115 -□	74	24	120	55.5	101.5	48.3	12	46	44.5	60.5	2	LC115	43
LCSC115H-□	74	32.5	120	55.5	101.5	48.3	20.5	46	44.5	60.5	2	LC115H	50
LCSC135 -□	81	32	141	59.5	118.5	55	19	53	59	79	2.5	LC135	70
LCSC135H-□	81	40	141	59.5	118.5	55	27	53	59	79	2.5	LC135H	75.5
<b>NEW</b> LCSC145S-□	101	25	151	76.5	125.5	71	12	71	59	81	2.5	LC145S	73.4
<b>NEW</b> LCSC145 -□	101	32	151	76.5	125.5	71	19	71	59	81	2.5	LC145	81
<b>NEW</b> LCSC145H-□	101	40	151	76.5	125.5	71	27	71	59	81	2.5	LC145H	89
LCSC165 -□	85	32	171	63.5	148.5	59	19	53	67	92	2.5	LC165	82.5
LCSC165H-□	85	40	171	63.5	148.5	59	27	53	67	92	2.5	LC165H	86

# IP67 PORTABLE CASE WC SERIES



● IEC60529 standard is a system for classifying the degrees of protection provided by the enclosures of electrical equipment, such as against dust and water.

**IP6x : No ingress of dust; complete protection against contact (dust tight).**

**IPx7 : No ingress of water when submerged up to a depth of 1 meter for 30 minutes**

## High waterproof performance with both TPE and silicone gasket

ABS and TPE double-shot molded top & bottom covers allows for a good waterproof seal.

The durable silicone gasket maintains the battery lid seal.

Insert nut and screw allow the battery compartment to remain durable even after repeated opening/closing.



## Great protection by TPE sides

Side grips in TPE material provides a comfortable grip and protection against drop impact.



## 3 color combinations available



# APPLICATION EXAMPLE

Best for outdoor use as a remote control, RFID tag, compact GPS, wireless device, simplified measurement and so on.



We are able to manufacture embossed or standard overlay sheets with low initial costs.



Note that the waterproof performance will be lost by drilling/milling holes or cutouts for buttons or switches on waterproof enclosures. Use an IP rated overlay sheet or membrane keypad in order to allow the milled area to remain waterproof.



Customized digital print overlay can be ordered from just 1 sheet. Waterproof double-sided tape for overlay available.

- Advantage 1** Reduce initial cost with digital inkjet printing.
- Advantage 2** Reduce initial tooling cost for cutting die with digital cutting plotter.
- Advantage 3** Reduce initial tooling cost for embossing with in-house mold processing.
- Advantage 4** Shorter lead time made possible by having all production be in-house.

## A variety of customization services are available



Contact us with your drawings

E-mail: [sales@takachi-el.co.jp](mailto:sales@takachi-el.co.jp)



## WC SERIES

## IP67 PORTABLE PLASTIC CASE



- TPE side grip provides not only a comfortable grip, but also protects from drop impact.
- Suitable to be used as a remote controller, key fob, wireless device, RFID tag, and so on.
- Case with a CR2032 coin battery, and no battery compartment types are available.
- Available in 2 different sizes and battery compartment types, with 3 color variations.

## Technical Data

Protection class: IP67  
 Operating temperature: -10°C ~ +50°C  
 Recommended torque: 0.06 ~ 0.08N • m

WC72-15-N / WC90-15-N No battery compartment type



WC72-15-C / WC90-15-C Battery compartment type



## Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94HB : Elastomer	Black : Black • Black : Marine • Black : Light gray
2	Bottom cover	1	ABS UL94HB : Elastomer	Black : Black • Black : Marine • Black : Light gray
3	Battery lid	1	ABS UL94HB	Black • White
4	Battery contact	1 set	Stainless steel SUS304	Nicked plated
5	O-ring	1	Silicone	Black
6	Screw	7	Stainless steel SUS304	Unfinished

## Accessories (Optional parts)



Exclusive PCB  
 WCPB series  
 See page 48



Strap  
 STPS series  
 See page 63



PCB mounting screw  
 EM-1.6  
 See page 135



Neodymium magnet  
 NMG series  
 See page 130

# Coin battery contact installation step



Solder the contacts onto the PCB



Install the PCB in the top cover



All set!



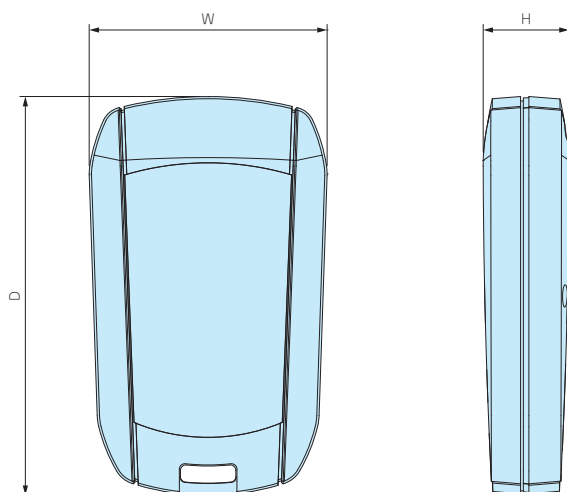
■ Battery direction is incised on the inner side of the battery lid.

**CAUTION** Use caution when mounting battery contacts.



## Battery Compartment Types

Type	N	C
	None	CR2032 x1
Battery compartment		



## Color Type

Code	B B	B M	W L
Body	Black	Black	White
Grip	Black	Marine	Light gray
Color			

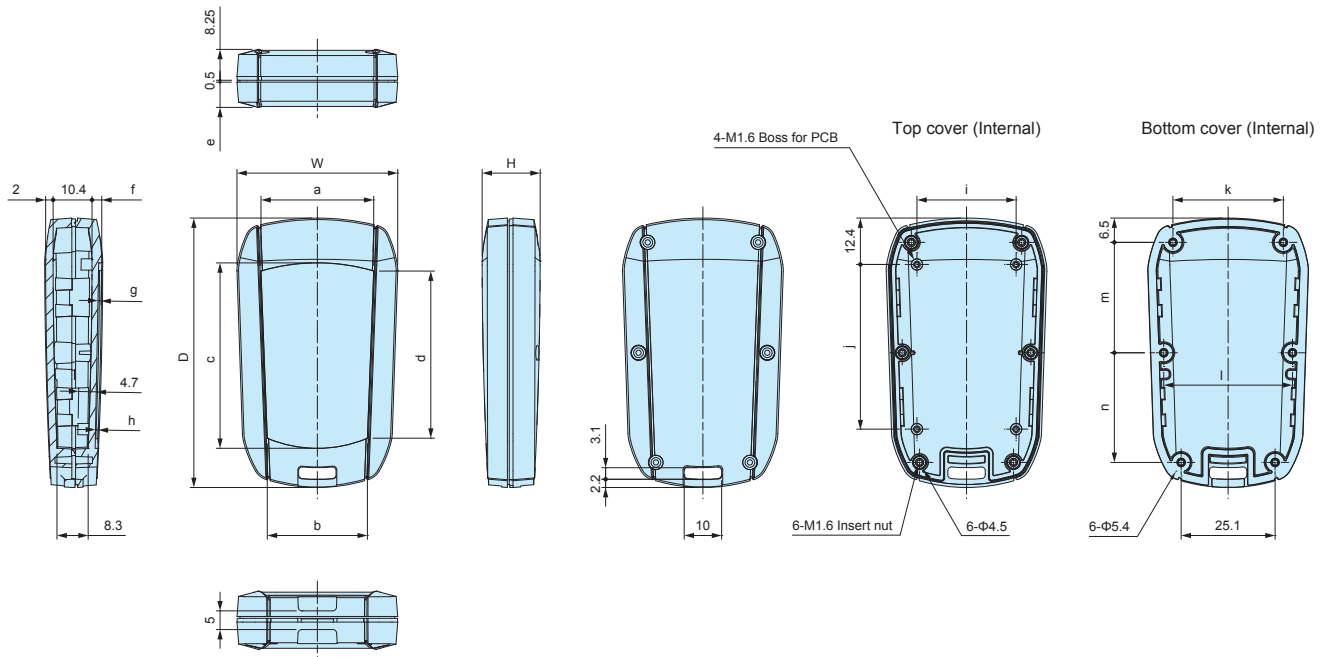
## Product no. / Dimensions

Product no.	W	H	D	Battery compartment	Weight (g)
WC72-15-N-□□	43	15.5	72	None	18.5
WC72-15-C-□□	43	15.5	72	CR2032 x1	22
WC90-15-N-□□	44.2	15.7	90	None	23
WC90-15-C-□□	44.2	15.7	90	CR2032 x1	26.5

## WC dimensions

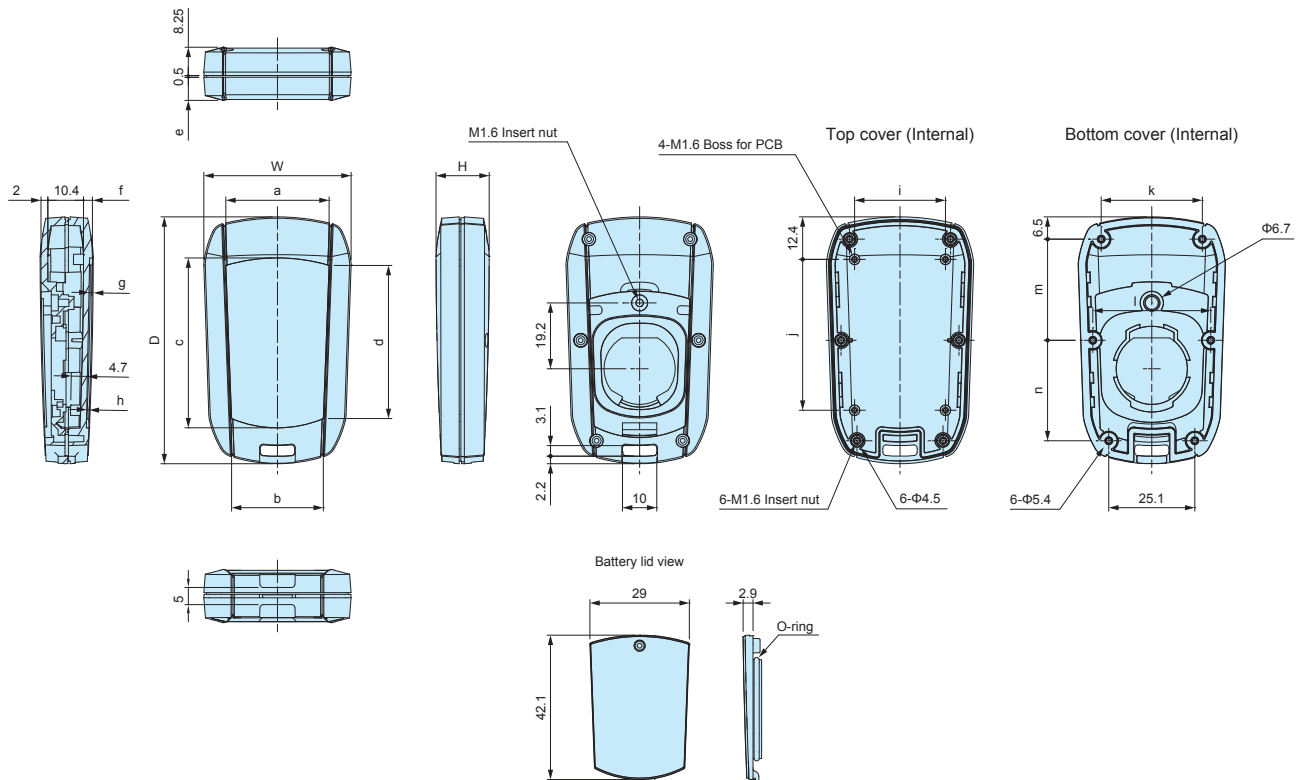
■ DXF/DWG/PDF drawings available on our website.

### WC72-15-N / WC90-15-N



Product no.	W	H	D	a	b	c	d	e	f	g	h	i	j	k	l	m	n
WC72-15-N-□□	43	15.5	72	30.1	26.8	49.5	44.7	6.75	2.6	0.8	0.7	26.5	44	29.5	34.4	29.5	29.3
WC90-15-N-□□	44.2	15.7	90	31.5	26.7	67.5	62.7	6.95	2.8	0.7	1	26.9	62	30.9	34.9	38.5	38.3

### WC72-15-C / WC90-15-C

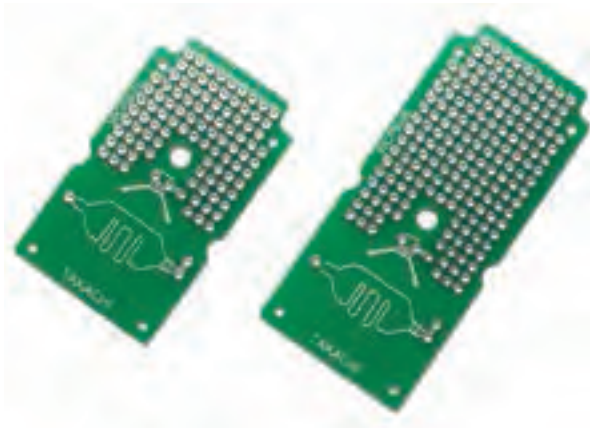


Product no.	W	H	D	a	b	c	d	e	f	g	h	i	j	k	l	m	n
WC72-15-C-□□	43	15.5	72	30.1	26.8	49.5	44.7	6.75	2.6	0.8	0.7	26.5	44	29.5	34.4	29.5	29.3
WC90-15-C-□□	44.2	15.7	90	31.5	26.7	67.5	62.7	6.95	2.9	0.7	1	26.9	62	30.9	34.9	38.5	38.3

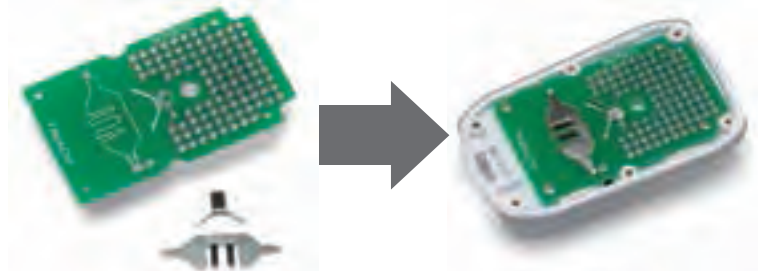
# WCPB SERIES

# EXCLUSIVE PCB for WC

- Exclusive PCB for WC series.
- Glass epoxy board (FR-4), through-holes on both sides, 2.54mm hole pitch.
- Designed with a battery contact hole. Battery contact position and direction are printed onto the pcb.

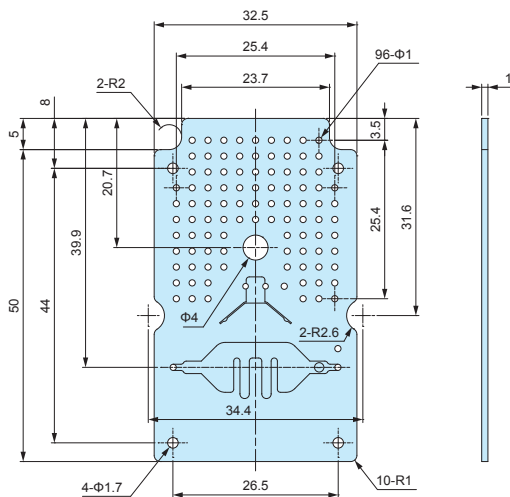


Please use battery contacts included with WC case.

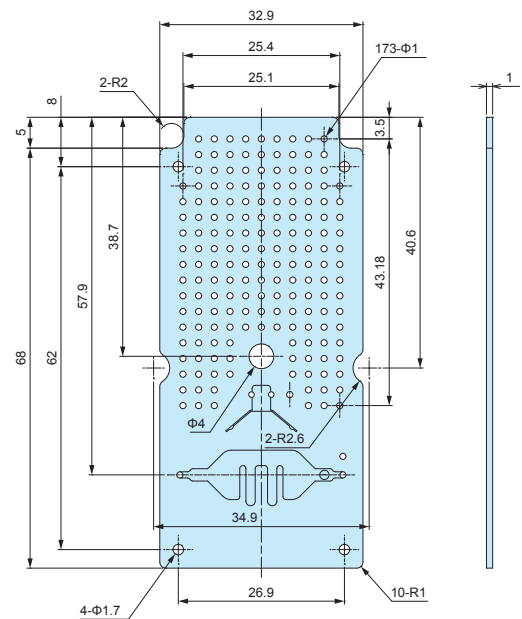


- DXF/DWG/PDF drawings available on our website.

WCPB-72



WCPB-90



Note : Holes (4-Φ1.7) for PCB mounting bosses are un-soldered.

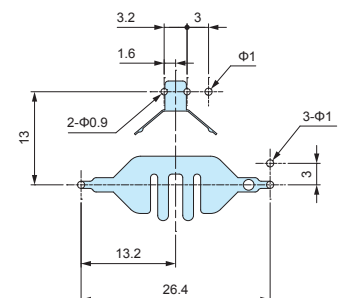
## Components

Part name	Pcs	Material	Color / Finish
PCB	1	Glass epoxy (FR-4) t=1.0	Through-hole • Lead-free solder • Solder resist
Screw	4	Steel M1.6	Trivalent chromate

## Product no. / Dimensions

Product no.	Suitable case
WCPB- 72	WC72-15-C
WCPB- 90	WC90-15-C

Battery contact position details





# CSS • CS SERIES

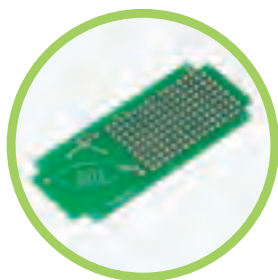
**SMALL PLASTIC CASE WITH SILICONE COVER**

**Built-in CR2032 Coin Battery Compartment**

**Selectable in 3 sizes & 12 color combinations**



Built-in CR2032  
battery compartment



Exclusive  
universal PCBs



Pink



Yellow



Black



Green



Blue



Light gray



**6 colors**

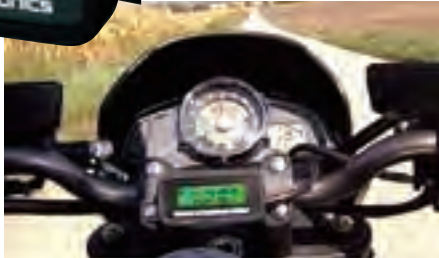


# APPLICATION EXAMPLE

## MOTOR SPORT INFRARED LAPTIMER (BLUETOOTH 4.0 & ANDROID APPLICATION)



Product by General Mechatronics (Hungary)  
Website : [generalmechatronics.com](http://generalmechatronics.com)



Enables the measurement of lap time, drag time and temperature.

Measuring result can be seen on your smart phone in log and graph via an Android application.

## G TRIP - TRIP SENSOR for RELAY TESTER

Product by Musashi Intech Inc (Japan)  
Website : [musashi-in.co.jp](http://musashi-in.co.jp)



## WIRELESS REMOTE CONTROL SWITCH

Product by Herutu Electronics Corporation (Japan)  
Website : [musashi-in.co.jp](http://musashi-in.co.jp)



## HANDI QUILTER EASY-SET TENSION™ Kit

Product by Handi Quilter, Inc (USA)  
Website : [handiquilter.com](http://handiquilter.com)



Customized digital printed overlay can be ordered from just 1 sheet.  
Waterproof double-sided tape for overlay sheet available.



### Advantage 1

Reduce initial cost with digital inkjet printing.

### Advantage 2

Reduce initial tooling cost for cutting die with digital cutting plotter.

### Advantage 3

Reduce initial tooling cost for embossing with in-house mold processing.

### Advantage 4

Shorter lead time made possible by having all production be in-house.

## CSS SERIES

## PORTABLE PLASTIC CASE with SILICONE COVER



## Technical Data

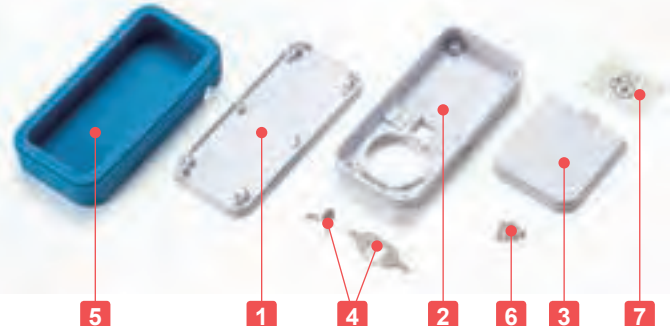
Protection class: IP40  
Operating temperature: -10°C ~ +60°C

- Small plastic case with silicone cover. Strong against drop impact while providing a secure grip.
- Smart phone sized CSS115 comes with 2 CR2032 battery compartment while smaller sized single battery and no battery compartment types are also available.
- Suitable for remote controller, wireless key fob, small tester/device and so on.
- Available in 3 sizes with 6 models and selectable in 12 different color combinations.
- 2 types of silicone cover available which have with (Open) and without (Closed) rectangular cutout on the front side.

CSS75N/CSS90N/CSS115N (No battery compartment type)



CSS75/CSS90/CSS115 (Battery compartment type)



## Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94HB	White • Black
2	Bottom cover	1	ABS UL94HB	White • Black
3	Battery cover	1	ABS UL94HB	White • Black
4	Battery contact	1 set / 2 set (CS115)	Stainless steel	Nickel plated
5	Silicone cover	1	Silicone	Pink • Yellow • Green • Cyan • Light gray • Black
6	Self tapping screw	4	Steel M1.6	Nickel plated • Black trivalent chromate
7	CR2032 sticker	1	PP	—

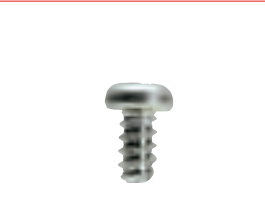
## Accessories (Optional parts)



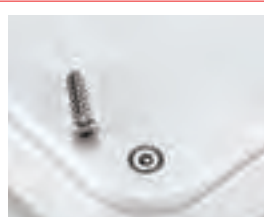
Exclusive PCB  
CSPB series  
See page 58



Strap  
STPS series  
See page 63



PCB mounting screw  
EM-1.6  
See page 135

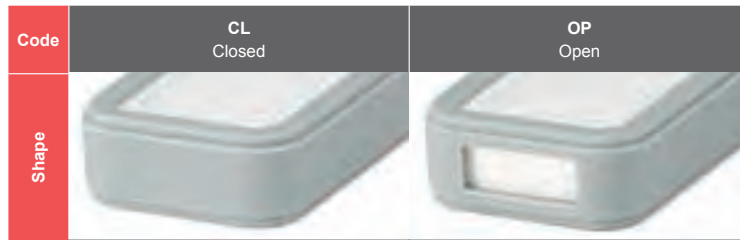


TORX screw  
MR1.6-6S  
See page 135



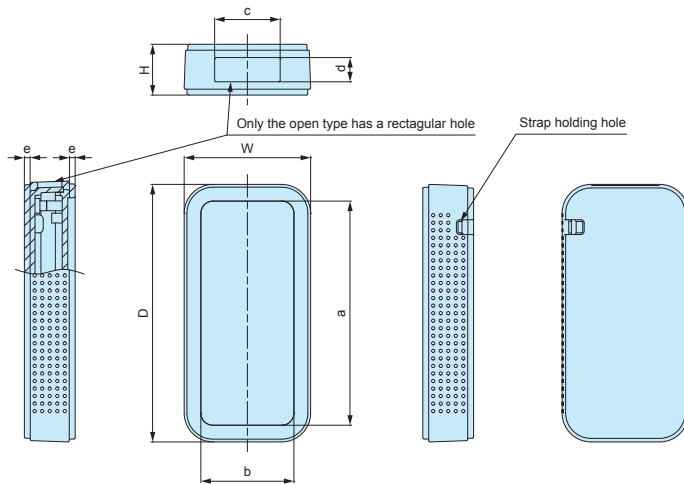
Neodymium magnet  
NMG series  
See page 130

## Silicone Cover Type



## Color Type

Code	[B][P] Black / Pink	[B][Y] Black / Yellow	[B][G] Black / Green	[B][C] Black / Cyan	[B][L] Black / Light gray	[B][B] Black / Black
Color						
Code	[W][P] White / Pink	[W][Y] White / Yellow	[W][G] White / Green	[W][C] White / Cyan	[W][L] White / Light gray	[W][B] White / Black
Color						



Type	None CSS75N/90N/115N	CR2032 × 1 CSS75/CSS90	R2032 × 2 CSS115
Battery compartment			

- DXF/DWG/PDF drawings available on our website.
- Refer to drawings on page 58 for suitable PCB dimensions and screw hole layout.

## Product no. / Dimensions

■ Please suffix color code at the end of the product number.

Product no.	W	H	D	a	b	c	d	e	Battery compartment	Weight (g)
CSS 75N-CL-□□	38.6(35)	15.5(12)	78.6 (75)	68.4	28.4	—	—	1.75	None	24
CSS 75N-OP-□□	38.6(35)	15.5(12)	78.6 (75)	68.4	28.4	20	7.4	1.75	None	24
CSS 75 -CL-□□	38.6(35)	15.5(12)	78.6 (75)	68.4	28.4	—	—	1.75	CR2032×1	25
CSS 75 -OP-□□	38.6(35)	15.5(12)	78.6 (75)	68.4	28.4	20	7.4	1.75	CR2032×1	25
CSS 90N-CL-□□	48.6(45)	15.5(12)	93.6 (90)	82.4	37.4	—	—	1.75	None	36
CSS 90N-OP-□□	48.6(45)	15.5(12)	93.6 (90)	82.4	37.4	30	7.4	1.75	None	35
CSS 90 -CL-□□	48.6(45)	15.5(12)	93.6 (90)	82.4	37.4	—	—	1.75	CR2032×1	38
CSS 90 -OP-□□	48.6(45)	15.5(12)	93.6 (90)	82.4	37.4	30	7.4	1.75	CR2032×1	37
CSS115N-CL-□□	67.1(63)	16 (12)	119.1(115)	107.4	55.4	—	—	2	None	62
CSS115N-OP-□□	67.1(63)	16 (12)	119.1(115)	107.4	55.4	45	7.4	2	None	61
CSS115 -CL-□□	67.1(63)	16 (12)	119.1(115)	107.4	55.4	—	—	2	CR2032×2	65
CSS115 -OP-□□	67.1(63)	16 (12)	119.1(115)	107.4	55.4	45	7.4	2	CR2032×2	64

■ ( ) value = enclosure dimension.

## CS SERIES

## PORTABLE PLASTIC CASE

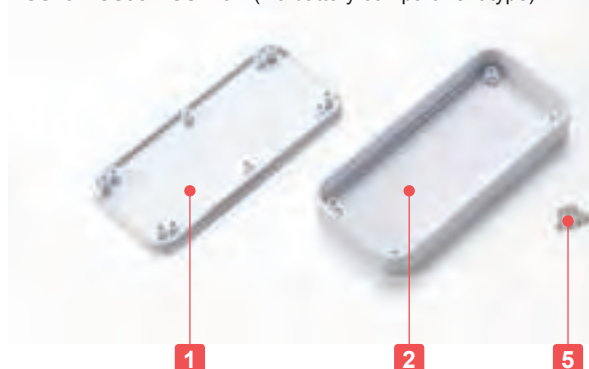


- Easy replacement of batteries. Battery contact included in each case (except for N type).
- Suitable for remote controller, wireless key fob, or small tester/device, and so on.
- 3 sizes with 2 different color types available.

## Technical Data

Protection class: IP40  
Operating temperature: -10°C ~ +60°C

CS75N/CS90N/CS115N (No battery compartment type)



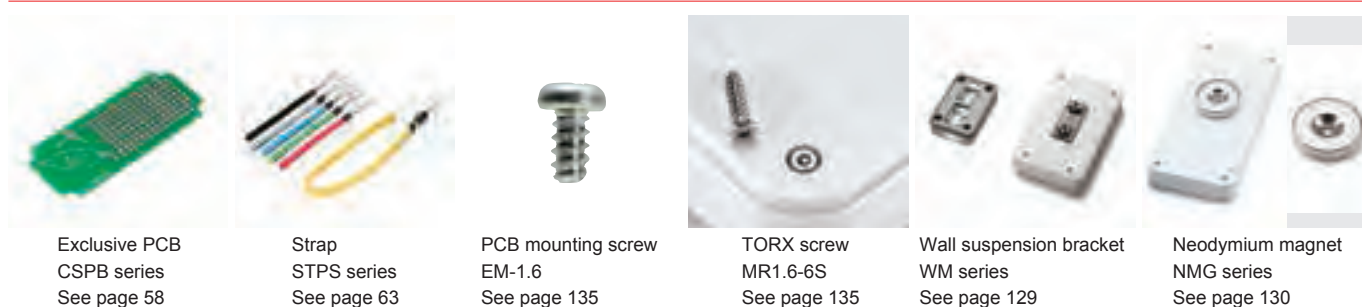
CS75/CS90/CS115 (Battery compartment type)



## Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94HB	White • Black
2	Bottom cover	1	ABS UL94HB	White • Black
3	Battery cover	1	ABS UL94HB	White • Black
4	Battery contact	1 set / 2 set (CS115)	Stainless steel	Nickel plated
5	Self tapping screw	4	Steel M1.6	Nickel plated • Black trivalent chromate
6	CR2032 sticker	1	PP	—

## Accessories (Optional parts)



Exclusive PCB  
CSPB series  
See page 58

Strap  
STPS series  
See page 63

PCB mounting screw  
EM-1.6  
See page 135

TORX screw  
MR1.6-6S  
See page 135

Wall suspension bracket  
WM series  
See page 129

Neodymium magnet  
NMG series  
See page 130



# Coin battery contact installation instructions

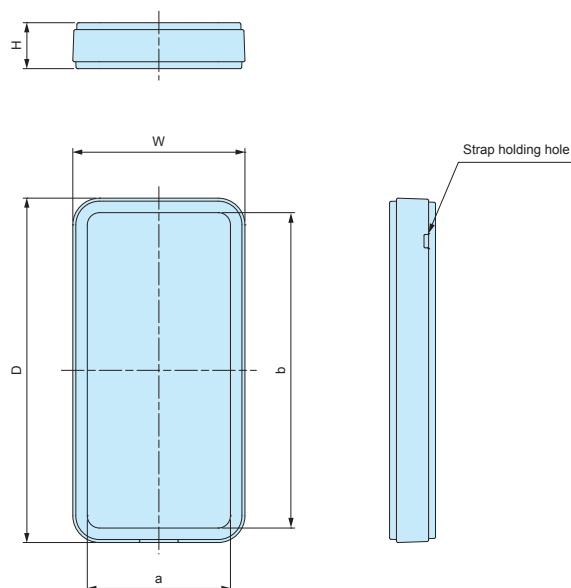


■ Exclusive PCB is available as an optional part. See page 58 for more details.  
Refer to drawings on page 58 for suitable PCB dimensions and screw hole layout.



Stick the CR2032 sticker on the backside of the battery cover to avoid incorrect placement of the battery.

**NOTE** Take caution of the mount position of the battery contact.



Type	None CS75N/90N/115N	CR2032 × 1 CS75/CS90	CR2032 × 2 CS115
Battery compartment			

## Product no. / Dimensions

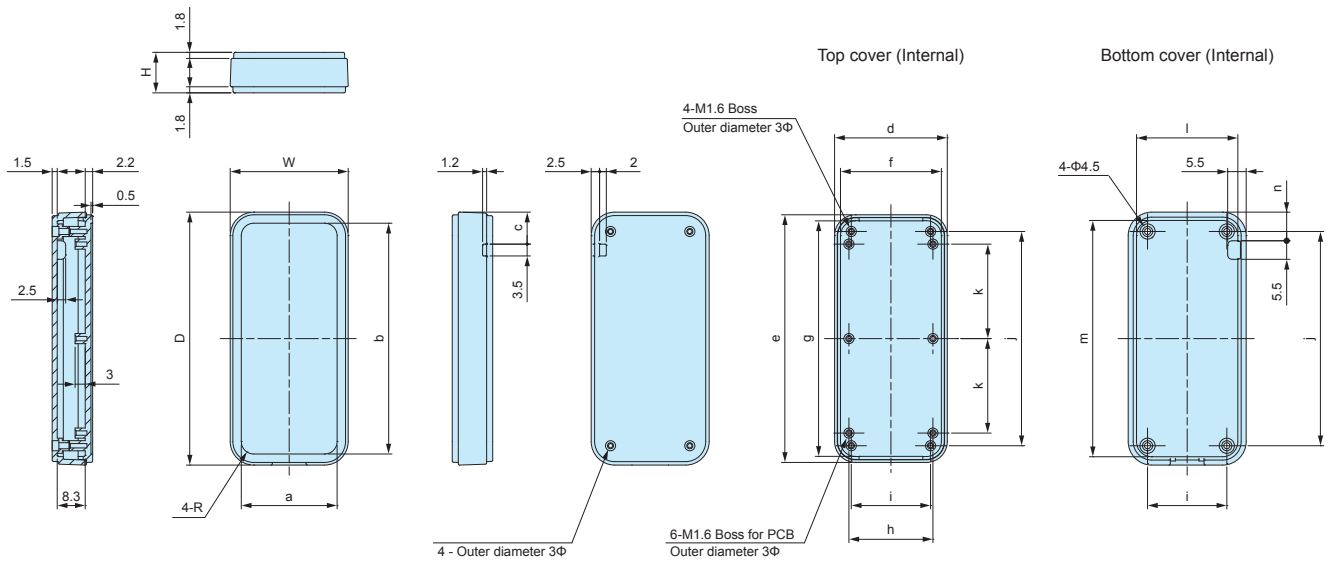
■ Please suffix color code at the end of the product number.

Product no.		W	H	D	a	b	Battery compartment	Weight (g)
● Black	● White							
CS 75N-B	CS 75N-W	35	12	75	28.4	68.4	None	12
CS 75 -B	CS 75 -W	35	12	75	28.4	68.4	CR2032 × 1	13
CS 90N-B	CS 90N-W	45	12	90	37.4	82.4	None	18
CS 90 -B	CS 90 -W	45	12	90	37.4	82.4	CR2032 × 1	20
CS115N-B	CS115N-W	63	12	115	55.4	107.4	None	30
CS115 -B	CS115 -W	63	12	115	55.4	107.4	CR2032 × 2	33

# CSS • CS dimensions

■ DXF/DWG/PDF drawings available on our website.

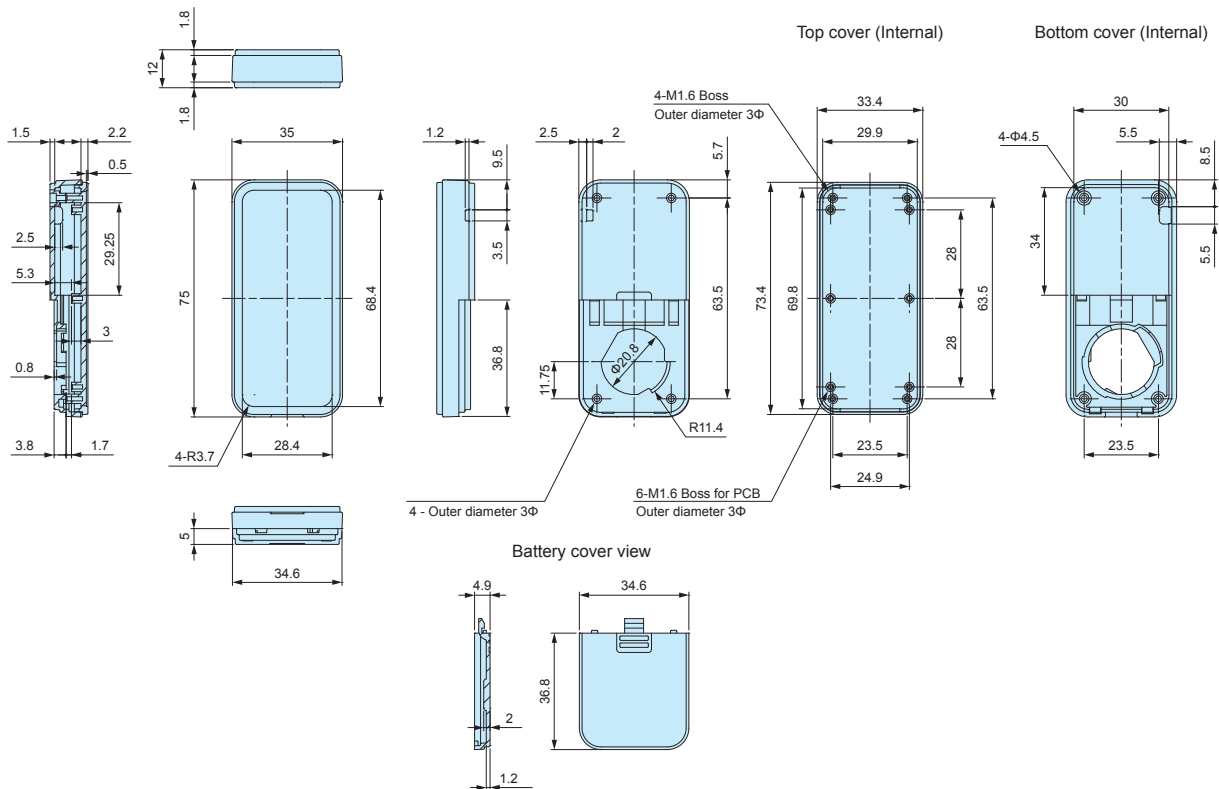
CS75N/CS90N/CS115N



Product no.	W	H	D	R	a	b	c	d	e	f	g	h	i	j	k	l	m	n
CS75 N-□	35	12	75	3.7	28.4	68.4	9.5	33.4	73.4	29.9	69.8	24.9	23.5	63.5	28	30	70	8.5
CS90 N-□	45	12	90	3.2	37.4	82.4	9.5	43.4	88.4	39.9	84.8	34.9	33.5	78.5	35.5	40	85	8.5
CS115N-□	63	12	115	4.7	55.4	107.4	10.5	61.4	113.4	57.9	109.8	52.9	50.5	102.5	47.5	58	110	9.5

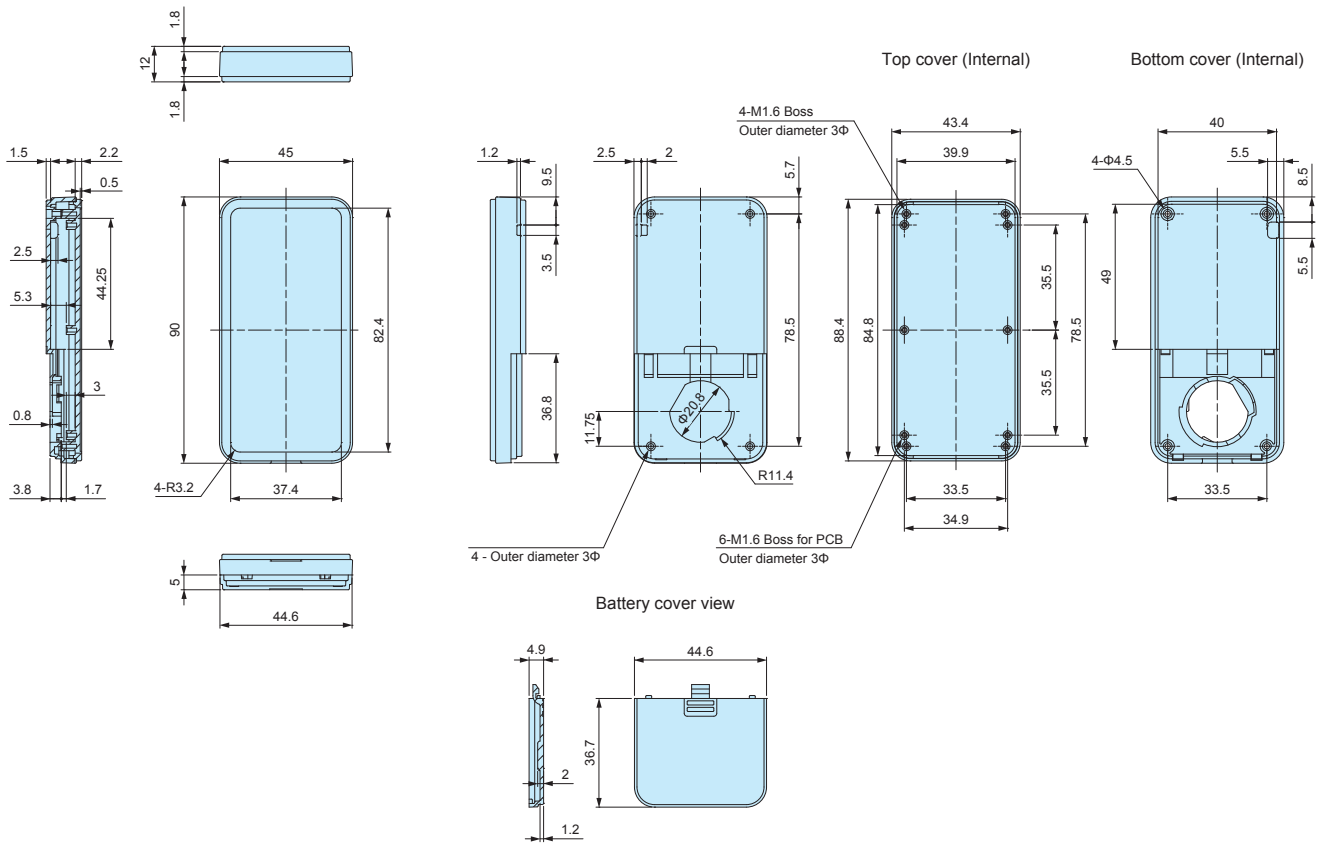
CS75

■ Refer to drawings on page 58 for suitable PCB dimension and screw hole layout.



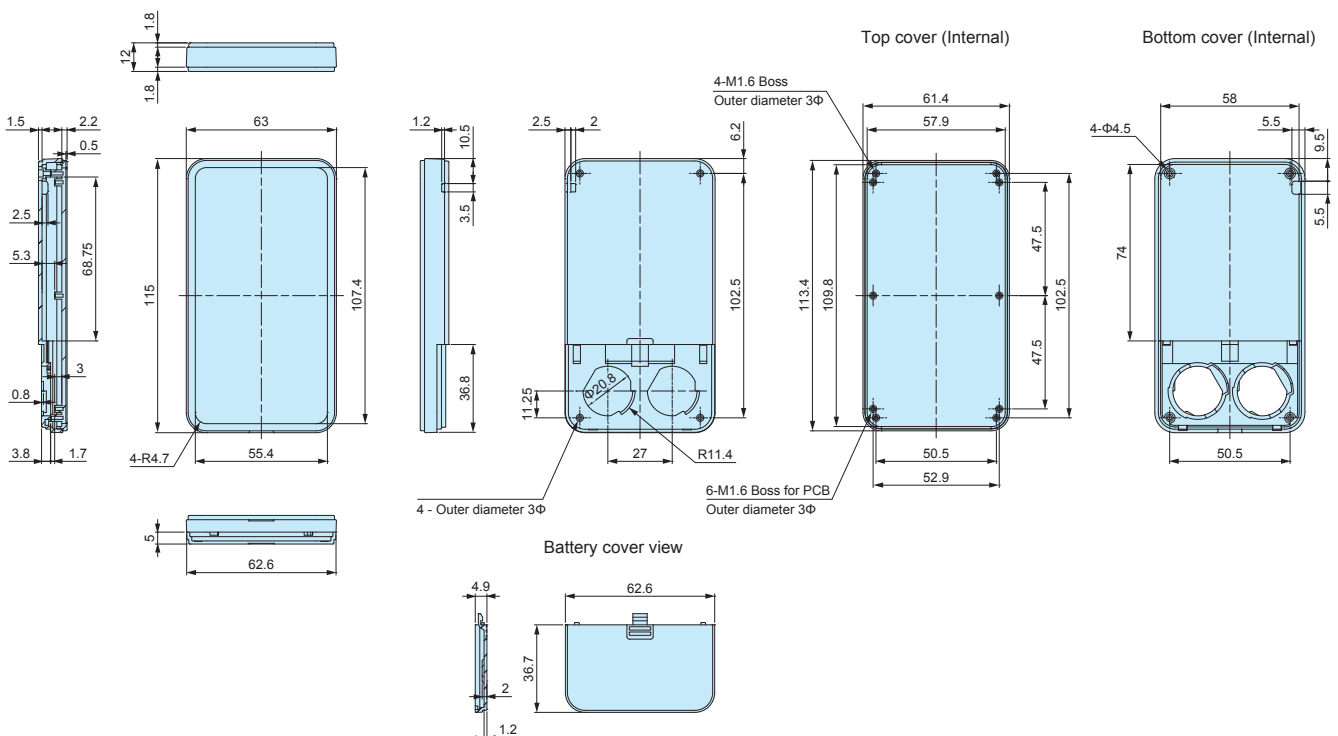
CS90

■ Refer to drawings on page 58 for suitable PCB dimension and screw hole layout.



CS115

■ Refer to drawings on page 58 for suitable PCB dimension and screw hole layout.



## CSSC SERIES

## SILICONE COVER

## Silicone Cover Type

Code	CL Closed	OP Open
Shape		

■ 2 types of silicone cover which have with (Open) and without (Closed) rectangular cutout on the front side; selectable in 6 different colors.

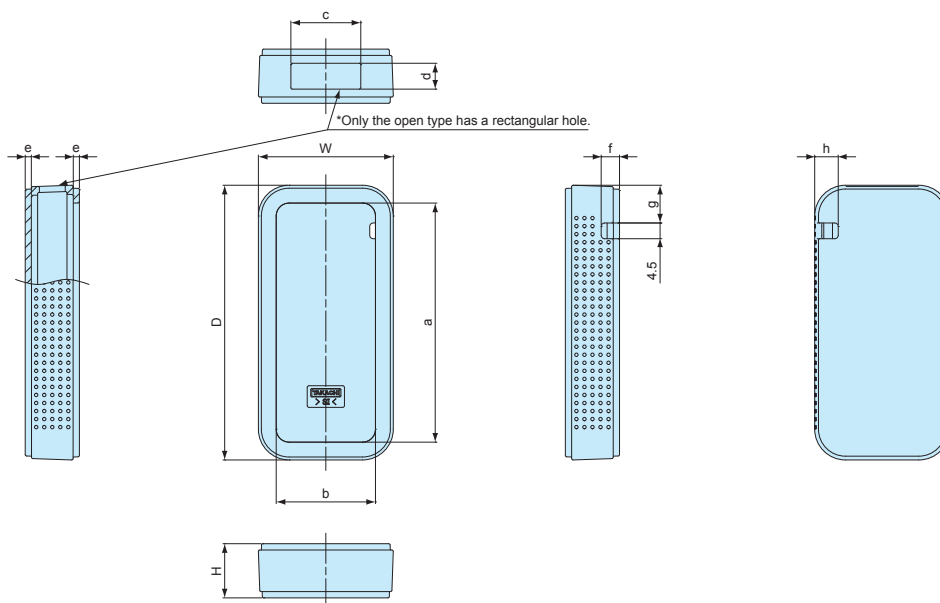
■ Custom color is available from 1,000pcs per order batch.

For custom color order, please specify **PANTONE**, RGB color number, or provide your sample color.

## Color Type

Code	[P] Pink	[Y] Yellow	[G] Green	[C] Cyan	[L] Light gray	[B] Black
Color						

■ DXF/DWG/PDF drawings available on our website.



## Components

Part name	Material	Color
Silicone cover	Silicone	Pink • Yellow • Green • Cyan • Light gray • Black

## Product no. / Dimensions

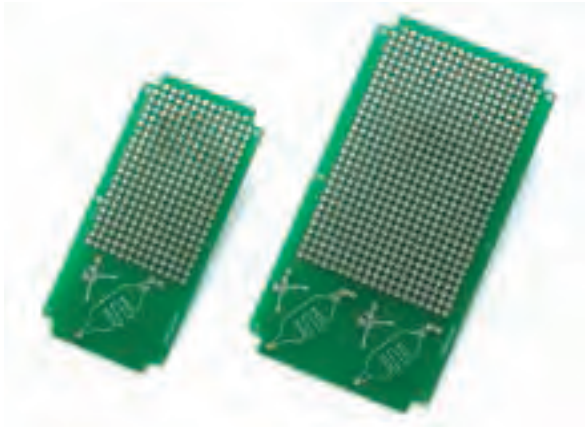
■ Please suffix color code at the end of the product number.

Product no.	W	H	D	a	b	c	d	e	f	g	h	Suitable case	Weight (g)
CSSC 75-CL-□	38.6	15.5	78.6	68.4	28.4	—	—	1.75	5.25	10.8	6.7	CS 75	12
CSSC 75-OP-□	38.6	15.5	78.6	68.4	28.4	20	7.4	1.75	5.25	10.8	6.7	CS 75	12
CSSC 90-CL-□	48.6	15.5	93.6	82.4	37.4	—	—	1.75	5.25	10.8	6.7	CS 90	18
CSSC 90-OP-□	48.6	15.5	93.6	82.4	37.4	30	7.4	1.75	5.25	10.8	6.7	CS 90	17
CSSC115-CL-□	67.1	16	119.1	107.4	55.4	—	—	2	5.5	12.1	7	CS115	32
CSSC115-OP-□	67.1	16	119.1	107.4	55.4	45	7.4	2	5.5	12.1	7	CS115	31



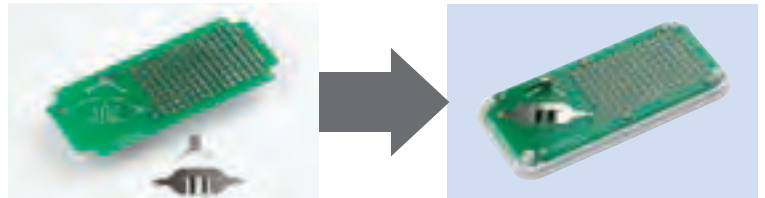
## CSPB SERIES

## EXCLUSIVE PCB for CS • CSS



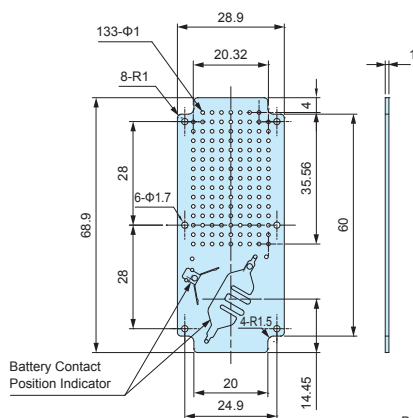
- Exclusive PCB for CS • CSS case.
- Glass epoxy board (FR-4), through-hole on both sides and 2.54mm hole distance.
- Prefabricated holes for battery contact use with CS • CSS case. The contact directions are printed on the PCB.

Soldering the battery contacts (included with each case) onto the PCB.

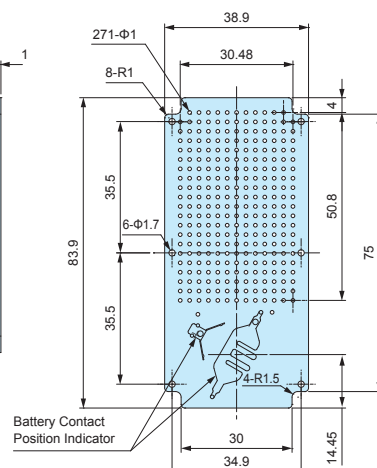


- DXF/DWG/PDF drawings available on our website.

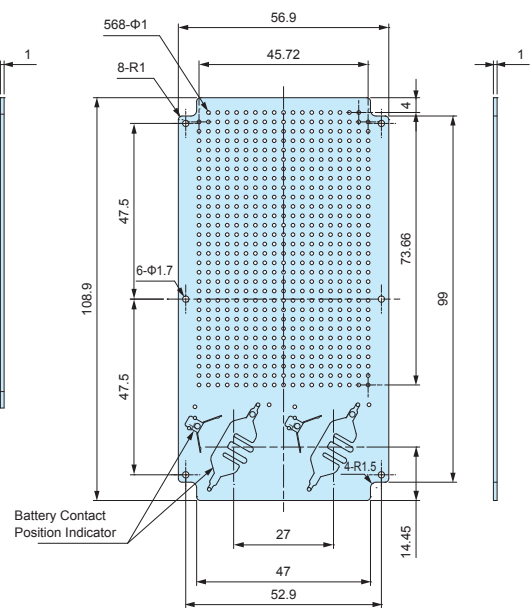
CSPB-75



CSPB-90



CSPB-115



Note : Holes (6-Φ1.7) for PCB mount bosses are un-soldered.

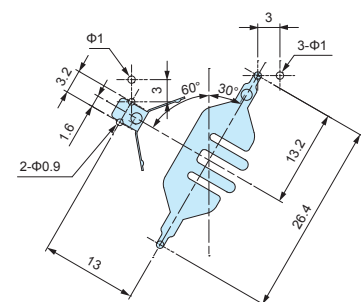
## Components

Part name	Pcs	Material	Finish
PCB	1	Glass epoxy (FR-4) t=1.0	Through-hole • Lead-free solder • Solder resist
Self tapping screw	6	Steel M1.6	Trivalent chromate

## Product no.

Product no.	Suitable case
CSPB- 75	CS75, CSS75
CSPB- 90	CS90, CSS90
CSPB-115	CS115, CSS115

## Battery Contact Position Indicator Details



# PS PORTABLE PLASTIC CASE

Suitable for wireless device, remote controller, key fob, and so on.

Round and larger sized type added for a total of 4 different sizes with 5 selectable colors.

## APPLICATION EXAMPLE

### PORTABLE RADIATION CHECKER AND MONITOR



Easy to use radiation level checker.



TAKACHI "BK-890" Coin battery holder is used.

Product by YAMAGATA Kyodo (Japan)

Website: [y-kyodo.jp](http://y-kyodo.jp)

### PORTABLE EMF PROTECTION DEVICE



Product by Blushield Inc. (New Zealand)

Website: [blushield-global.com](http://blushield-global.com)



## EXAMPLE of OVERLAY SHEET CUSTOMIZATION



## 100% ARDUINO COMPATIBLE GPS on SIGFOX NETWORK TRACKER



Product by HidnSeek (France)

Website: [hidnseek.fr](http://hidnseek.fr)

Portable multi-sensor system equipped with widely accessible connectivity.  
Utilized for tracking vehicles, parcels, monitoring of children, pets, and so on.



Finding your car in a large parking area.

## PORTABLE MULTI-SENSOR SYSTEM



Product by Axible Technologies (France)

Website: [axible-connects-for-you.com](http://axible-connects-for-you.com)

Multi-sensor system which detects motion, temperature, humidity and sound around, and sends warnings to an owner or 3rd parties via SMS, Twitter or Facebook when events such as home invasions or fire occurs.



## SIGFOX

French company that builds wireless networks, ultra-narrow band (UNB), to connect low-energy objects such as electricity meters, smart-watches, and washing machines, which need to be continuously on and emitting small amounts of data. This wireless network technology which is aimed at the Internet of Things (IoT) is rolling out in the fields of housing, vehicle, transportation, logistic, smart city, healthcare, and so on.



## Technical Data

Protection class: IP40  
Operating temperature: -10°C ~ +60°C



- Simple snap-in case without screws.
- Comfortable shape and hold.
- New round-type PS-50 model, and large-sized PS-100 model are now available.
- 5 different colors are available for selection.
- Suitable for use as a wireless device, remote control, key fob etc.
- Designed with an easily accessible hole for strap attachment.

## Components

No.	Part name	Material	Color / Finish
1	Top cover	ABS UL94HB	White • Black • Cobalt • Green • Pink
2	Bottom cover	ABS UL94HB	White • Black • Cobalt • Green • Pink

## Product no. / Dimensions

Product no.					Dimensions			Weight (g)
● White	● Black	● Cobalt	● Green	● Pink	W	H	D	
<b>NEW</b> PS- 50W	<b>NEW</b> PS- 50B	<b>NEW</b> PS- 50C	<b>NEW</b> PS- 50G	<b>NEW</b> PS- 50P	50	14	50	9
PS- 65W	PS- 65B	PS- 65C	PS- 65G	PS- 65P	35	11	65	9
PS- 85W	PS- 85B	PS- 85C	PS- 85G	PS- 85P	48	15	85	20
<b>NEW</b> PS-100W	<b>NEW</b> PS-100B	<b>NEW</b> PS-100C	<b>NEW</b> PS-100G	<b>NEW</b> PS-100P	58	18	100	27

## Accessories (Optional parts)



PCB mounting screw  
EM-1.6  
See page 135



Strap  
STPS series  
See page 63

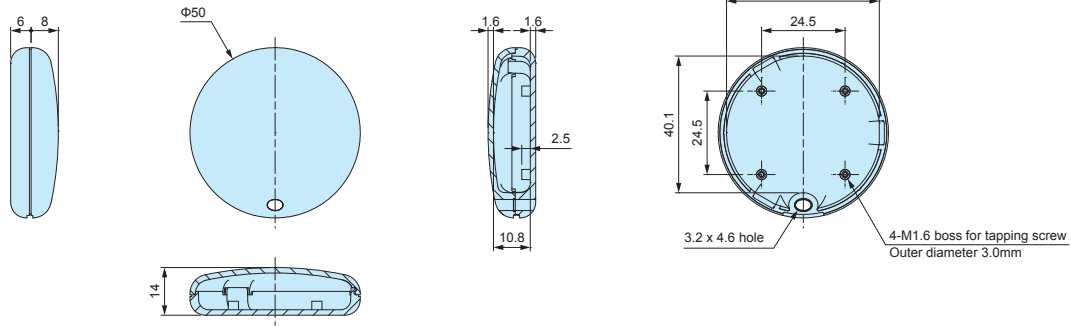


Neodymium magnet  
NMG series  
See page 130

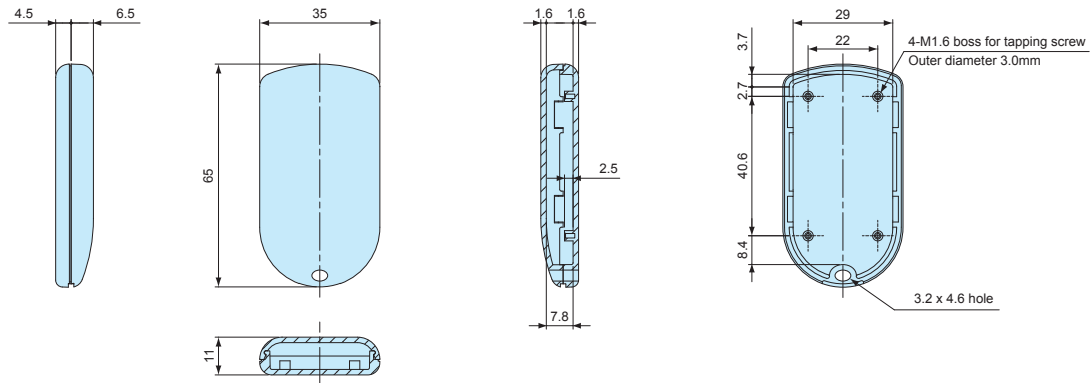


## PS dimensions

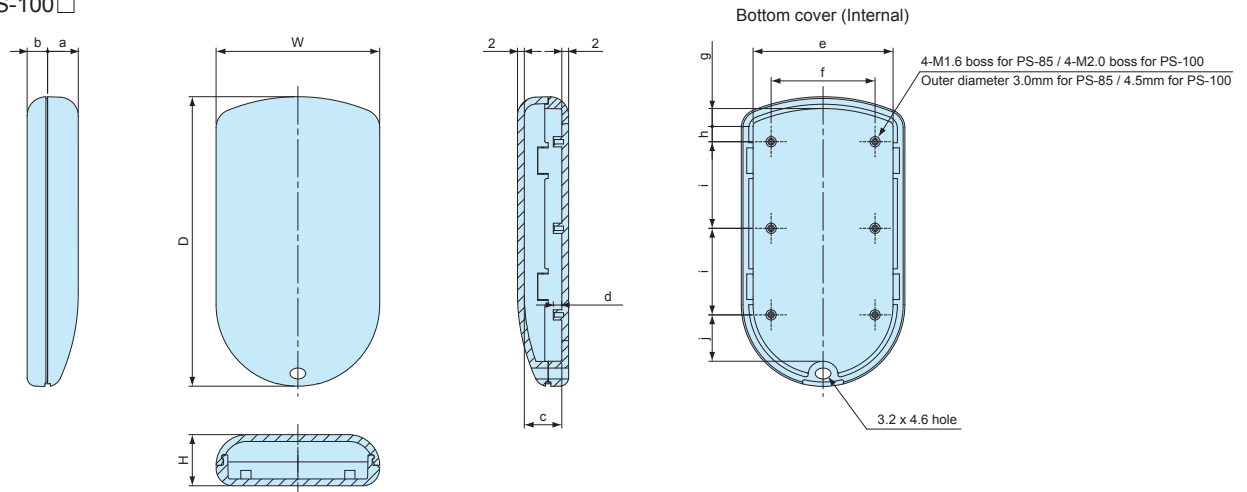
### PS-50□



### PS-65□

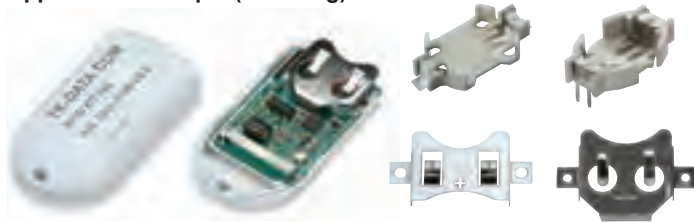


### PS-85□ / PS-100□



Product no.	W	H	D	a	b	c	d	e	f	g	h	i	j
PS- 85□	48	11	65	9	6	11	2.5	41.1	33	5.3	4.5	25.4	13.6
PS-100□	58	18	100	11.5	6.5	14	4	51.2	40	6.4	4.2	29	20.4

### Application example (RFID Tag)



■ A variety of suitable coin battery holders are available.  
See website for more details.

### Suitable coin battery holder chart

Suitable case	Coin battery holder product no.
PS- 50□	SMTU1220(G) / 1225 / 1632(G) / 2-2016 / 2032(G) PB-621 • SMTM1632 / 2032 BK-879 / 5091 / 885 / 890 / 868 / 869 / 5067 / 888
PS- 65□	BK-879 / 5091 / 885 / 890 / 868 / 869 / 5067 / 888 PB621 • SMTM1632 / 2032
PS- 85□	PB621 • SMTM1632 / 2032 BK-879 / 5091 / 885 / 890 / 868 / 869 / 5067 / 888 SMTU1220(G) / 1225 / 1632(G) / 2-2016 / 2032(G) / 2430
PS-100□	PB621 • SMTM1632 / 2032 BK-879 / 5091 / 885 / 890 / 868 / 869 / 5067 / 888 SMTU1220(G) / 1225 / 1632(G) / 2-2016 / 2032(G) / 2430 / 2450



## STPS SERIES

## STRAP



Wrist strap (STPS-140P)



Neck strap (STPS-450Y)



- Colorful and sturdy straps best used with CSS, CS and PS series.
- Wrist and Neck straps are available in 6 unique colors.
- Neck strap comes with a quick-release joint, making removal or attachment quick and easy.

## Color Type

Code	P Pink	Y Yellow	G Green	C Cyan	L Light gray	B Black
Color						

Quick-release joint  
(Neck strap only)

## Components

No.	Part name	Material	Color
1	String	Polyester	Black
2	Strap	Polyester	Pink • Yellow • Green • Cyan • Light gray • Black
3	Cap (wrist strap only)	Nylon	Black
4	Clamp (neck strap only)	Elastomer	Black
5	Joint (neck strap only)	Polyacetal	Black

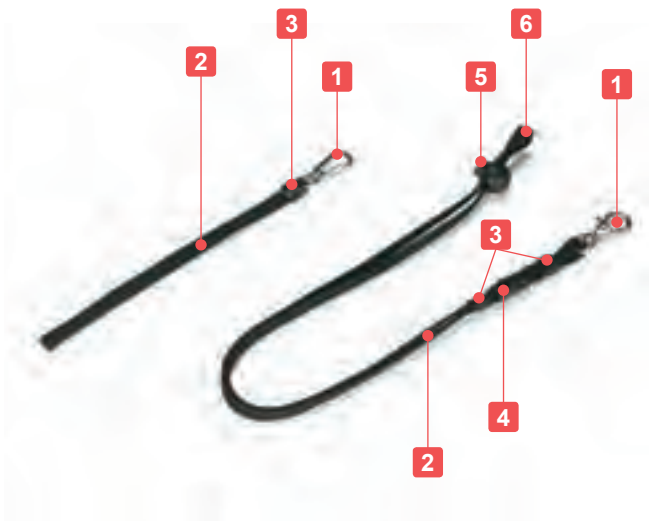
## Product no. / Dimensions

Product no.						Strap width	Strap length
Pink	Yellow	Green	Cyan	Light gray	Black		
STPS-140P	STPS-140Y	STPS-140G	STPS-140C	STPS-140L	STPS-140B	8	140
STPS-450P	STPS-450Y	STPS-450G	STPS-450C	STPS-450L	STPS-450B	10	450

## Accessories (Optional parts)

## STP SERIES

## STRAP



- Strap with a metal hook
- Recommended to be used with CR key ring.

Wrist strap (STP-200)



Neck strap (STP-450)



Neck strap detail



- Only the neck strap has a joint and an adjuster.

## Components

No.	Part name	Pcs	Material	Color / Finish
1	Metal hook	1	Diecast zinc & steel	Nickel plated
2	Strap	1	Nylon / Polyester	Black
3	Cap	1 / 2	Polyurethane / Elastomer	Black
4	Joint (Neck strap only)	1	Polyacetal	Black
5	Adjuster (Neck strap only)	1	Nylon	Black
6	Clamp (Neck strap only)	1	PE	Black

## Product no. / Dimensions

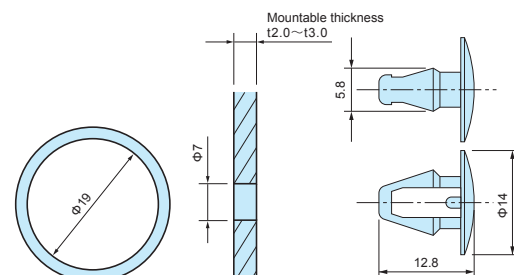
Product no.	Strap width	Strap length	Strap material	Cap material
STP-200	8	200	Nylon	Polyurethane x 1
STP-450	10	450	Polyester	Elastomer x 2

## CR-20

## KEY RING



- Hole milling is required for case installation.



## Components

Part name	Material	Color / Finish
Ring	SWRM 6 Steel	Nickel plated
Insert clip	Nylon	Black

## Product no. / Dimensions

Product no.	Ring Φ	Installation hole	Mounting thickness
CR-20	Φ19	Φ7	t2.0 ~ t3.0

# WP SERIES

## IP67 UV-PROTECT NETWORK PLASTIC BOX



● IEC60529 standard is a system for classifying the degrees of protection provided by the enclosures of electrical equipment, such as against dust and water.

**IP6x : No ingress of dust; complete protection against contact (dust tight).**

**IPx7 : No ingress of water when submerged up to a depth of 1 meter for 30 minutes**

### Waterproofing ability by using silicone gasket

Highly elastic and durable silicone gasket allows for high waterproof ability.

The use of insert nuts allows the unit to retain its waterproofing ability even after multiple opening and closing.



### Weather-resistant ASA material

The white gray "G" type utilizes a UV resistant, durable ASA material. Recommended for outdoors usage as a communication device type equipment.



### Easy installation on walls and brackets

Easy mounting onto walls and brackets by opening the blind lids. A clean and sleek appearance can be maintained as screws are hidden away by the blind lids.



### Easy installation on electrical poles

By using a pole mount bracket accessory, it can be attached to poles with ease.



# APPLICATION EXAMPLE

WP series are used in products such as communication devices, controllers, measurement instruments, and so on.



## How to make waterproof buttons and switches

Please utilize a waterproof membrane keypad or membrane switch.

Note that the waterproof performance will be lost by drilling/milling holes or cutouts for buttons or switches on waterproof enclosures.



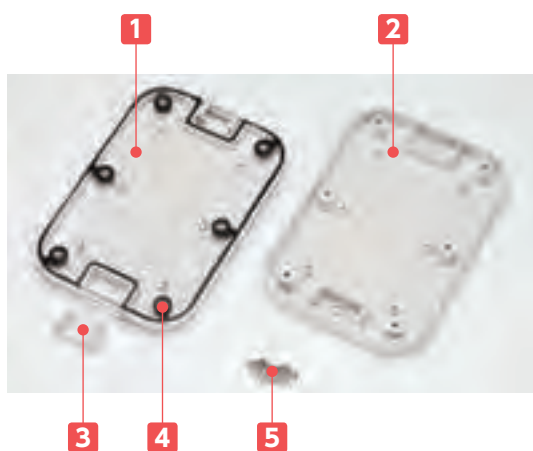
## How to make waterproof cable hole

Please utilize a cable gland from our available range of cable gland accessories.

Refer to page 308 ~ 314 for more information.







## Technical Data

Protection class: IP67
Operating temperature:
ASA* -30°C ~ +60°C
ABS -10°C ~ +50°C
Recommended torque:
0.25N · m ~ 0.35N · m

\*May become brittle and break under impact when temperature is lowered close to -30°C.

- IP67 protection class allows the unit to be used outdoors while protecting the internal components from dust and water.
- Available in 2 types: UV resistant ASA white gray color, and flame-resistant ABS charcoal gray color.
- Addition of 10 new sizes for a total of 16 different selectable sizes.
- Mount on walls or brackets by simply opening the blind lids.
- Pole mounting is possible via an optional pole mounting bracket accessory.

## Components

No.	Part name	Pcs	Material / Color
1	Top cover	1	ASA UL94HB / White gray : Flame-resistant ABS UL94V-0 / Charcoal gray
2	Bottom base	1	ASA UL94HB / White gray : Flame-resistant ABS UL94V-0 / Charcoal gray
3	Blind lids	2	ASA UL94HB / White gray : Flame-resistant ABS UL94V-0 / Charcoal gray
4	Gasket	1	Silicone / Black
5	Screw	4~6	Stainless steel binding head screw / Unfinished

## Accessories (Optional parts)



Pole mount bracket  
WPMB series  
See page 75



PCB mounting screw  
EM series  
See page 135



TORX screws  
MR series  
See page 76, 135



Cable gland  
See page 308 ~ 314



Protective vent  
PMF series  
See page 301 ~ 302



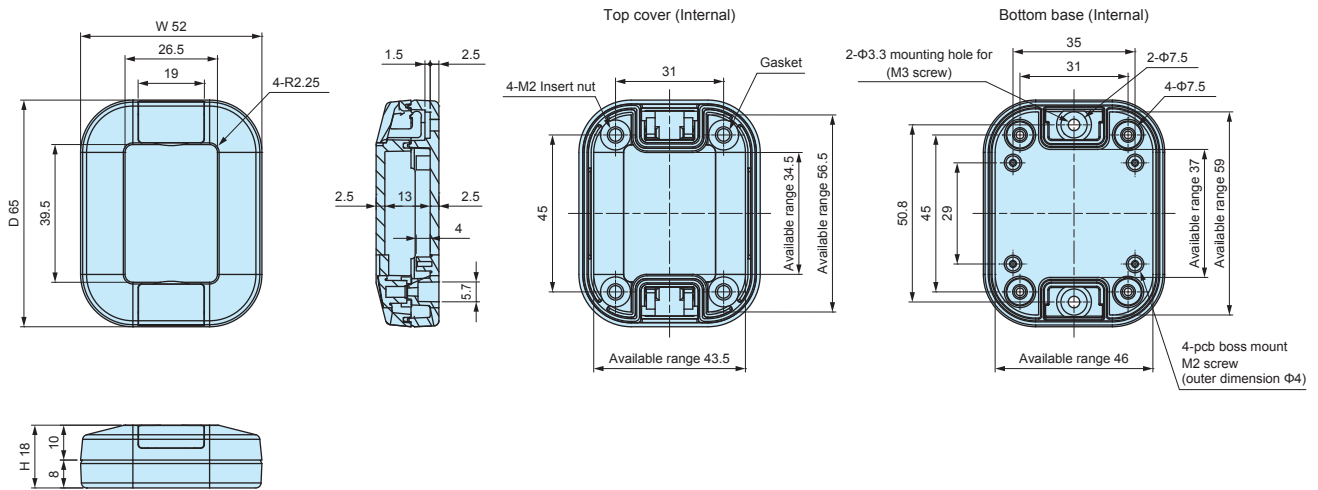
## Product no. / Dimensions

Product no.		Dimensions			Screw	Weight (g)
● White gray (ASA)	● Charcoal gray (ABS)	W	D	H		
<b>NEW</b> WP 5- 7-2G	<b>NEW</b> WP 5- 7-2C	52	65	18	M2-8 × 4pcs	31.5
<b>NEW</b> WP 5- 7-3G	<b>NEW</b> WP 5- 7-3C	52	65	27	M2-8 × 4pcs	39.5
<b>NEW</b> WP 6- 8-2G	<b>NEW</b> WP 6- 8-2C	60	80	20	M2-8 × 4pcs	41.5
<b>NEW</b> WP 6- 8-3G	<b>NEW</b> WP 6- 8-3C	60	80	30	M2-8 × 4pcs	49
<b>NEW</b> WP 8- 8-2G	<b>NEW</b> WP 8- 8-2C	75	75	22	M2.5-8 × 4pcs	57.5
<b>NEW</b> WP 8- 8-4G	<b>NEW</b> WP 8- 8-4C	75	75	35	M2.5-16 × 4pcs	88.5
<b>NEW</b> WP 8-10-2G	<b>NEW</b> WP 8-10-2C	75	100	22	M2.5-8 × 4pcs	74
<b>NEW</b> WP 8-10-4G	<b>NEW</b> WP 8-10-4C	75	100	35	M2.5-16 × 4pcs	95
WP 9-13-3G	WP 9-13-3C	90	130	25	M2.5-8 × 6pcs	113
WP 9-13-4G	WP 9-13-4C	90	130	40	M2.5-16 × 6pcs	141
WP10-10-3G	WP10-10-3C	100	100	25	M2.5-8 × 4pcs	96
WP10-10-4G	WP10-10-4C	100	100	40	M2.5-16 × 4pcs	121
WP11-15-3G	WP11-15-3C	110	150	27	M2.5-8 × 6pcs	153
WP11-15-4G	WP11-15-4C	110	150	40	M2.5-16 × 6pcs	181
<b>NEW</b> WP13-18-3G	<b>NEW</b> WP13-18-3C	130	175	30	M2.5-8 × 6pcs	225
<b>NEW</b> WP13-18-5G	<b>NEW</b> WP13-18-5C	130	175	45	M2.5-16 × 6pcs	266

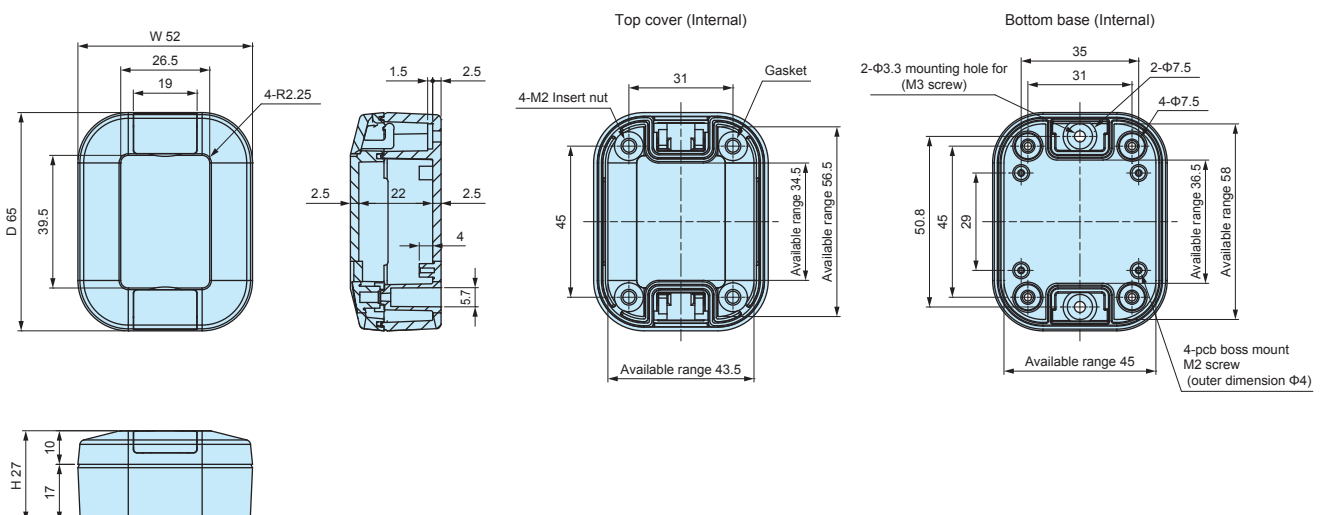
## WP dimensions

DXF/DWG/PDF drawings available on our website.

## WP5-7-2



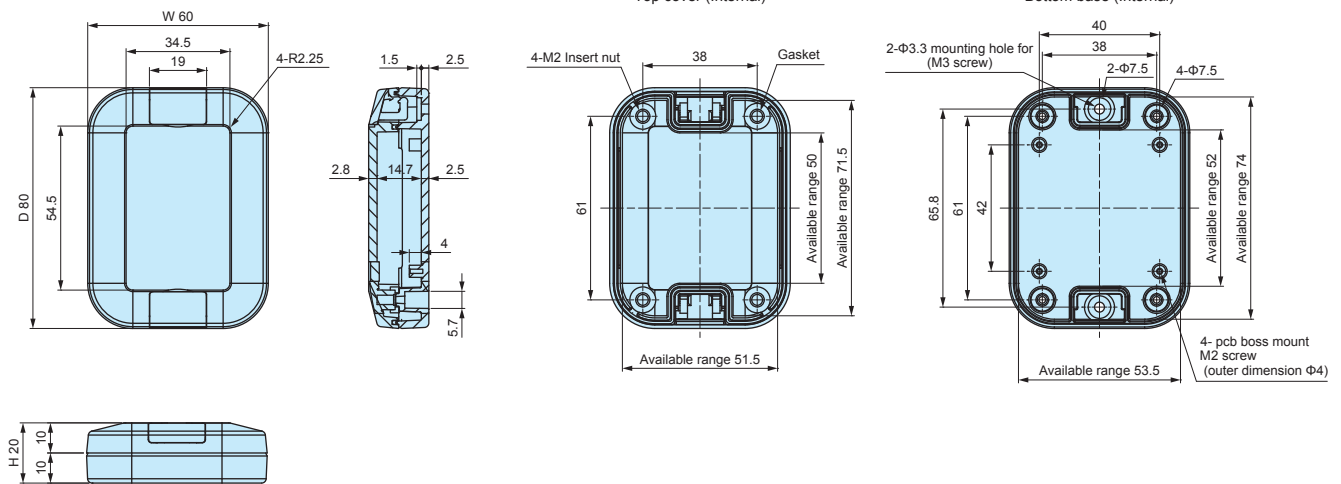
## WP5-7-3



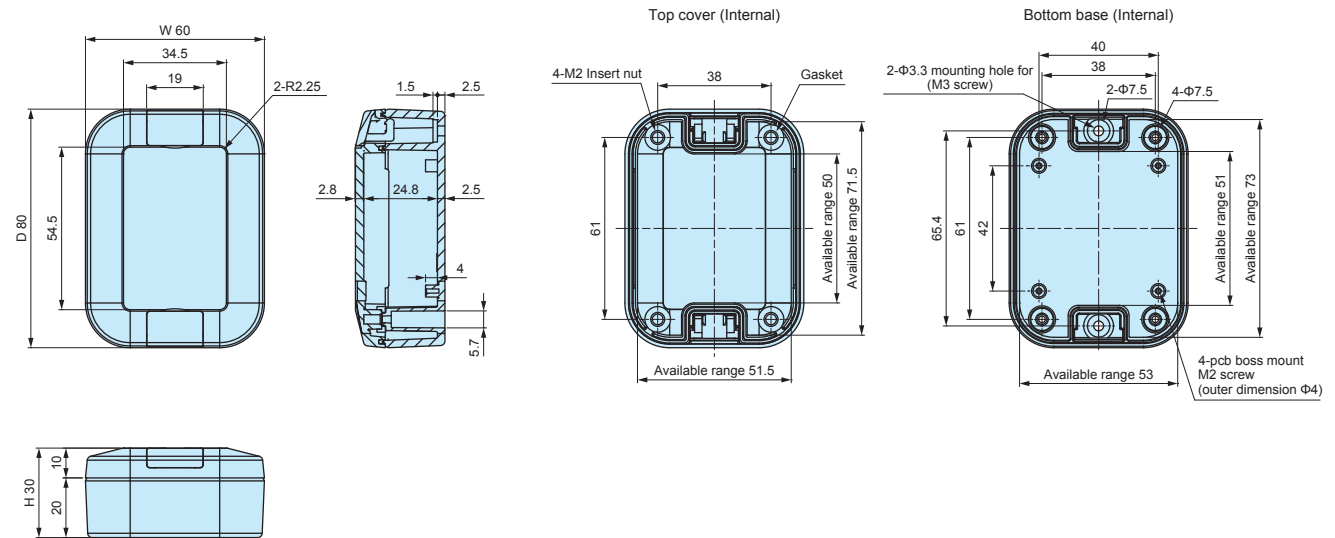
## WP dimensions

■ DXF/DWG/PDF drawings available on our website.

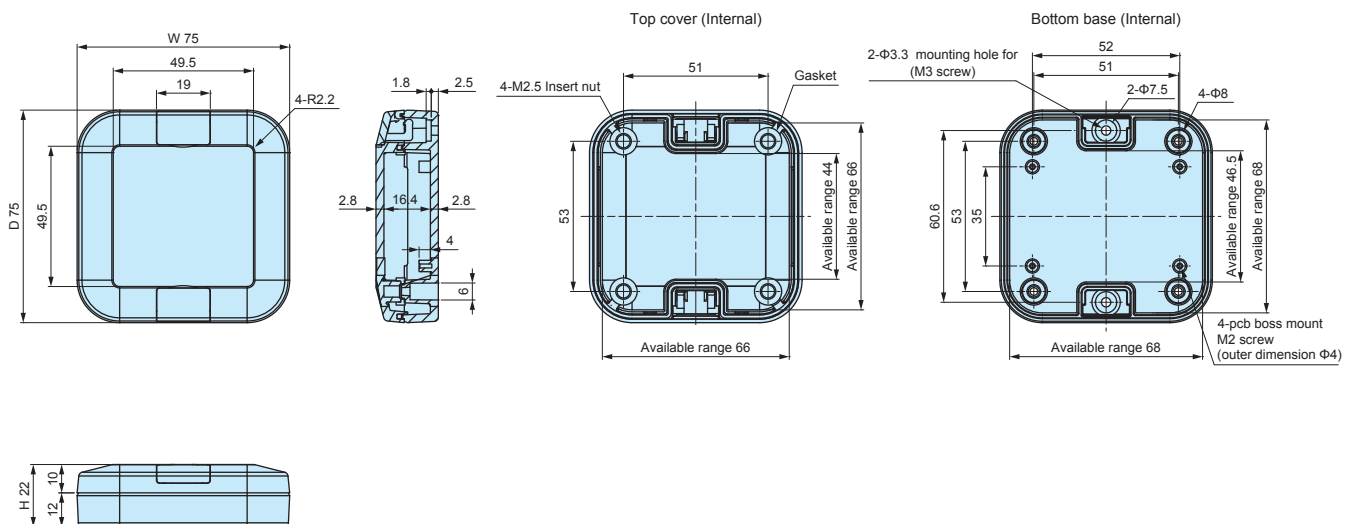
### WP6-8-2



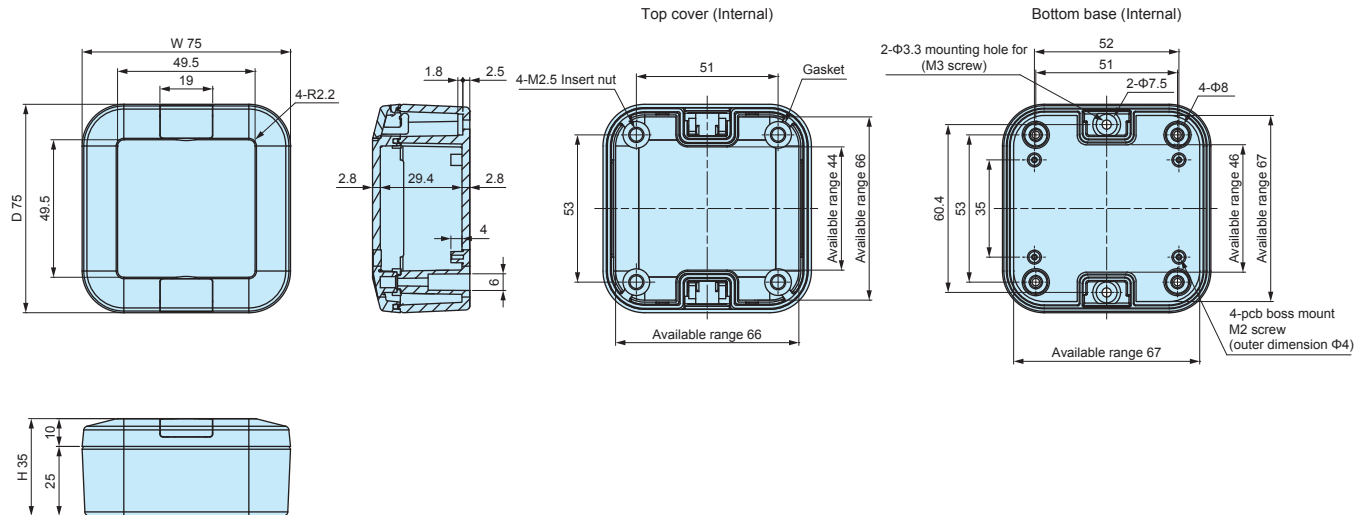
### WP6-8-3



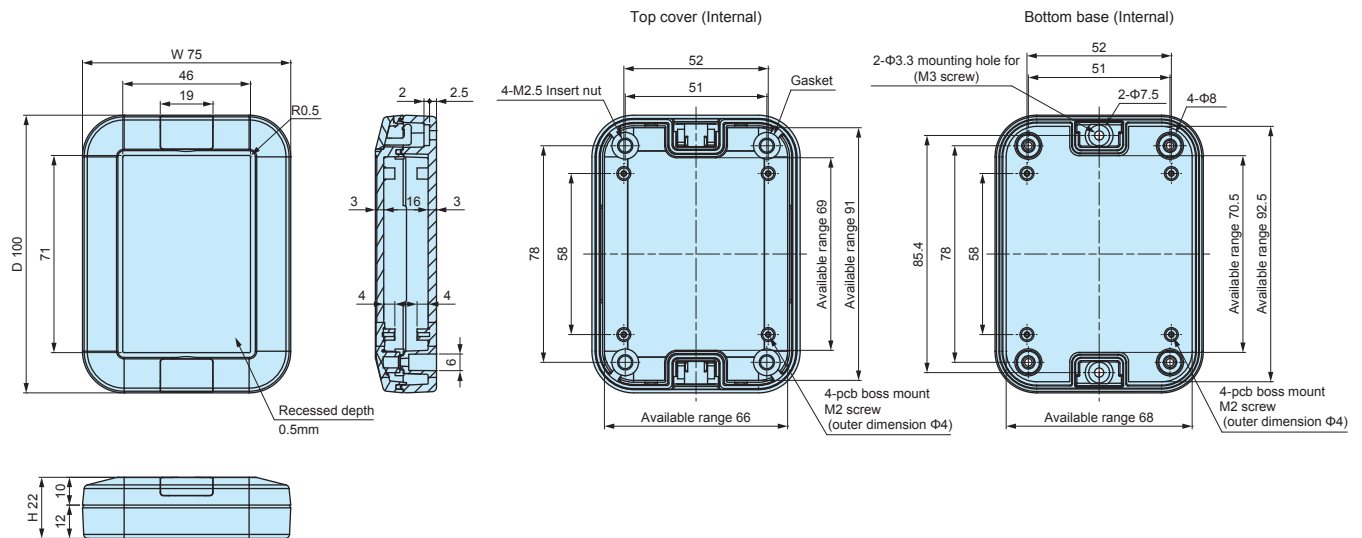
### WP8-8-2



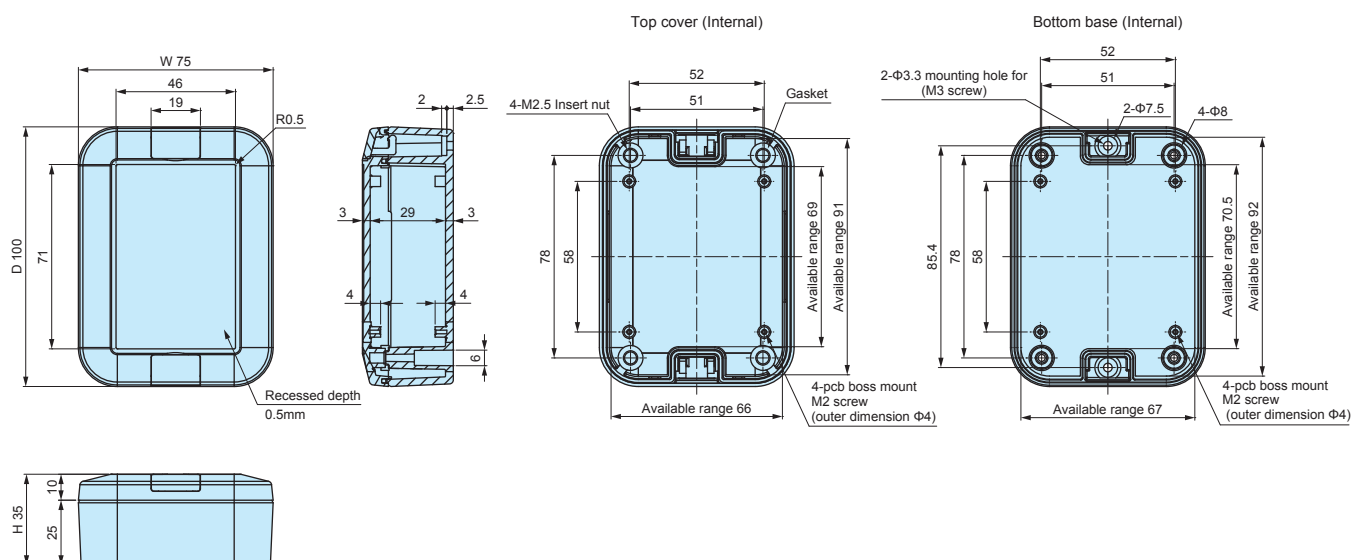
WP8-8-4



## WP8-10-2



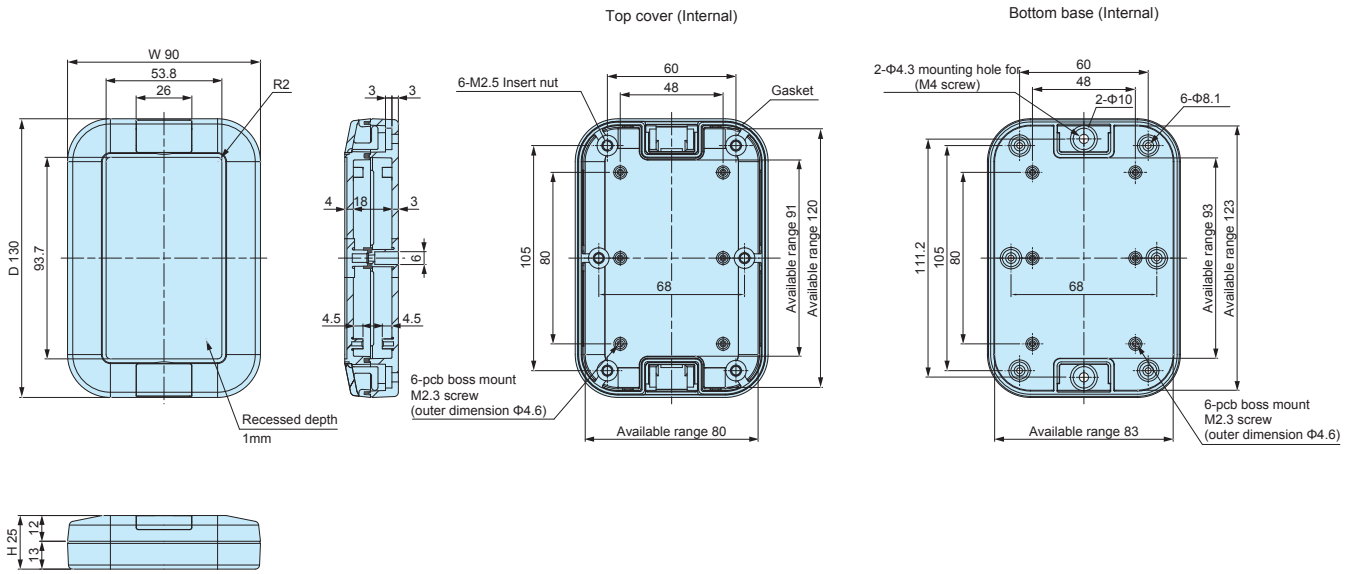
WP8-10-4



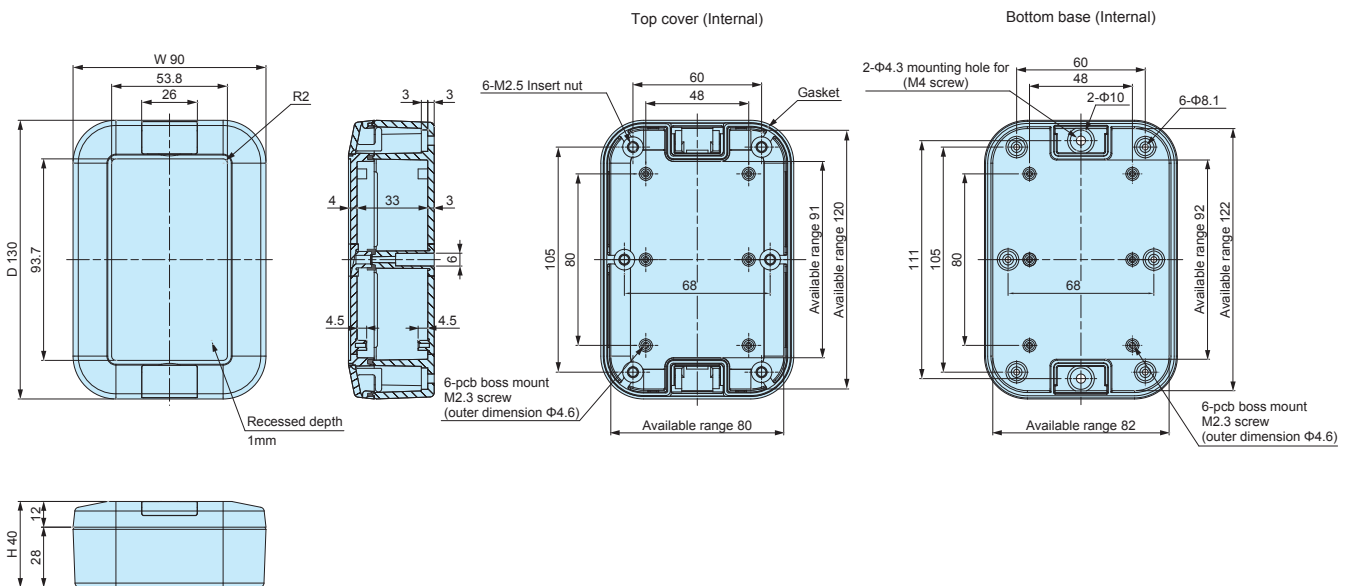
**WP dimensions**

■ DXF/DWG/PDF drawings available on our website.

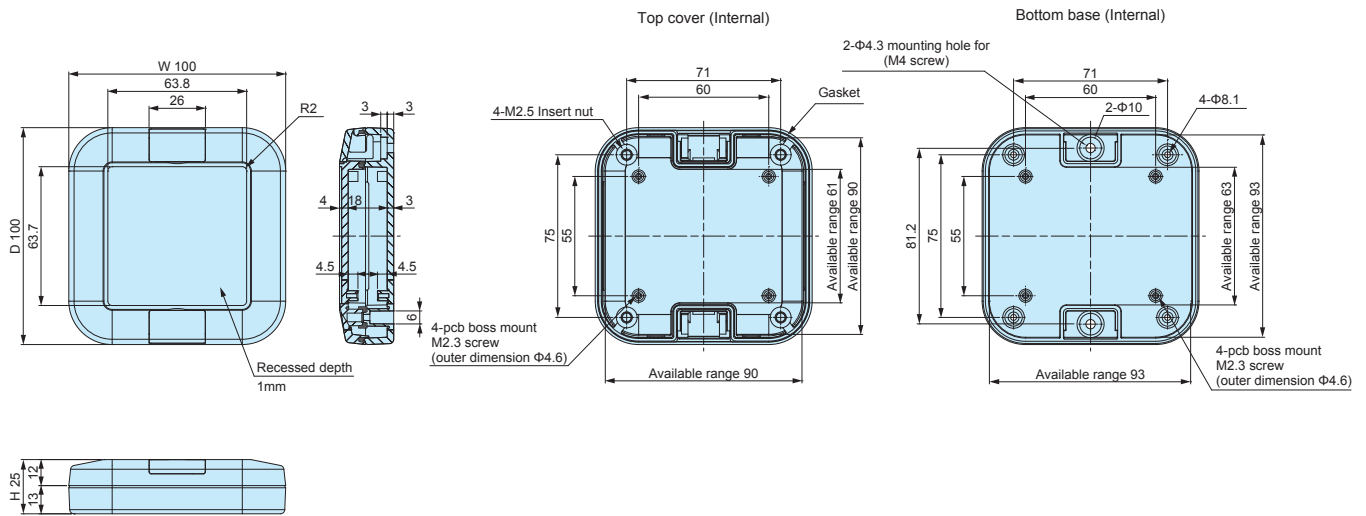
**WP9-13-3**



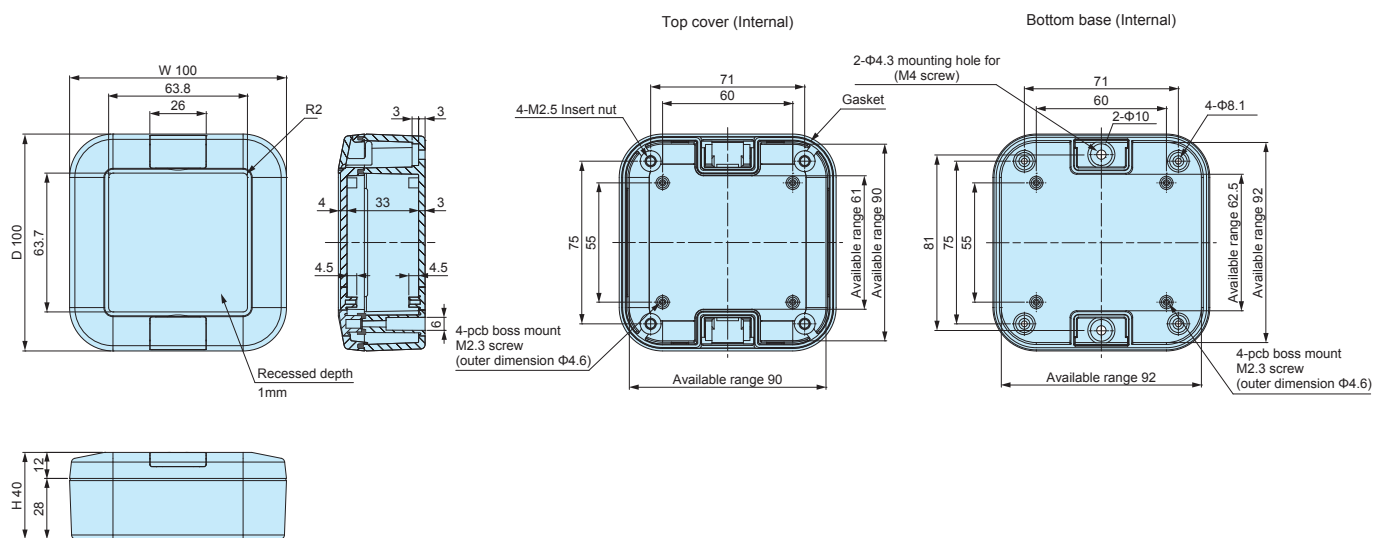
**WP9-13-4**



WP10-10-3



WP10-10-4

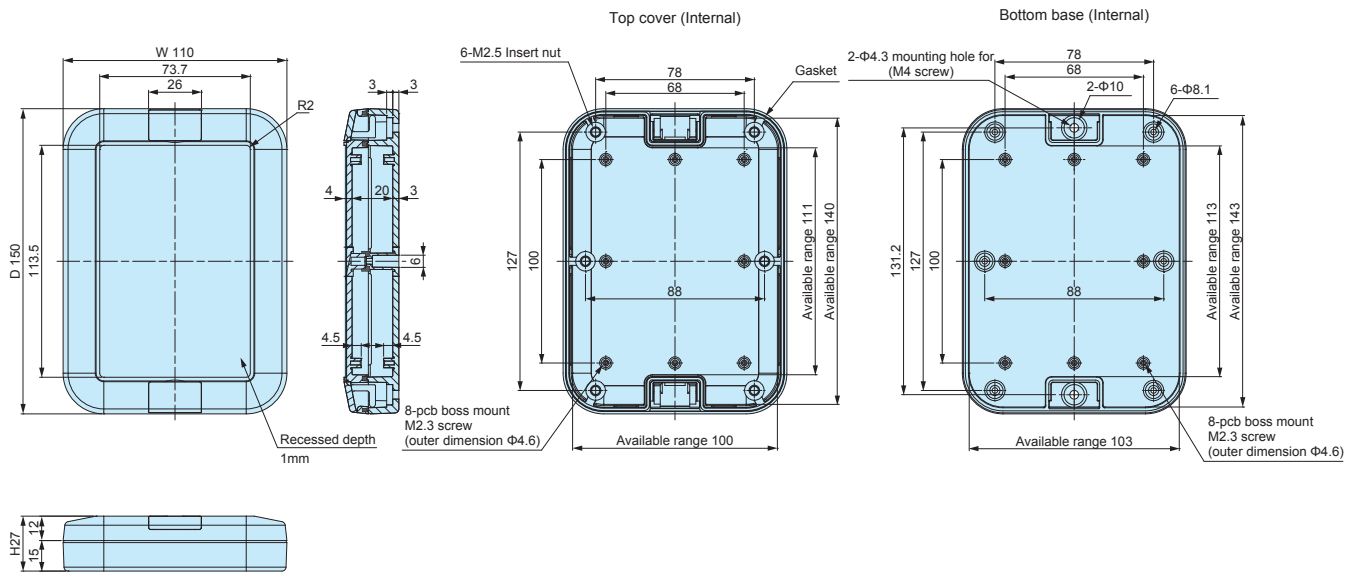




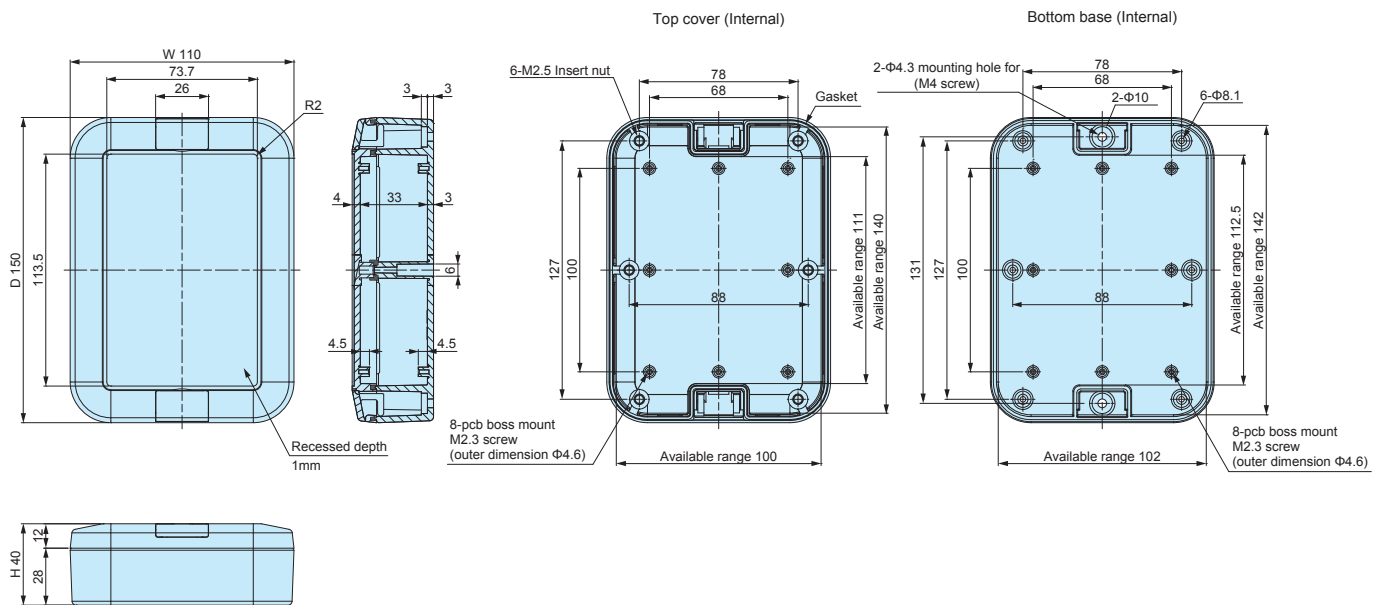
## WP dimensions

■ DXF/DWG/PDF drawings available on our website.

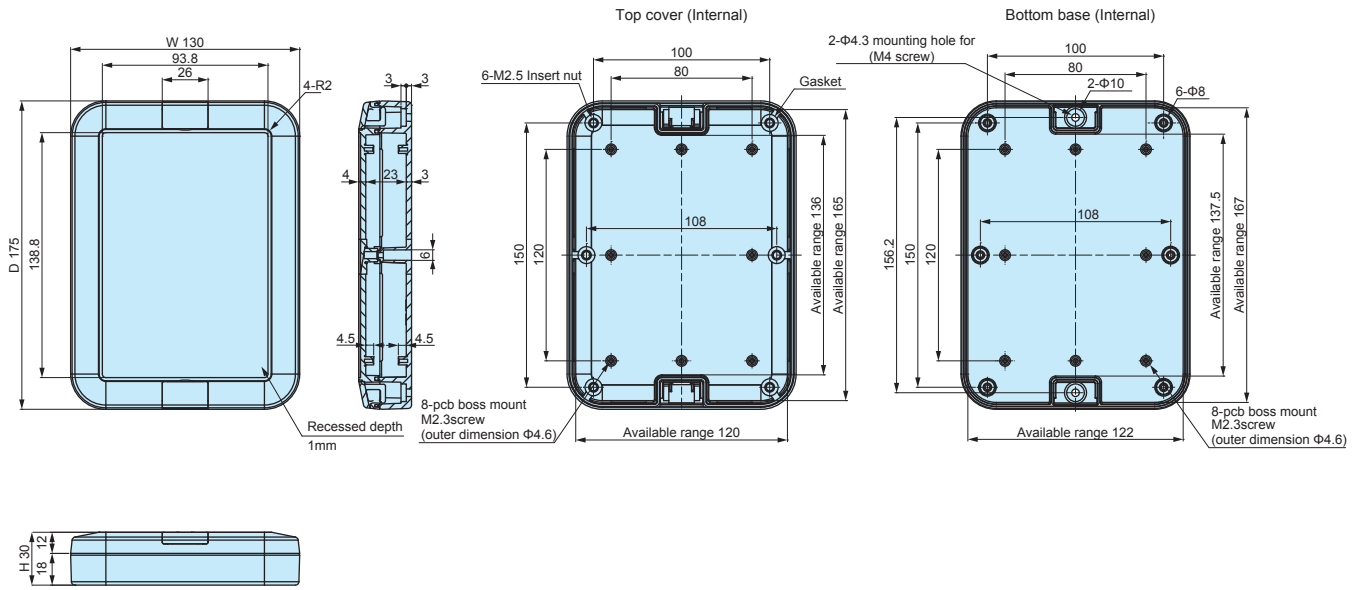
### WP11-15-3



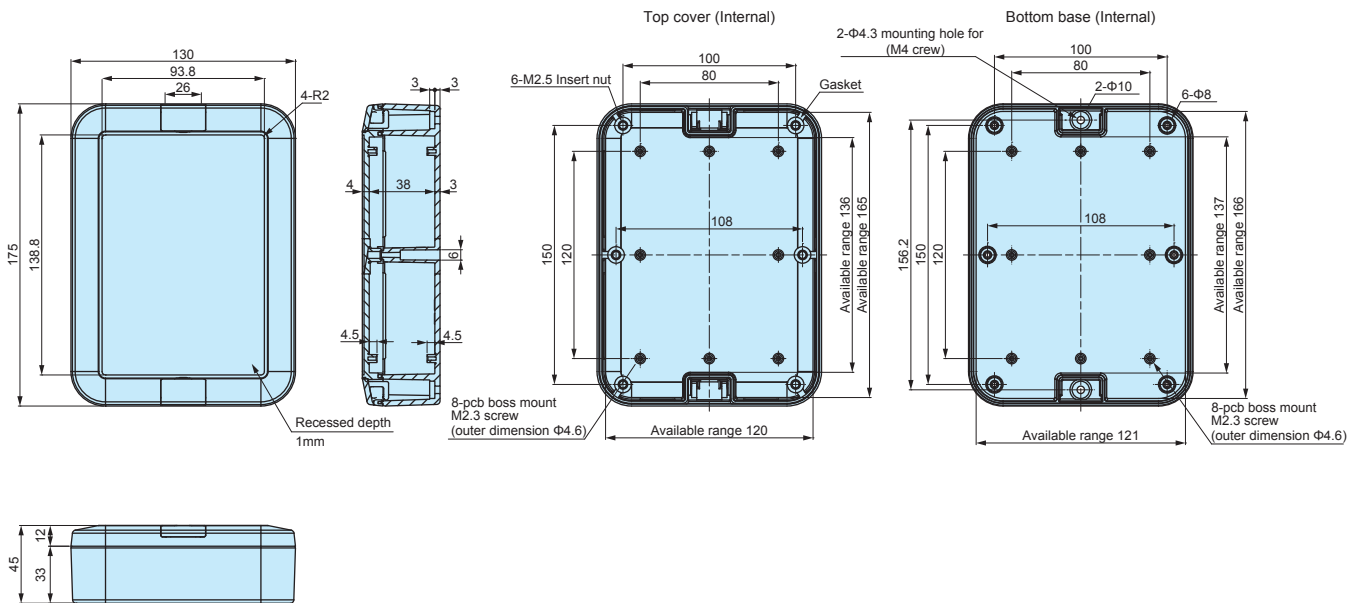
### WP11-15-4



WP13-18-3



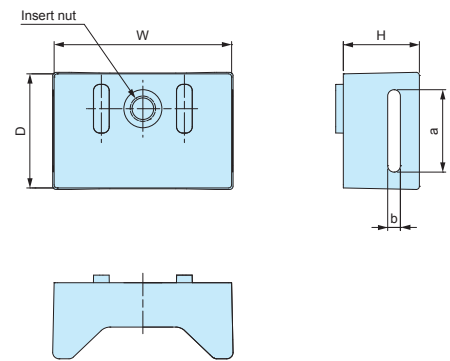
WP13-18-5



## WPMB SERIES

## POLE MOUNT BRACKET

NEW SIZE



- Pole mount bracket made from weather-resistant ASA material.
- Hole milling is not required when installing the mount bracket, thus allowing the enclosure to maintain its IP67 rating.
- Together with the WPMB series, the PKB series mounting belt enables the unit to be mounted onto the pole.
- DXF/DWG/PDF drawings available on our website.

## Product no. / Dimensions

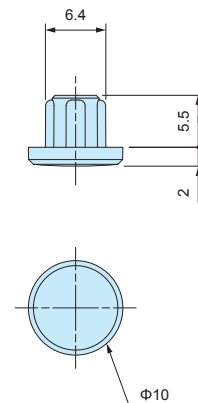
Product no.		Dimensions					Pack of	Material	Weight (g)	Screw
● White gray	● Dark gray	W	D	H	a	b				
NEW WPMB-M3G	WPMB-M3D	18	14	9.5	11	1.5	2 (pair)	ASA UL94HB	3	Stainless Steel M3-6
WPMB-M4G	WPMB-M4D	28	18	12	13	2	2 (pair)	ASA UL94HB	10	Stainless Steel M3-6



## PFRF-M2.5D

## RUBBER FEET

★ NEW



- Recommended to be used with the WP series as a desktop flat-type unit.
- No additional hole milling required as the rubber feet fits snugly into the screw holes.
- Made from elastomer material.
- Unavailable for use with WP5-7-2, 5-7-3, 6-8-2, and 6-8-3 models.

## Product no. / Dimensions

Product no.	Pack of	Material	Color
PFRF-M2.5D	4	Elastomer UL94HB	Dark gray

## MR SERIES

## TORX SCREW for WP



Head type (with pin)



pin

- Recommended to be used for tamper resistance, or for an elegant look and feel.
- Requires the use of a specialized screwdriver.
- Unavailable for use with WP5-7-2, 5-7-3, 6-8-2, and 6-8-3 models.

## Product no. / Dimensions

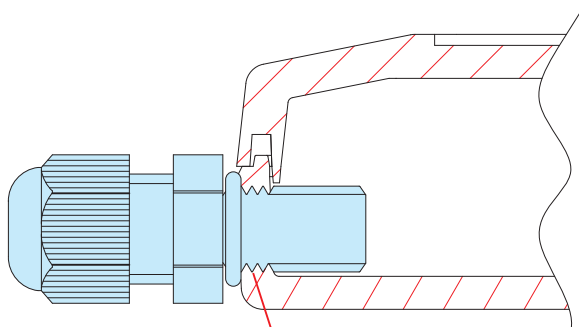
Product no.	Dimensions		TORX head no.	Pack of	Material	Finish	Suitable enclosures
	M	L					
MR2.5-8ST	2.5	8	T8 (with pin)	20	Stainless steel	Unfinished	WP8-8-2 • 8-10-2 • 9-13-3 • 10-10-3 • 11-15-3 • 13-18-3
MR2.5-16ST	2.5	16	T8 (with pin)	20	Stainless steel	Unfinished	WP8-8-4 • 8-10-4 • 9-13-4 • 10-10-4 • 11-15-4 • 13-18-5

## Instructions on installation of cable glands

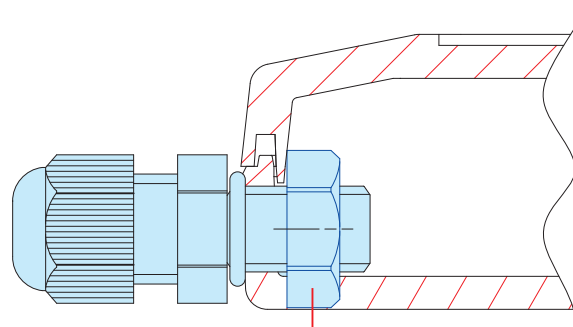


- Please note that certain cable glands are unable to be affixed on properly due to the lack of surface area for installation, causing the nut to not be able to be secured properly.

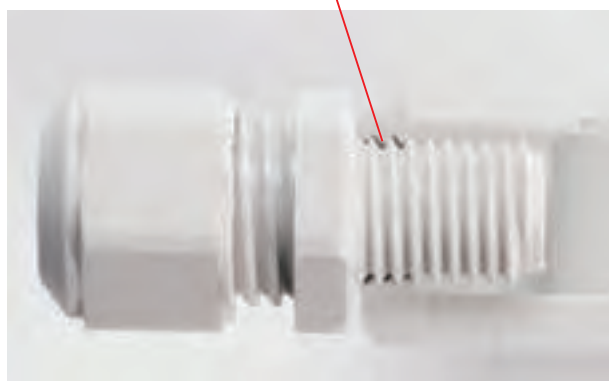
In these instances, a thread-hole should be drilled with the cable gland directly screwed into it without utilizing the nut.



Cross-section



Obstruction



- Thread-hole milling from M6~M32, PG7~21 sizes can be performed as per your requirements.



# PF SERIES FLAT NETWORK CASE

## USB-HUB

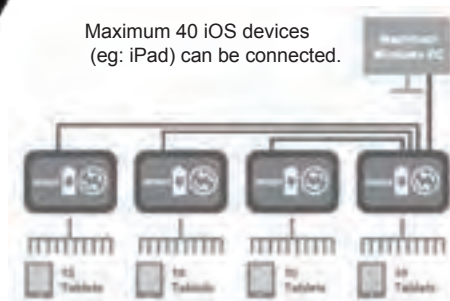
Self-powered USB-hub enabling power charging and data synchronization for multiple USB devices.

Product by MT-planning, Ltd.(Japan)

Website : [mt-planning.com](http://mt-planning.com)

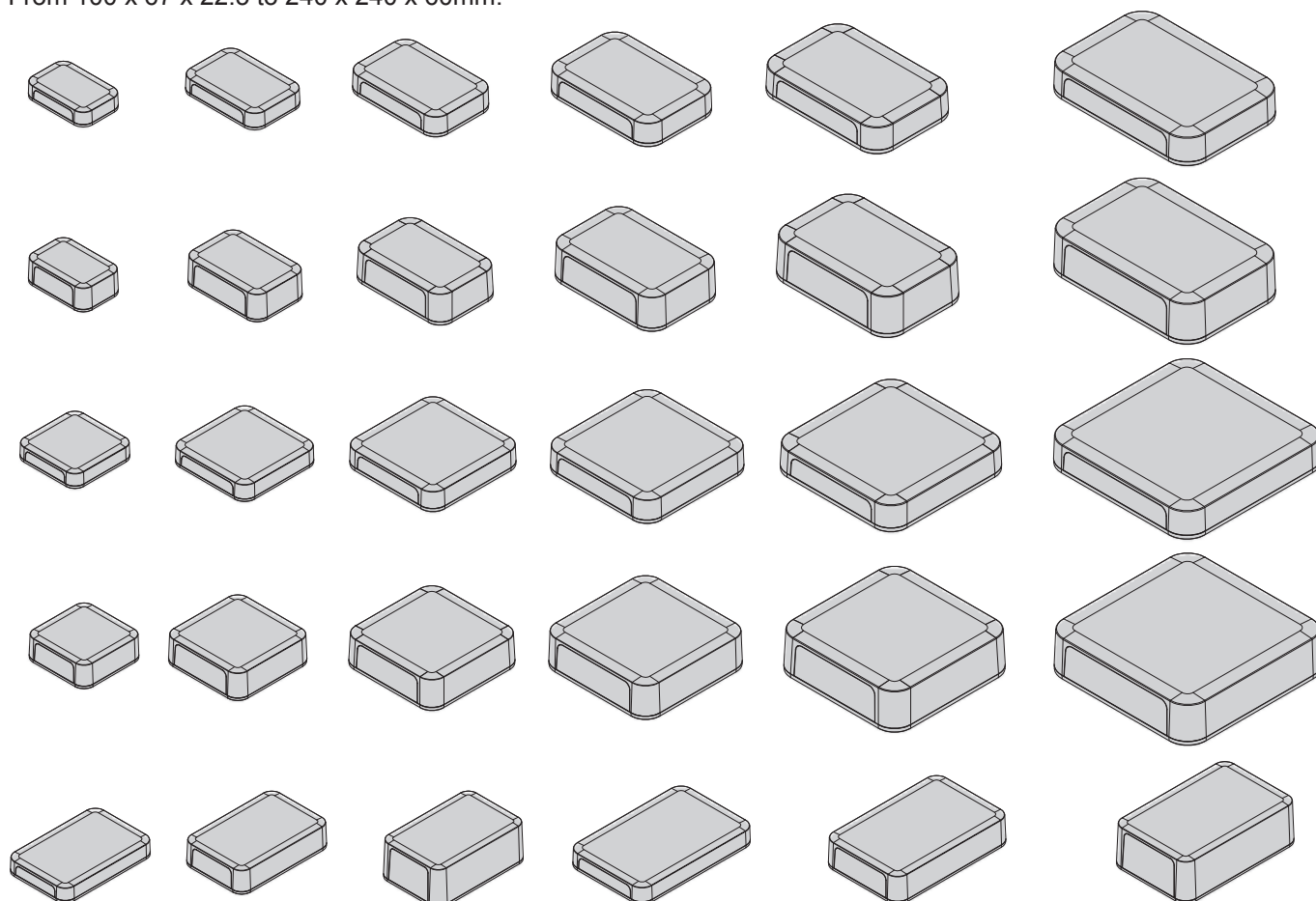


Maximum 40 iOS devices  
(eg: iPad) can be connected.



**Huge selection, 30 different sizes are now available.**

From 100 x 67 x 22.5 to 240 x 240 x 60mm.





# APPLICATION EXAMPLE

## USB HEMODYNAMIC RESEARCH DEVICE



Product by Cardiovascular Engineering, Inc. (USA)  
website : [cardiovascularengineering.com](http://cardiovascularengineering.com)

## WIRELESS HOME ELECTRONICS CONTROLLER

Product by AR SMART SAS (Colombia)  
Website : [ar-smart.co](http://ar-smart.co)



## iCONSE-T IOT and SENSOR NETWORK TRAINING SYSTEM

Product by Benchmark Electronic Systems (India)  
website : [iconse-t.com](http://iconse-t.com)



## G4 FLIGHT TRACKER

Product by Guardian Mobility (Canada)  
website : [guardianmobility.com](http://guardianmobility.com)



## TOUCH PANEL CONTROLLER

Product by Elmar Electronic d.o.o. (Croatia)  
Website : [elmar-el.hr](http://elmar-el.hr)



## GSM MODULE

Product by Elmar Electronic d.o.o. (Croatia)  
Website : [elmar-el.hr](http://elmar-el.hr)



## WIRELESS NETWORK DATA LOGGER

Product by SensingWinTech Co.,Ltd. (Japan)  
Website : [sensingwintech.com](http://sensingwintech.com)



## ADVANCED TRIGGER STATION

Product by BrainTrends (Italy)  
Website : [braintrends.it](http://braintrends.it)




**Technical Data**

Protection class: IP40  
Operating temperature: -10°C ~ +60°C



- Flat designed plastic case with detachable panels.
- Made of flame-resistant ABS UL94V-0, and available in off-white and dark gray color.
- 22 new sizes added for a total of 30 available sizes.
- Equipped with built-in bosses for PCB mounting.
- Suitable for Wi-Fi access point, measuring equipment, controller or other various applications either desktop or wall mounting and so on.

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white • Dark gray
2	Bottom base	1	ABS UL94V-0	Off-white • Dark gray
3	Panel	2	ABS UL94V-0	Off-white • Dark gray
4	Self tapping screw	4	Steel	Nickel plated
5	Rubber feet	4	Elastomer	Dark gray

## Accessories (Optional parts)



PCB mounting screw  
EM series See page 135



TORX screw  
MR series See page 135



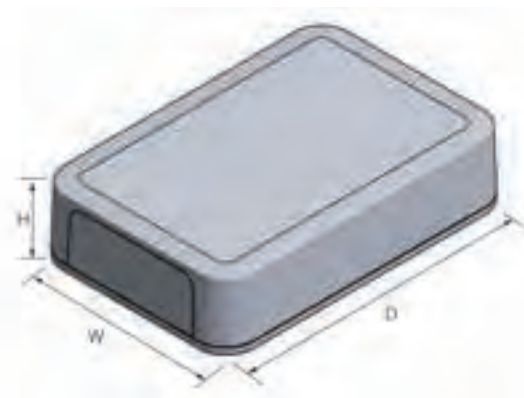
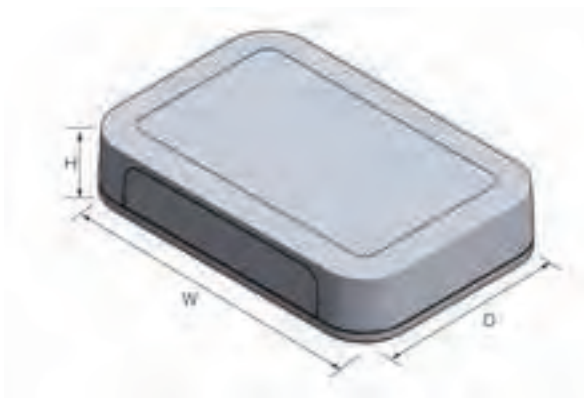
Tapping standoff  
TPS series See page 133



Suspension bracket  
WM series See page 129



Neodymium magnet  
NMG series See page 130



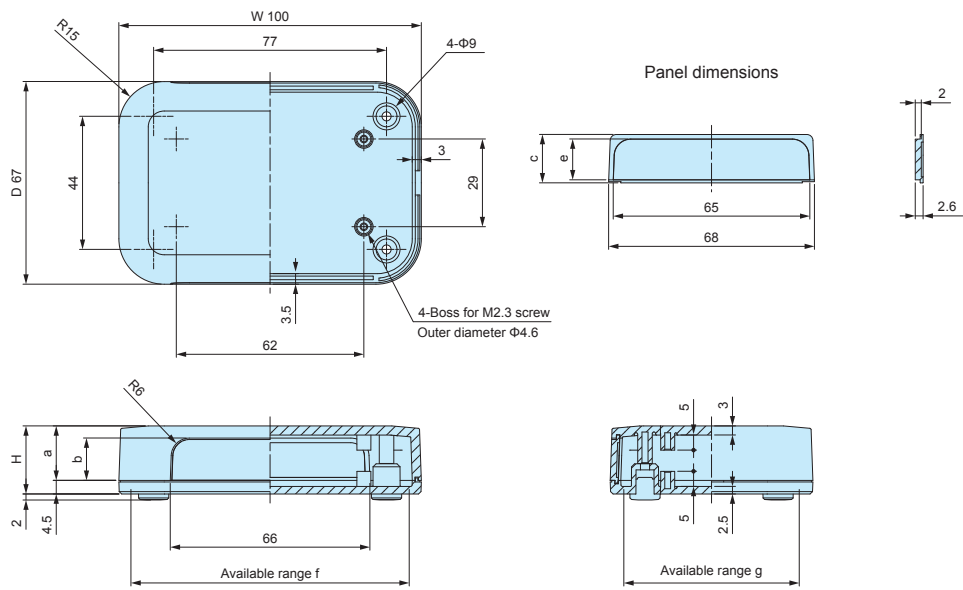
## Product no. / Dimensions

※ H dimension is not inclusive of rubber feet. (Rubber feet height = 2mm)

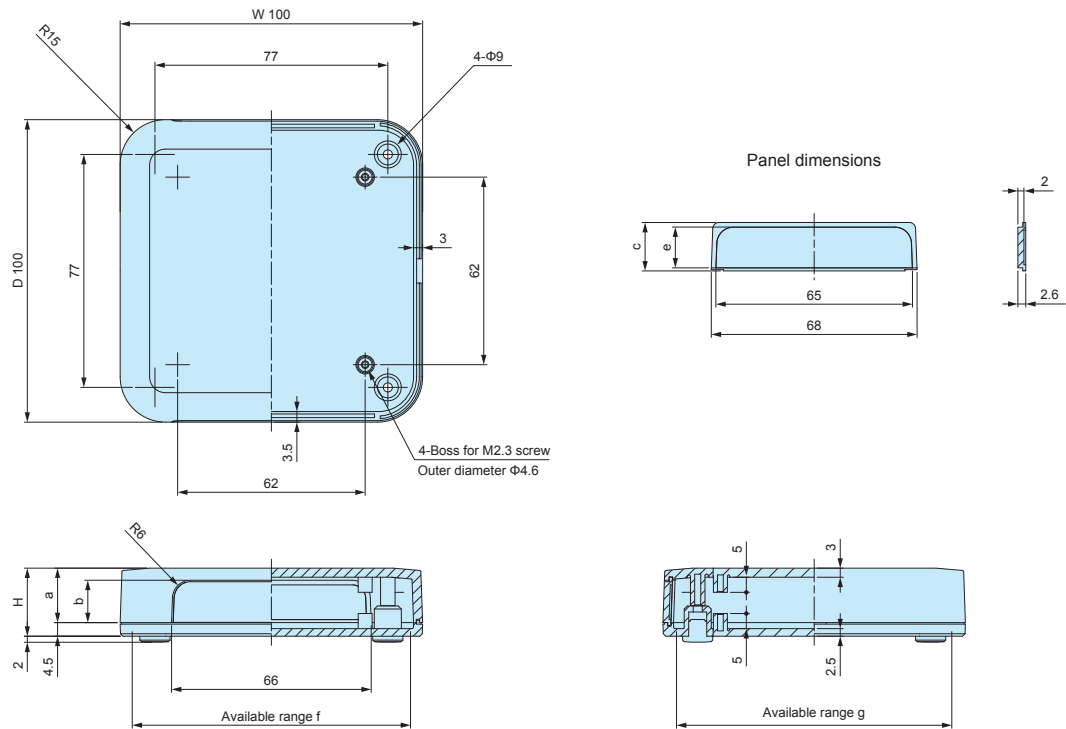
Product no.		Dimensions			Screw	Weight (g)
● Off-white	● Dark gray	W	H	D		
<b>NEW</b> PF10-2- 7W	<b>NEW</b> PF10-2- 7D	100	22.5	67	M2.5-8 x 4 pcs	60
<b>NEW</b> PF10-2-10W	<b>NEW</b> PF10-2-10D	100	22.5	100	M2.5-8 x 4 pcs	82.9
<b>NEW</b> PF10-2-15W	<b>NEW</b> PF10-2-15D	100	22.5	150	M2.5-8 x 4 pcs	120.2
<b>NEW</b> PF10-4- 7W	<b>NEW</b> PF10-4- 7D	100	35	67	M2.5-8 x 4 pcs	65
<b>NEW</b> PF10-4-10W	<b>NEW</b> PF10-4-10D	100	35	100	M2.5-8 x 4 pcs	97.1
<b>NEW</b> PF10-4-15W	<b>NEW</b> PF10-4-15D	100	35	150	M2.5-8 x 4 pcs	132.6
<b>NEW</b> PF10-6-15W	<b>NEW</b> PF10-6-15D	100	55	150	M2.5-8 x 4 pcs	169.1
<b>NEW</b> PF13-3- 9W	<b>NEW</b> PF13-3- 9D	125	25	85	M2.5-8 x 4 pcs	90.8
<b>NEW</b> PF13-3-13W	<b>NEW</b> PF13-3-13D	125	25	125	M2.5-8 x 4 pcs	127.5
<b>NEW</b> PF13-3-19W	<b>NEW</b> PF13-3-19D	125	25	190	M2.5-8 x 4 pcs	186.8
<b>NEW</b> PF13-4- 9W	<b>NEW</b> PF13-4- 9D	125	40	85	M2.5-8 x 4 pcs	108.4
<b>NEW</b> PF13-4-13W	<b>NEW</b> PF13-4-13D	125	40	125	M2.5-8 x 4 pcs	151.4
<b>NEW</b> PF13-4-19W	<b>NEW</b> PF13-4-19D	125	40	190	M2.5-8 x 4 pcs	214.9
<b>NEW</b> PF13-6-19W	<b>NEW</b> PF13-6-19D	125	60	190	M2.5-8 x 4 pcs	250.4
PF15-3-10W	PF15-3-10D	150	30	100	M2.5-8 x 4 pcs	145.5
PF15-3-15W	PF15-3-15D	150	30	150	M2.5-8 x 4 pcs	207.5
PF15-5-10W	PF15-5-10D	150	45	100	M2.5-8 x 4 pcs	166
PF15-5-15W	PF15-5-15D	150	45	150	M2.5-8 x 4 pcs	233.5
<b>NEW</b> PF18-4-12W	<b>NEW</b> PF18-4-12D	175	35	120	M2.5-8 x 4 pcs	188.7
<b>NEW</b> PF18-4-18W	<b>NEW</b> PF18-4-18D	175	35	175	M2.5-8 x 4 pcs	266.8
<b>NEW</b> PF18-5-12W	<b>NEW</b> PF18-5-12D	175	50	120	M2.5-8 x 4 pcs	213.6
<b>NEW</b> PF18-5-18W	<b>NEW</b> PF18-5-18D	175	50	175	M2.5-8 x 4 pcs	302.1
PF20-4-13W	PF20-4-13D	200	40	135	M3-8 x 4 pcs	264
PF20-4-20W	PF20-4-20D	200	40	200	M3-8 x 4 pcs	368.5
PF20-6-13W	PF20-6-13D	200	60	135	M3-8 x 4 pcs	302.5
PF20-6-20W	PF20-6-20D	200	60	200	M3-8 x 4 pcs	417
<b>NEW</b> PF24-4-17W	<b>NEW</b> PF24-4-17D	240	42.5	165	M3-8 x 4 pcs	370.4
<b>NEW</b> PF24-4-24W	<b>NEW</b> PF24-4-24D	240	42.5	240	M3-8 x 4 pcs	521.4
<b>NEW</b> PF24-6-17W	<b>NEW</b> PF24-6-17D	240	60	165	M3-8 x 4 pcs	408.8
<b>NEW</b> PF24-6-24W	<b>NEW</b> PF24-6-24D	240	60	240	M3-8 x 4 pcs	568.7

# PF dimensions

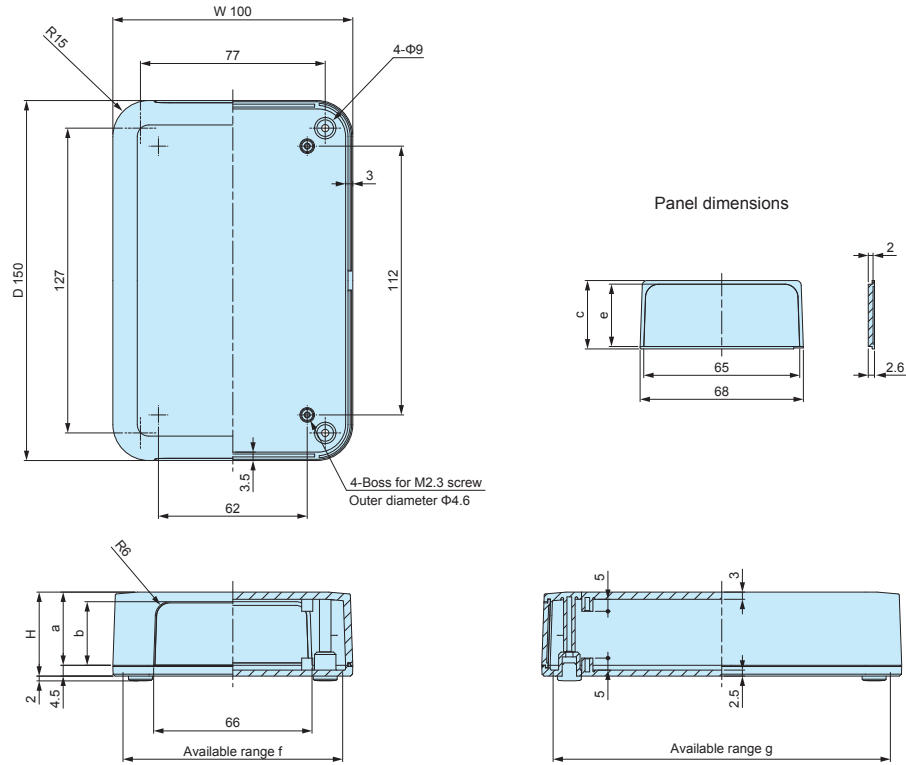
■ DXF/DWG/PDF drawings available on our website.



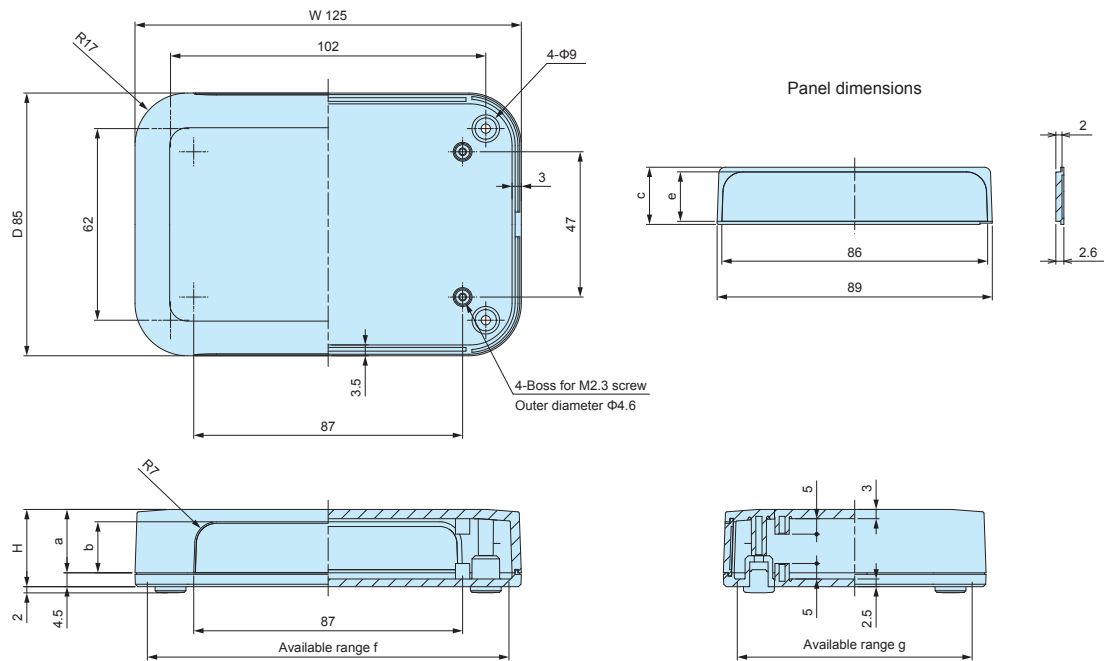
Product no.	W	H	D	a	b	c	e	f	g
PF10-2-7□	100	22.5	67	18	14	16	13.5	92	58
PF10-4-7□	100	35	67	30.5	26.5	28.5	26	91	57



Product no.	W	H	D	a	b	c	e	f	g
PF10-2-10□	100	22.5	100	18	14	16	13.5	92	91
PF10-4-10□	100	35	100	30.5	26.5	28.5	26	91	90



Product no.	W	H	D	a	b	c	e	f	g
PF10-2-15□	100	22.5	150	18	14	16	13.5	92	141
PF10-4-15□	100	35	150	30.5	26.5	28.5	26	91	140
PF10-6-15□	100	55	150	50.5	46.5	48.5	46	90	139

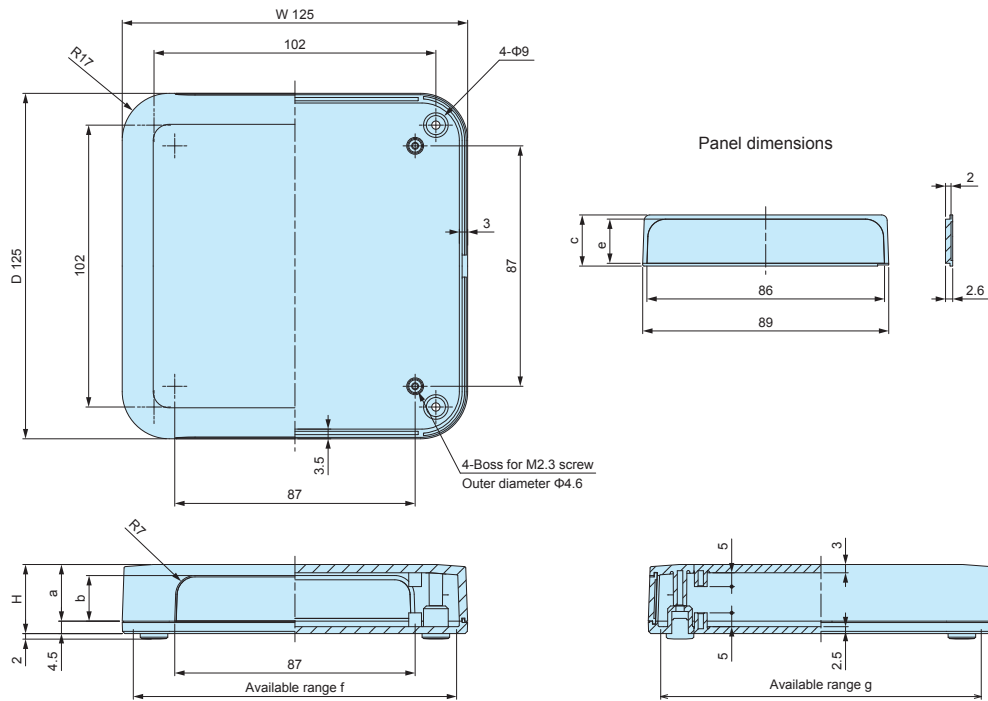


Product no.	W	H	D	a	b	c	e	f	g
PF13-3-9□	125	25	85	20.5	16.5	18.5	16	117	76
PF13-4-9□	125	40	85	35.5	31.5	33.5	31	116	75

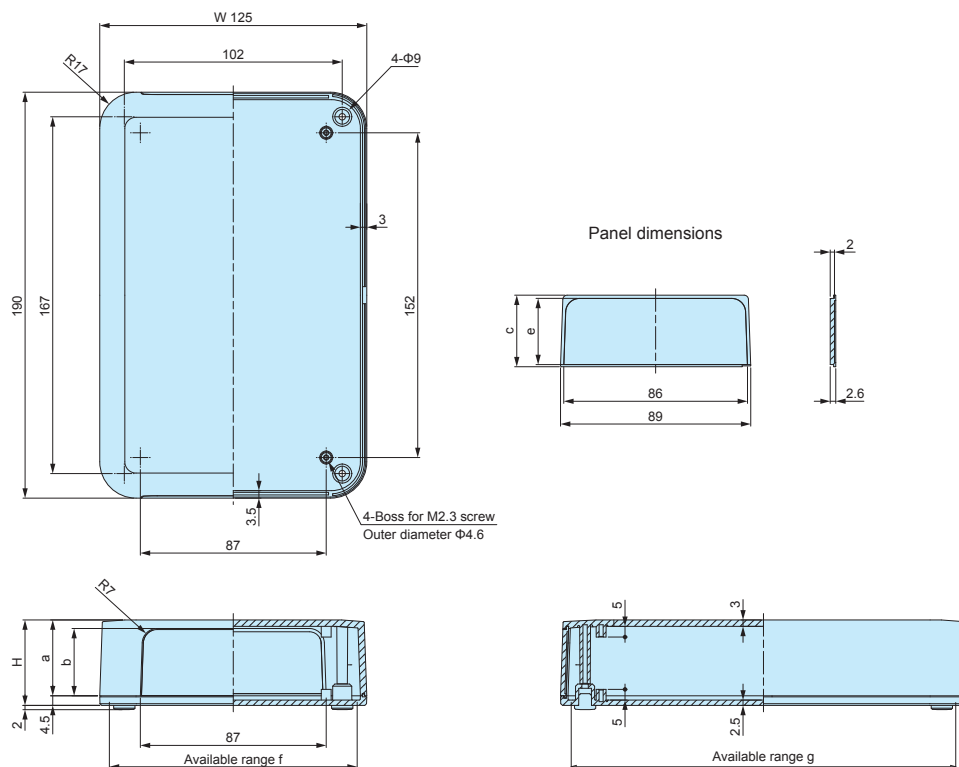


**PF dimensions**

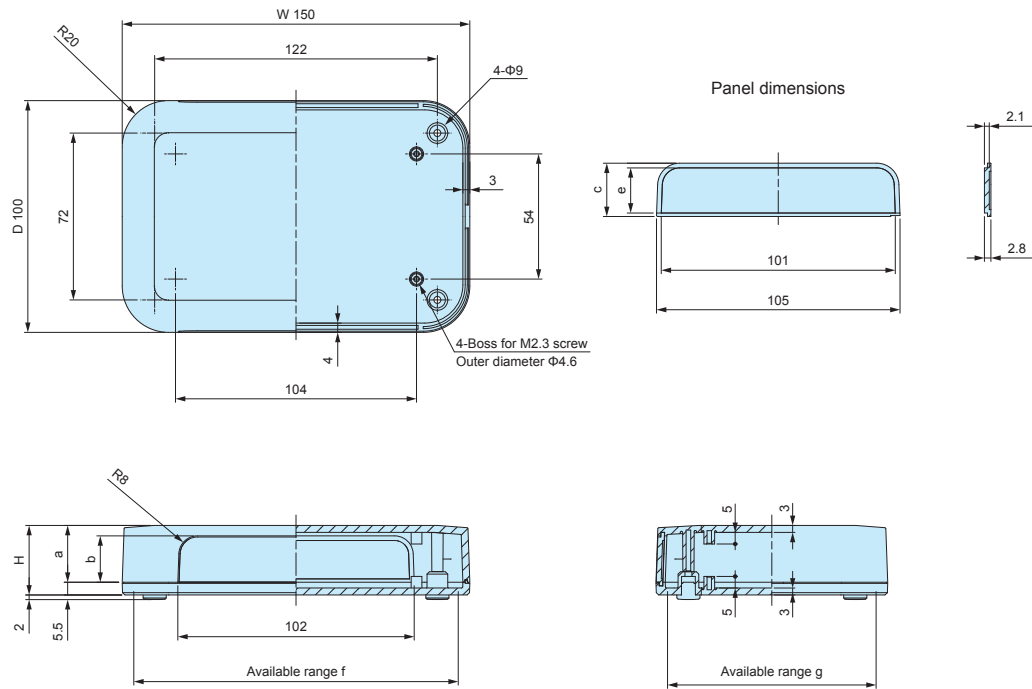
■ DXF/DWG/PDF drawings available on our website.



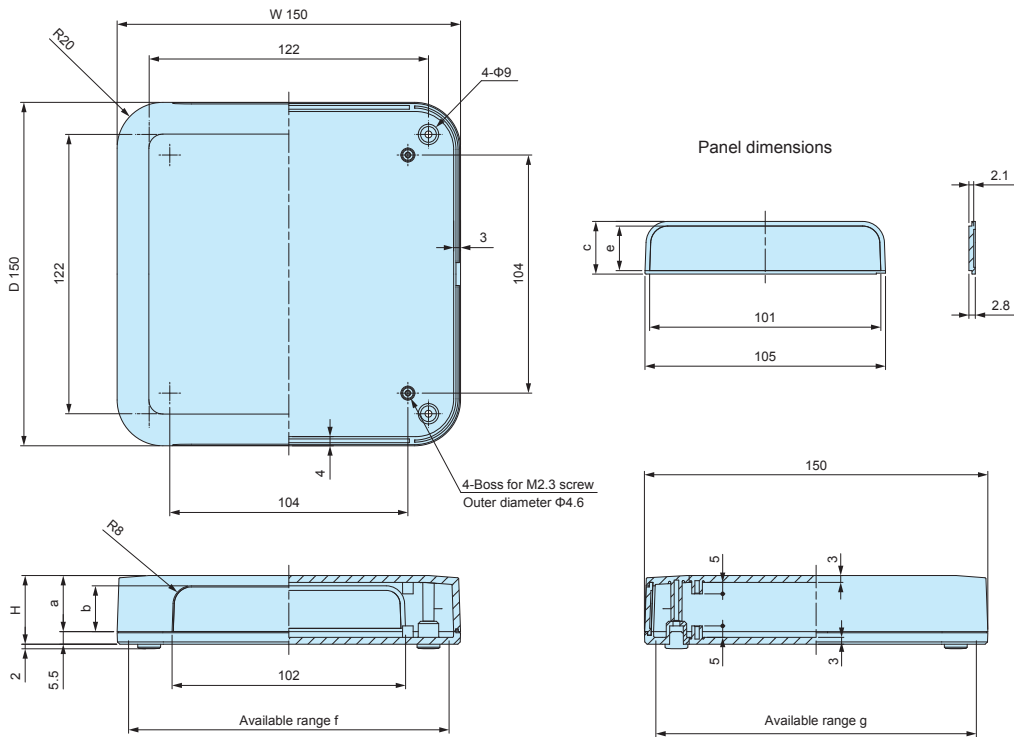
Product no.	W	H	D	a	b	c	e	f	g
PF13-3-13□	125	25	125	20.5	16.5	18.5	16	117	116
PF13-4-13□	125	40	125	35.5	31.5	33.5	31	116	115



Product no.	W	H	D	a	b	c	e	f	g
PF13-3-19□	125	25	190	20.5	16.5	18.5	16	117	181
PF13-4-19□	125	40	190	35.5	31.5	33.5	31	116	180
PF13-6-19□	125	60	190	55.5	51.5	53.5	51	115	179



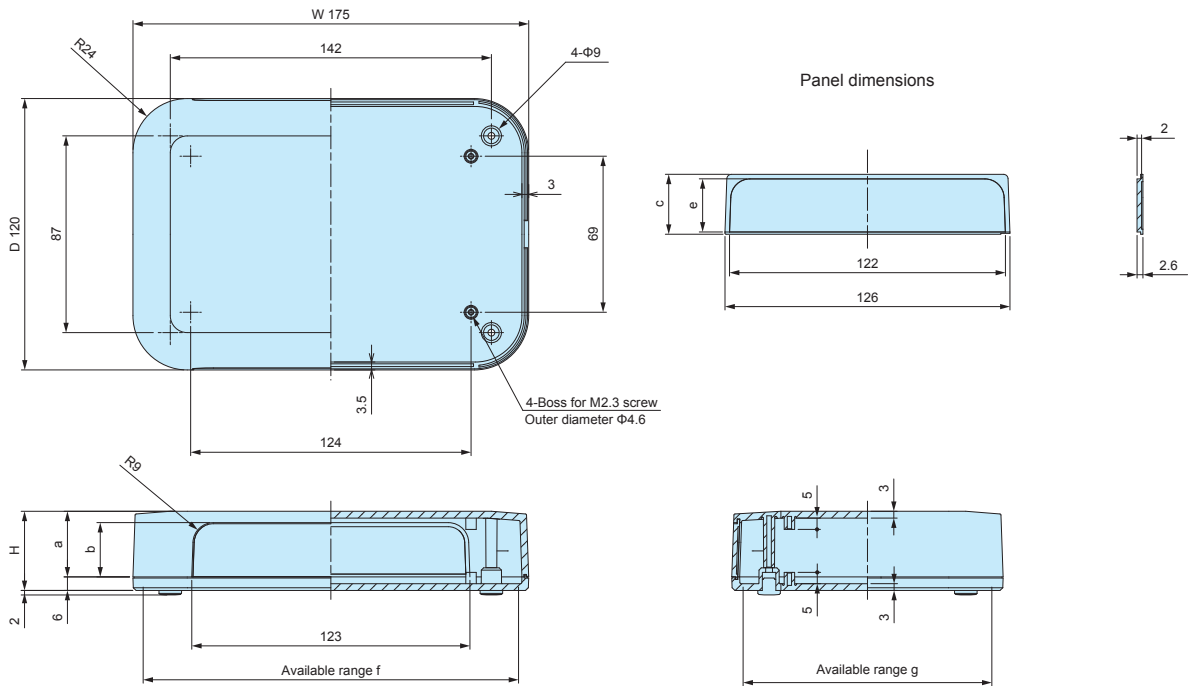
Product no.	W	H	D	a	b	c	e	f	g
PF15-3-10□	150	30	100	24.5	20	23	19.5	142	90
PF15-5-10□	150	45	100	39.5	35	38	34.5	141	89



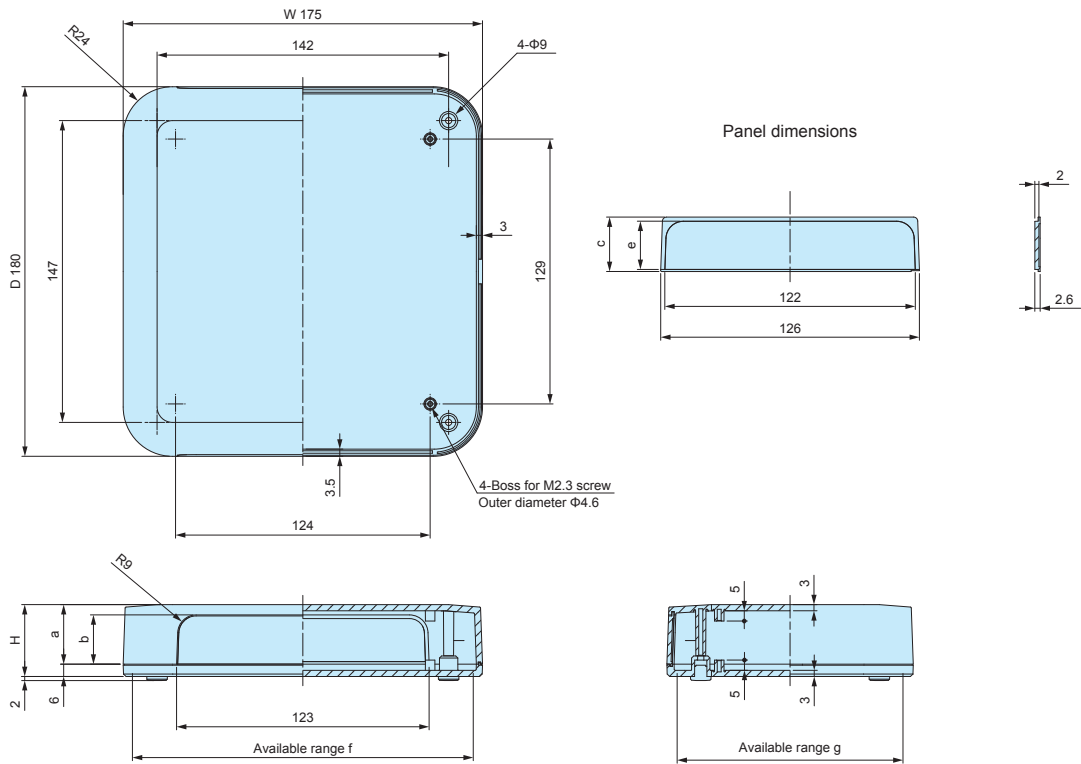
Product no.	W	H	D	a	b	c	e	f	g
PF15-3-15□	150	30	150	24.5	20	23	19.5	142	140
PF15-5-15□	150	45	150	45	39.5	38	34.5	141	139

# PF dimensions

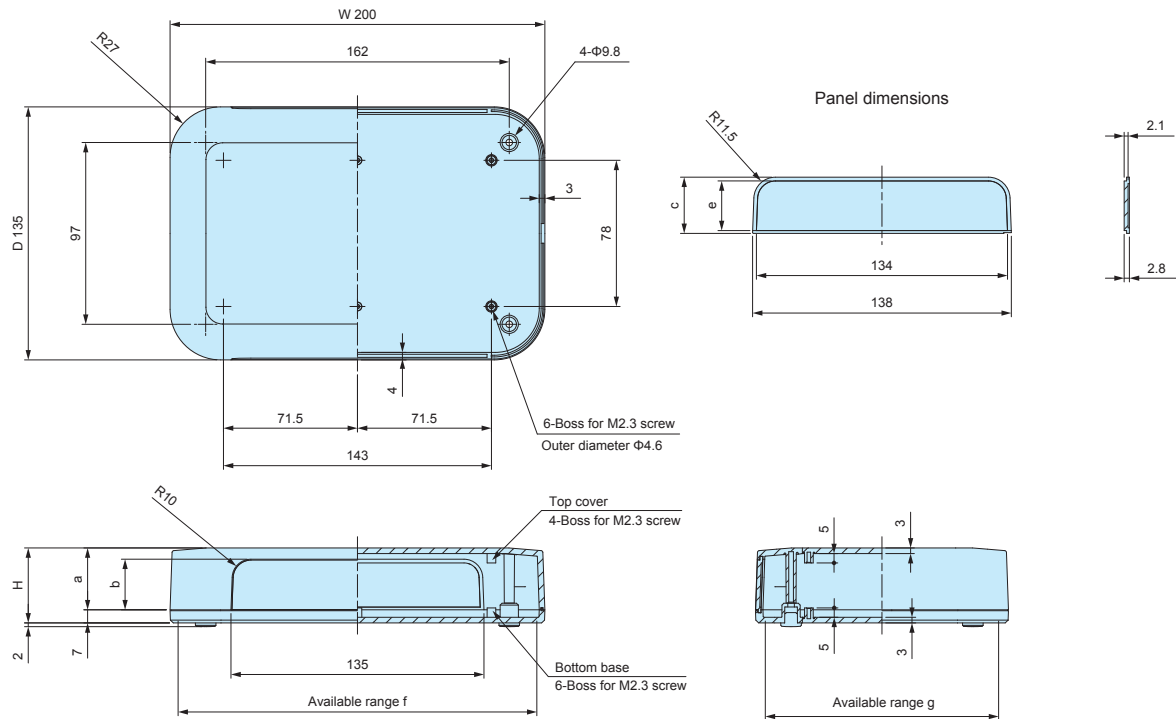
■ DXF/DWG/PDF drawings available on our website.



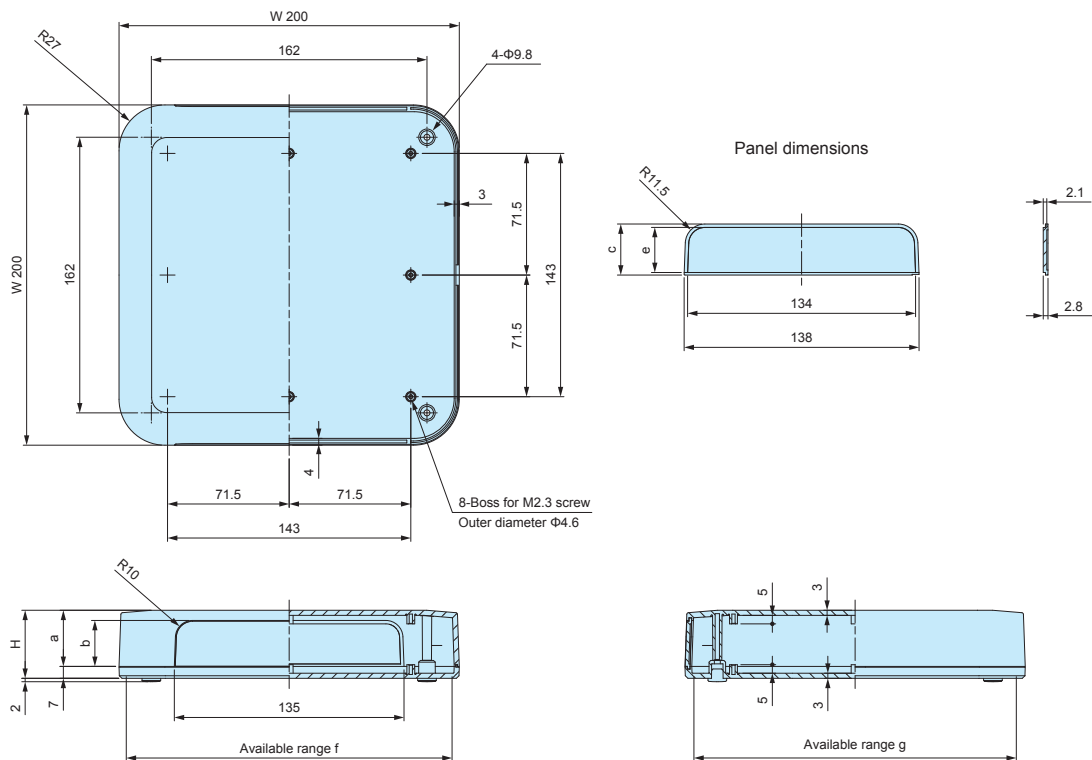
Product no.	W	H	D	a	b	c	e	f	g
PF18-4-12□	175	35	120	29	24	26.5	23.5	166	110
PF18-5-12□	175	50	120	29	24	41.5	38.5	165	109



Product no.	W	H	D	a	b	c	e	f	g
PF18-4-18□	175	35	175	29	24	26.5	23.5	166	165
PF18-5-18□	175	50	175	44	39	41.5	38.5	165	164



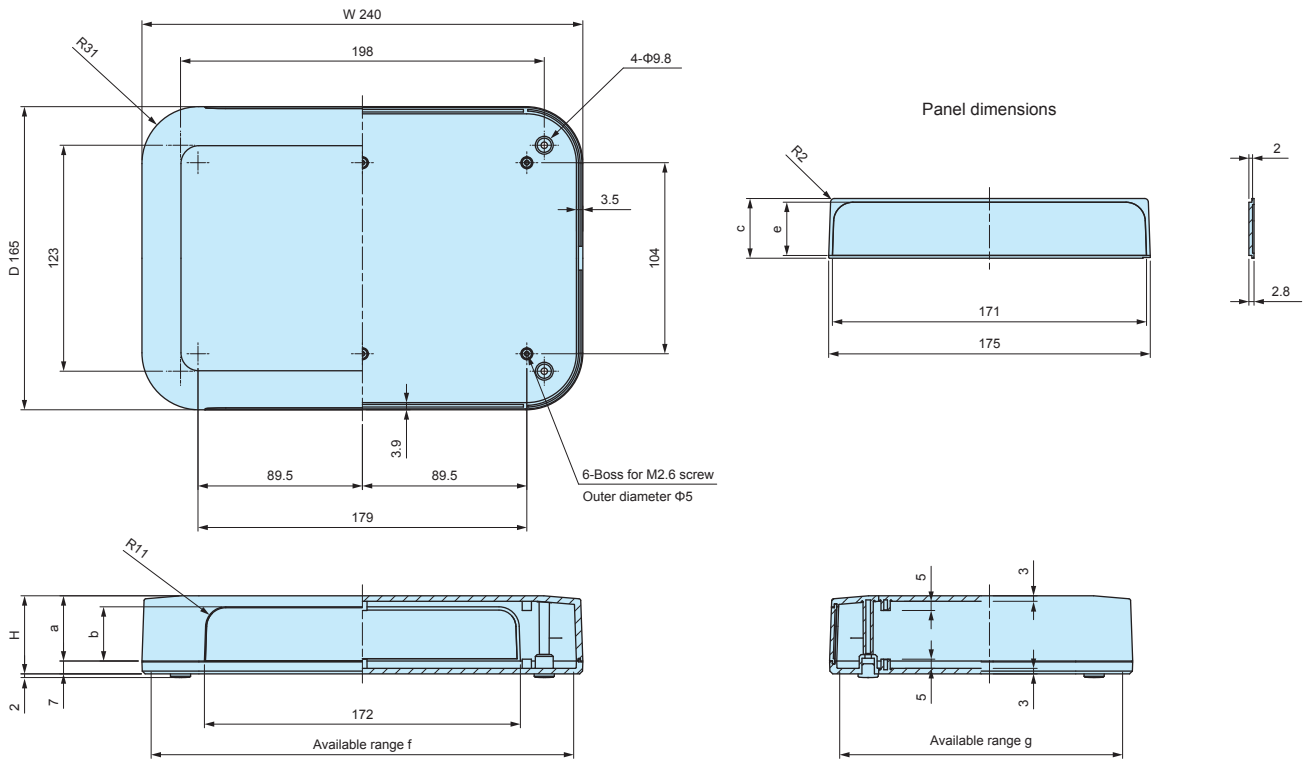
Product no.	W	H	D	a	b	c	e	f	g
PF20-4-13□	200	40	135	33	27	30	26.5	191.5	124.5
PF20-6-13□	200	60	135	53	47	50	46.5	190	123



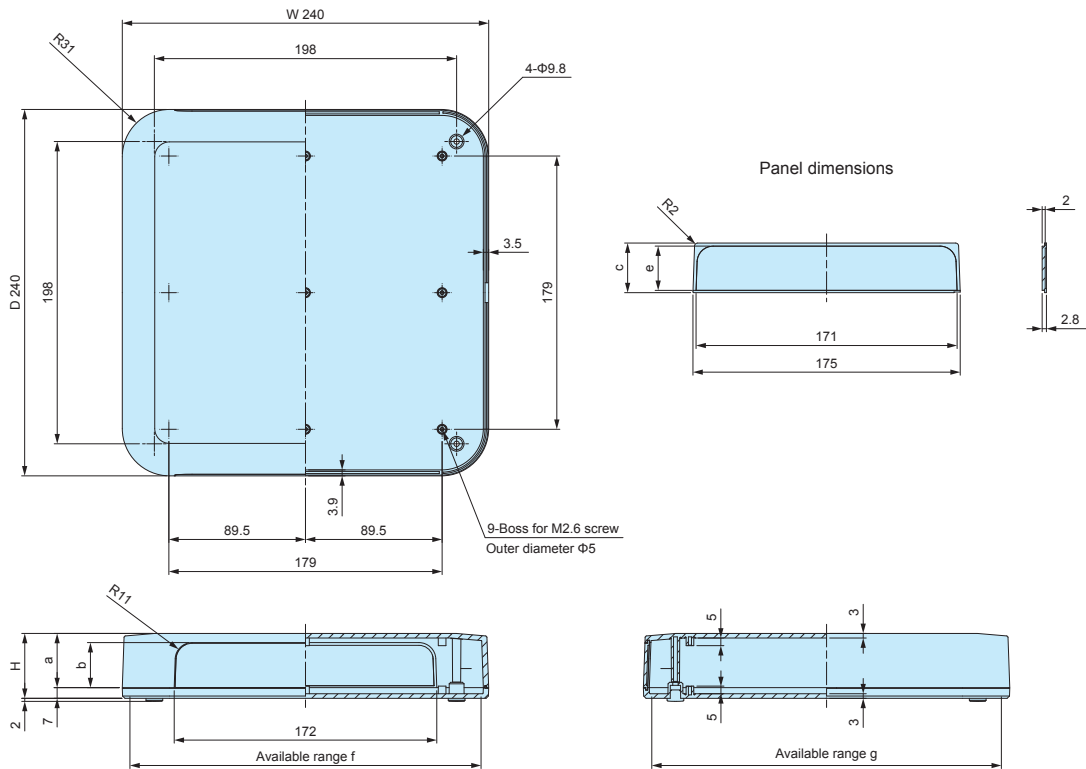
Product no.	W	H	D	a	b	c	e	f	g
PF20-4-20□	200	40	200	33	27	30	26.5	191.5	189.5
PF20-6-20□	200	60	200	53	47	50	46.5	190	188

# PF dimensions

■ DXF/DWG/PDF drawings available on our website.



Product no.	W	H	D	a	b	c	e	f	g
PF24-4-17□	240	42.5	165	35.5	29.5	32.5	29	230	154
PF24-6-17□	240	60	165	53	47	50	46.5	229	153



Product no.	W	H	D	a	b	c	e	f	g
PF24-4-24□	240	42.5	240	35.5	29.5	32.5	29	230	229
PF24-6-24□	240	60	240	53	47	50	46.5	229	228



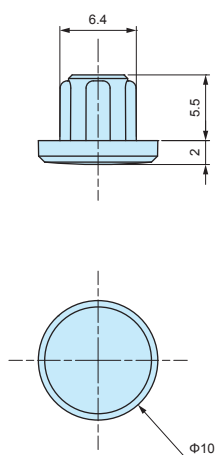
## PFRF SERIES

## RUBBER FEET for PF

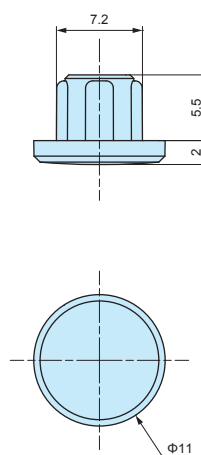


- Rubber feet for PF series.
- Inserted into the screw holes on the underside of box.
- Elastomer material is resistant against color migration.

PFRF-M2.5D



PFRF-M3D



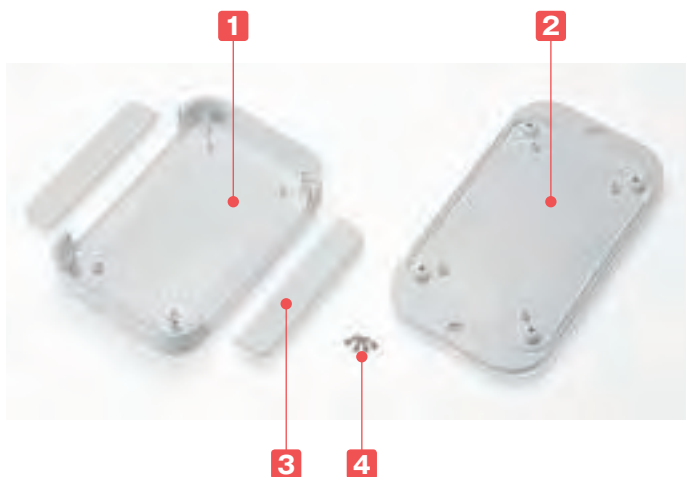
## Product no. / Dimensions

Product no.	Suitable case	Material	Color	Pack of
PFRF-M2.5D	PF10-2-7, 10-2-10, 10-2-15, 10-4-7, 10-4-10, 10-4-15 PF10-6-15, 13-3-9, 13-3-13, 13-3-19, 13-4-9, 13-4-13 PF13-4-19, 13-6-19, 15-3-10, 15-3-15, 15-5-10, 15-5-15 PF18-4-12, 18-4-18, 18-5-12, 18-5-18	Elastomer	Dark gray	4
PFRF-M3D	PF20-4-13, 20-4-20, 20-6-13, 20-6-20, 24-4-17, 24-4-24 PF24-6-17, 24-6-24	Elastomer	Dark gray	4



Technical Data

Protection class: IP40  
Operating temperature: -10°C ~ +60°C



- New PF plastic case with wall mounting flange bottom design.
- Made of flame-resistant ABS UL94V-0 and available in off-white color.
- 24 different sizes available for selection.
- Equipped with built-in bosses for PCB mounting.
- Suitable for Wi-Fi access point, wireless LAN, HUB, controller or other applications.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white
2	Flanged base	1	ABS UL94V-0	Off-white
3	Panel	2	ABS UL94V-0	Off-white
4	Self tapping screw	4	Steel	Nickel plated

## Accessories (Optional parts)



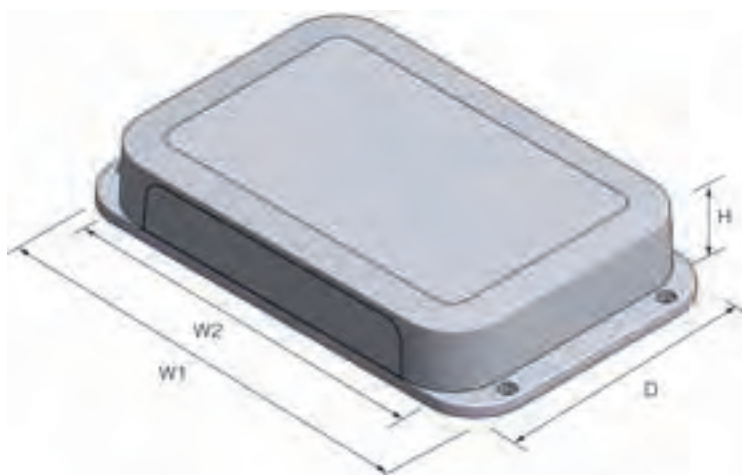
PCB mounting screw  
EM series  
See page 135



TORX screw  
MR series  
See page 135



Tapping standoff  
TPS series  
See page 133

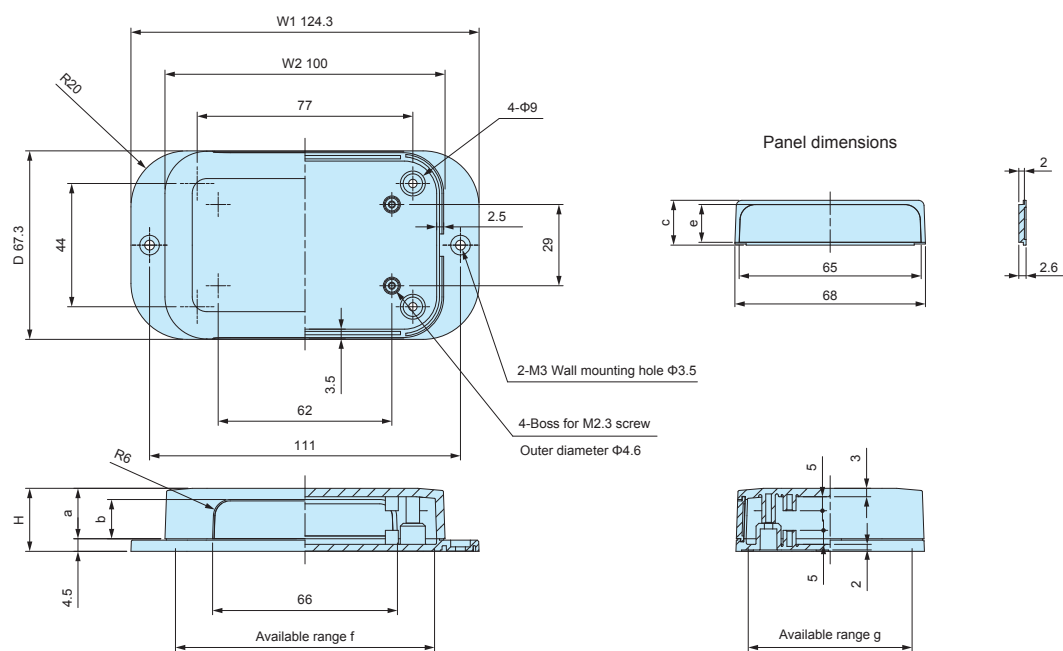


### Product no. / Dimensions

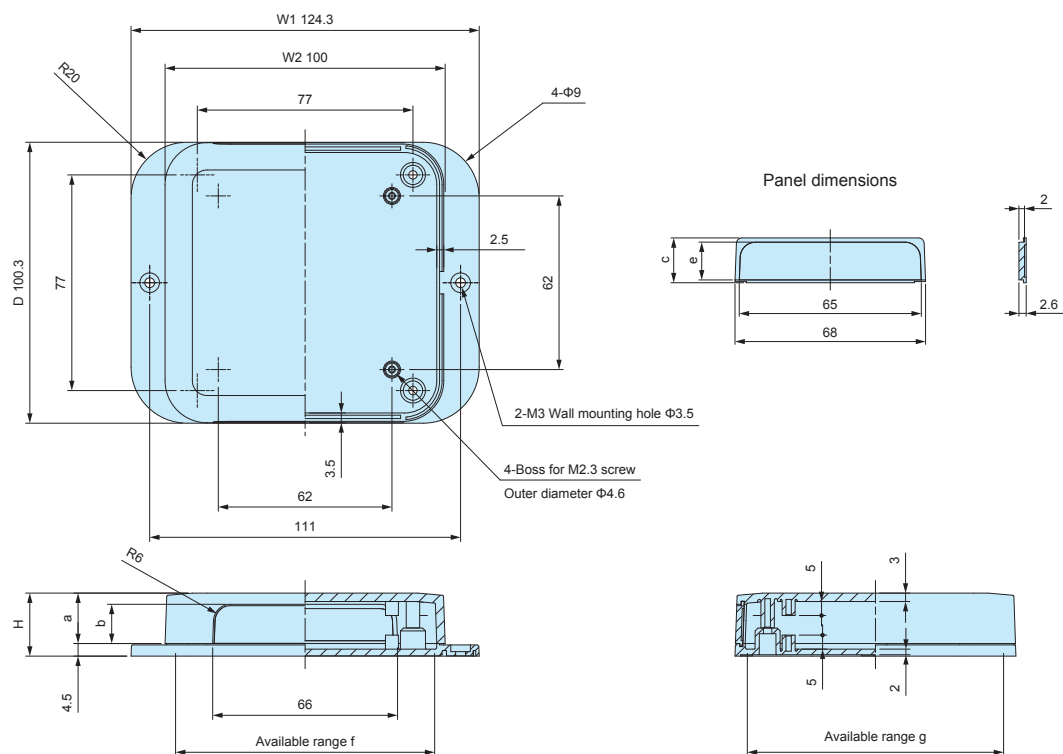
Product no.	Dimensions				Screw	Weight (g)
● Off-white	W1	W2	H	D		
PFF10-2- 7W	124.3	100	22.5	67.3	M2.5-8 x 4 pcs	60.8
PFF10-2-10W	124.3	100	22.5	100.3	M2.5-8 x 4 pcs	84.6
PFF10-4- 7W	124.3	100	35	67.3	M2.5-8 x 4 pcs	72
PFF10-4-10W	124.3	100	35	100.3	M2.5-8 x 4 pcs	99.1
PFF13-3- 9W	149.3	125	25	85.3	M2.5-8 x 4 pcs	90.8
PFF13-3-13W	155.3	125	25	125.3	M2.5-8 x 4 pcs	128.6
PFF13-4- 9W	149.3	125	40	85.3	M2.5-8 x 4 pcs	108.4
PFF13-4-13W	155.3	125	40	125.3	M2.5-8 x 4 pcs	152.3
PFF15-3-10W	180.4	150	30	100.4	M2.5-8 x 4 pcs	145.2
PFF15-3-15W	180.4	150	30	150.4	M2.5-8 x 4 pcs	211.3
PFF15-5-10W	180.4	150	45	100.4	M2.5-8 x 4 pcs	168.6
PFF15-5-15W	180.4	150	45	150.4	M2.5-8 x 4 pcs	235
PFF18-4-12W	205.4	175	35	120.4	M2.5-8 x 4 pcs	192.1
PFF18-4-18W	205.4	175	35	175.4	M2.5-8 x 4 pcs	209.8
PFF18-5-12W	205.4	175	50	120.4	M2.5-8 x 4 pcs	215.8
PFF18-5-18W	205.4	175	50	175.4	M2.5-8 x 4 pcs	299.7
PFF20-4-13W	230.5	200	40	135.5	M3-8 x 4 pcs	267.7
PFF20-4-20W	230.5	200	40	200.5	M3-8 x 4 pcs	376
PFF20-6-13W	230.5	200	60	135.5	M3-8 x 4 pcs	309.7
PFF20-6-20W	230.5	200	60	200.5	M3-8 x 4 pcs	422.9
PFF24-4-17W	270.5	240	42.5	165.5	M3-8 x 4 pcs	366.9
PFF24-4-24W	270.5	240	42.5	240.5	M3-8 x 4 pcs	513.5
PFF24-6-17W	270.5	240	60	165.5	M3-8 x 4 pcs	403.8
PFF24-6-24W	270.5	240	60	240.5	M3-8 x 4 pcs	560.8

# PFF dimensions

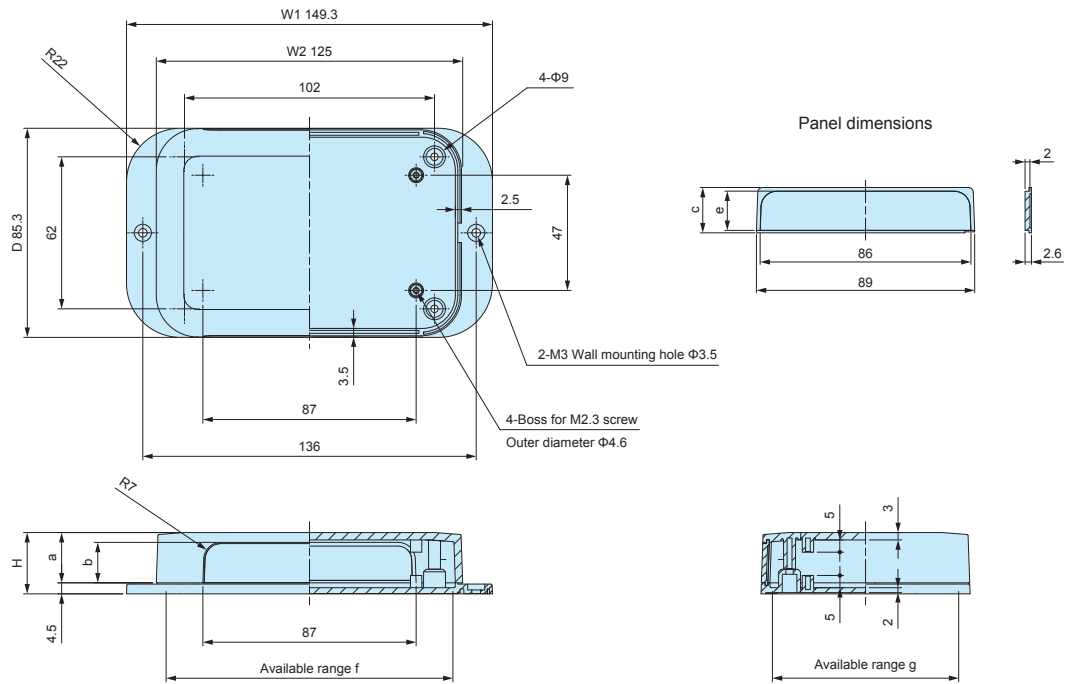
■ DXF/DWG/PDF drawings available on our website.



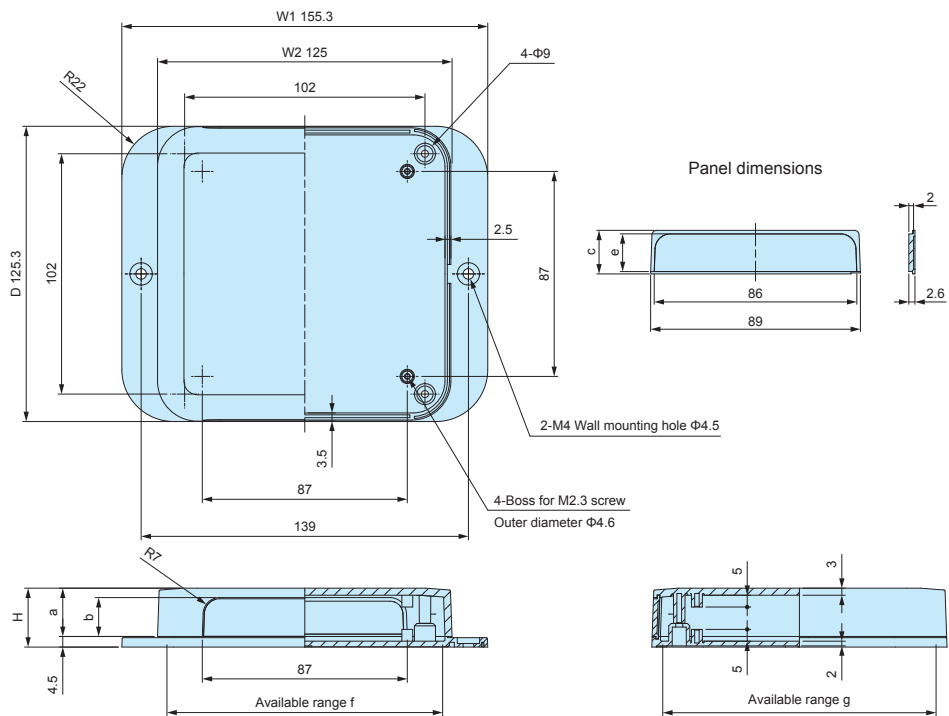
Product no.	W1	W2	H	D	a	b	c	e	f	g
PFF10-2-7W	124.3	100	22.5	67.3	18	14	16	13.5	92	58
PFF10-4-7W	124.3	100	35	67.3	30.5	26.5	28.5	26	91	57



Product no.	W1	W2	H	D	a	b	c	e	f	g
PFF10-2-10W	124.3	100	22.5	100.3	18	14	16	13.5	92	91
PFF10-4-10W	124.3	100	35	100.3	30.5	26.5	28.5	26	91	90



Product no.	W1	W2	H	D	a	b	c	e	f	g
PFF13-3-9W	149.3	125	25	85.3	20.5	16.5	18.5	16	117	76
PFF13-4-9W	149.3	125	40	85.3	35.5	31.5	33.5	31	116	75

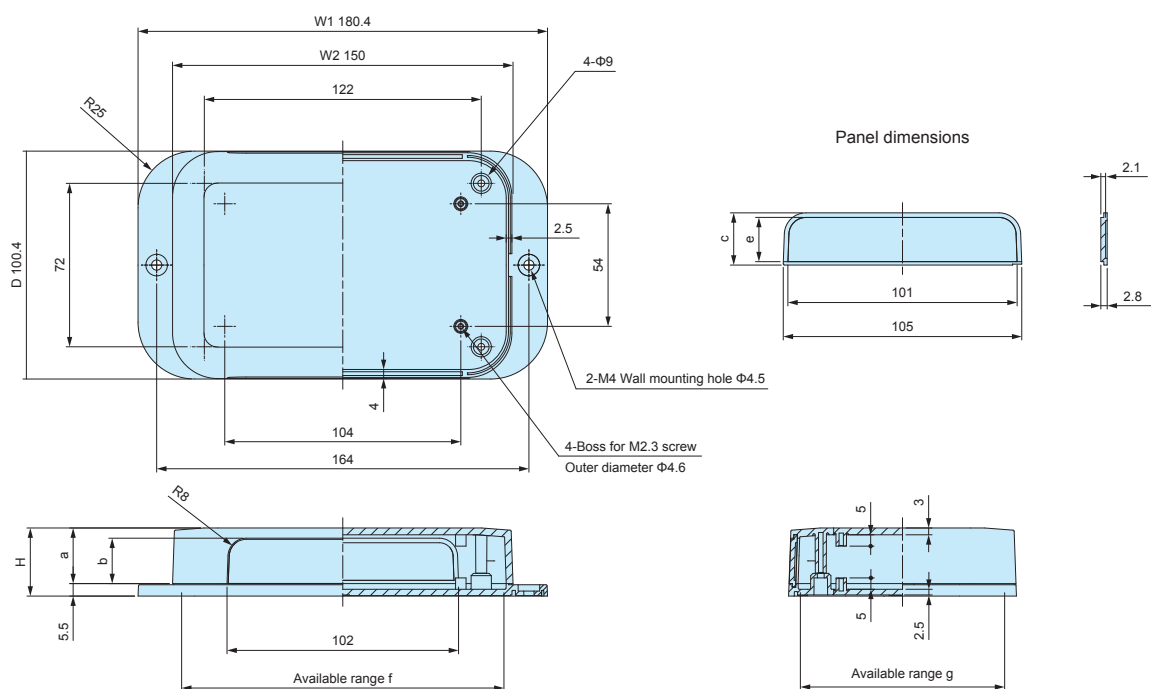


Product no.	W1	W2	H	D	a	b	c	e	f	g
PFF13-3-13W	155.3	125	25	125.3	20.5	16.5	18.5	16	117	116
PFF13-4-13W	155.3	125	40	125.3	35.5	31.5	33.5	31	116	115

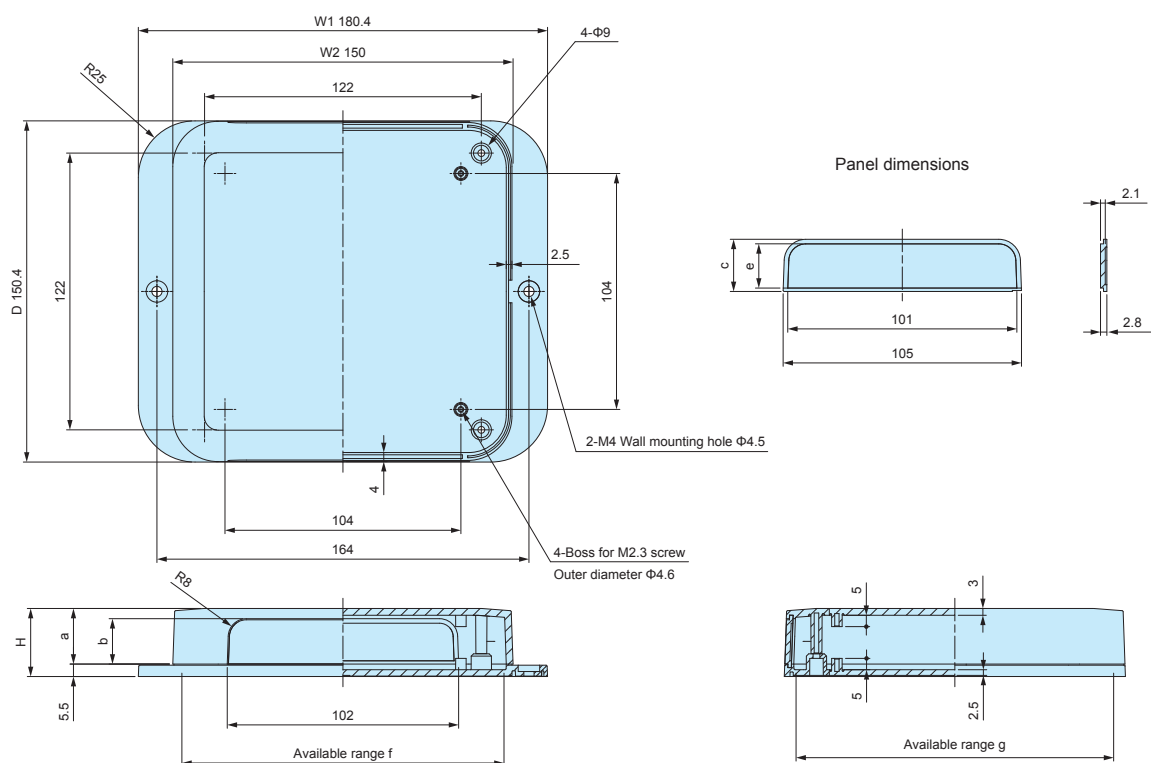


# PFF dimensions

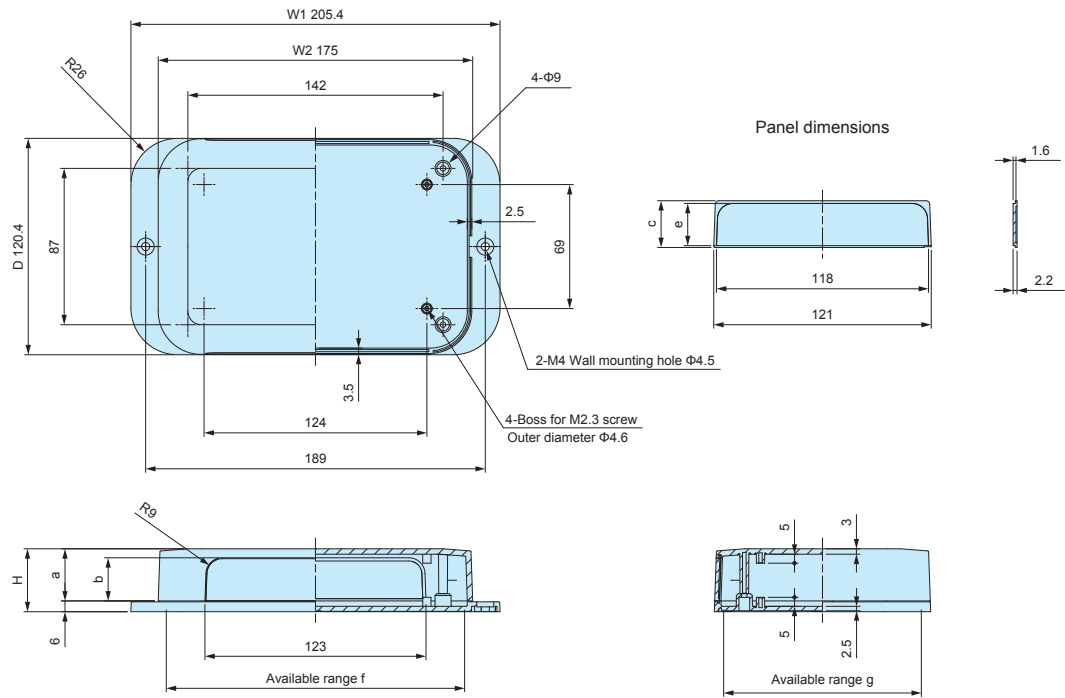
■ DXF/DWG/PDF drawings available on our website.



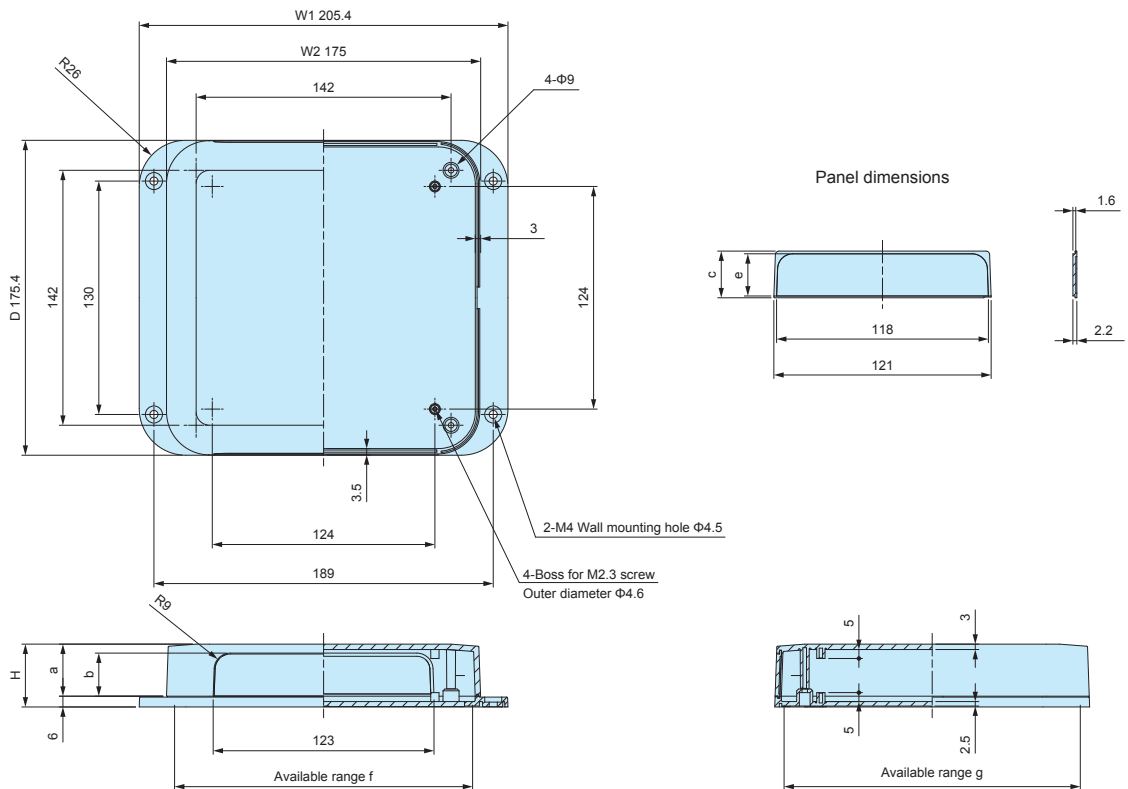
Product no.	W1	W2	H	D	a	b	c	e	f	g
PFF15-3-10W	180.4	150	30	100.4	24.5	20	23	19.5	142	90
PFF15-5-10W	180.4	150	45	100.4	39.5	35	38	34.5	141	89



Product no.	W1	W2	H	D	a	b	c	e	f	g
PFF15-3-15W	180.4	150	30	150.4	24.5	20	23	19.5	142	140
PFF15-5-15W	180.4	150	45	150.4	39.5	35	38	34.5	141	139

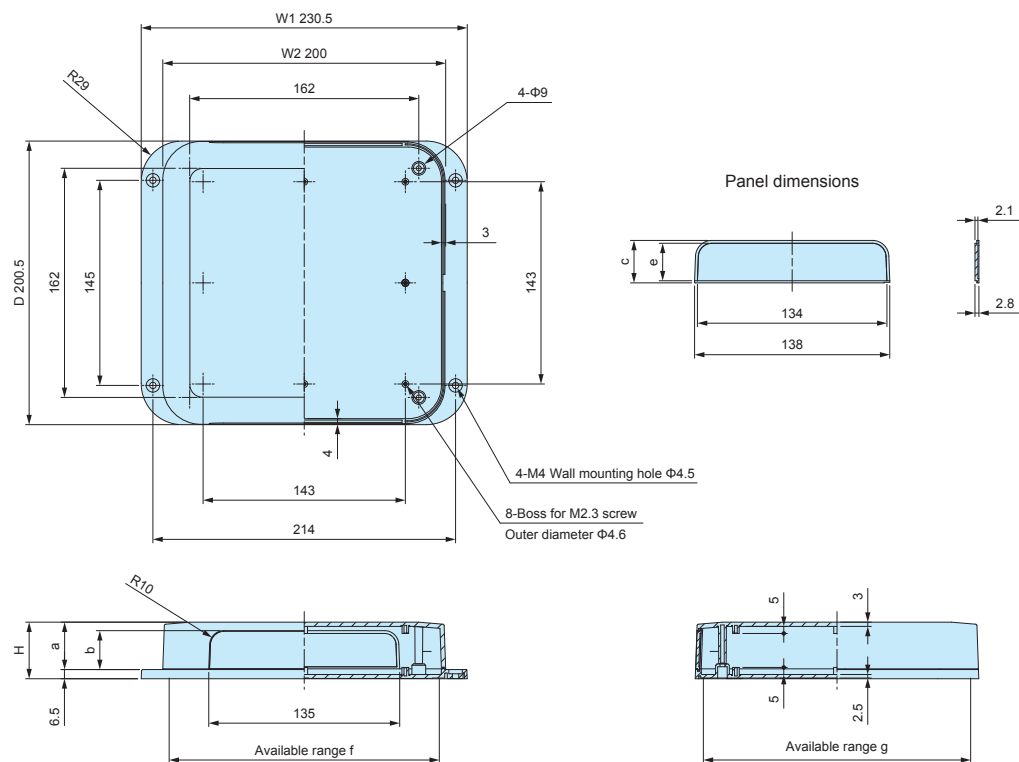


Product no.	W1	W2	H	D	a	b	c	e	f	g
PFF18-4-12W	205.4	175	35	120.4	29	24	26.5	23.5	166	110
PFF18-5-12W	205.4	175	50	120.4	44	39	41.5	38.5	165	109

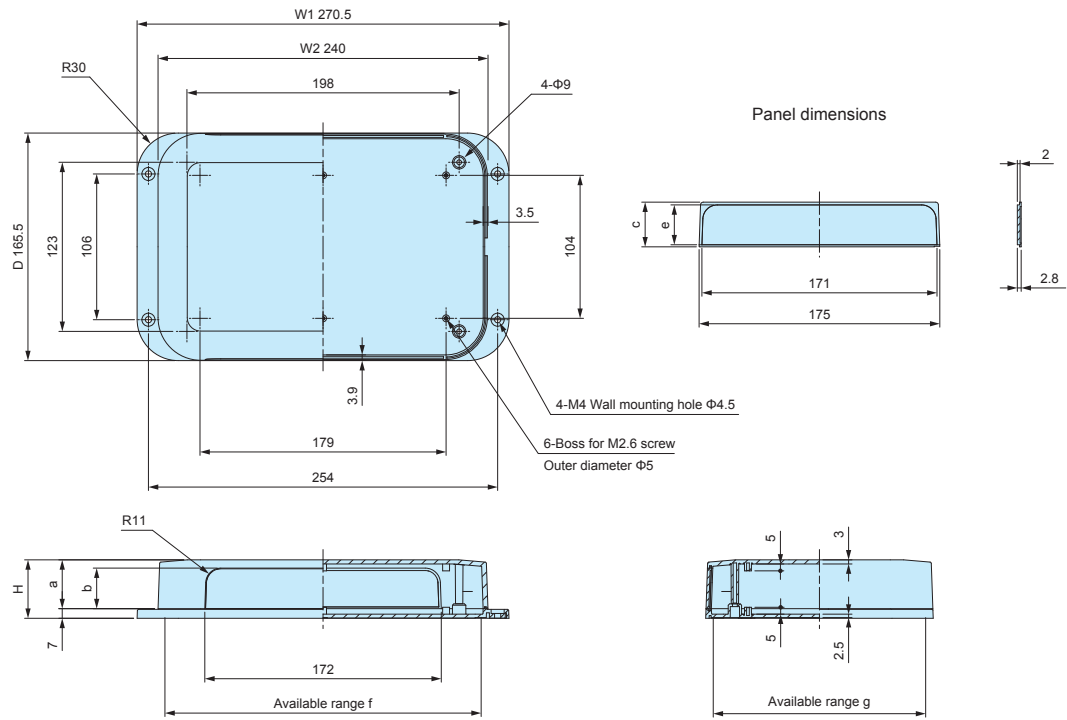


Product no.	W1	W2	H	D	a	b	c	e	f	g
PFF18-4-18W	205.4	175	35	175.4	29	24	26.5	23.5	166	165
PFF18-5-18W	205.4	175	50	175.4	44.5	39.5	41.5	38.5	165	109

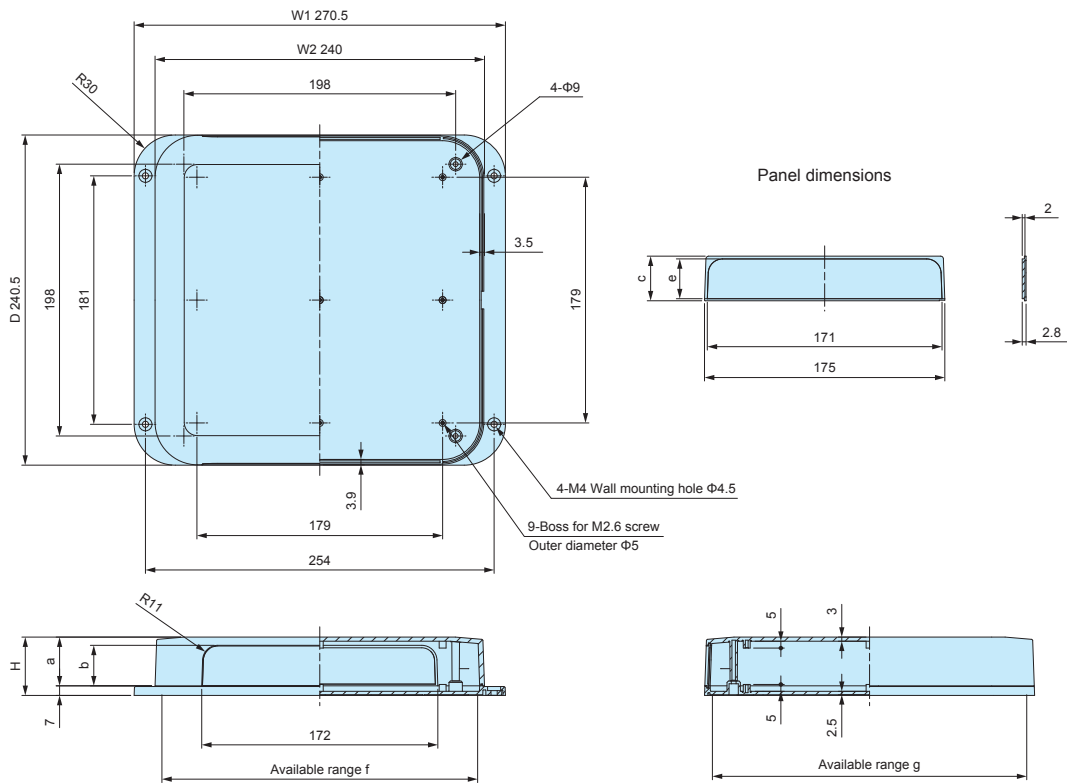
Product no.	W1	W2	H	D	a	b	c	e	f	g
PFF20-4-13W	230.5	200	40	135.5	33	27	30	26.5	191	124
PFF20-6-13W	230.5	200	60	135.5	53	47	50	46.5	190	123



Product no.	W1	W2	H	D	a	b	c	e	f	g
PFF20-4-20W	230.5	200	40	200.5	33	27	30	26.5	191	189
PFF20-6-20W	230.5	200	60	200.5	53	47	50	46.5	190	188



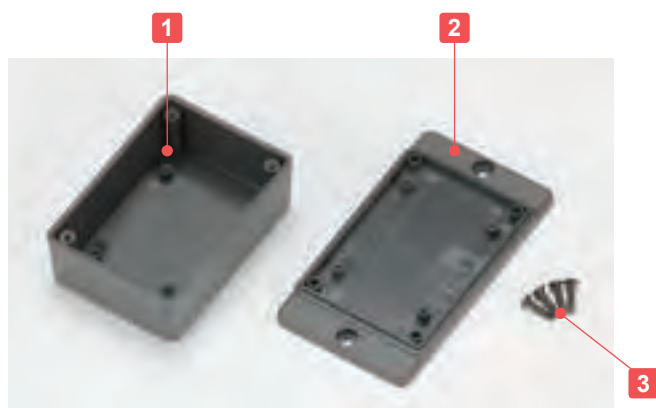
Product no.	W1	W2	H	D	a	b	c	e	f	g
PFF24-4-17W	270.5	240	42.5	165.5	35.5	29.5	32.5	29	230	154
PFF24-6-17W	270.5	240	60	165.5	53	47	50	46.5	229	153



Product no.	W1	W2	H	D	a	b	c	e	f	g
PFF24-4-24W	270.5	240	42.5	240.5	35.5	29.5	32.5	29	230	229
PFF24-6-24W	270.5	240	60	240.5	53	47	50	46.5	229	228

**TWF** SERIES**PLASTIC ENCLOSURE with WALL MOUNTING FLANGE****Technical Data**

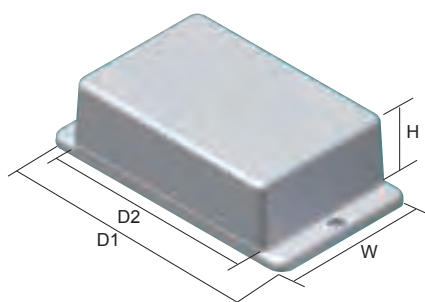
Protection class: IP40  
 Operating temperature: -10°C ~ +60°C



- Multi-purpose flanged enclosure designed for use as a wall-mounted device/terminal.
- 23 different sizes in 2 colors. Made of ABS UL94V-0 : UL94V-1.
- Equipped with screwing bosses for PCB.
- Recommended to be used as measurement instruments, wireless communication gadgets, controller devices and so on.

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	ABS UL94V-0 : UL94-1	Off-white • Dark gray
2	Flanged base	1	ABS UL94V-0 : UL94-1	Off-white • Dark gray
3	Self tapping screw	2 / 4	Steel	Nickel plated • Black trivalent chromate

**Accessories (Optional parts)**

TORX screw  
 MR series  
 See page 135



PCB mounting screw  
 EM-2.3  
 See page 135



Tapping standoff  
 TPS series  
 See page 133



# APPLICATION EXAMPLE

## SOLAR POWER SYSTEM REMOTE MONITOR

Product by Wave Energy Inc. (Japan)

Website : [wavee.co.jp](http://wavee.co.jp)



## SOLAR PANEL CHARGE CONTROLLER

Product by SunWorks Inc. (UK)

Website : [sunworks.co.uk](http://sunworks.co.uk)



## WIRELESS RFID TAG SEARCH DEVICE

Product by MULTILUX (Slovenia)

Website : [multilux.eu](http://multilux.eu)



### RFID TAG

Using our PS-65W portable plastic case.



## WIRELESS LIGHTING CONTROL ROUTER

Product by Deus LLC (Russia)

Website : [me6cloud.com](http://me6cloud.com)



### Color Type

Code	Cover	Flanged base	Screw
W	Off-white	Off-white	Nickel plated
D	Dark gray	Dark gray	Black trivalent chromate

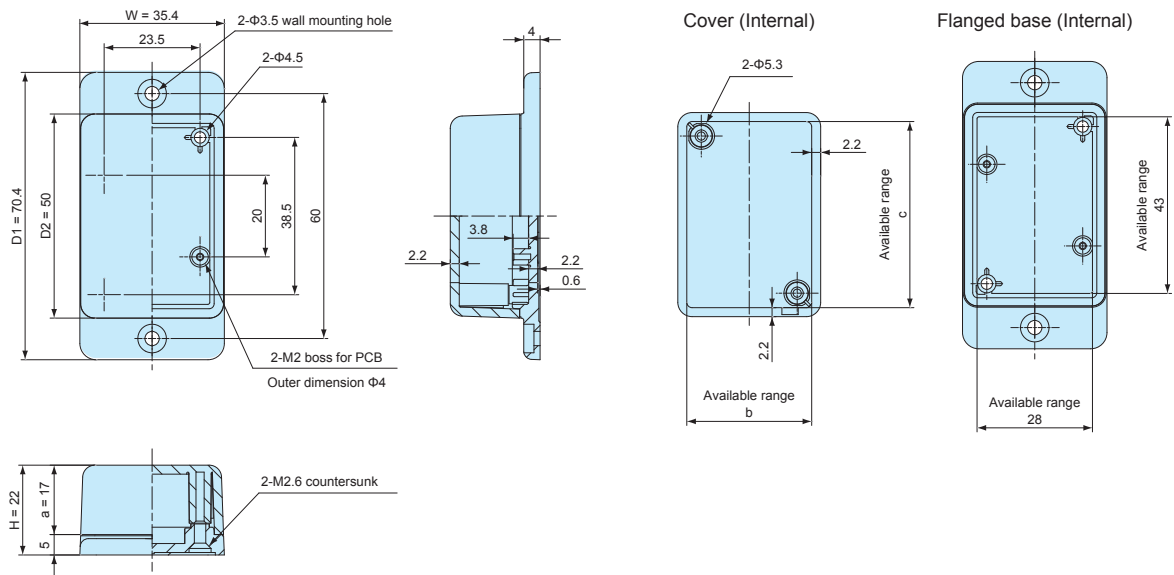
### Product no. / Dimensions

Product no.		Dimensions				UL class	Screw	Weight (g)
● Off-white	● Dark gray	W	H	D1 (Flanged base)	D2 (Cover)			
TWF 4-2- 5W	TWF 4-2- 5D	35.4	22	70.4	50	UL94V-0	M2.6-12 × 2 pcs	19.7
TWF 5-2- 5W	TWF 5-2- 5D	50.4	17	70.4	50	UL94V-1	M2.6-12 × 4 pcs	21.5
TWF 5-3- 5W	TWF 5-3- 5D	50.4	27	70.4	50	UL94V-1	M2.6-12 × 4 pcs	26.5
TWF 5-2- 7W	TWF 5-2- 7D	50.4	17	90.4	70	UL94V-1	M2.6-12 × 4 pcs	29
TWF 5-3- 7W	TWF 5-3- 7D	50.4	29.5	90.4	70	UL94V-1	M2.6-12 × 4 pcs	36
TWF 5-4- 7W	TWF 5-4- 7D	50.4	42	90.4	70	UL94V-1	M2.6-12 × 4 pcs	43.5
TWF 5-3- 9W	TWF 5-3- 9D	45.6	27.5	111	90	UL94V-0	M2.6-12 × 4 pcs	43
TWF 7-2-11W	TWF 7-2-11D	70.6	20.5	127	105	UL94V-0	M2.6-14 × 4 pcs	66.5
TWF 7-4-11W	TWF 7-4-11D	70.6	35.5	127	105	UL94V-0	M2.6-14 × 4 pcs	82
TWF 7-5-11W	TWF 7-5-11D	70.6	50.5	127	105	UL94V-0	M2.6-14 × 4 pcs	96.5
TWF 7-3-13W	TWF 7-3-13D	65.5	25.5	150	130	UL94V-0	M3-16 × 4 pcs	87
TWF 7-5-13W	TWF 7-5-13D	65.5	50	150	130	UL94V-0	M3-16 × 4 pcs	114
TWF 8-2- 8W	TWF 8-2- 8D	80.6	23.5	100.6	80	UL94V-0	M2.6-14 × 4 pcs	62
TWF 8-4- 8W	TWF 8-4- 8D	80.6	43.5	100.6	80	UL94V-0	M2.6-14 × 4 pcs	82
TWF 9-4-17W	TWF 9-4-17D	86	35	190	170	UL94V-0	M3-16 × 4 pcs	150
TWF 9-6-17W	TWF 9-6-17D	86	60	190	170	UL94V-0	M3-16 × 4 pcs	184
TWF11-5-22W	TWF11-5-22D	110.3	45	250.6	220	UL94V-0	M3-16 × 4 pcs	250
TWF11-8-22W	TWF11-8-22D	110.3	75	250.6	220	UL94V-0	M3-16 × 4 pcs	303
TWF13-3-13W	TWF13-3-13D	125.6	25	155.6	125	UL94V-0	M3-16 × 4 pcs	155
TWF13-5-13W	TWF13-5-13D	125.6	45	155.6	125	UL94V-0	M3-16 × 4 pcs	189
TWF13-3-18W	TWF13-3-18D	125.6	25	205.6	175	UL94V-0	M3-16 × 4 pcs	199
TWF13-5-18W	TWF13-5-18D	125.6	45	205.6	175	UL94V-0	M3-16 × 4 pcs	242
TWF13-7-18W	TWF13-7-18D	125.6	65	205.6	175	UL94V-0	M3-16 × 4 pcs	281

TWF dimensions

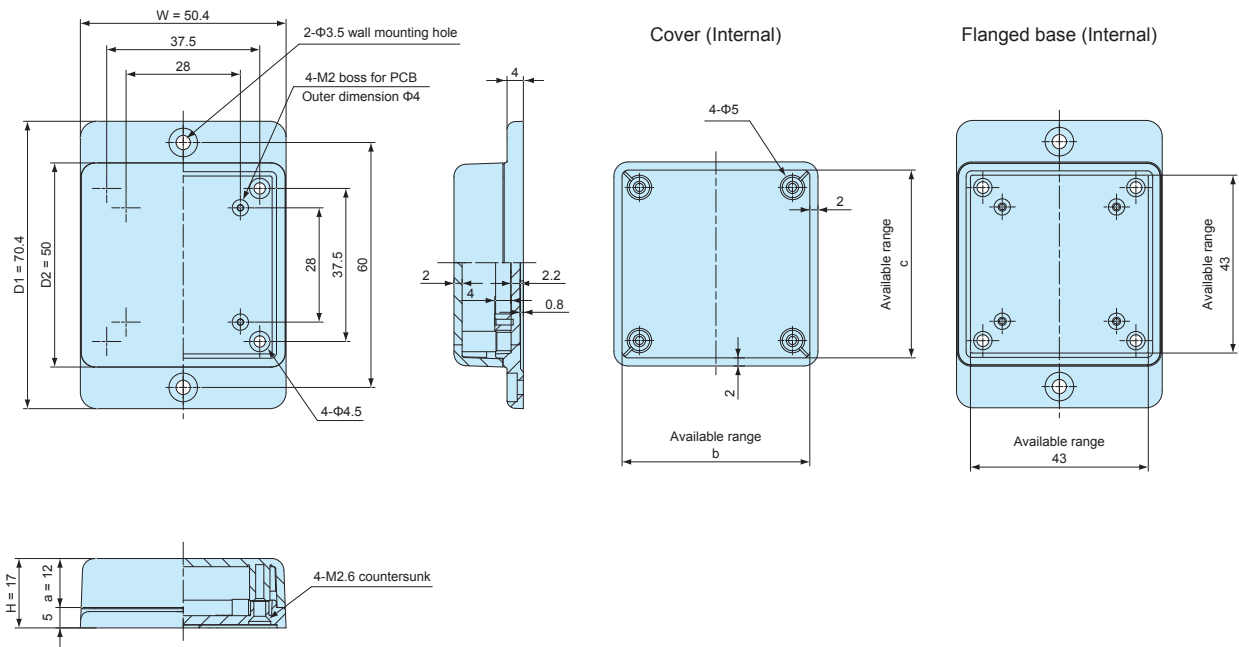
■ DXF/DWG/PDF drawings available on our website.

TWF4-2-5□



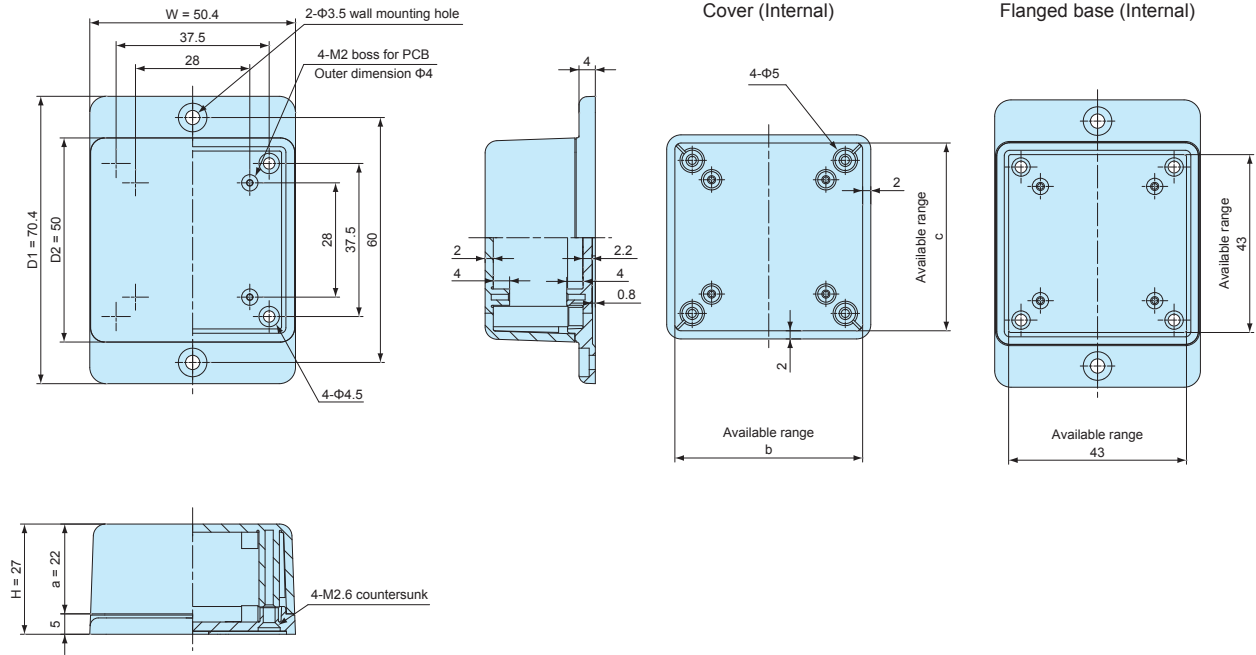
Product no.	W	H	D1	D2	a	b	c
TWF4-2-5□	35.4	22	70.4	50	17	29	44

TWF5-2-5□



Product no.	W	H	D1	D2	a	b	c
TWF5-2-5□	50.4	17	70.4	50	12	45	45

TWF5-3-5□

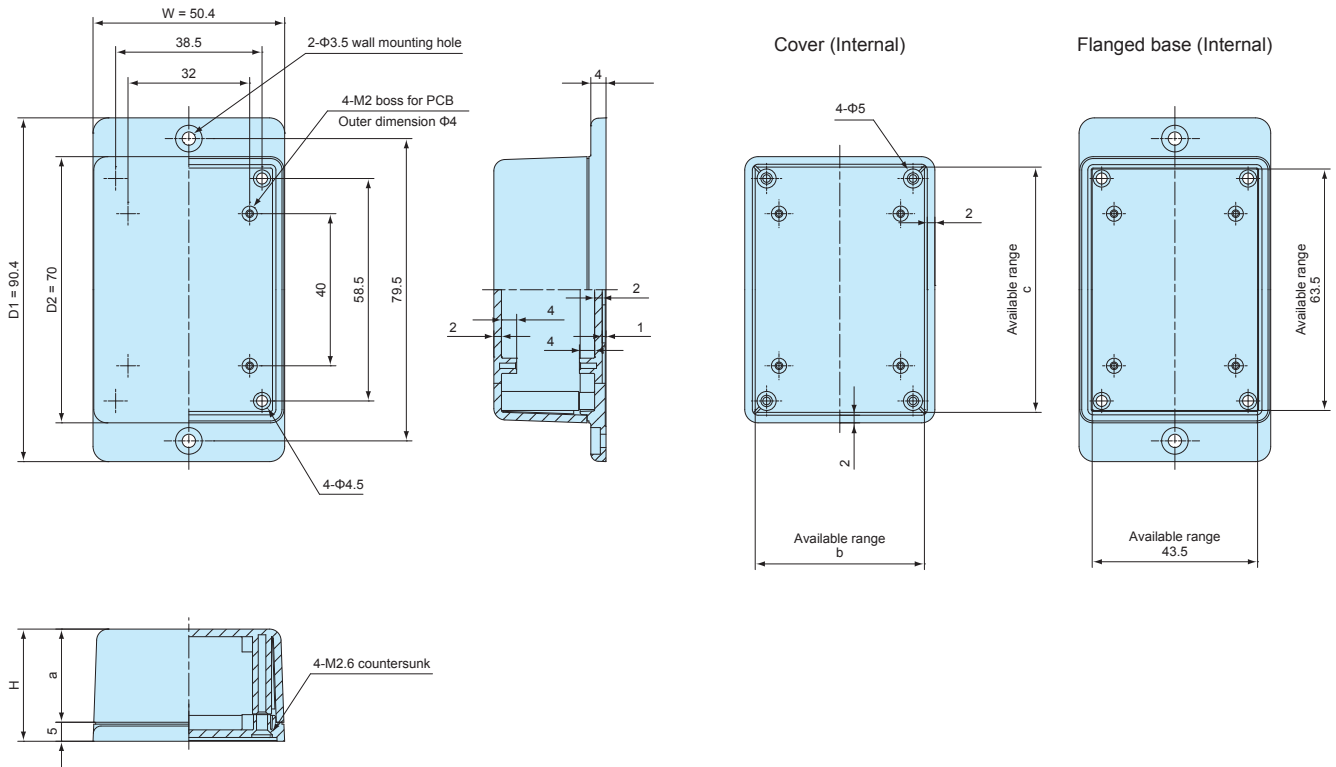


Product no.	W	H	D1	D2	a	b	c
TWF5-3-5□	50.4	27	70.4	50	22	44.5	44.5

TWF5-2-7□

TWF5-3-7□

TWF5-4-7□

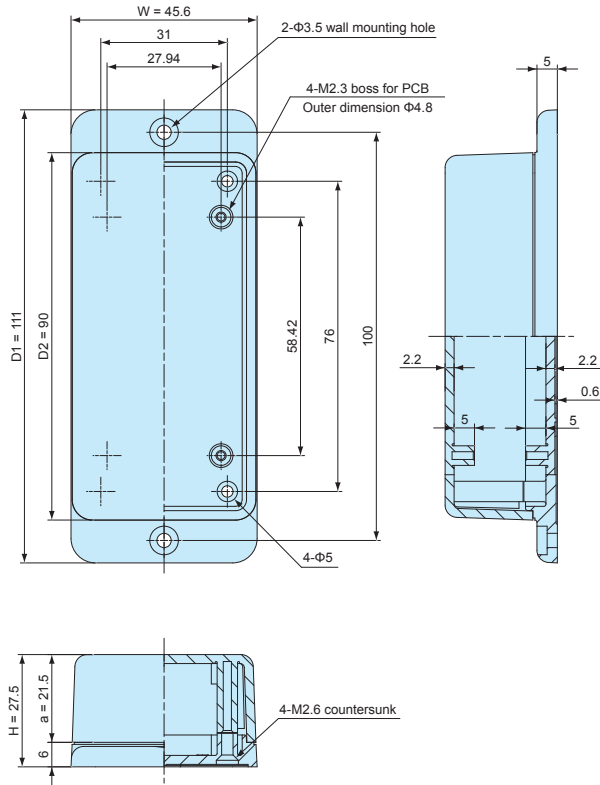


Product no.	W	H	D1	D2	a	b	c
TWF5-2-7□	50.4	17	90.4	70	12	44.5	64.5
TWF5-3-7□	50.4	29.5	90.4	70	24.5	44	64
TWF5-4-7□	50.4	42	90.4	70	37	43	63

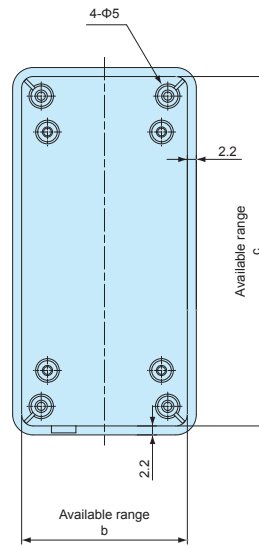
## TWF dimensions

■ DXF/DWG/PDF drawings available on our website.

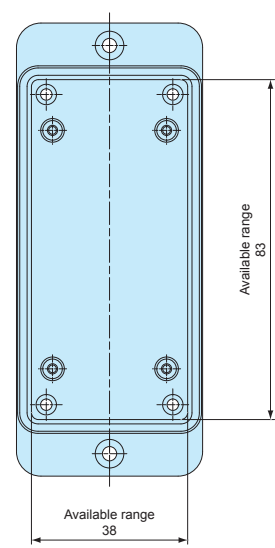
### TWF5-3-9□



Cover (Internal)



Flanged base (Internal)

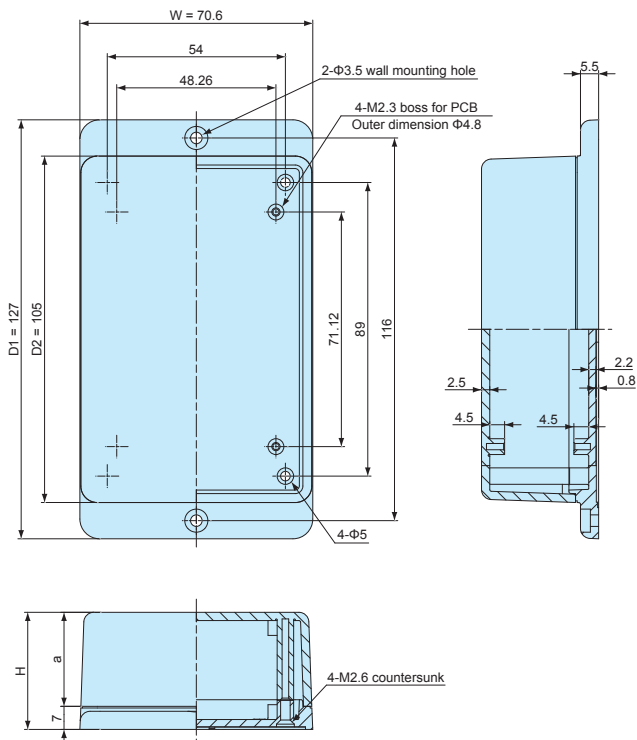


Product no.	W	H	D1	D2	a	b	c
TWF5-3-9□	45.6	27.5	111	90	21.5	39	84

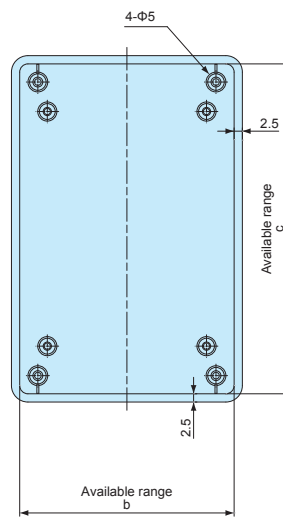
### TWF7-2-11□

### TWF7-4-11□

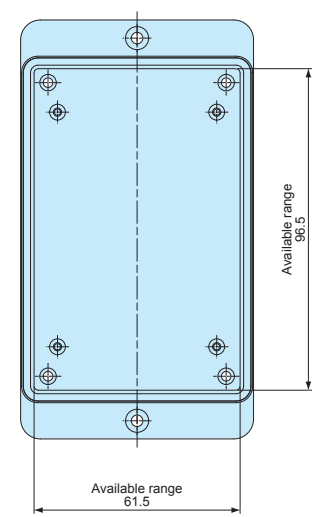
### TWF7-5-11□



Cover (Internal)



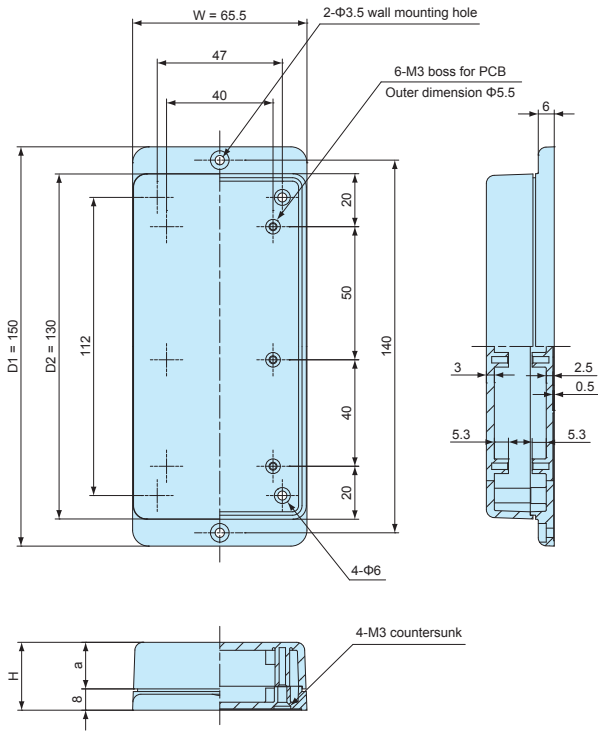
Flanged base (Internal)



Product no.	W	H	D1	D2	a	b	c
TWF7-2-11□	70.6	20.5	127	105	13.5	63.5	98.5
TWF7-4-11□	70.6	35.5	127	105	28.5	62.5	97.5
TWF7-5-11□	70.6	50.5	127	105	43.5	61.5	96.5

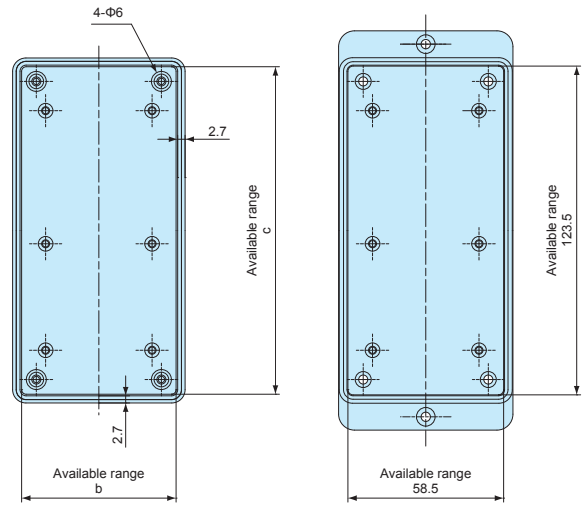
TWF7-3-13□

TWF7-5-13□



Cover (Internal)

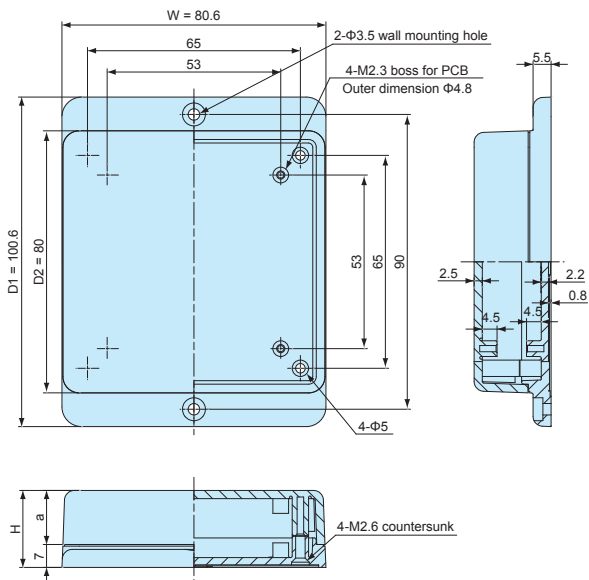
Flanged base (Internal)



Product no.	W	H	D1	D2	a	b	c
TWF7-3-13□	65.5	25.5	150	130	17.5	58	123
TWF7-5-13□	65.5	50	150	130	42	56.5	121.5

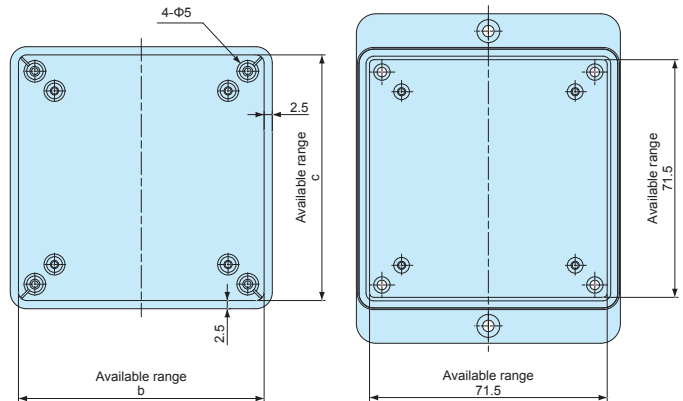
TWF8-2-8□

TWF8-4-8□



Cover (Internal)

Flanged base (Internal)



Product no.	W	H	D1	D2	a	b	c
TWF8-2-8□	80.6	23.5	100.6	80	16.5	73.5	73.5
TWF8-4-8□	80.6	43.5	100.6	80	36.5	72	72

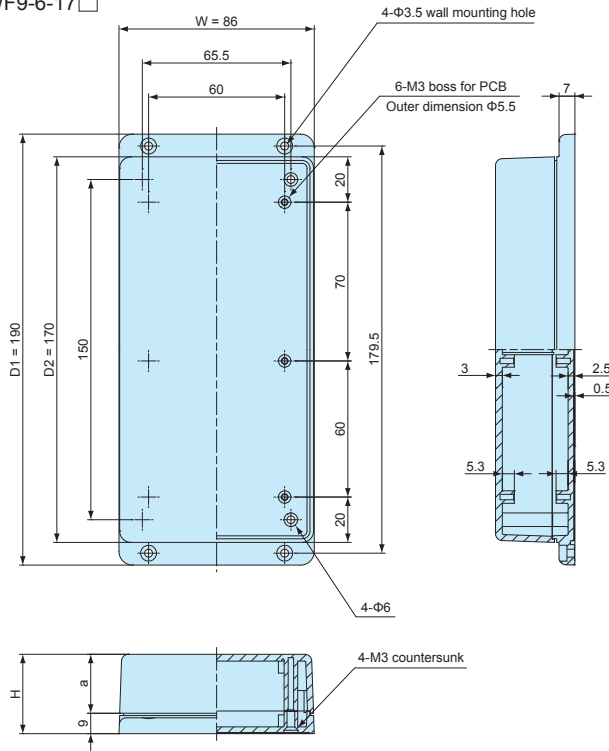


# TWF dimensions

■ DXF/DWG/PDF drawings available on our website.

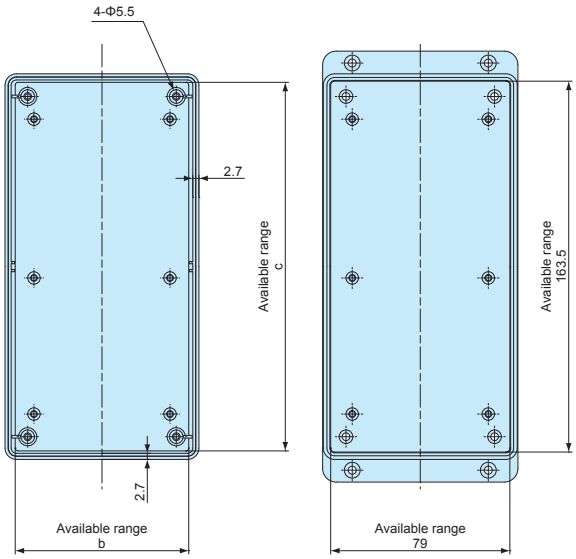
TWF9-4-17□

TWF9-6-17□



Cover (Internal)

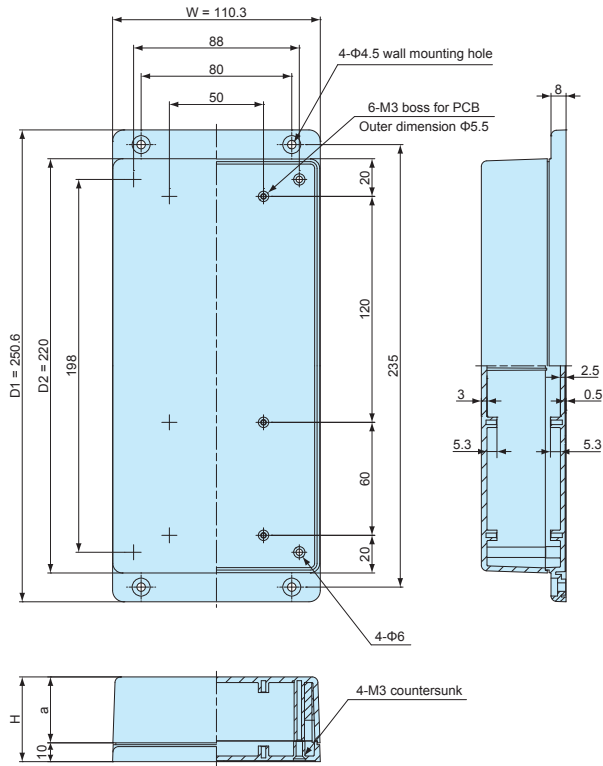
Flanged base (Internal)



Product no.	W	H	D1	D2	a	b	c
TWF9-4-17□	86	35	190	170	26	76.5	162.5
TWF9-6-17□	86	60	190	170	51	76.5	161

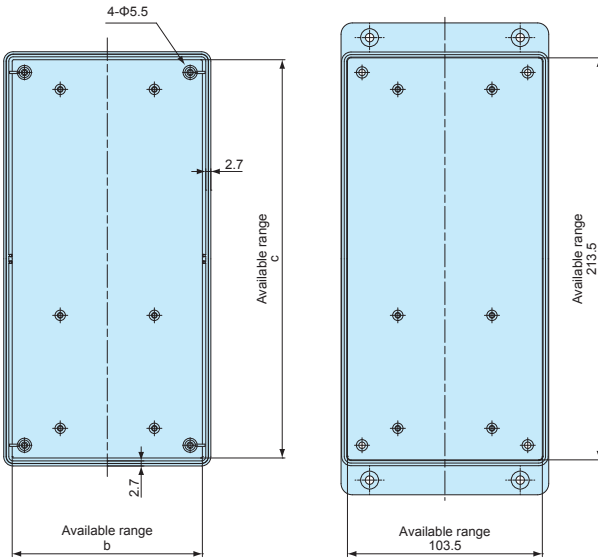
TWF11-5-22□

TWF11-8-22□



Cover (Internal)

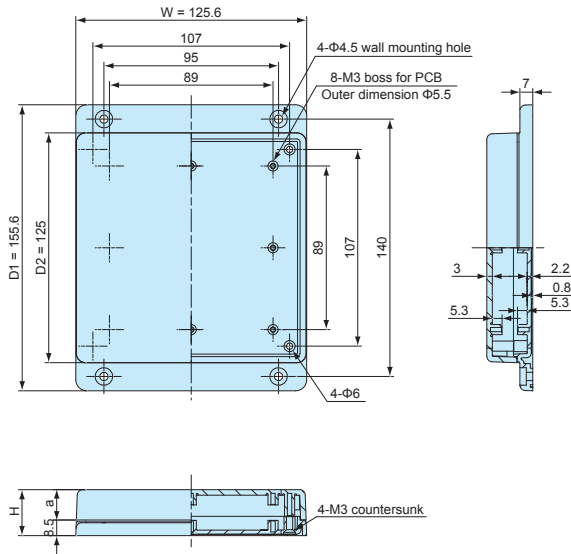
Flanged base (Internal)



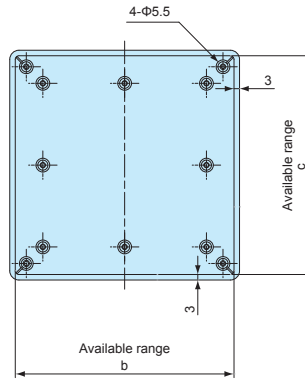
Product no.	W	H	D1	D2	a	b	c
TWF11-5-22□	110.3	45	250.6	220	35	101	211.5
TWF11-8-22□	110.3	75	250.6	220	65	100	210

TWF13-3-13□

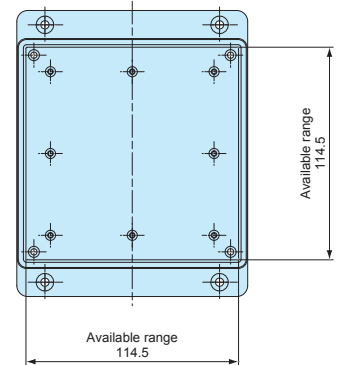
TWF13-5-13□



Cover (Internal)



Flanged base (Internal)

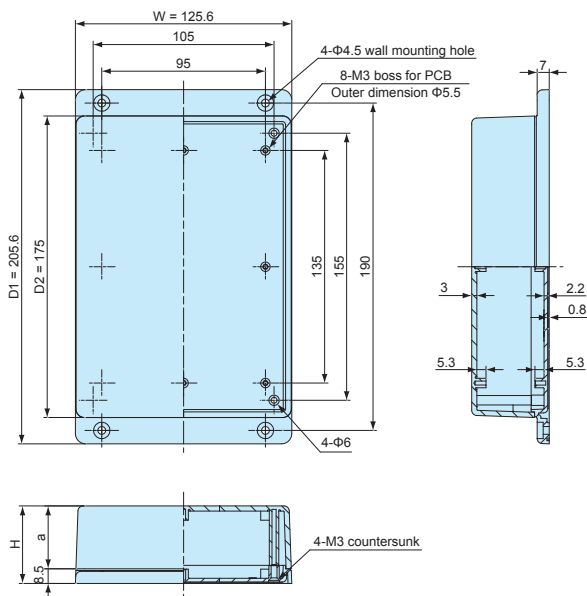


Product no.	W	H	D1	D2	a	b	c
TWF13-3-13□	125.6	25	155.6	125	16.5	118	118
TWF13-5-13□	125.6	45	155.6	125	36.5	116.5	116.5

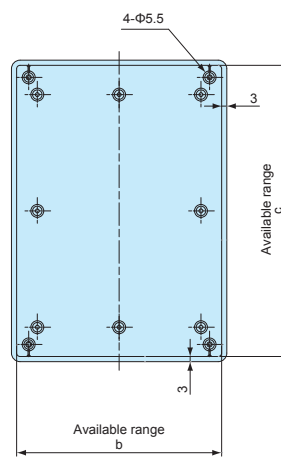
TWF13-3-18□

TWF13-5-18□

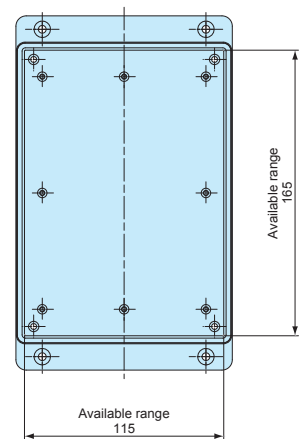
TWF13-7-18□



Cover (Internal)



Flanged base (Internal)



Product no.	W	H	D1	D2	a	b	c
TWF13-3-18□	125.6	25	205.6	175	16.5	117.5	167.5
TWF13-5-18□	125.6	45	205.6	175	36.5	116.5	166.5
TWF13-7-18□	125.6	65	205.6	175	56.5	115	165

# TWS·TW·TWN MULTI PURPOSE PLASTIC ENCLOSURE

Plastic enclosures suitable to be used as measuring instruments, communication devices, handy controllers and as various other devices.

Normal TW, TWS with silicone protectors, and flame-resistant TWN models are available.

TWS, TW, and TWN series are available in 11, 26, and 23 different sizes respectively.

## DIGITAL POWER AMPLIFIER



Product by Dream Co., Ltd. (Japan)

Website : [dream-pa.jp](http://dream-pa.jp)



High quality power amplifier equipped with USB-DAC.

Drive your speakers with 5W + 5W power while connected with PC through USB.

You can adjust your PC volume via a volume button on this device as well.

Unit is also equipped with an analog line-in terminal, so you can connect your portable audio player, etc.

With standard USB AC adapter, this can be used as an power amplifier for an analog line-in.

This amplifier is designed with plenty of film capacitors enabling crystal clear sound and natural sounding tones.

## GPS DATA LOGGER



Product by Reds Fixit Shop LLC (USA)

Website : [redsfixit.com](http://redsfixit.com)



Data logger to save and carry searched GPS data.

Map information can be printed out to a printer.

Compatible with many different map system formats; data is also able to be exported easily.

# APPLICATION EXAMPLE

## 6 CHANNEL DATA LOGGER



Possible to log temperature/humidity data and show the data up to 6 channels at a time.

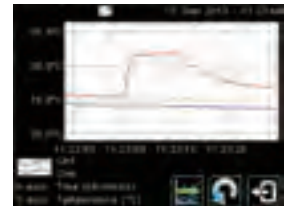
Maximum, Minimum, Average and Standard values can be displayed.

Furthermore, the difference between 2 channels can be displayed graphically.

Backlight touch screen panel provides a clear display for viewing.

Product by Irisense Limited (UK)

Website : [irisense.com](http://irisense.com)



## Wi-Fi DIRECT DATA LOGGER



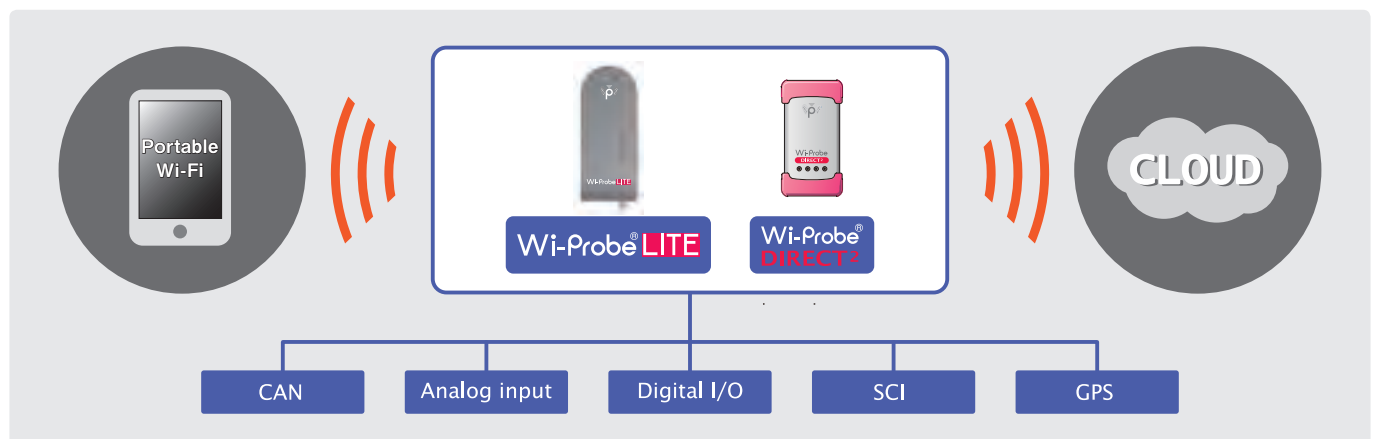
Product by Tkcc Co.,Ltd. (Japan)

Website : [tkcc.net](http://tkcc.net)

Highly functional data logger which can communicate with one another via Wi-Fi Direct®, thus joining a Wi-Fi network is not necessary.

Long distance communication can be done using Multihop Wireless Networks.

It is also able to monitor distant loggers using cloud computing infrastructure.



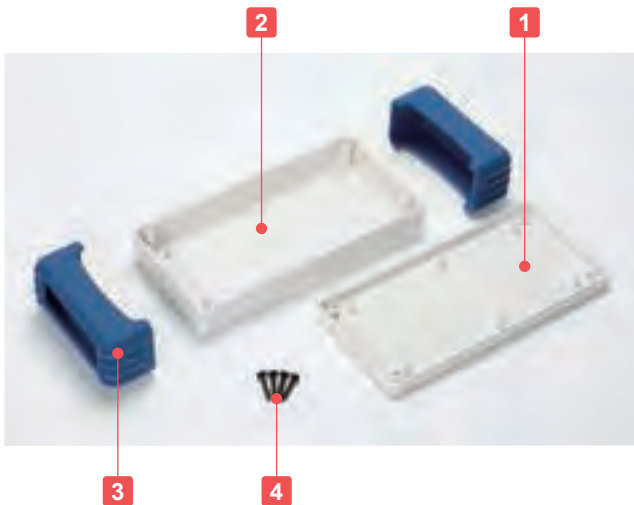
# TWS SERIES

# PLASTIC ENCLOSURE with SILICONE PROTECTOR



## Technical Data

Operating temperature: -10°C ~ +60°C



- Universal plastic enclosure with protective silicone protectors which functions both as an anti-slip grip and impact protection.
- Available in 11 sizes and selectable in 18 different color combinations.
- Plastic case and protective silicone with screw fastening.

## Components

No.	Part name	Pcs	Material : Color / Finish
1	Top cover	1	ABS UL94HB : Light gray • Black - ABS UL94V-0 : Off-white
2	Bottom cover	1	ABS UL94HB : Light gray • Black - ABS UL94V-0 : Off-white
3	Silicone protector	2	Silicone : Pink • Yellow • Green • Navy • Light gray • Black
4	Self tapping screw	4	Steel M3-20 / Black trivalent chromate

## Accessories (Optional parts)



PCB mounting screw  
EM-2.3  
See page 135



Tapping standoff  
TPS series  
See page 133



Snap-in battery box  
LD • LDN series  
See page 122



## Color Type

Code	B P Black / Pink	B Y Black / Yellow	B G Black / Green	B N Black / Navy	B L Black / Light gray	B B Black / Black
Color						
Code	G P Light gray / Pink	G Y Light gray / Yellow	G G Light gray / Green	G N Light gray / Navy	G L Light gray / Light gray	G B Light gray / Black
Color						
Code	W P Off-white / Pink	W Y Off-white / Yellow	W G Off-white / Green	W N Off-white / Navy	W L Off-white / Light gray	W B Off-white / Black
Color						

■ Note: Enclosure material varies depending on color. Black and Light gray are ABS UL94HB; Off-white is ABS UL94V-0.

## ABS UL94HB (Black • Light gray enclosure)

## Product no. / Dimensions

■ Please suffix color code at the end of the product number.

Product no.	W	H	D	Plastic case material	Weight (g)
TWS 7-3-13□□	71(65)	32(25.6)	136(130)	ABS UL94HB	117
TWS 7-5-13□□	71(65)	56(50.1)	136(130)	ABS UL94HB	147.5
TWS 9-4-17□□	91.5(85.5)	41.5(35.5)	176(170)	ABS UL94HB	193
TWS 9-6-17□□	91.5(85.5)	66.5(60.5)	176(170)	ABS UL94HB	243
TWS11-5-22□□	116(110)	51.5(45.3)	226(220)	ABS UL94HB	325.5
TWS11-8-22□□	116(110)	81.5(75.3)	226(220)	ABS UL94HB	399
TWS13-3-13□□	131(125)	31(25)	131(125)	ABS UL94HB	222
TWS13-5-13□□	131(125)	51(45)	131(125)	ABS UL94HB	269.5
TWS13-3-18□□	131(125)	31(25)	181(175)	ABS UL94HB	271.5
TWS13-5-18□□	131(125)	51(45)	181(175)	ABS UL94HB	322
TWS13-7-18□□	131(125)	71(65)	181(175)	ABS UL94HB	371

■ ( ) value = enclosure dimension.

## ABS UL94V-0 (Off-white enclosure)

## Product no. / Dimensions

■ Please suffix color code at the end of the product number.

Product no.	W	H	D	Plastic case material	Weight (g)
TWS 7-3-13W□	71(65)	32(25.6)	136(130)	ABS UL94V-0	126
TWS 7-5-13W□	71(65)	56(50.1)	136(130)	ABS UL94V-0	163
TWS 9-4-17W□	91.5(85.5)	41.5(35.5)	176(170)	ABS UL94V-0	211
TWS 9-6-17W□	91.5(85.5)	66.5(60.5)	176(170)	ABS UL94V-0	266
TWS11-5-22W□	116(110)	51.5(45.3)	226(220)	ABS UL94V-0	356.5
TWS11-8-22W□	116(110)	81.5(75.3)	226(220)	ABS UL94V-0	438
TWS13-3-13W□	131(125)	31(25)	131(125)	ABS UL94V-0	243.5
TWS13-5-13W□	131(125)	51(45)	131(125)	ABS UL94V-0	294
TWS13-3-18W□	131(125)	31(25)	181(175)	ABS UL94V-0	293.5
TWS13-5-18W□	131(125)	51(45)	181(175)	ABS UL94V-0	353
TWS13-7-18W□	131(125)	71(65)	181(175)	ABS UL94V-0	407.5

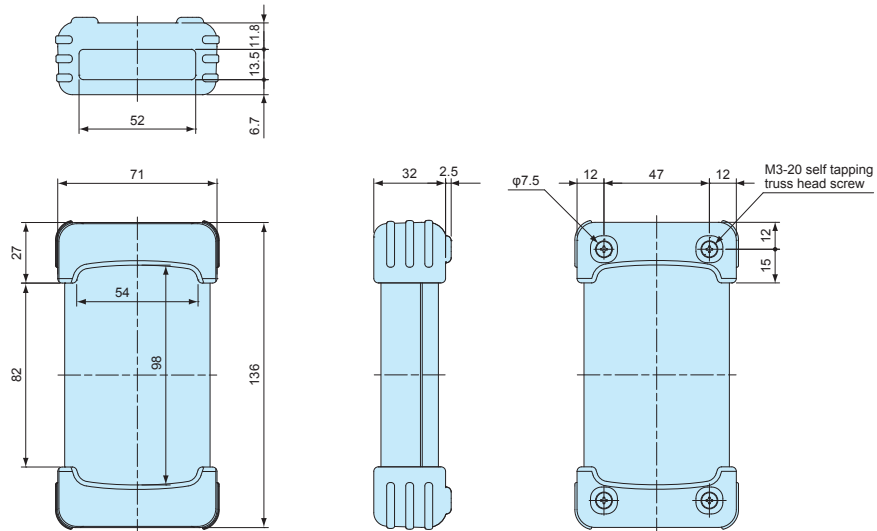
■ ( ) value = enclosure dimension.

## TWS dimensions

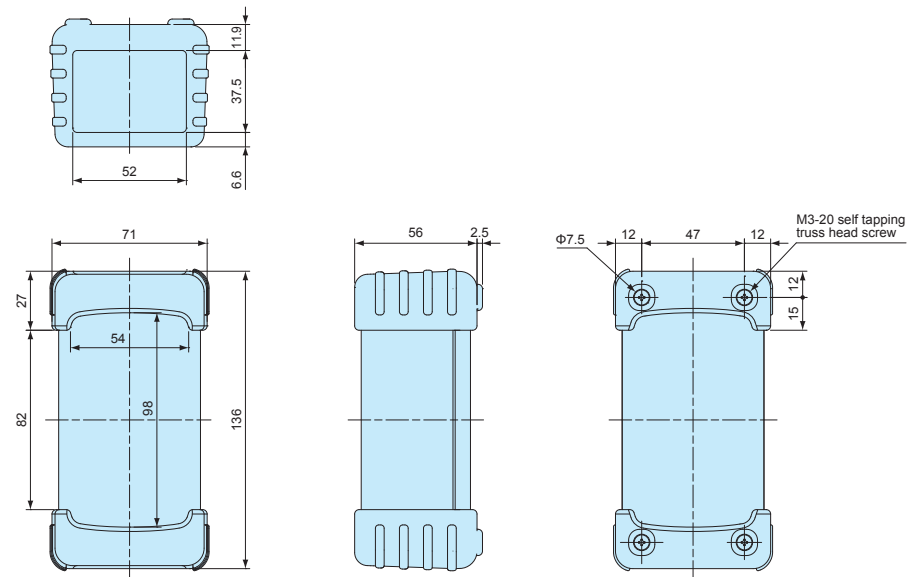
■ DXF/DWG/PDF drawings available on our website.

■ Refer to page 118 and 119 for enclosure dimensions (without silicone protector).

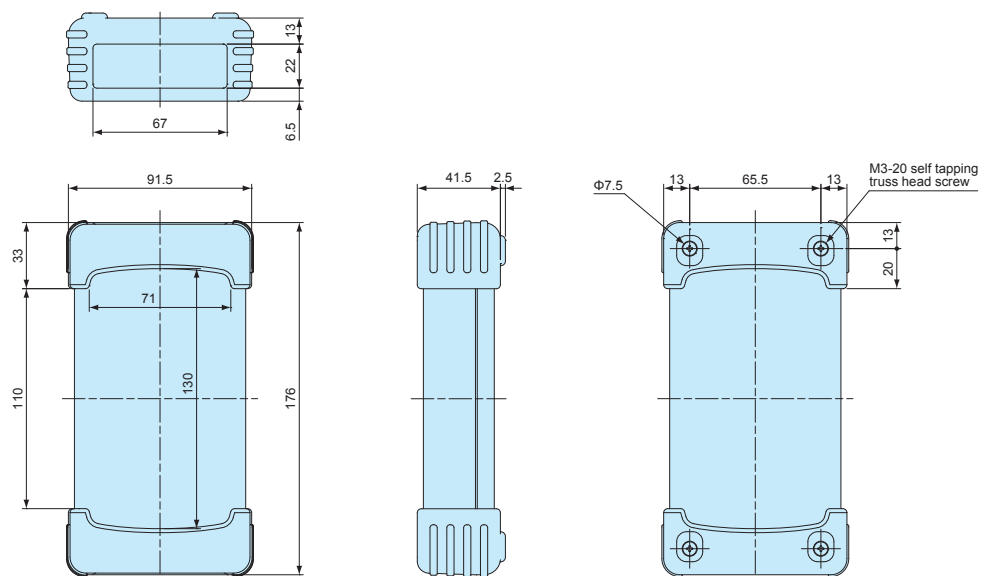
### TWS7-3-13



### TWS7-5-13



### TWS9-4-17



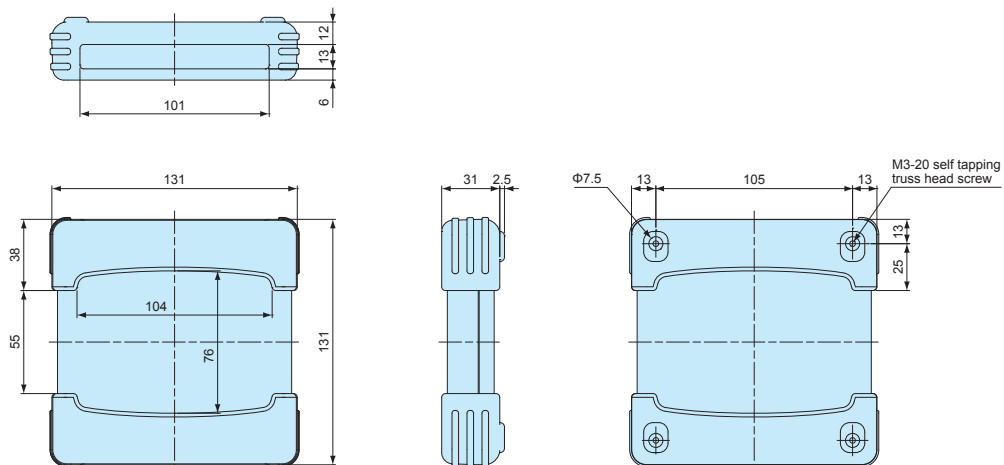


## TWS dimensions

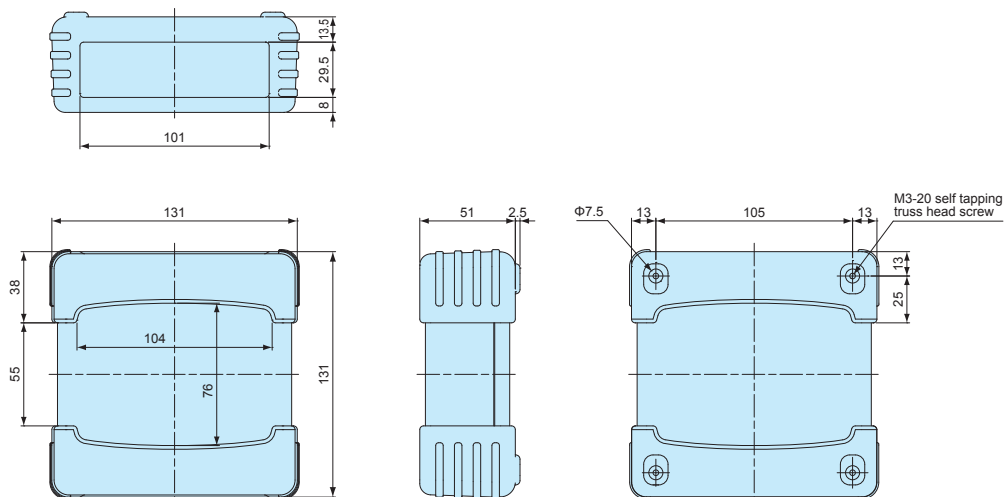
■ DXF/DWG/PDF drawings available on our website.

■ Refer to page 119 for enclosure dimensions (without silicone protector).

### TWS13-3-13

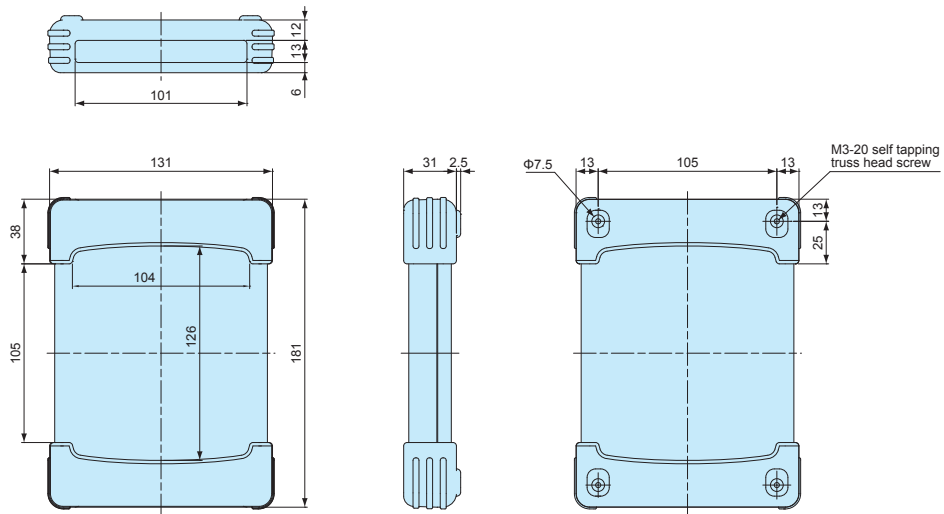


### TWS13-5-13

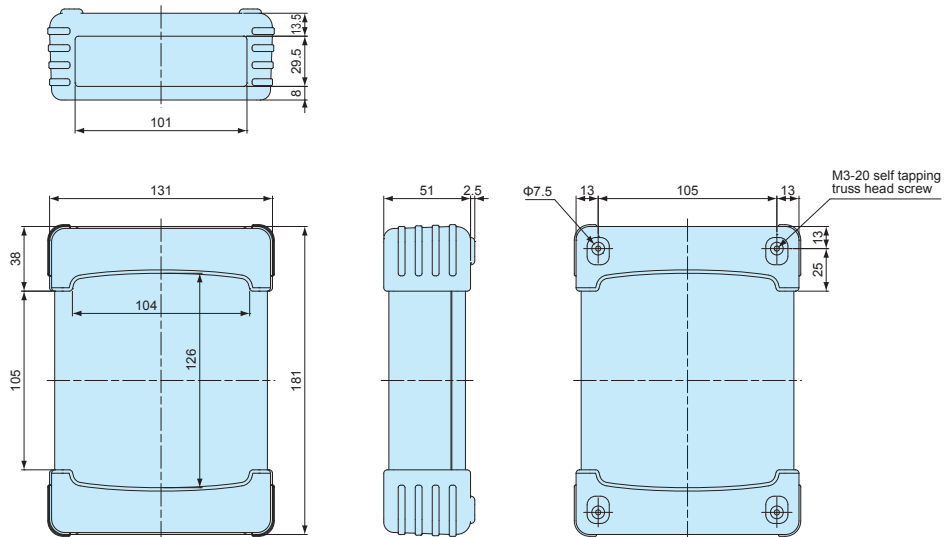


■ Refer to page 120 for enclosure dimensions (without silicone protector).

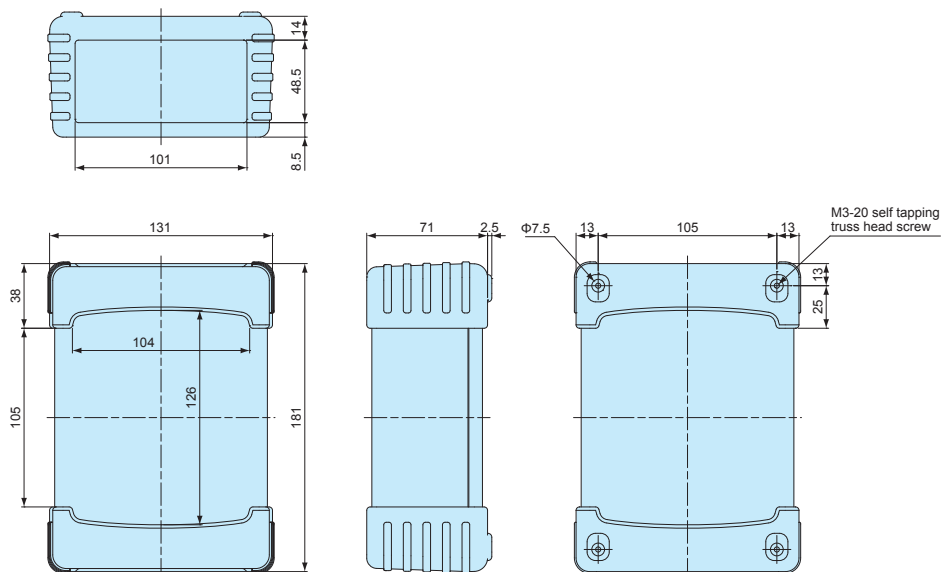
## TWS13-3-18



## TWS13-5-18



TWS13-7-18





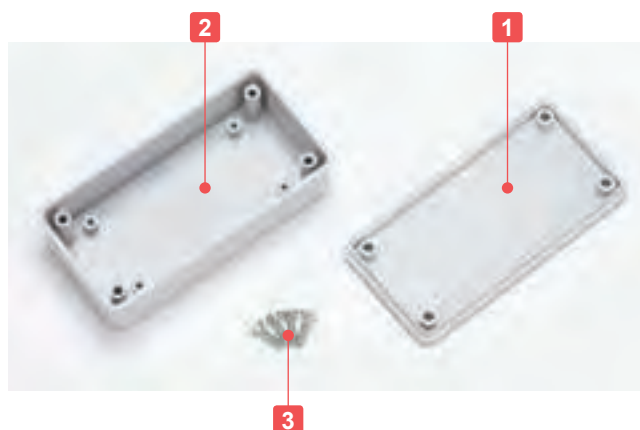
## TW•TWN SERIES

## MULTIPURPOSE PLASTIC ENCLOSURE



## Technical Data

Protection class: IP40  
Operating temperature: -10°C ~ +60°C



- Universal plastic enclosure with screw fastening.
- Selectable in 26 sizes in 3 colors ; Light gray, Black and Off-white.
- Suitable for measuring instruments, testing devices, wireless communication devices, medical devices, and so on.

## Components

No.	Part name	Pcs	Material / Color / Finish
1	Top cover	1	TW : ABS UL94HB / Light gray • Black
			TWN : ABS UL94V-1 • UL94V-0 / Off-white
2	Bottom cover	1	TW : ABS UL94HB / Light gray • Black
			TWN : ABS UL94V-1 • UL94V-0 / Off-white
3	Self tapping screw	2 / 4	TW : Steel / Trivalent chromate • Black trivalent chromate
			TWN : Steel / Nickel plated



Neodymium magnet  
NMG series  
See page 130

## Accessories (Optional parts)



Wall suspension bracket  
WM series  
See page 129



TORX Screw  
MR series  
See page 135



PCB mounting screw  
EM series  
See page 135



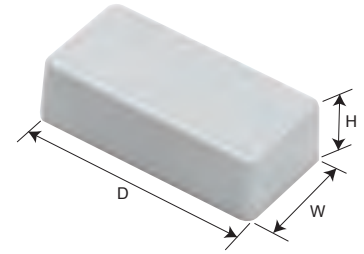
Tapping standoff  
TPS series  
See page 133



Snap-in battery box  
LD • LDN series  
See page 122

## Color Type

Series	Code	Top cover	Bottom cover	Screw
TW	G	Light gray	Light gray	Trivalent chromate
	B	Black	Black	Black trivalent chromate
TWN	W	Off-white	Off-white	Nickel plated



## TW series (ABS UL94HB)

## Product no. / Dimensions

Product no.		Dimensions			Screw	Weight (g)
● Light gray	● Black	W	H	D		
TW 4-2- 5G	TW 4-2- 5B	35	20	50	M2.6-12 × 2 pcs	13.5
TW 4-2- 6G	TW 4-2- 6B	35	20	60	M2.6-12 × 2 pcs	15.5
TW 4-2- 8G	TW 4-2- 8B	40.3	20	80.3	M2.6-12 × 2 pcs	22
TW 5-2- 5G	TW 5-2- 5B	50	15	50	M2.6-12 × 4 pcs	18
TW 5-3- 5G	TW 5-3- 5B	50	25	50	M2.6-12 × 4 pcs	22
TW 5-2- 7G	TW 5-2- 7B	50	15	70	M2.6-12 × 4 pcs	22
TW 5-3- 7G	TW 5-3- 7B	50	27.5	70	M2.6-12 × 4 pcs	29
TW 5-4- 7G	TW 5-4- 7B	50	40	70	M2.6-12 × 4 pcs	35
TW 5-3- 9G	TW 5-3- 9B	45	25	90	M3-12 × 4 pcs	30.5
TW 5-3-10G	TW 5-3-10B	50	30	100	M3-12 × 4 pcs	45.5
TW 7-2-11G	TW 7-2-11B	70	20	105	M2.6-14 × 4 pcs	56.5
TW 7-4-11G	TW 7-4-11B	70	35	105	M2.6-14 × 4 pcs	70
TW 7-5-11G	TW 7-5-11B	70	50	105	M2.6-14 × 4 pcs	83
TW 7-3-13G	TW 7-3-13B	65	25.6	130	M3-16 × 4 pcs	76
TW 7-5-13G	TW 7-5-13B	65	50.1	130	M3-16 × 4 pcs	100
TW 8-2- 8G	TW 8-2- 8B	80	20	80	M2.6-12 × 4 pcs	49
TW 8-4- 8G	TW 8-4- 8B	80	40	80	M2.6-12 × 4 pcs	65
TW 9-4-17G	TW 9-4-17B	85.5	35.5	170	M3-16 × 4 pcs	133
TW 9-6-17G	TW 9-6-17B	85.5	60.5	170	M3-16 × 4 pcs	168
TW11-5-22G	TW11-5-22B	110	45.3	220	M3-16 × 4 pcs	223
TW11-8-22G	TW11-8-22B	110	75.3	220	M3-16 × 4 pcs	277
TW13-3-13G	TW13-3-13B	125	25	125	M3-16 × 4 pcs	135
TW13-5-13G	TW13-5-13B	125	45	125	M3-16 × 4 pcs	165.5
TW13-3-18G	TW13-3-18B	125	25	175	M3-16 × 4 pcs	184.5
TW13-5-18G	TW13-5-18B	125	45	175	M3-16 × 4 pcs	218
TW13-7-18G	TW13-7-18B	125	65	175	M3-16 × 4 pcs	254

## TWN series (ABS UL94V-1 • UL94V-0)

## Product no. / Dimensions

Product no.	W	H	D	Screw	UL class	Weight (g)
TWN 4-2- 5W	35	20	50	M2.6-12 × 2 pcs	UL94V-1	16.5
TWN 4-2- 6W	35	20	60	M2.6-12 × 2 pcs	UL94V-1	18
TWN 4-2- 8W	40.3	20	80.3	M2.6-12 × 2 pcs	UL94V-1	26
TWN 5-2- 7W	50	15	70	M2.6-12 × 4 pcs	UL94V-1	24.5
TWN 5-3- 7W	50	27.5	70	M2.6-12 × 4 pcs	UL94V-1	33
TWN 5-4- 7W	50	40	70	M2.6-12 × 4 pcs	UL94V-1	39.5
TWN 5-3- 9W	45	25	90	M3-16 × 4 pcs	UL94V-1	35
TWN 7-2-11W	70	20	105	M2.6-14 × 4 pcs	UL94V-0	64.5
TWN 7-4-11W	70	35	105	M2.6-14 × 4 pcs	UL94V-0	80
TWN 7-5-11W	70	50	105	M2.6-14 × 4 pcs	UL94V-0	94.5
TWN 7-3-13W	65	25.6	130	M3-16 × 4 pcs	UL94V-0	85
TWN 7-5-13W	65	50.1	130	M3-16 × 4 pcs	UL94V-0	115.5
TWN 8-2- 8W	80	20	80	M2.6-12 × 4 pcs	UL94V-0	55.5
TWN 8-4- 8W	80	40	80	M2.6-12 × 4 pcs	UL94V-0	75
TWN 9-4-17W	85.5	35.5	170	M3-16 × 4 pcs	UL94V-0	151
TWN 9-6-17W	85.5	60.5	170	M3-16 × 4 pcs	UL94V-0	191
TWN11-5-22W	110	45.3	220	M3-16 × 4 pcs	UL94V-0	254
TWN11-8-22W	110	75.3	220	M3-16 × 4 pcs	UL94V-0	316
TWN13-3-13W	125	25	125	M3-16 × 4 pcs	UL94V-0	156.5
TWN13-5-13W	125	45	125	M3-16 × 4 pcs	UL94V-0	190
TWN13-3-18W	125	25	175	M3-16 × 4 pcs	UL94V-0	206.5
TWN13-5-18W	125	45	175	M3-16 × 4 pcs	UL94V-0	249
TWN13-7-18W	125	65	175	M3-16 × 4 pcs	UL94V-0	290.5

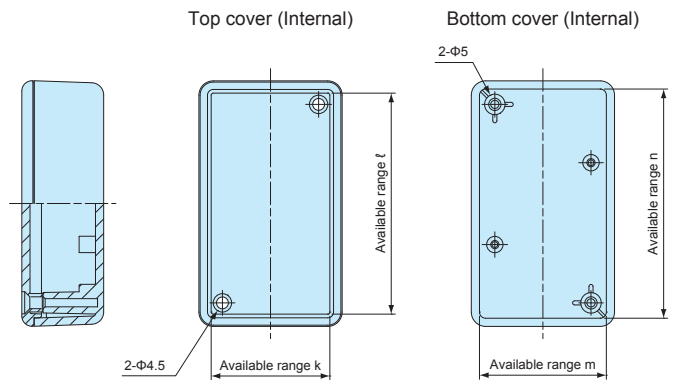
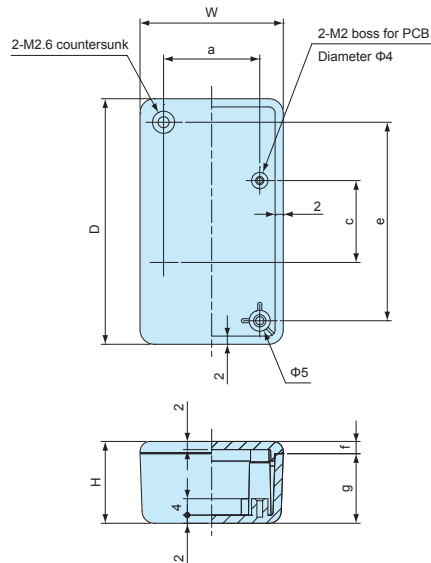
## TW / TWN dimensions

■ DXF/DWG/PDF drawings available on our website.

TW / TWN4-2-5

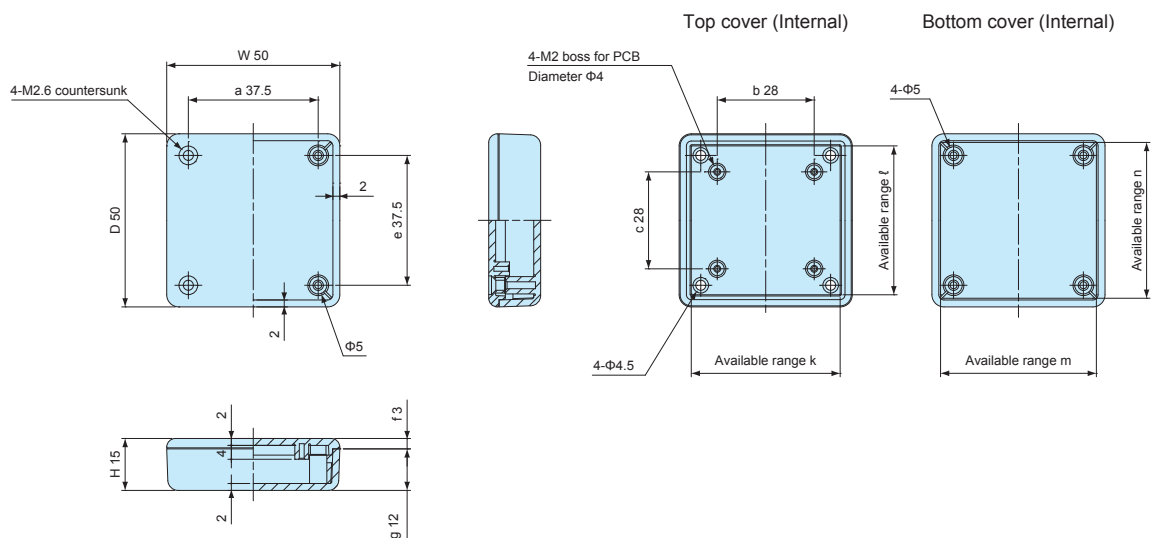
TW / TWN4-2-6

TW / TWN4-2-8



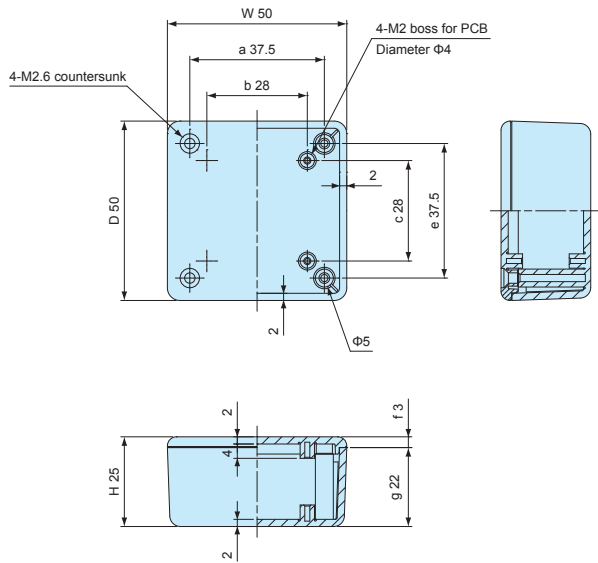
Product no.	W	H	D	a	b	c	e	f	g	i	j	k	l	m	n
TW / TWN4-2-5□	35	20	50	23.5	-	20	38.5	3	17	-	-	28.5	43.5	29.5	44.5
TW / TWN4-2-6□	35	20	60	23.5	-	20	48.5	3	17	-	-	28.5	53.5	29.5	54.5
TW / TWN4-2-8□	40.3	20	80.3	28.5	-	40	68.5	3	17	-	-	33.5	73.5	34.5	74.5

TW5-2-5



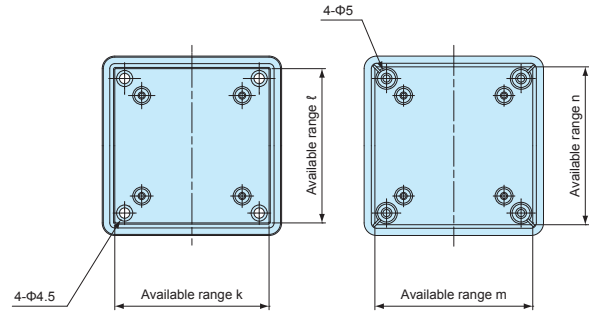
Product no.	W	H	D	a	b	c	e	f	g	i	j	k	l	m	n
TW5-2-5□	50	15	50	37.5	28	28	37.5	3	12	-	-	43	43	45	45

TW5-3-5



Top cover (Internal)

Bottom cover (Internal)

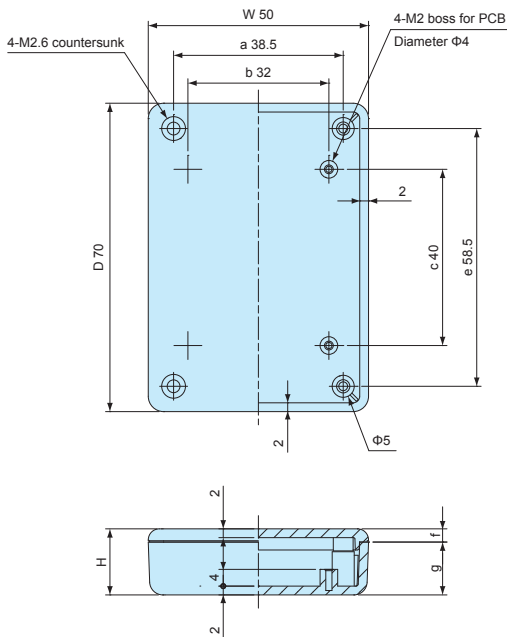


Product no.	W	H	D	a	b	c	e	f	g	i	j	k	$\ell$	m	n
TW5-3-5□	50	25	50	37.5	28	28	37.5	3	22	-	-	43	43	44.5	44.5

TW / TWN5-2-7

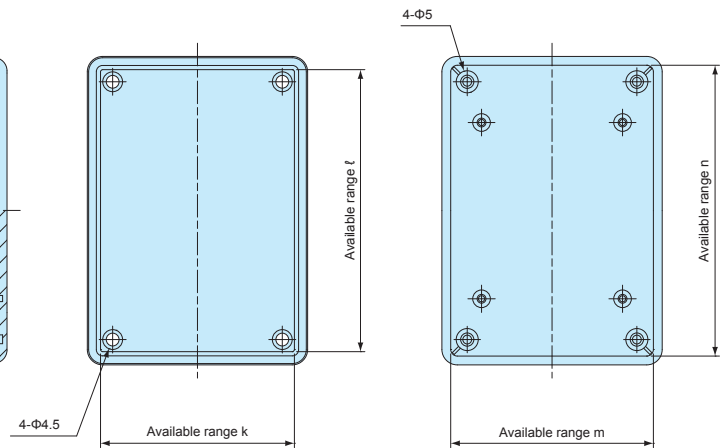
TW / TWN5-3-7

TW / TWN5-4-7



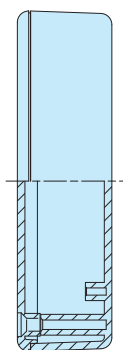
Top cover (Internal)

Bottom cover (Internal)

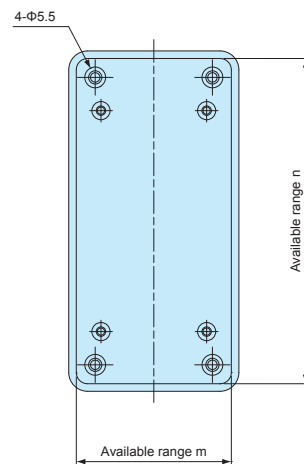
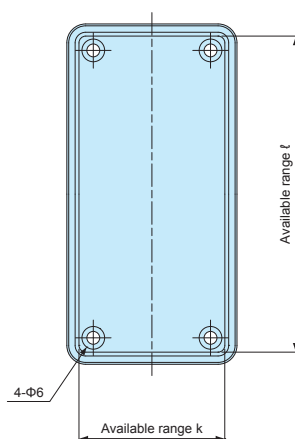


Product no.	W	H	D	a	b	c	e	f	g	i	j	k	$\ell$	m	n
TW / TWN5-2-7□	50	15	70	38.5	32	40	58.5	3	12	-	-	43.5	63.5	44.5	64.5
TW / TWN5-3-7□	50	27.5	70	38.5	32	40	58.5	3	24.5	-	-	43.5	63.5	44	64
TW / TWN5-4-7□	50	40	70	38.5	32	40	58.5	3	37	-	-	43.5	63.5	43	63

TW / TWN5-3-9  
TW5-3-10

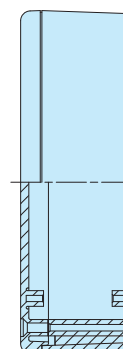


Bottom cover (Internal)

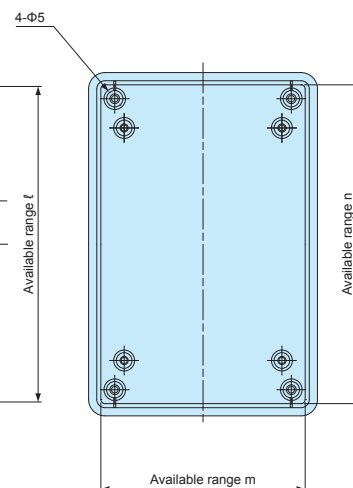
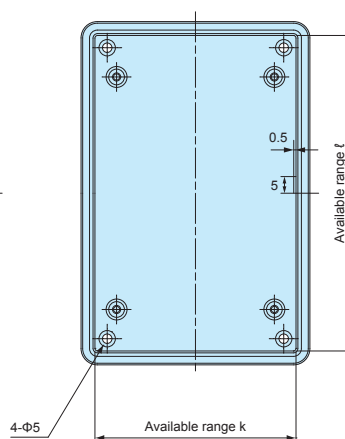


Product no.	W	H	D	a	b	c	e	f	g	i	j	k	ℓ	m	n
TW / TWN5-3-9□	45	25	90	31	27.94	58.42	76	3.5	21.5	–	–	38.5	83.5	39	84
TW5-3-10□	50	30	100	36	22.86	73.66	86	3.5	26.5	–	–	43	93	44	94

TW / TWN7-2-11  
TW / TWN7-4-11  
TW / TWN7-5-11



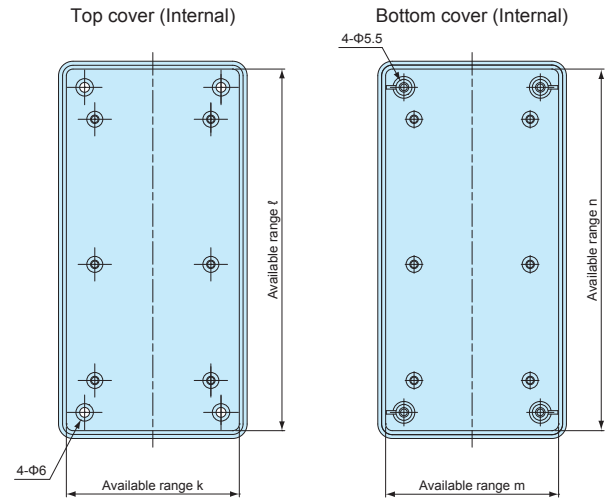
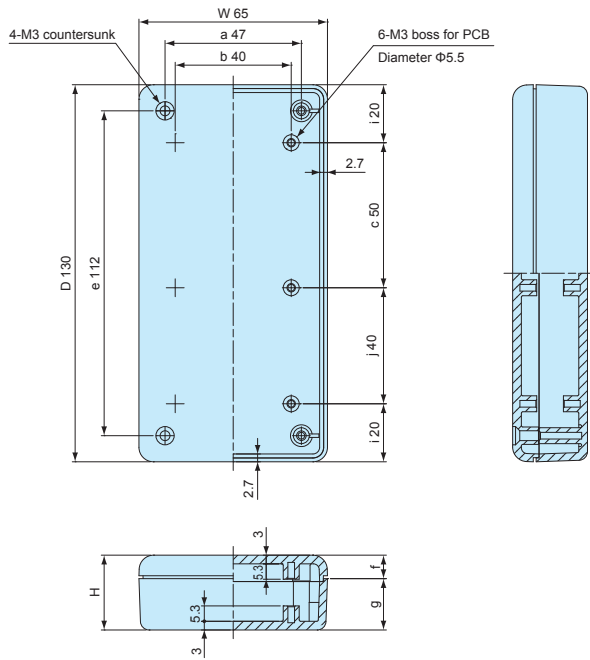
Bottom cover (Internal)



Product no.	W	H	D	a	b	c	e	f	g	i	j	k	ℓ	m	n
TW / TWN7-2-11□	70	20	105	54	48.26	71.12	89	6.5	13.5	–	–	61.5	96.5	63.5	98.5
TW / TWN7-4-11□	70	35	105	54	48.26	71.12	89	6.5	28.5	–	–	61.5	96.5	62.5	97.5
TW / TWN7-5-11□	70	50	105	54	48.26	71.12	89	6.5	43.5	–	–	61.5	96.5	61.5	96.5

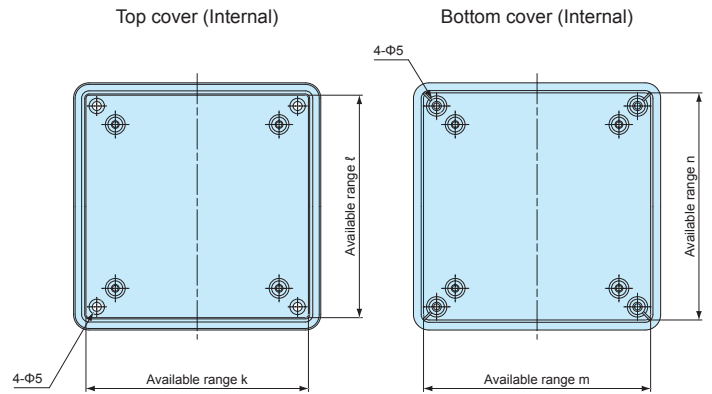
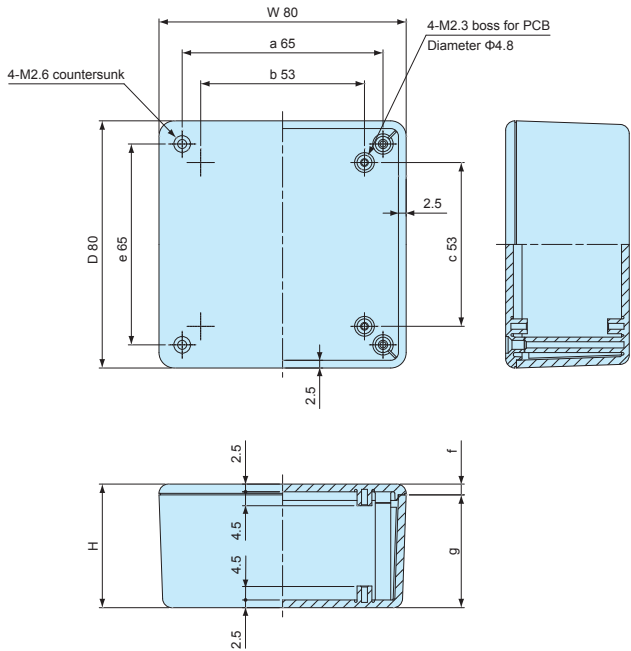


TW / TWN7-3-13 / TWS7-3-13  
TW / TWN7-5-13 / TWS7-5-13



Product no.	W	H	D	a	b	c	e	f	g	i	j	k	$\ell$	m	n
TW / TWN7-3-13□	65	25.6	130	47	40	50	112	8.1	17.5	20	40	57	122	58	123
TW / TWN7-5-13□	65	50.1	130	47	40	50	112	8.1	42	20	40	57	122	56.5	121.5

TW / TWN8-2-8  
TW / TWN8-4-8



Product no.	W	H	D	a	b	c	e	f	g	i	j	k	$\ell$	m	n
TW / TWN8-2-8□	80	20	80	65	53	53	65	3.5	16.5	-	-	72	72	73.5	73.5
TW / TWN8-4-8□	80	40	80	65	53	53	65	3.5	36.5	-	-	72	72	72	72

## TW / TWN dimensions

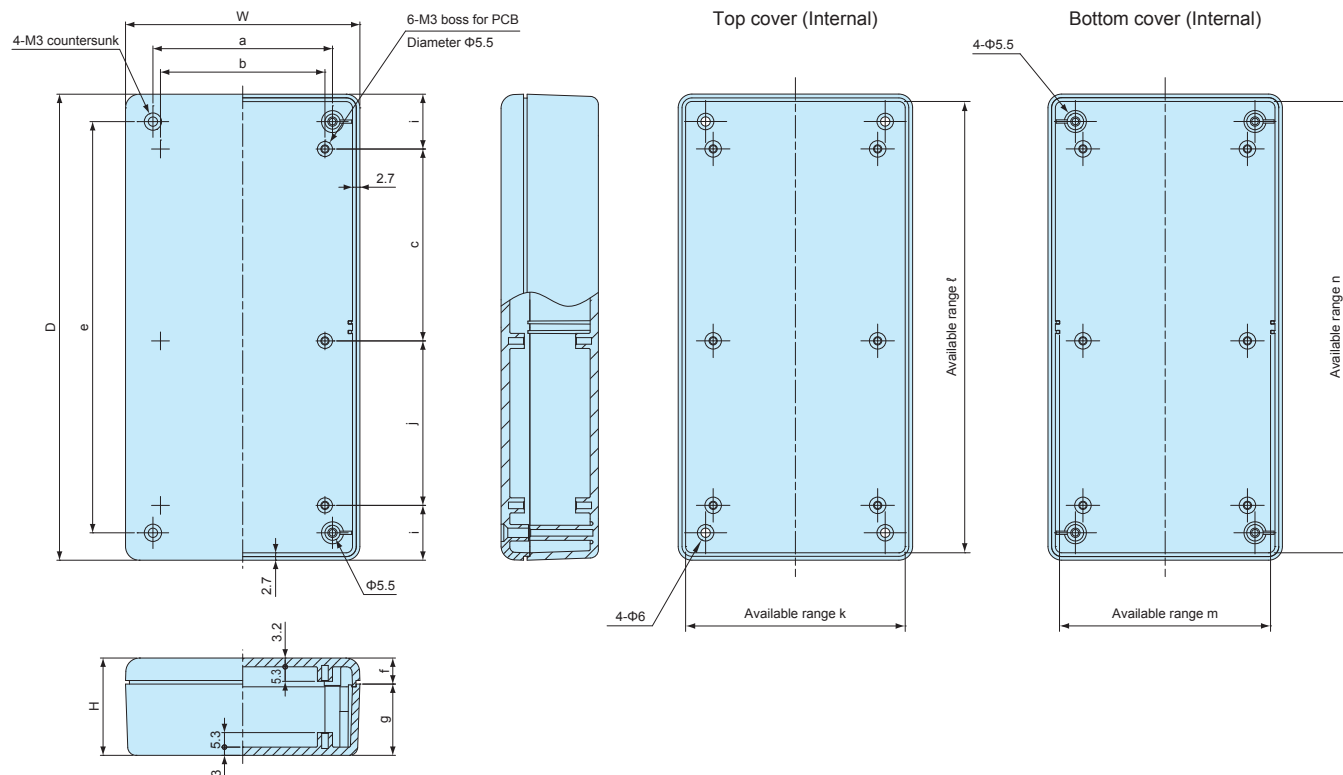
■ DXF/DWG/PDF drawings available on our website.

TW / TWN 9-4-17 / TWS 9-4-17

TW / TWN 9-6-17 / TWS 9-6-17

TW / TWN11-5-22 / TWS11-5-22

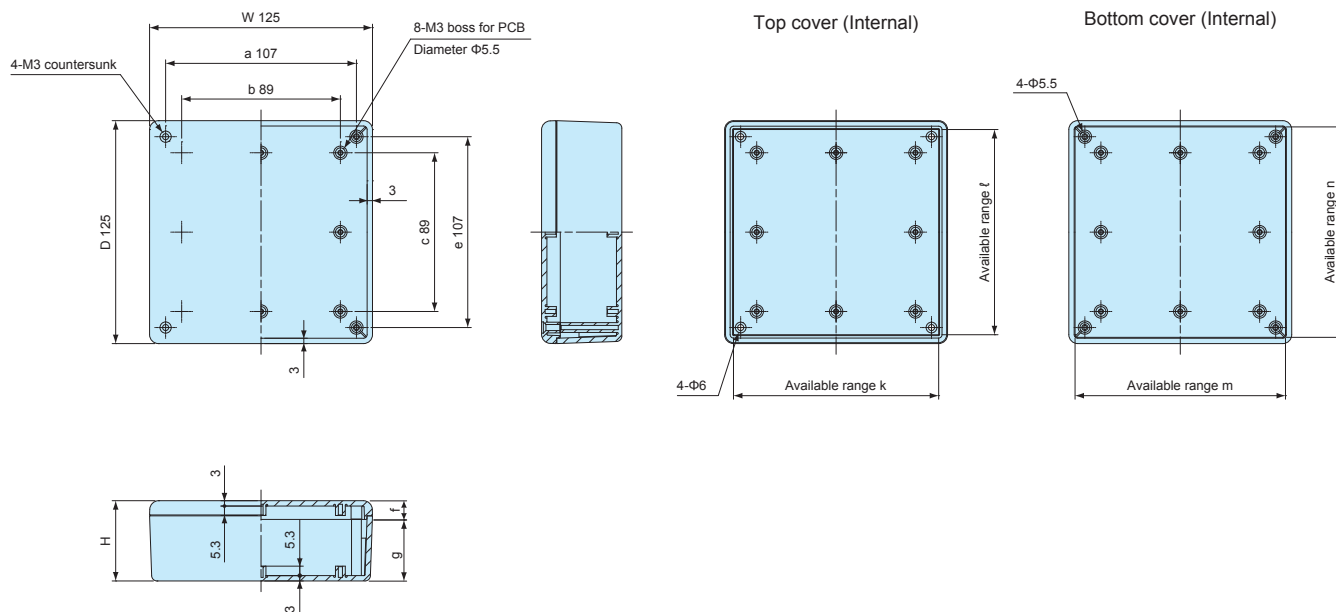
TW / TWN11-8-22 / TWS11-8-22



Product no.	W	H	D	a	b	c	e	f	g	i	j	k	ℓ	m	n
TW / TWN 9-4-17□	85.5	35.5	170	65.5	60	70	150	9.5	26	20	60	77.5	162	76.5	162.5
TW / TWN 9-6-17□	85.5	60.5	170	65.5	60	70	150	9.5	51	20	60	77.5	162	76.5	161
TW / TWN11-5-22□	110	45.3	220	88	50	120	198	10.3	35	20	60	102	212	101	211.5
TW / TWN11-8-22□	110	75.3	220	88	50	120	198	10.3	65	20	60	102	212	100	210

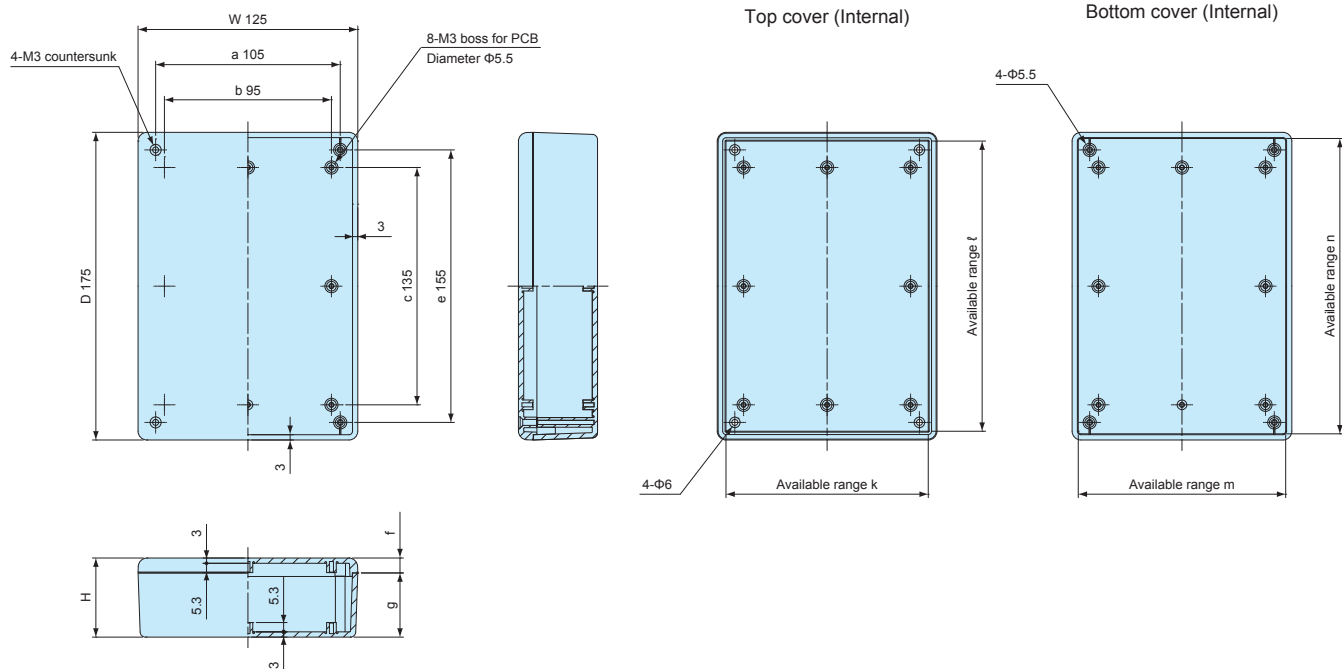
TW / TWN13-3-13 / TWS13-3-13

TW / TWN13-5-13 / TWS13-5-13









Product no.	W	H	D	a	b	c	e	f	g	i	j	k	ℓ	m	n
TW / TWN13-3-13□	125	25	125	107	89	89	107	8.5	16.5	-	-	115	115	118	118
TW / TWN13-5-13□	125	45	125	107	89	89	107	8.5	36.5	-	-	115	115	116.5	116.5

TW / TWN13-3-18 / TWS13-3-18  
 TW / TWN13-5-18 / TWS13-5-18  
 TW / TWN13-7-18 / TWS13-7-18



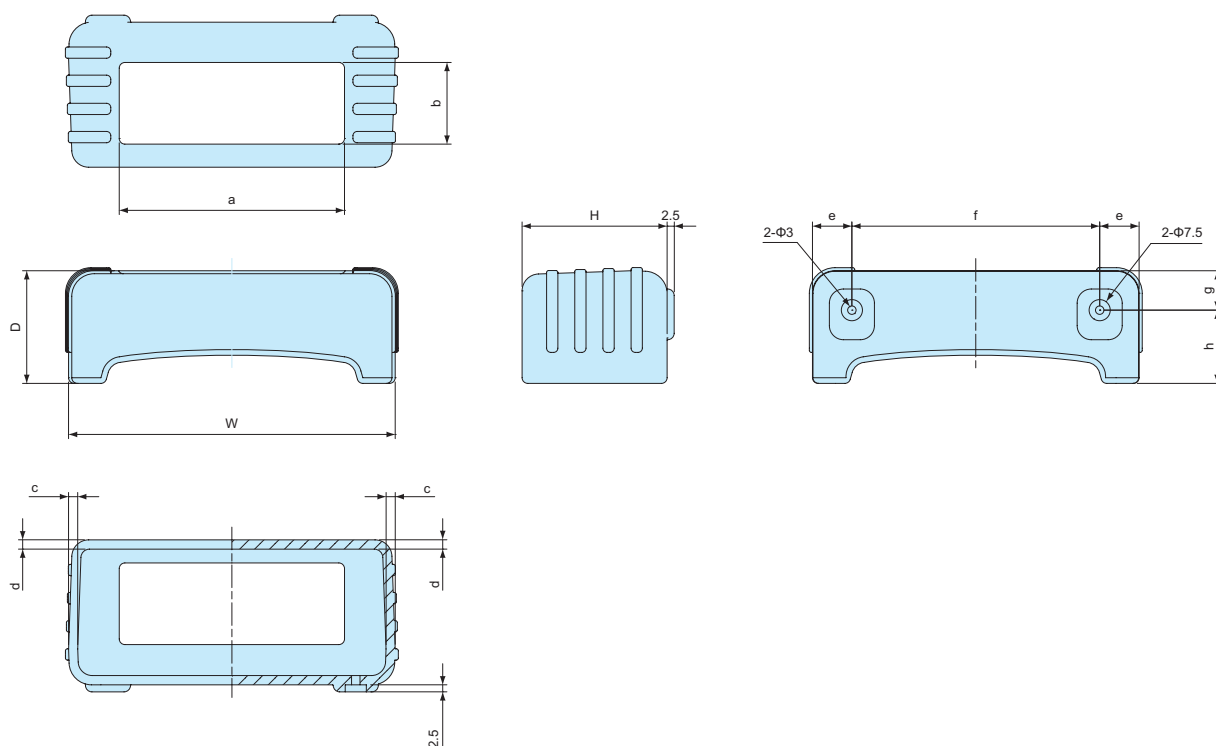
Product no.	W	H	D	a	b	c	e	f	g	i	j	k	ℓ	m	n
TW / TWN13-3-18□	125	25	175	105	95	135	155	8.5	16.5	—	—	115	165	117.5	167.5
TW / TWN13-5-18□	125	45	175	105	95	135	155	8.5	36.5	—	—	115	165	116.5	166.5
TW / TWN13-7-18□	125	65	175	105	95	135	155	8.5	56.5	—	—	115	165	115	165

**TWSC SERIES****SILICONE PROTECTOR for TW•TWN****Color Type**

Code	P Pink	Y Yellow	G Green	N Navy	L Light gray	B Black
Color						

- Silicone Protector for TW • TWN series. Selectable in 6 colors.
- Please select a model based on the suitable plastic case as listed below. The silicone protector is a set of 2 pcs.
- Custom color is available from 500 pairs per order. Please specify the **PANTONE** color number or provide your sample color.

- DXF/DWG/PDF drawings available on our website.

**Components**

Part name	Pcs	Material	Color / Finish
Silicone protector	1 set (2 pcs)	Silicone	Pink • Yellow • Green • Navy • Light gray • Black
Self tapping screw	4	Steel M3-20	Black trivalent chromate

**Product no. / Dimensions**

- Please suffix color code at the end of the product number.

Product no.	W	H	D	a	b	c	d	e	f	g	h	Suitable case	Weight (g)
TWSC 7-3□	71	32	27	52	13.5	3.2	3.3	12	47	12	15	TW / TWN 7-3-13	41
TWSC 7-5□	71	56	27	52	37.5	3.15	3.1	12	47	12	15	TW / TWN 7-5-13	47.5
TWSC 9-4□	91.5	41.5	33	67	22	3.1	3.15	13	65.5	13	20	TW / TWN 9-4-17	60
TWSC 9-6□	91.5	66.5	33	67	46.5	3.2	3.3	13	65.5	13	20	TW / TWN 9-6-17	75
TWSC11-5□	116	51.5	40	80	29	3.25	3.3	14	88	14	26	TW / TWN11-5-22	102.5
TWSC11-8□	116	81.5	40	80	58	3.2	3.3	14	88	14	26	TW / TWN11-8-22	122
TWSC13-3□	131	31	38	101	13	3.15	3.2	13	105	13	25	TW / TWN13-3-13 TW / TWN13-3-18	87
TWSC13-5□	131	51	38	101	29.5	3.3	3.3	13	105	13	25	TW / TWN13-5-13 TW / TWN13-5-18	104
TWSC13-7□	131	71	38	101	48.5	3.3	3.3	13	105	13	25	TW / TWN13-7-18	117

**LD•LDN SERIES****SNAP-IN BATTERY BOX**

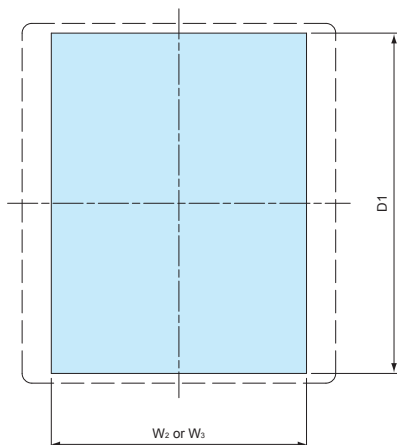
Snap-in battery holders are available for installation onto TWS • TW • TWN series.  
Hole milling is required for installation of battery holder.



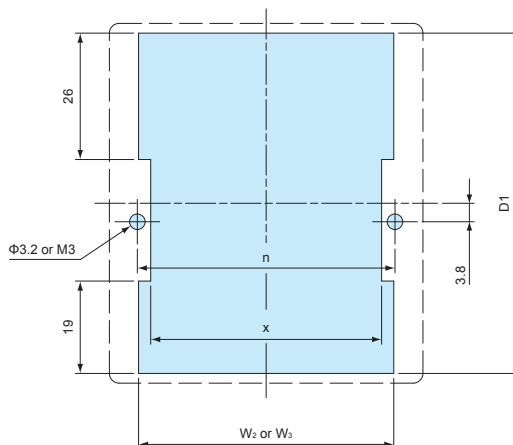
Visit our website for more details on the LD • LDN series.

**LD • LDN mounting hole**

Snap-in mount hole



Screwed mount hole

**Mount hole dimension**

Product no.	$W_2$ (thickness=2.5mm)	$W_3$ (thickness=3.0mm)	$D1$	$n$	$x$
LD / LDN-2 • 006P	38.5	40.5	70.6	40.5	34.5
LD / LDN-3	52.5	54	70.4	53	49
LD / LDN-4	68.5	70.5	70.6	70.1	64.5

■  $W_2$  or  $W_3$  size depends on the thickness of the enclosure wall used for mounting.

**How to mount the battery box on the enclosure**

Please push the hook using a thin stick when mounting the battery box on the enclosure.

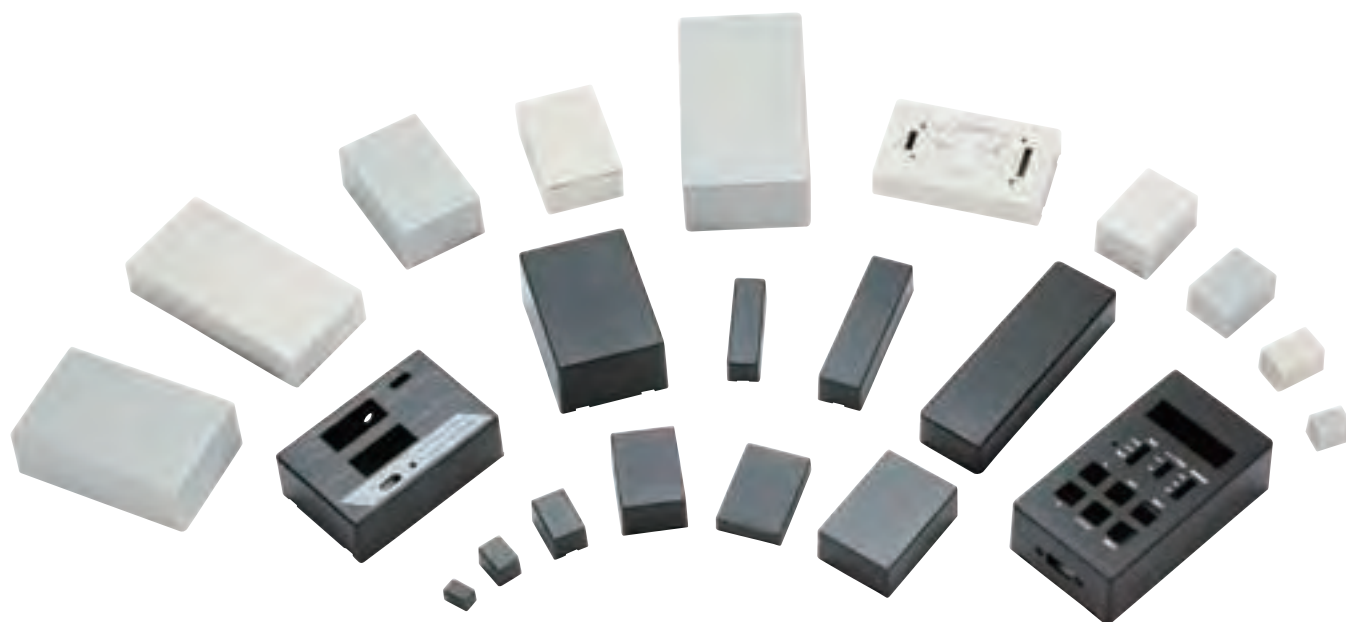
Please use minimal force when pushing to avoid breaking it.





## SW•SW-N•SW-T

## COMPACT SNAP-IN PLASTIC CASE



## Technical Data

Protection class: IP40  
 Operating temperature:  
 SW•SW-N: -10°C ~ +60°C  
 SW-T: -10°C ~ +100°C



- No screws required; simple snap on / off cover.
- General purpose compact type case.
- Ample interior space.
- Exclusive PCB is available.
- 3 different material types (standard, flame-resistant, and heat-resistant) are available.

## Components

No.	Part name	Material / Color
1	Base	SW : ABS UL94HB / Light gray • Black
		SW-N : ABS UL94V-1 : UL94V-0 / Gray
		SW-T : ABS flame-resistant / Black
2	Cover	SW : ABS UL94HB / Light gray • Black
		SW-N : ABS UL94V-1 : UL94V-0 / Gray
		SW-T : ABS flame-resistant / Black

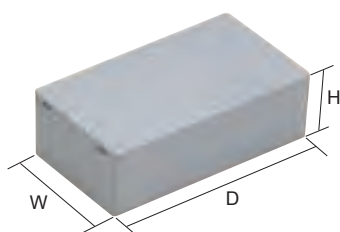
## Accessories (Optional parts)



Adhesive standoff  
 T-600, 700, ASR  
 See page 134



Neodymium magnet  
 NMG series  
 See page 130



## Color Type

Series	Code	Color
SW	S	Light gray
	B	Black
SW-N	G	Gray
SW-T	B	Black

## SW standard (ABS UL94HB)

## Product no. / Dimensions

Product no.		Dimensions			Weight (g)
● Light gray	● Black	W	H	D	
SW- 15S	SW- 15B	10	10	15	1
SW- 20S	SW- 20B	15	15	20	2
SW- 30S	SW- 30B	20	18	30	4
SW- 40S	SW- 40B	30	20	40	10
SW- 50S	SW- 50B	35	25	50	14
SW- 53S	SW- 53B	36	11	53	10
SW- 55S	SW- 55B	40	20	55	17
SW- 60S	SW- 60B	18	17	60	9
SW- 65S	SW- 65B	45	25	65	21
SW- 75S	SW- 75B	50	30	75	32
SW- 85S	SW- 85B	60	40	85	43
SW- 90S	SW- 90B	25	21	90	17
SW- 95S	SW- 95B	58	18	95	34
SW-100S	SW-100B	65	35	100	55
SW-120S	SW-120B	60	24	120	50
SW-125S	SW-125B	70	40	125	77
SW-130S	SW-130B	40	25	130	43

## SW-N flame-resistant (ABS UL94V-1 : UL94V-0)

## Product no. / Dimensions

Product no.	W	H	D	UL class	Weight (g)
SW-N 20G	15	15	20	UL94V-1	3
SW-N 30G	20	18	30	UL94V-1	5
SW-N 40G	30	20	40	UL94V-0	11
SW-N 50G	35	25	50	UL94V-0	17
SW-N 55G	40	20	55	UL94V-0	19
SW-N 65G	45	25	65	UL94V-0	23
SW-N 75G	50	30	75	UL94V-0	35
SW-N 85G	60	40	85	UL94V-0	50
SW-N 95G	58	18	95	UL94V-0	37
SW-N100G	65	35	100	UL94V-0	60
SW-N120G	60	24	120	UL94V-0	56
SW-N125G	70	40	125	UL94V-0	85
SW-N130G	40	25	130	UL94V-0	48

## SW-T heat-resistant (ABS heat distortion temperature 100°C)

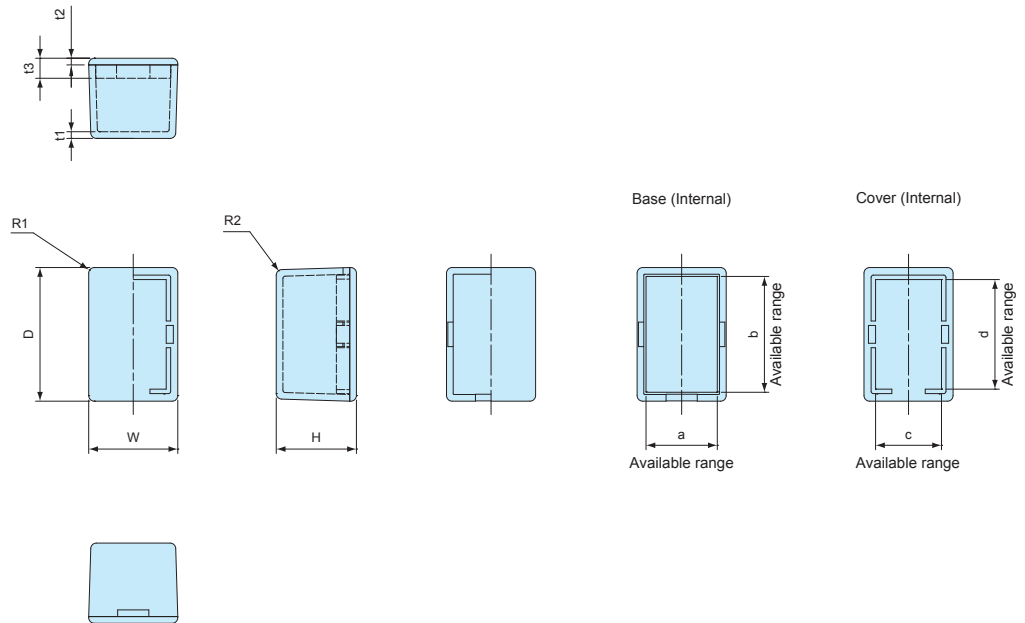
## Product no. / Dimensions

Product no.	W	H	D	Weight (g)
SW-T 20B	15	15	20	2
SW-T 40B	30	20	40	9
SW-T 55B	40	20	55	16
SW-T 75B	50	30	75	30
SW-T 95B	58	18	95	31
SW-T100B	65	35	100	50

## SW • SW-N • SW-T dimensions

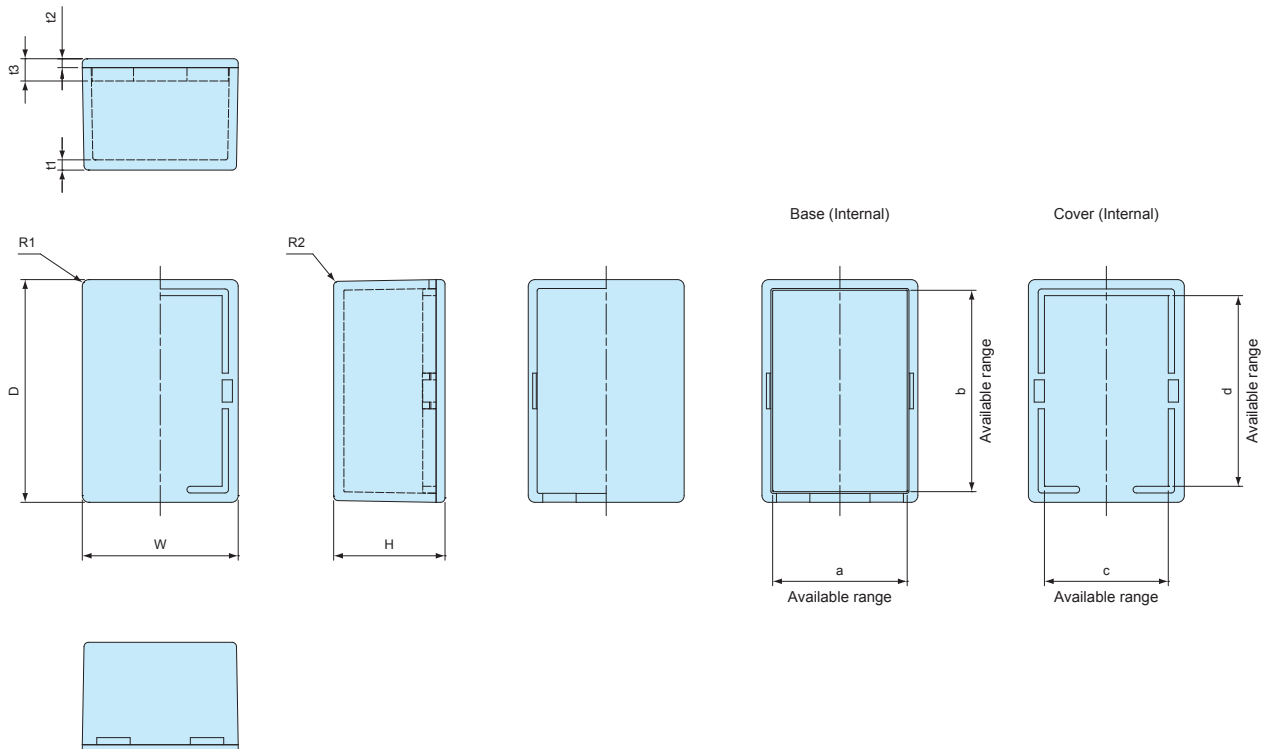
■ DXF/DWG/PDF drawings available on our website.

SW-15 • SW-20 • SW-30  
SW-N20 • SW-N30  
SW-T20



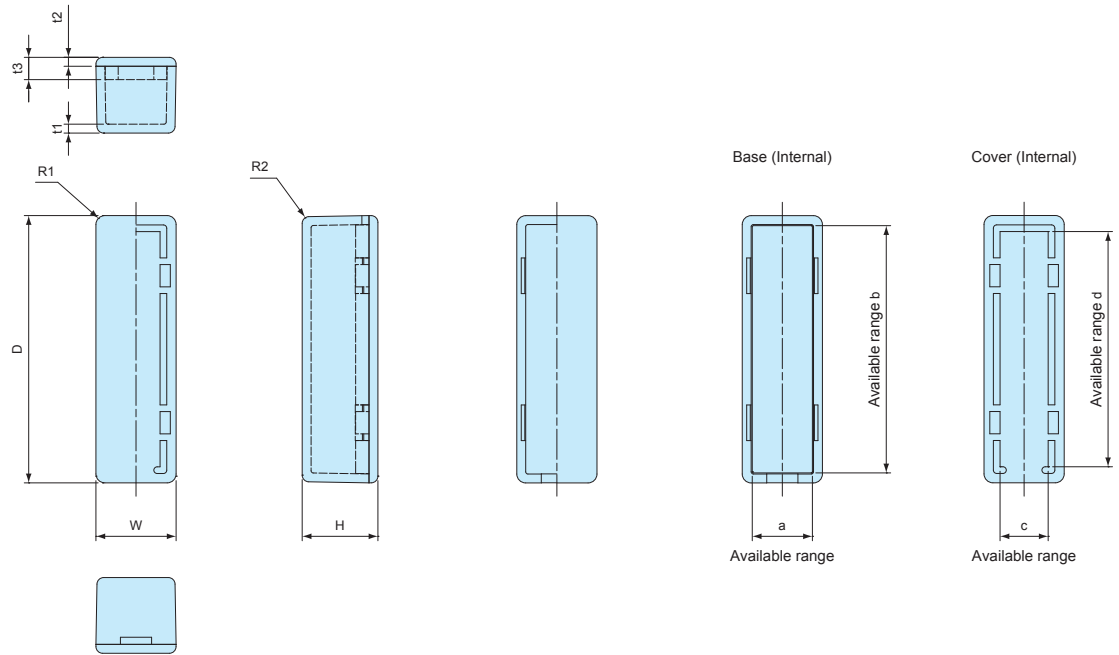
Product no.	W	H	D	a	b	c	d	t1	t2	t3	R1	R2
SW-15	10	10	15	7.2	12.2	5.4	10.6	1.1	1.1	3.6	1	1
SW-20 • SW-N20 • SW-T20	15	15	20	11.6	16.6	10	14.8	1.5	1.5	4.5	1.25	1.25
SW-30 • SW-N30	20	18	30	16	26	14.8	24.6	1.5	1.5	4.5	1.25	1.25

SW-40 • SW-50 • SW-53 • SW-55  
SW-N40 • SW-N50 • SW-N55  
SW-T40 • SW-T55



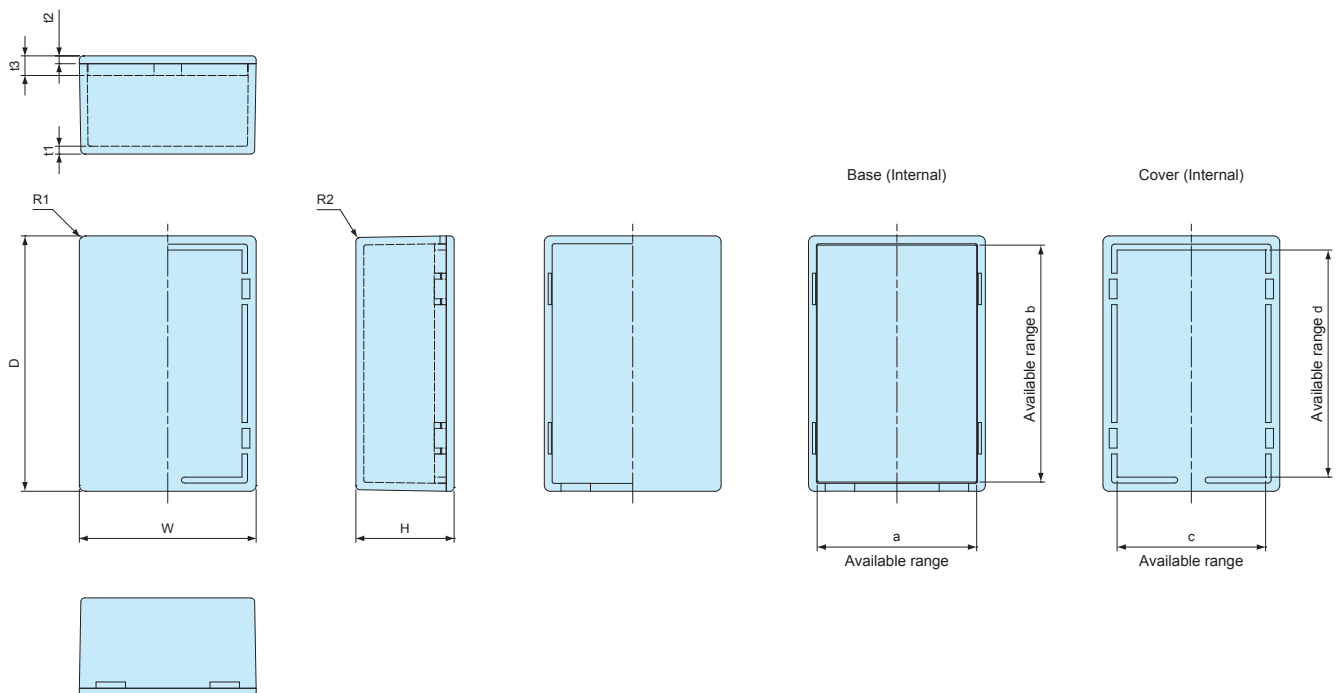
Product no.	W	H	D	a	b	c	d	t1	t2	t3	R1	R2
SW-40 • SW-N40 • SW-T40	30	20	40	26	36	22.8	32.8	1.8	2	5	1.5	1
SW-50 • SW-N50	35	25	50	30.2	45.2	27.8	42.8	2.3	2	5	1.5	1
SW-53	36	11	53	32	49	29.2	46.2	1.8	1.8	4.8	1.5	1.25
SW-55 • SW-N55 • SW-T55	40	20	55	35.5	50.5	32.8	47.8	2	2	5	1.5	0.3

## SW-60 • SW-90



Product no.	W	H	D	a	b	c	d	t1	t2	t3	R1	R2
SW-60	18	17	60	13.5	55.5	10.8	52.8	2	2	5	2	1.5
SW-90	25	21	91	20.3	85.3	17.8	82.8	2	2	5	2	1.5

SW-65 • SW-75 • SW-85 • SW-95 • SW-100 • SW-120 • SW-125 • SW-130  
 SW-N65 • SW-N75 • SW-N85 • SW-N95 • SW-N100 • SW-N120 • SW-N125 • SW-N130  
 SW-T75 • SW-T95 • SW-T100



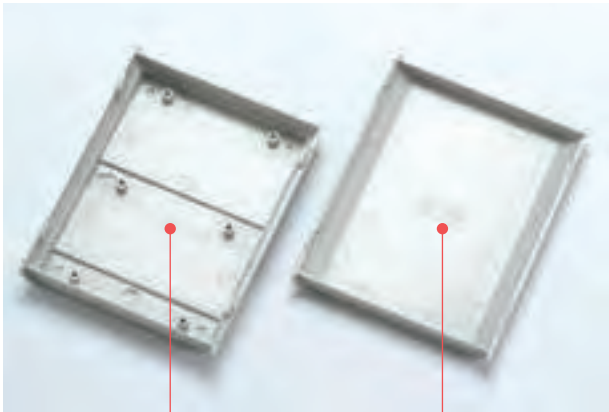
Product no.	W	H	D	a	b	c	d	t1	t2	t3	R1	R2
SW- 65 • SW-N 65	45	25	65	40.6	60.3	37.8	57.8	2	2	5	1.5	1
SW- 75 • SW-N 75 • SW-T 75	50	30	75	45.2	70.5	42.8	67.8	2	2	5	1.75	0.3
SW- 85 • SW-N 85	60	40	85	54.5	79.5	52.8	77.8	2.3	2	5	2	1.5
SW- 95 • SW-N 95 • SW-T 95	58	18	95	53.7	90.7	50.8	87.8	2	2	5	3	1.5
SW-100 • SW-N100 • SW-T100	65	35	100	60.6	95.6	57.8	92.8	2	2.5	5.5	2	1.5
SW-120 • SW-N120	60	24	120	55.7	115.7	52.8	112.8	2	2.5	5.5	2	1.5
SW-125 • SW-N125	70	40	125	65	120	62.8	117.8	2.5	2.5	5.5	3	1.5
SW-130 • SW-N130	40	25	130	35.5	125.5	32.8	122.8	2.5	2.5	5.5	3	1.75

SU SERIES

NETWORK PLASTIC CASE



Technical Data
Protection class: IP40 Operating temperature: -10°C ~ +60°C



- Rounded shape design.
- Suitable for wall-mount communication device usage.
- Snap on / off cover. No screws are required.

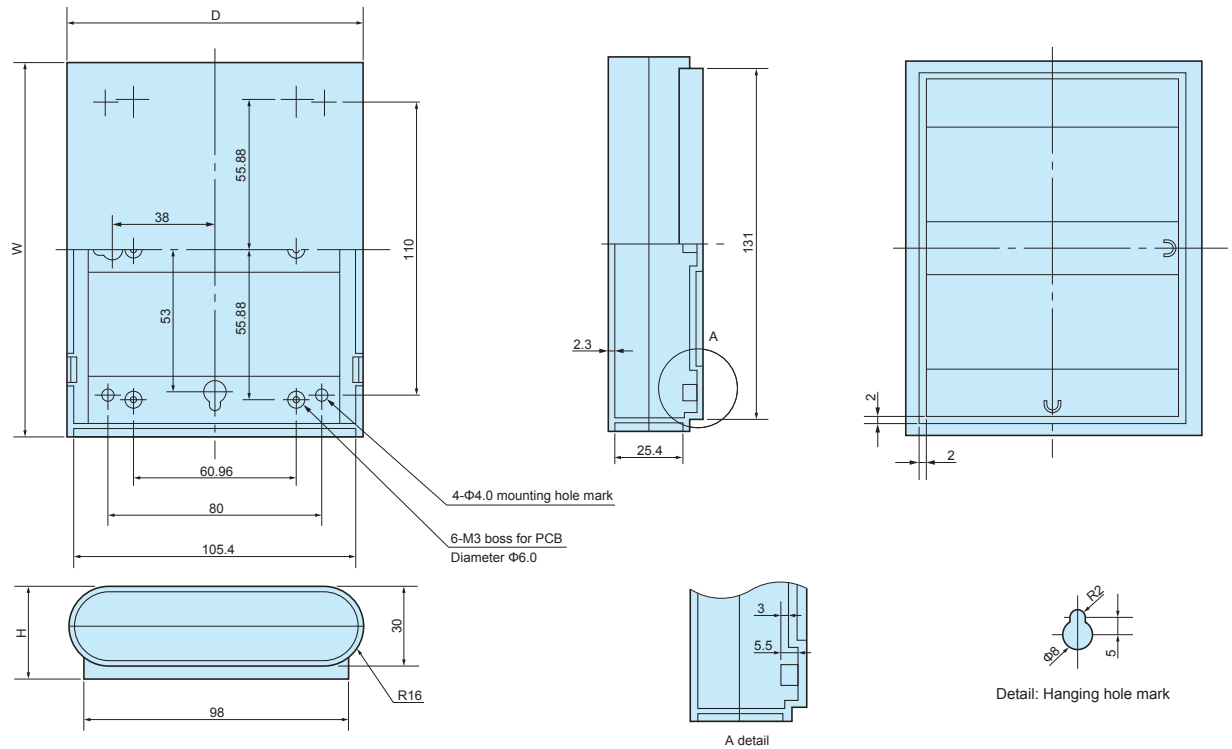
Components

No.	Part name	Material	Color / Finish
1	Cover	ABS UL94HB	Light gray • Dark gray • White
2	Base	ABS UL94HB	Light gray • Dark gray • White

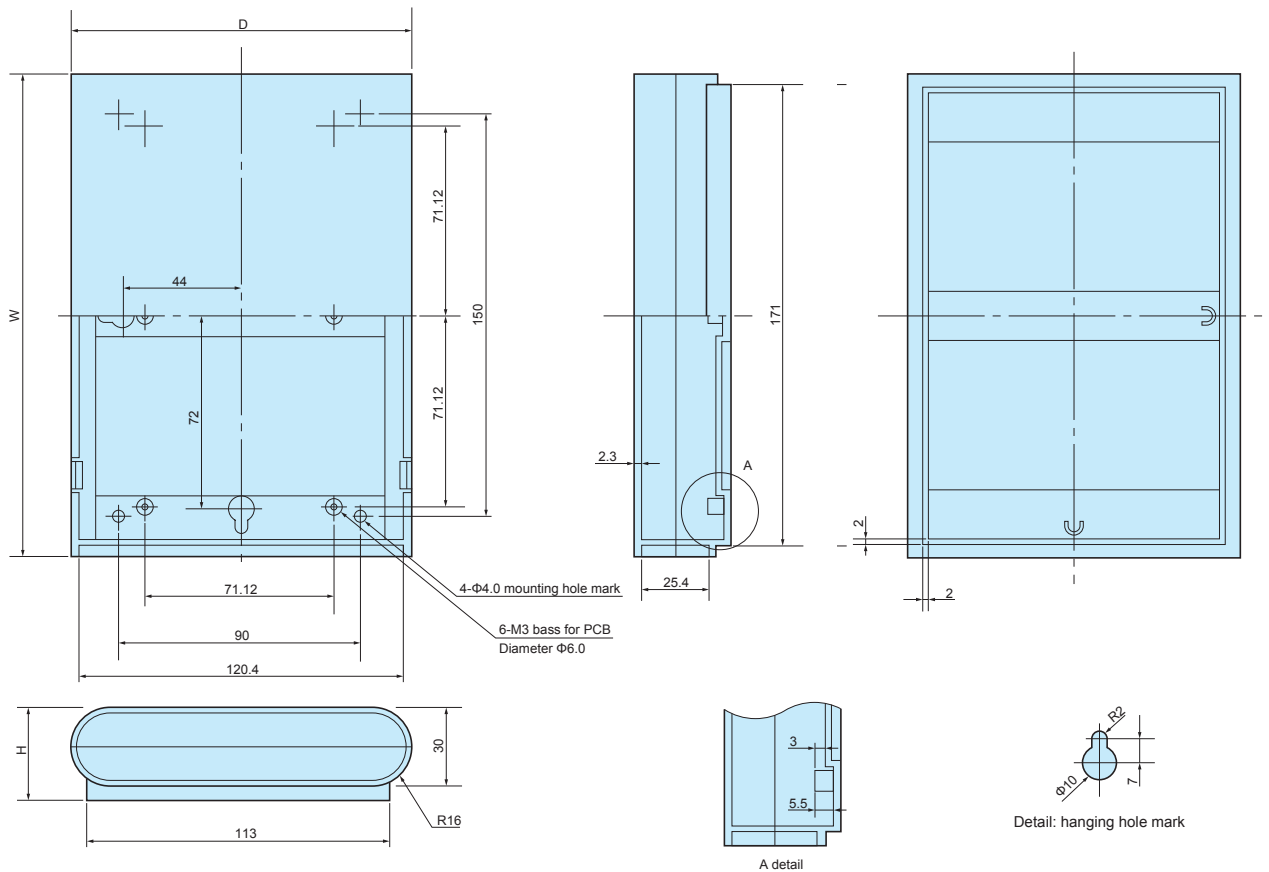
# SU dimensions

■ DXF/DWG/PDF drawings available on our website.

SU-140



SU-180



## Product no. / Dimensions

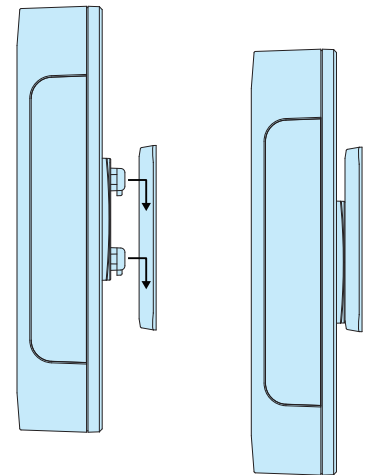
Product no.			Dimensions			Weight (g)
● Light gray	● Dark gray	● White	W	H	D	
SU-140G	SU-140C	SU-140W	140	35	110	100
SU-180G	SU-180C	SU-180W	180	35	125	140



## WM SERIES

## SUSPENSION BRACKET

## How to install



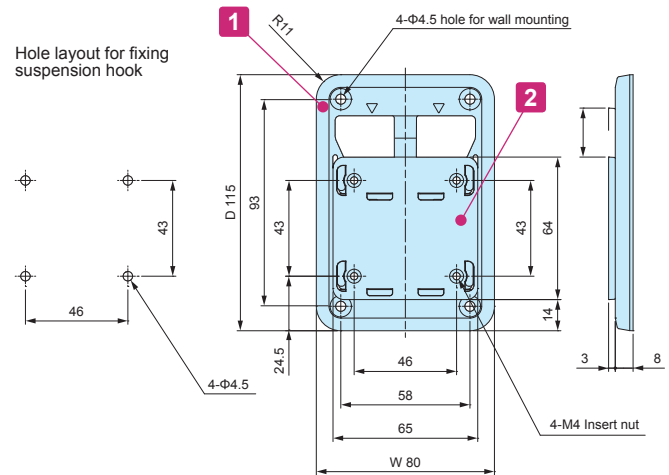
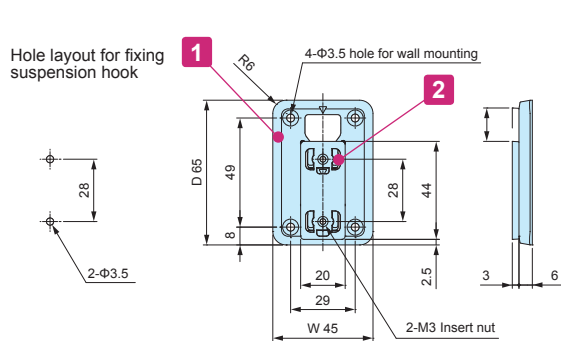
- Plastic wall mounting bracket. Easy attachment and removal.
- Large and small brackets are available.
- Applicable not only for the PF series, but also other plastic/metal enclosures with a panel thickness of 0.8 ~ 3.5mm.
- To attach the suspension hook onto the enclosure, hole milling is required.
- The max load values listed are static load values only. Use caution when handling.
- Please be aware of the insertion direction of the suspension hook against the mounting base when attaching.

## Technical Data

Max load : 2 kg - WM-1  
5 kg - WM-2

## WM-1

## WM-2



- DXF/DWG/PDF drawings available on our website.

## Components

No.	Part name	Pcs	Material	Color / Finish
1	Mounting base	1	PC + ABS UL94HB	Off-white • Dark gray
2	Suspension hook	1	PC + ABS UL94HB	Off-white • Dark gray
-	Insert nut	2 / 4	Brass	Unfinished
-	Screw	2	M3-8 Steel binding = WM-1	Nickel plated
-	Screw	4	M4-8 Steel binding = WM-2	Nickel plated

## Product no. / Dimensions

Product no.		Dimensions		Mountable thickness	Weight (g)
● Off-white	● Dark gray	W	D		
WM-1W	WM-1D	45	65	t0.8 ~ t3.5	11.5
WM-2W	WM-2D	80	115	t0.8 ~ t3.5	48

## NMG SERIES

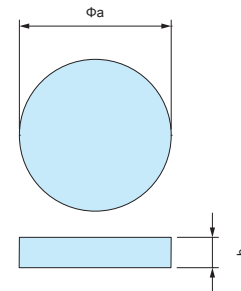
## NEODYMIUM MAGNET



## Round magnet



- Material / Finish: Neodymium / Nickel plated
- Please attach using a strong adhesive.



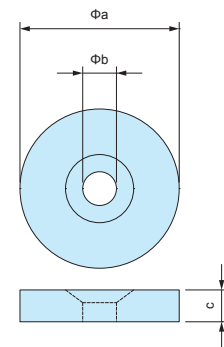
## Components

Product no.	a	b	Weight (g)
NMG3-15N	15	3	4
NMG3-20N	20	3	7.1
NMG5-22N	22	5	11.4
NMG5-25N	25	5	18.4

## Round magnet with countersunk hole



- Please fasten with a screw.



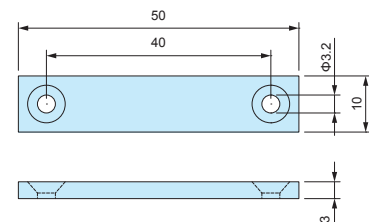
## Components

Product no.	a	b	c	Countersunk size	Weight (g)
NMG3-15M3	15	3.2	3	M3	3.8
NMG3-20M3	20	3.2	3	M3	6.9
NMG5-22M4	22	4.3	5	M4	13.7
NMG5-25M5	25	5.3	5	M5	17.6

## Rectangular magnet with countersunk holes



- Please fasten with a screw.



## Components

Product no.	a	b	c	Countersunk size	Weight (g)
NMG3-50M3	50	10	3	M3	11.3

## Example 1 The magnetic force remains strong even through plastic.



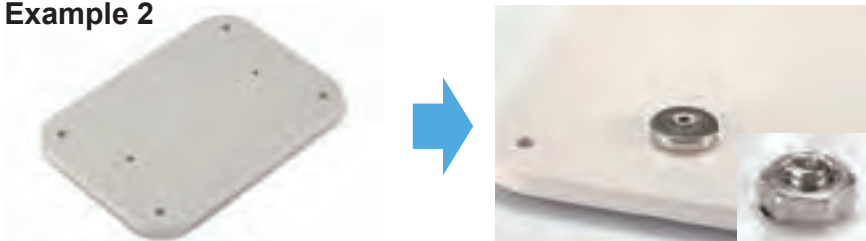
Make recessed pocket on the inside wall.

Glue on.



Attach onto a metallic surface.

## Example 2



Make holes

Fasten with a screw and nut.



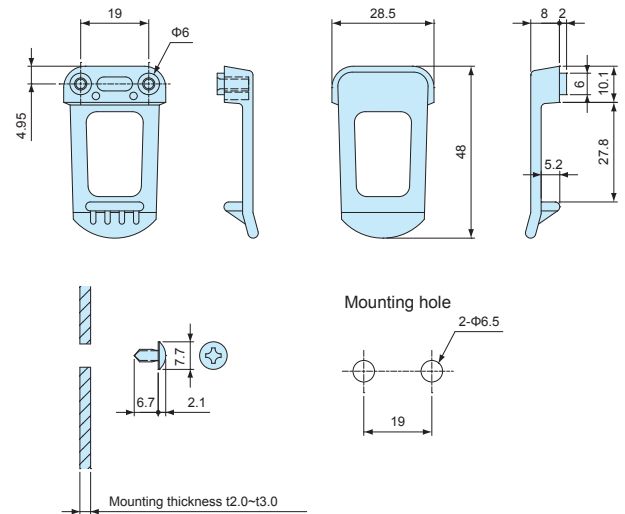
Attach onto a metallic surface.

**CAUTION:** Handle with care to avoid personal injury or damage to the magnet.

## GDH SERIES

## PLASTIC BELT CLIP

■ DXF/DWG/PDF drawings available on our website.



## Components

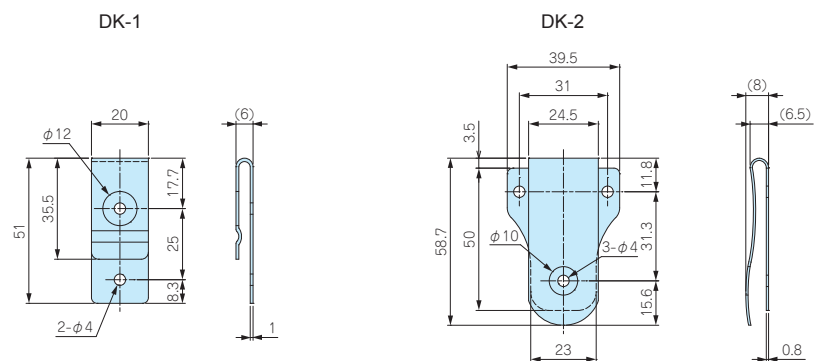
No.	Part name	Pcs	Material	Color / Finish
1	Clip	1	ABS UL94HB	White gray • Black
2	Screw	2	Steel M3.5-6	Zinc plated

## Product no. / Dimensions

Product no.		W	H	D
● White gray	● Black			
GDH-1G	GDH-1B	28.5	10	48

## DK SERIES

## STEEL BELT CLIP



## Product no. / Dimensions

Product no.	Material	Finish
DK-1	Steel SPCC t=1.0	Chrome plated
DK-2	Steel SPCC t=0.8	Chrome plated

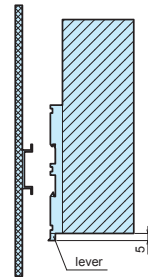
## Accessories (Optional parts)

## DRA SERIES

## DIN-RAIL MOUNTING BASE

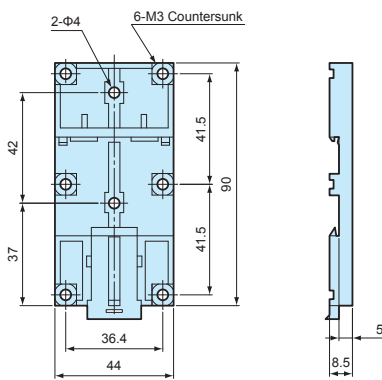
## ■ NOTE

Before installation, please ensure that the lever is not fully hidden behind the enclosure

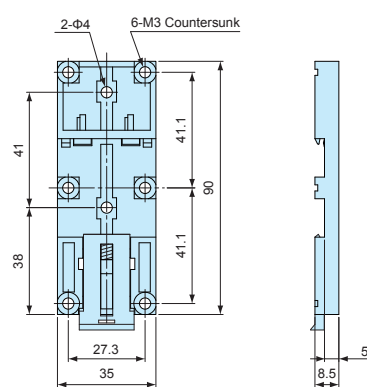


- For installation of enclosures, PCB and other parts onto a DIN rail.
- Simple installation and removal via the pull lever.

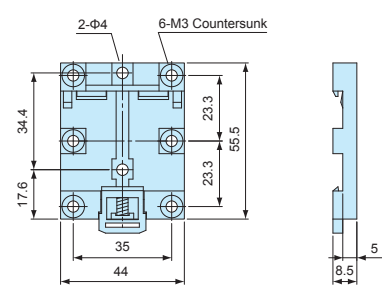
DRA-1



DRA-2



DRA-3



## Product no. / Dimensions

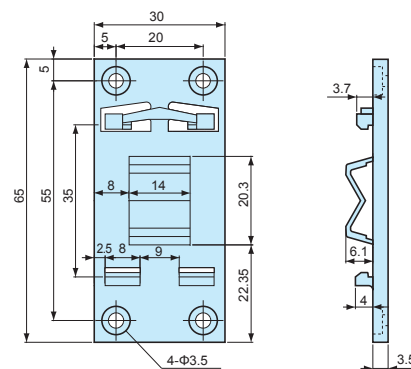
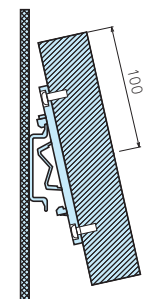
Product no.	Material (body)	Material (lever)	Color	Max load (kg)
DRA-1	PPE : SB UL94V-1	Nylon 66 UL94V-2	Black : Milky white	5
DRA-2	PPE : SB UL94V-1	Nylon 66 UL94V-2	Black : Milky white	5
DRA-3	PPE : SB UL94V-1	Nylon 66 UL94V-2	Black : Milky white	5

## DRT SERIES

## DIN-RAIL MOUNTING BASE

## ■ NOTE

Before installation, please ensure that the length (from top) of the enclosure is equal to, or less than 100mm from the center of the mounting base.



- For installation of enclosures, PCB and other parts onto a DIN rail.
- Simple installation and removal by tilting the case at an angle and sliding it in/out.

## Product no. / Dimensions

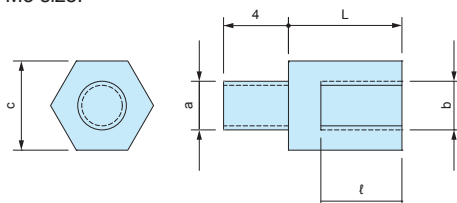
Product no.	Material	Color	Max load (kg)
DRT-1	PBT UL94V-0	Light gray	1

## TPS SERIES

## TAPPING STANDOFF



- Tapping screw head allows for easy installation onto existing enclosure boss mount.
- 4 different sizes available: M2, M2.3, M2.6 and M3 size.



## Product no. / Dimensions

■ Material / Finish: Brass / Unfinished

Product no.	Screw size (a)	Screw size (b)	c	L	Ø	Pack of	Recommended enclosure models
TPS-M2.3-4	M2.3	M2.3	5	4	3	4	WH series • WP series (M2.3 only) LC • LCS • LCT series PF10-2-7 / 10-2-10 / 10-2-15 / 10-4-7 / 10-4-10 / 10-4-15 10-6-15 / 13-3-9 / 13-3-13 / 13-3-19 / 13-4-9 / 13-4-13 13-4-19 / 13-6-19 / 15-3-10 / 15-5-10 / 15-3-15 15-5-15 / 18-4-12 / 18-4-18 / 18-5-12 / 18-5-18 20-4-13 / 20-6-13 / 20-4-20 / 20-6-20 TW • TWN • TWF5-3-9 / 7-2-11 / 7-4-11 / 7-5-11 TW5-3-10 • TW • TWN • TWF8-2-8 / 8-4-8
TPS-M2.3-5	M2.3	M2.3	5	5	3	4	
TPS-M2.3-6	M2.3	M2.3	5	6	4	4	
TPS-M2.3-7	M2.3	M2.3	5	7	5	4	
TPS-M2.3-8	M2.3	M2.3	5	8	6	4	
TPS-M2.3-10	M2.3	M2.3	5	10	6	4	
TPS-M2.3-12	M2.3	M2.3	5	12	6	4	
TPS-M2.6-4	M2.6	M2.6	5	4	3	4	PF24-4-17 / 24-4-24 / 24-6-17 / 24-6-24
TPS-M2.6-5	M2.6	M2.6	5	5	3	4	
TPS-M2.6-7	M2.6	M2.6	5	7	5	4	
TPS-M2.6-10	M2.6	M2.6	5	10	6	4	
TPS-M2.6-12	M2.6	M2.6	5	12	6	4	
TPS-M3-4	M3	M3	5.5	4	3	4	TW • TWN • TWF7-3-13 / 7-5-13 / 9-4-17 / 9-6-17 / 11-5-22 11-8-22 / 13-3-13 / 13-5-13 / 13-3-18 / 13-5-18 / 13-7-18  SU series • OP series • PW series
TPS-M3-5	M3	M3	5.5	5	3	4	
TPS-M3-6	M3	M3	5.5	6	4	4	
TPS-M3-7	M3	M3	5.5	7	5	4	
TPS-M3-8	M3	M3	5.5	8	5	4	
TPS-M3-10	M3	M3	5.5	10	6	4	
TPS-M3-12	M3	M3	5.5	12	6	4	

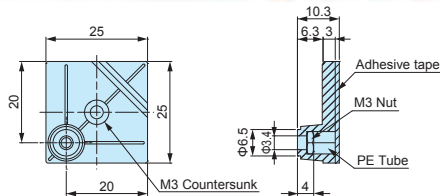


- Please use a suitably sized driver to both secure and loosen the tapping standoff.

## Accessories (Optional parts)

## T-600

## M3 INSERT NUT ADHESIVE STANDOFF



- Double-sided adhesive tape allows the standoff to be mounted easily; allows PCB mounting in non-boss enclosures.

## NOTE

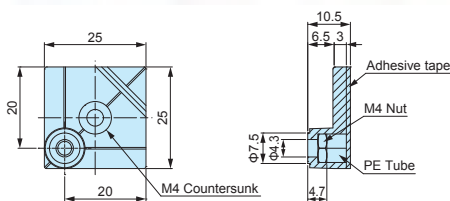
- Please ensure the surface is cleaned and grease-free before adhering.
- Once removed, it cannot be adhered on again.
- Recommended screw torque: 4kgf • cm.

## Product no. / Dimensions

Product no.	Material	Color	Weight (g)	Pack of
T-600	ABS	Black	2.6 (g) / pc	10

## T-700

## M4 INSERT NUT ADHESIVE STANDOFF



- Double-sided adhesive tape allows the standoff to be mounted easily; allows PCB mounting in non-boss enclosures.

## NOTE

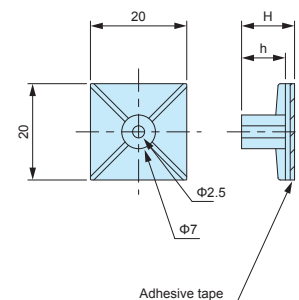
- Please ensure the surface is cleaned and grease-free before adhering.
- Once removed, it cannot be adhered on again.
- Recommended screw torque: 8.1kgf • cm.

## Product no. / Dimensions

Product no.	Material	Color	Weight (g)	Pack of
T-700	ABS	Natural	2.6 (g) / pc	10

## ASR SERIES

## ADHESIVE STANDOFF



- M3 tapping screw use adhesive standoff.

Recommended to be used with EM-3 or EM-3-6 tapping screws (See page 135).

## NOTE

- Please ensure the surface is cleaned and grease-free before adhering.
- Once removed, it cannot be adhered on again.
- Recommended screw torque: 4kgf • cm.

## Product no. / Dimensions

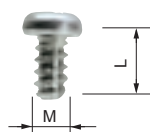
Product no.	H	h	Weight (g)	Pack of
ASR- 5	5.1	3.1	0.9 (g) / pc	10
ASR- 6	6.4	4.4	1.0 (g) / pc	10
NEW ASR- 7	7.2	5.1	0.9 (g) / pc	10
NEW ASR- 8	8.1	6.3	0.9 (g) / pc	10
ASR- 9	9	7	1.0 (g) / pc	10
ASR-11	11	9	1.0 (g) / pc	10
ASR-13	12.7	10.7	1.2 (g) / pc	10
NEW ASR-14.5	14.7	12.8	1.1 (g) / pc	10
ASR-16	15.9	13.9	1.3 (g) / pc	10
ASR-19	19.1	17.1	1.4 (g) / pc	10

- Material: Nylon 66 UL94V-2



## EM SERIES

## PCB MOUNTING SCREW



- Self-tapping screws for mounting PCB on bosses or standoffs.
- EM-3-6 self-tapping screws are suitable for mounting 1.6mm or thicker PCB.

## Product no. / Dimensions

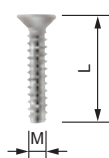
Product no.	M	L	Material	Finish	Suitable enclosures	Pack of
EM-1.6	1.6	4	Steel	Trivalent chromate	CSS • CS • PS • WC	50
EM-2	2	5	Steel	Trivalent chromate	TW • TWN • TWF • WP (M2 size)	50
EM-2.3	2.3	6	Steel	Trivalent chromate	LCT • LCS • LC • WH PF • PFF (M2.3 size) TW • TWN • TWF (M2.3 size) WP (M2.3 size)	50
<b>NEW</b> EM-2.6	2.6	6	Steel	Trivalent chromate	PF • PFF (M2.6 size)	50
EM-3	3	5	Steel	Trivalent chromate	TW • TWN • TWF (M3 size) • SU	50
EM-3-6	3	6	Steel	Trivalent chromate		50

## MR SERIES

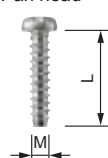
## TORX SCREW



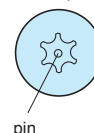
Countersunk head



Pan head



With pin



pin

★ Without pin



★ : MR2.6-10□, MR3-14□, and MR1.6-6S are without pin.

## Product no. / Dimensions

★ Mark = Without pin

Product no.	M	L	head no.	Head style	Material	Finish	Suitable enclosures	Pack of
MR1.6-6S★	1.6	6	T3	Pan	Steel	Nickel plated	CS • CSS	20
MR2.5-8PS	2.5	8	T8	Pan	Steel	Nickel plated	PF • PFF (M2.5 size)	20
MR2.6-10S★	2.6	10	T8	Countersunk	Steel	Nickel plated	TW5-2-5 / 5-3-5 TW • TWN4-2-5 / 4-2-6 / 4-2-8 / 5-2-7	20
MR2.6-10B★	2.6	10	T8	Countersunk	Steel	Black trivalent chromate	TW • TWN5-3-7 / 5-4-7 / 8-2-8 / 8-4-8 TWF5-2-7 / 5-3-7 / 5-4-7	20
MR2.6-12PS	2.6	12	T8	Pan	Steel	Nickel plated	LCT • LCS • LC115-F2 / F3 LCT • LCS • LC145S-F6	20
MR2.6-14PS	2.6	14	T8	Pan	Steel	Nickel plated	LCT • LCS • LC115H-F2 / F3 / M2 / 9V LCT • LCS • LC135-F4 / M2 / M3 / 9V LCT • LCS • LC135H-F4 / M2 / M3 / 9V LCT • LCS • LC145-F6 / M2 / M4 LCT • LCS • LC145H-F6 / M2 / M4 LCT • LCS • LC165-M4 LCT • LCS • LC165H-M4	20
MR2.6-14S	2.6	14	T8	Countersunk	Steel	Nickel plated	LCT • LCS • LC115-F2 / F3 LCT • LCS • LC145S-F6 TW • TWN7-2-11 / 7-4-11 / 7-5-11	20
MR2.6-18S	2.6	18	T8	Countersunk	Steel	Nickel plated	LCT • LCS • LC115H-N / F2 / F3 / M2 / 9V LCT • LCS • LC135-N / F4 / M2 / M3 / 9V LCT • LCS • LC135H-N / F4 / M2 / M3 / 9V LCT • LCS • LC145-N / F6 / M2 / M4 LCT • LCS • LC145H-N / F6 / M2 / M4 LCT • LCS • LC165-N / M4 LCT • LCS • LC165H-N / M4	20
MR3-8PS	3	8	T10	Pan	Steel	Nickel plated	PF • PFF (M3 size)	20
MR3-14S★	3	14	T10	Countersunk	Steel	Nickel plated	TW5-3-10	20
MR3-14B★	3	14	T10	Countersunk	Steel	Black trivalent chromate	TW • TWN5-3-9 / 7-3-13 / 7-5-13 / 9-4-17 / 9-6-17 TWF7-3-13 / 7-5-13 / 9-4-17 / 9-6-17	20
MR-1S	3	5	T10	Countersunk	Steel	Nickel plated	UC	20
MR-1B	3	5	T10	Countersunk	Steel	Black trivalent chromate	UC • UCY • US	20
MR-2S	3	10	T10	Countersunk	Steel	Nickel plated	HEN	20

## CR2•CR123A-PC SERIES

## LITHIUM BATTERY HOLDER

■ DXF/DWG/PDF drawings available on our website.



## Technical Data

Operating temperature: -10°C ~ +60°C

## Components

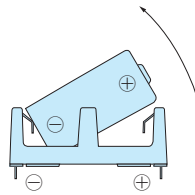
Holder material	Holder color	Contact material	Contact finish
ABS UL94V-0	Black	Phosphor bronze	Nickel plated

## Product no. / Feature

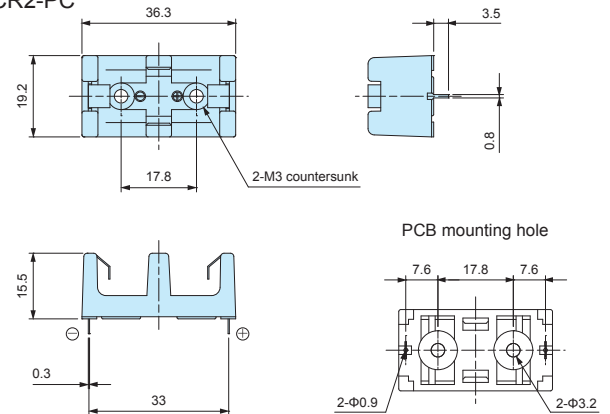
Product no.	Battery	Mounting	Weight (g)
CR2-PC	CR2×1	Through-hole mount pin x 2	4.3
CR123A-PC	CR123A×1	Through-hole mount pin x 2	5.0

## Caution

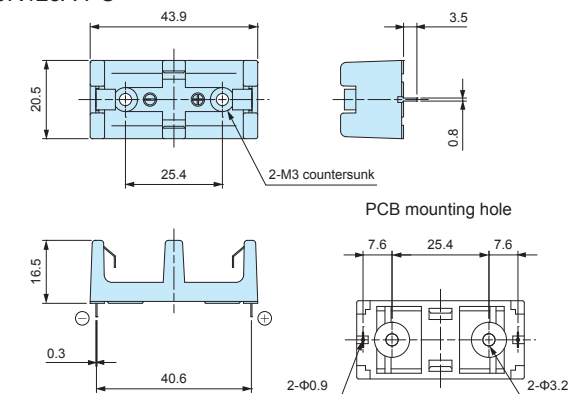
- Please remove the battery from the positive (+) side. Removing it from the negative (-) side may damage the battery or the battery contacts.



## CR2-PC



## CR123A-PC



## CR2•CR123A-R SERIES

## LITHIUM BATTERY HOLDER with LEAD WIRE



## Technical Data

Operating temperature: -10°C ~ +60°C

## Components

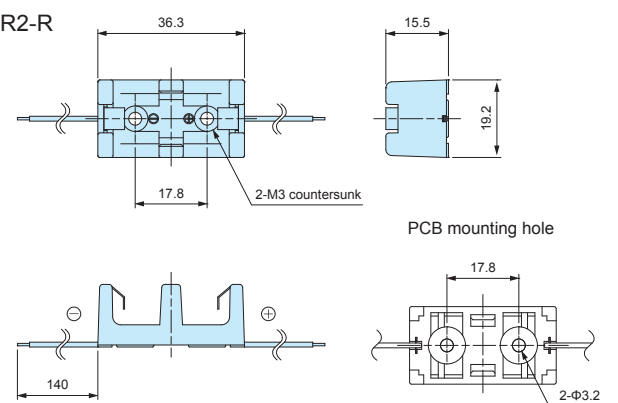
Holder material	Holder color	Contact material	Contact finish
ABS UL94V-0	Black	Phosphor bronze	Nickel plated

## Product no. / Feature

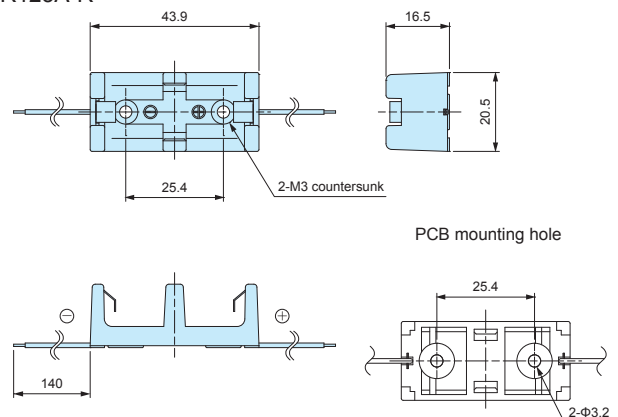
Product no.	Battery	Lead wire	Weight (g)
CR2-R	CR2×1	UL1007 AWG26 L=140	5.3
CR123A-R	CR123A×1	UL1007 AWG26 L=140	6.0

■ DXF/DWG/PDF drawings available on our website.

## CR2-R



## CR123A-R



# EX MULTI-FUNCTION EXTRUDED ALUMINIUM CASE

By utilizing 5 different exterior frame types with the same cover, various functions are now possible.  
39 different sizes are available for each version.

**Aluminium Panel corner guard version**  
EXP series Page 139 ~ 140



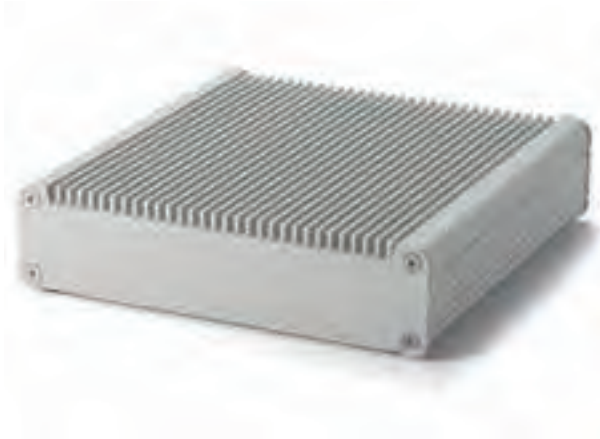
**EMC Shielding corner guard version**  
EXPE series Page 141 ~ 142



**IP65 Corner guard version**  
EXW series Page 143 ~ 144



**Heat-sink version**  
EXH series Page 207 ~ 210



**Standard version**  
EX series Page 145 ~ 146



Custom frame length for all versions are available.



# 16 COLOR COMBINATIONS

Available in 2 different body frame and 8 different exterior frame colors.



## APPLICATION EXAMPLE

### MEASURING INSTRUMENT



### NETWORK / COMMUNICATION BOX



### INDUSTRIAL FANLESS EMBEDDED PC



### CONTROLLER



### DIGITAL AUDIO AMPLIFIER







## Technical Data

Protection class: IP40

- Corner guards are designed to be both aesthetically pleasing, and impact resistant.
- Available in 39 different standard sizes with 16 different color combinations.

## Product no. / Dimensions

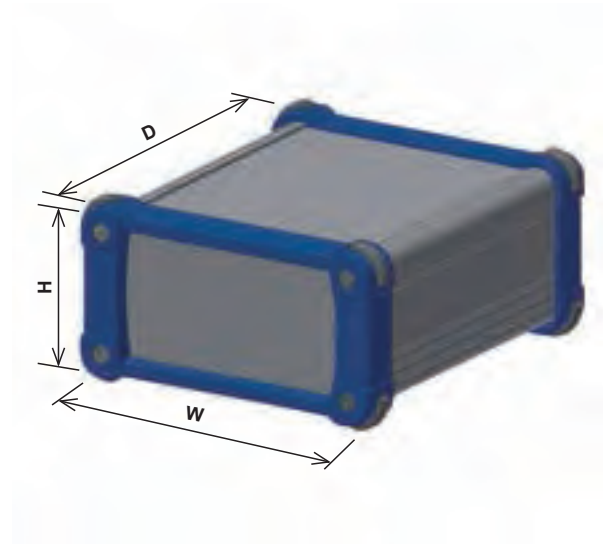
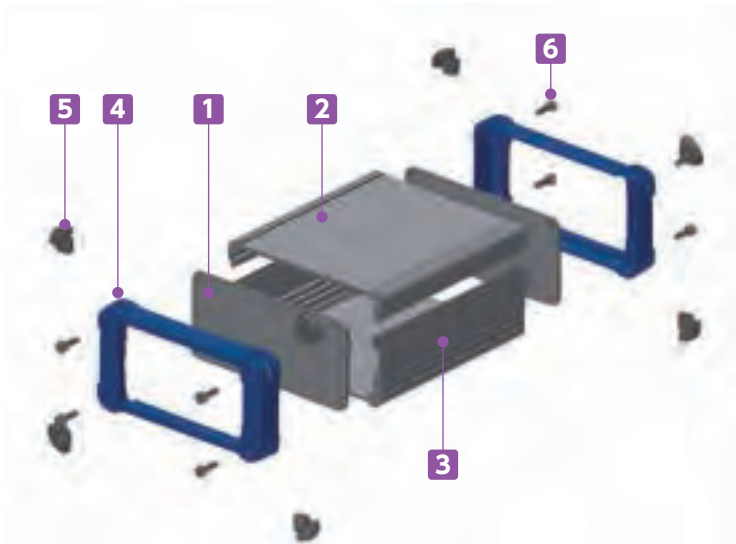
No.	Product no.	Pcs	Material	Color / Finish
1	Panel	2	Aluminium A1100 t=1.5	Silver • Black / Anodized
2	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Exterior frame	2	Polycarbonate-ABS UL94V-0	Black • Gray / Unpainted Indigo • Navy • Lime • Yellow • Orange • Red / Painted
5	Corner guard	8	Silicone	Black • Dark gray
6	Screw	8	Stainless steel	Unfinished

## Color Type

Black and gray exterior frames are unpainted; other colored exterior frames are painted.

Code	S B Silver / Black	S G Silver / Gray	S I Silver / Indigo	S N Silver / Navy
Color				
Code	S L Silver / Lime	S Y Silver / Yellow	S O Silver / Orange	S R Silver / Red
Color				
Color code	B B Black / Black	B G Black / Gray	B I Black / Indigo	B N Black / Navy
Color				
Code	B L Black / Lime	B Y Black / Yellow	B O Black / Orange	B R Black / Red
Color				

■ Detailed dimensions on page 147 and 149 ~ 151.



Included screws

EXP7 and EXP9 series : M2.5-8 x 8 pcs

EXP11 and EXP15 series : M3-10 x 8 pcs

※Hexagonal wrench included.

#### Product no. / Dimensions

■ Please suffix color code at the end of the product number.

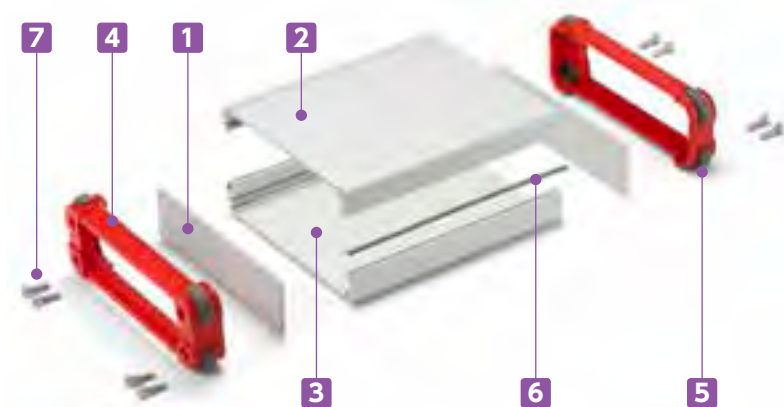
Product no.	W	H	D
EXP 7- 3- 6□□	69	34	60
EXP 7- 3- 9□□	69	34	87
EXP 7- 3-11□□	69	34	110
EXP 7- 4- 6□□	69	44	60
EXP 7- 4- 9□□	69	44	87
EXP 7- 4-11□□	69	44	110
EXP 7- 6- 6□□	69	59	60
EXP 7- 6- 9□□	69	59	87
EXP 7- 6-11□□	69	59	110
EXP 9- 4- 7□□	89	39	70
EXP 9- 4-10□□	89	39	100
EXP 9- 4-13□□	89	39	130
EXP 9- 5- 7□□	89	49	70
EXP 9- 5-10□□	89	49	100
EXP 9- 5-13□□	89	49	130
EXP 9- 6- 7□□	89	64	70
EXP 9- 6-10□□	89	64	100
EXP 9- 6-13□□	89	64	130
EXP12- 4- 9□□	116	41	90
EXP12- 4-13□□	116	41	130
EXP12- 4-18□□	116	41	176
EXP12- 6- 9□□	116	56	90
EXP12- 6-13□□	116	56	130
EXP12- 6-18□□	116	56	176
EXP12- 7- 9□□	116	71	90
EXP12- 7-13□□	116	71	130
EXP12- 7-18□□	116	71	176
EXP15- 5-11□□	151	46	110
EXP15- 5-15□□	151	46	150
EXP15- 5-20□□	151	46	200
EXP15- 6-11□□	151	61	110
EXP15- 6-15□□	151	61	150
EXP15- 6-20□□	151	61	200
EXP15- 8-11□□	151	81	110
EXP15- 8-15□□	151	81	150
EXP15- 8-20□□	151	81	200
EXP15-10-11□□	151	101	110
EXP15-10-15□□	151	101	150
EXP15-10-20□□	151	101	200

■ Custom length is available.



## EXPE SERIES

## ALUMINIUM EMC SHIELD CASE with CORNER GUARD



## Technical Data

Protection class: IP40

- EMC shielding is achieved by having the unfinished inner sides of the top/bottom covers and fabric-over-foam gaskets in contact with one another.
- Corner guards are designed to be both aesthetically pleasing, and strong against impact.
- Available in 39 different sizes and 8 different color combinations.

Included screws  
EXPE7 and EXPE9 series : M2.5-8 x 8 pcs  
EXPE11 and EXPE15 series : M3-10 x 8 pcs  
※Hexagonal wrench included.

## Components

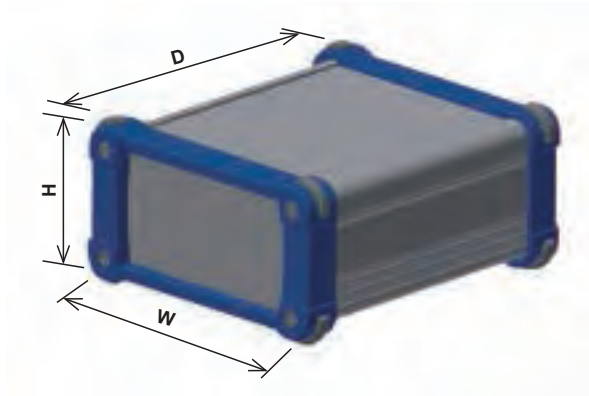
No.	Part name	Pcs	Material	Color / Finish
1	Panel	2	Aluminium A1100 t=1.5	Silver / Anodized (outside) : Unfinished (inside)
2	Top cover	1	Extruded aluminium A6063S-T5	Silver / Painted (outside) : Unfinished (inside)
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver / Painted (outside) : Unfinished (inside)
4	Exterior frame	2	Polycarbonate-ABS UL94V-0	Black • Gray / Unpainted Indigo • Navy • Lime • Yellow • Orange • Red / Painted
5	Corner guard	8	Silicone	Black • Dark gray
6	Fabric-over-foam gasket	2	Conductive fabric : TPE	Metallic gray
7	Screw	8	Stainless steel	Unfinished

## Color Type

Black and gray exterior frames are unpainted; other colored exterior frames are painted.

Code	S B Silver / Black	S G Silver / Gray	S I Silver / Indigo	S N Silver / Navy
Color				
Code	S L Silver / Lime	S Y Silver / Yellow	S O Silver / Orange	S R Silver / Red
Color				

■ Detailed dimensions on page 147 and 149 ~ 151.



#### Product no. / Dimensions

■ Please suffix color code at the end of the product number.

Product no.	W	H	D
EXPE 7- 3- 6□□	69	34	60
EXPE 7- 3- 9□□	69	34	87
EXPE 7- 3-11□□	69	34	110
EXPE 7- 4- 6□□	69	44	60
EXPE 7- 4- 9□□	69	44	87
EXPE 7- 4-11□□	69	44	110
EXPE 7- 6- 6□□	69	59	60
EXPE 7- 6- 9□□	69	59	87
EXPE 7- 6-11□□	69	59	110
EXPE 9- 4- 7□□	89	39	70
EXPE 9- 4-10□□	89	39	100
EXPE 9- 4-13□□	89	39	130
EXPE 9- 5- 7□□	89	49	70
EXPE 9- 5-10□□	89	49	100
EXPE 9- 5-13□□	89	49	130
EXPE 9- 6- 7□□	89	64	70
EXPE 9- 6-10□□	89	64	100
EXPE 9- 6-13□□	89	64	130
EXPE12- 4- 9□□	116	41	90
EXPE12- 4-13□□	116	41	130
EXPE12- 4-18□□	116	41	176
EXPE12- 6- 9□□	116	56	90
EXPE12- 6-13□□	116	56	130
EXPE12- 6-18□□	116	56	176
EXPE12- 7- 9□□	116	71	90
EXPE12- 7-13□□	116	71	130
EXPE12- 7-18□□	116	71	176
EXPE15- 5-11□□	151	46	110
EXPE15- 5-15□□	151	46	150
EXPE15- 5-20□□	151	46	200
EXPE15- 6-11□□	151	61	110
EXPE15- 6-15□□	151	61	150
EXPE15- 6-20□□	151	61	200
EXPE15- 8-11□□	151	81	110
EXPE15- 8-15□□	151	81	150
EXPE15- 8-20□□	151	81	200
EXPE15-10-11□□	151	101	110
EXPE15-10-15□□	151	101	150
EXPE15-10-20□□	151	101	200

#### How to install a shield gasket



■ Insert fabric-over-foam gasket into the joint-grooves on the bottom cover.



■ Ensure that a small portion of the fabric-over-foam gasket protrudes out in order to maintain a connection with the end panels.

# EXW SERIES

# IP65 ALUMINIUM CASE with CORNER GUARD



- IP65 is made possible by sealing between top & bottom covers and end panels with gaskets.
- Available in 39 different standard sizes and 6 color combinations by 2 body frame and 3 end panel colors.

## Technical Data

Protection class: IP65

Included screws  
EXW7 and EXW9 series : M2.5-8 x 8 pcs  
EXW12 and EXW15 series : M3-10 x 8 pcs  
※Hexagonal wrench included.

## Components

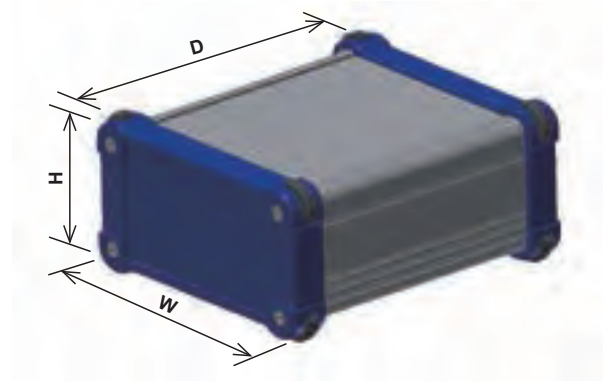
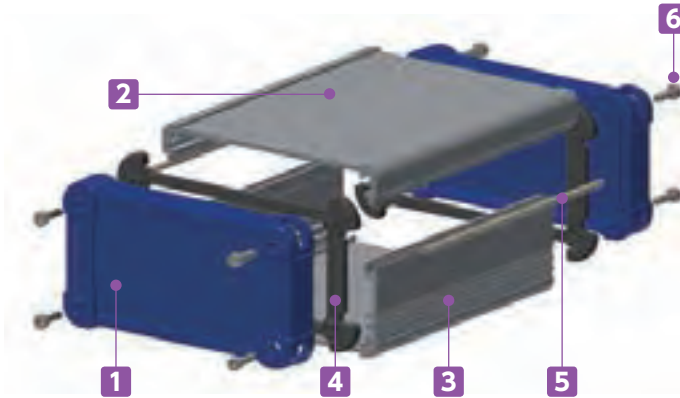
No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	Polycarbonate-ABS UL94V-0	Black • Gray / Unpainted Navy / Painted
2	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Panel gasket	2	Silicone	Dark gray • Black
5	Cover gasket	2	Silicone	White gray
6	Screw	8	Stainless steel	Unfinished

## Color Type

Black and gray end panels are unpainted; navy end panel is painted.

Code	S B Silver / Black	S G Silver / Gray	S N Silver / Navy
Color			
Code	B B Black / Black	B G Black / Gray	B N Black / Navy
Color			

■ Detailed dimensions on page 148 ~ 151.



## Product no. / Dimensions

■ Please suffix color code at the end of the product number.

Product no.	W	H	D
EXW 7- 3- 6□□	69	34	58
EXW 7- 3- 9□□	69	34	85
EXW 7- 3-11□□	69	34	108
EXW 7- 4- 6□□	69	44	58
EXW 7- 4- 9□□	69	44	85
EXW 7- 4-11□□	69	44	108
EXW 7- 6- 6□□	69	59	58
EXW 7- 6- 9□□	69	59	85
EXW 7- 6-11□□	69	59	108
EXW 9- 4- 7□□	89	39	69
EXW 9- 4-10□□	89	39	99
EXW 9- 4-13□□	89	39	129
EXW 9- 5- 7□□	89	49	69
EXW 9- 5-10□□	89	49	99
EXW 9- 5-13□□	89	49	129
EXW 9- 6- 7□□	89	64	69
EXW 9- 6-10□□	89	64	99
EXW 9- 6-13□□	89	64	129
EXW12- 4- 9□□	116	41	88
EXW12- 4-13□□	116	41	128
EXW12- 4-18□□	116	41	174
EXW12- 6- 9□□	116	56	88
EXW12- 6-13□□	116	56	128
EXW12- 6-18□□	116	56	174
EXW12- 7- 9□□	116	71	88
EXW12- 7-13□□	116	71	128
EXW12- 7-18□□	116	71	174
EXW15- 5-11□□	151	46	107
EXW15- 5-15□□	151	46	147
EXW15- 5-20□□	151	46	197
EXW15- 6-11□□	151	61	107
EXW15- 6-15□□	151	61	147
EXW15- 6-20□□	151	61	197
EXW15- 8-11□□	151	81	107
EXW15- 8-15□□	151	81	147
EXW15- 8-20□□	151	81	197
EXW15-10-11□□	151	101	107
EXW15-10-15□□	151	101	147
EXW15-10-20□□	151	101	197

■ Custom length is available.

## How to install a cover gasket



■ Insert cover gasket into the joint-grooves on the bottom cover.



■ Ensure that a small portion of the cover gasket protrudes out in order to maintain a seal with the panel gasket for IP65 protection.



# EX SERIES

# EXTRUDED ALUMINIUM CASE

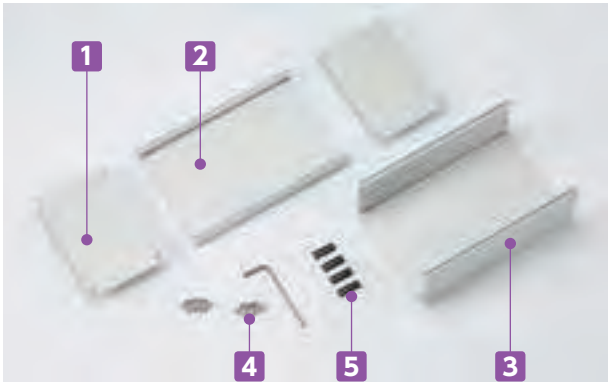


## Technical Data

Protection class: IP40



- Simple yet beautifully designed aluminium extrusion enclosure.
- Selectable in 4 different color combinations.
- Beautiful high-end finish is achieved by having a chamfered edge panel.
- Suitable for industrial and audio interface equipments.



## Components

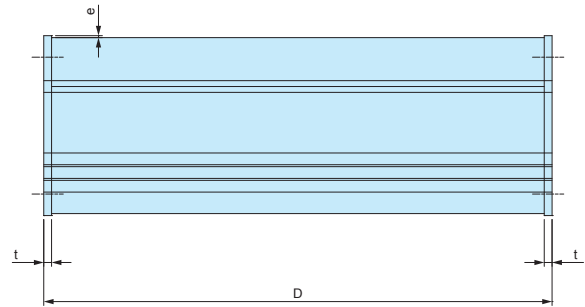
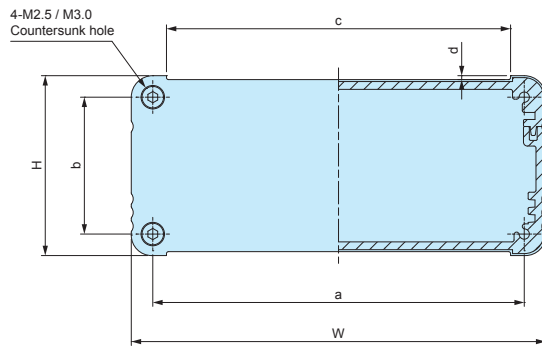
No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	Aluminium A1050P	Silver • Black / Anodized
2	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Screw	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane	Black

## Color Type

Code	S S Silver / Silver	S B Silver / Black	B S Black / Silver	B B Black / Black
Color				

## EX dimensions

■ Detailed dimensions on page 149 ~ 150 and 152.



Included screws  
EX6 and EX8 series : M2.5-8 x 8 pcs  
EX11 and EX14 series : M3-8 x 8 pcs  
※Hexagonal wrench included.

## Product no. / Dimensions

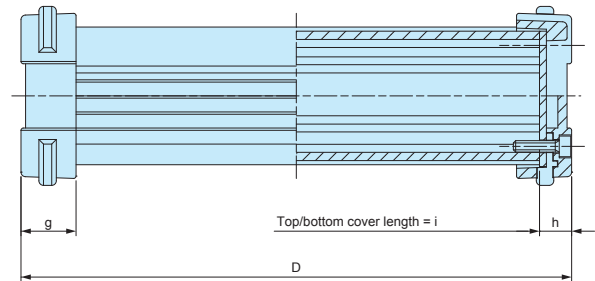
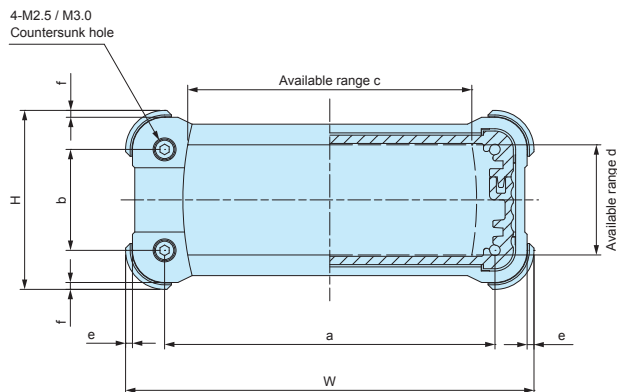
■ Please suffix color code at the end of the product number.

Product no.	W	H	D	a	b	c	d	e	t
EX 6- 3- 5□□	60.6	25.6	50	52	17	45.2	0.9	0.3	2
EX 6- 3- 8□□	60.6	25.6	77	52	17	45.2	0.9	0.3	2
EX 6- 3-10□□	60.6	25.6	100	52	17	45.2	0.9	0.3	2
EX 6- 4- 5□□	60.6	35.6	50	52	27	45.2	0.9	0.3	2
EX 6- 4- 8□□	60.6	35.6	77	52	27	45.2	0.9	0.3	2
EX 6- 4-10□□	60.6	35.6	100	52	27	45.2	0.9	0.3	2
EX 6- 5- 5□□	60.6	50.6	50	52	42	45.2	0.9	0.3	2
EX 6- 5- 8□□	60.6	50.6	77	52	42	45.2	0.9	0.3	2
EX 6- 5-10□□	60.6	50.6	100	52	42	45.2	0.9	0.3	2
EX 8- 3- 6□□	80.6	30.6	60	72	22	65.2	0.9	0.3	2
EX 8- 3- 9□□	80.6	30.6	90	72	22	65.2	0.9	0.3	2
EX 8- 3-12□□	80.6	30.6	120	72	22	65.2	0.9	0.3	2
EX 8- 4- 6□□	80.6	40.6	60	72	32	65.2	0.9	0.3	2
EX 8- 4- 9□□	80.6	40.6	90	72	32	65.2	0.9	0.3	2
EX 8- 4-12□□	80.6	40.6	120	72	32	65.2	0.9	0.3	2
EX 8- 6- 6□□	80.6	55.6	60	72	47	65.2	0.9	0.3	2
EX 8- 6- 9□□	80.6	55.6	90	72	47	65.2	0.9	0.3	2
EX 8- 6-12□□	80.6	55.6	120	72	47	65.2	0.9	0.3	2
EX11- 3- 8□□	106	31	79	95	20	87	1	0.5	2.5
EX11- 3-12□□	106	31	119	95	20	87	1	0.5	2.5
EX11- 3-16□□	106	31	165	95	20	87	1	0.5	2.5
EX11- 5- 8□□	106	46	79	95	35	87	1	0.5	2.5
EX11- 5-12□□	106	46	119	95	35	87	1	0.5	2.5
EX11- 5-16□□	106	46	165	95	35	87	1	0.5	2.5
EX11- 6- 8□□	106	61	79	95	50	87	1	0.5	2.5
EX11- 6-12□□	106	61	119	95	50	87	1	0.5	2.5
EX11- 6-16□□	106	61	165	95	50	87	1	0.5	2.5
EX14- 4-10□□	141	36	98	130	25	122	1	0.5	2.5
EX14- 4-14□□	141	36	138	130	25	122	1	0.5	2.5
EX14- 4-19□□	141	36	188	130	25	122	1	0.5	2.5
EX14- 5-10□□	141	51	98	130	40	122	1	0.5	2.5
EX14- 5-14□□	141	51	138	130	40	122	1	0.5	2.5
EX14- 5-19□□	141	51	188	130	40	122	1	0.5	2.5
EX14- 7-10□□	141	71	98	130	60	122	1	0.5	2.5
EX14- 7-14□□	141	71	138	130	60	122	1	0.5	2.5
EX14- 7-19□□	141	71	188	130	60	122	1	0.5	2.5
EX14- 9-10□□	141	91	98	130	80	122	1	0.5	2.5
EX14- 9-14□□	141	91	138	130	80	122	1	0.5	2.5
EX14- 9-19□□	141	91	188	130	80	122	1	0.5	2.5

■ Custom length is available.

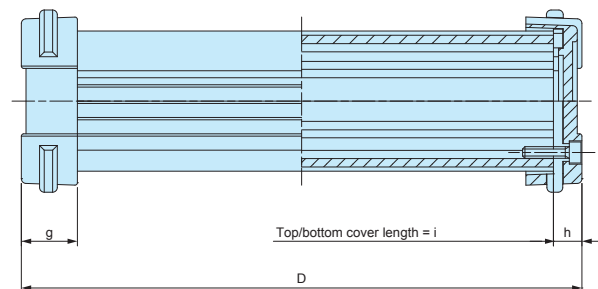
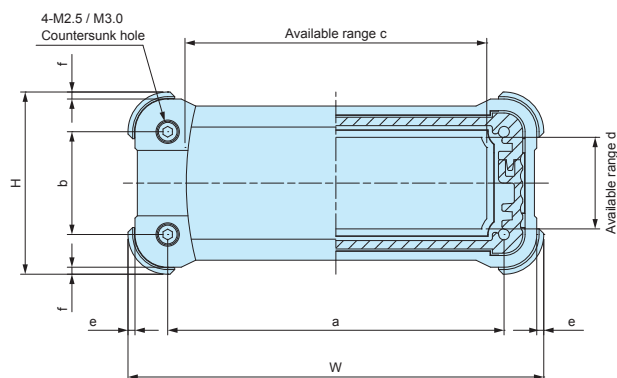


## EXP • EXPE dimensions



Product no.	W	H	D	a	b	c	d	e	f	g	h	i
EXP • EXPE 7- 3- 6□□	69	34	60	52	17	41.8	19.6	1.5	1.5	12	7	46
EXP • EXPE 7- 3- 9□□	69	34	87	52	17	41.8	19.6	1.5	1.5	12	7	73
EXP • EXPE 7- 3-11□□	69	34	110	52	17	41.8	19.6	1.5	1.5	12	7	96
EXP • EXPE 7- 4- 6□□	69	44	60	52	27	41.5	29.6	1.5	1.5	12	7	46
EXP • EXPE 7- 4- 9□□	69	44	87	52	27	41.5	29.6	1.5	1.5	12	7	73
EXP • EXPE 7- 4-11□□	69	44	110	52	27	41.5	29.6	1.5	1.5	12	7	96
EXP • EXPE 7- 6- 6□□	69	59	60	52	42	41.2	44.6	1.5	1.5	12	7	46
EXP • EXPE 7- 6- 9□□	69	59	87	52	42	41.2	44.6	1.5	1.5	12	7	73
EXP • EXPE 7- 6-11□□	69	59	110	52	42	41.2	44.6	1.5	1.5	12	7	96
EXP • EXPE 9- 4- 7□□	89	39	70	72	22	61.6	23.5	1.5	1.5	12	7	56
EXP • EXPE 9- 4-10□□	89	39	100	72	22	61.6	23.5	1.5	1.5	12	7	86
EXP • EXPE 9- 4-13□□	89	39	130	72	22	61.6	23.5	1.5	1.5	12	7	116
EXP • EXPE 9- 5- 7□□	89	49	70	72	32	61.3	33.5	1.5	1.5	12	7	56
EXP • EXPE 9- 5-10□□	89	49	100	72	32	61.3	33.5	1.5	1.5	12	7	86
EXP • EXPE 9- 5-13□□	89	49	130	72	32	61.3	33.5	1.5	1.5	12	7	116
EXP • EXPE 9- 6- 7□□	89	64	70	72	47	61	48.5	1.5	1.5	12	7	56
EXP • EXPE 9- 6-10□□	89	64	100	72	47	61	48.5	1.5	1.5	12	7	86
EXP • EXPE 9- 6-13□□	89	64	130	72	47	61	48.5	1.5	1.5	12	7	116
EXP • EXPE12- 4- 9□□	116	41	90	95	20	82.8	23.8	1.75	1.75	16	8	74
EXP • EXPE12- 4-13□□	116	41	130	95	20	82.8	23.8	1.75	1.75	16	8	114
EXP • EXPE12- 4-18□□	116	41	176	95	20	82.8	23.8	1.75	1.75	16	8	160
EXP • EXPE12- 6- 9□□	116	56	90	95	35	83.2	38.8	1.75	1.75	16	8	74
EXP • EXPE12- 6-13□□	116	56	130	95	35	83.2	38.8	1.75	1.75	16	8	114
EXP • EXPE12- 6-18□□	116	56	176	95	35	83.2	38.8	1.75	1.75	16	8	160
EXP • EXPE12- 7- 9□□	116	71	90	95	50	82.8	52.5	1.75	1.75	16	8	74
EXP • EXPE12- 7-13□□	116	71	130	95	50	82.8	52.5	1.75	1.75	16	8	114
EXP • EXPE12- 7-18□□	116	71	176	95	50	82.8	52.5	1.75	1.75	16	8	160
EXP • EXPE15- 5-11□□	151	46	110	130	25	107.4	23.7	1.75	1.75	18	8.5	93
EXP • EXPE15- 5-15□□	151	46	150	130	25	107.4	23.7	1.75	1.75	18	8.5	133
EXP • EXPE15- 5-20□□	151	46	200	130	25	107.4	23.7	1.75	1.75	18	8.5	183
EXP • EXPE15- 6-11□□	151	61	110	130	40	107.4	38.7	1.75	1.75	18	8.5	93
EXP • EXPE15- 6-15□□	151	61	150	130	40	107.4	38.7	1.75	1.75	18	8.5	133
EXP • EXPE15- 6-20□□	151	61	200	130	40	107.4	38.7	1.75	1.75	18	8.5	183
EXP • EXPE15- 8-11□□	151	81	110	130	60	107.4	58.7	1.75	1.75	18	8.5	93
EXP • EXPE15- 8-15□□	151	81	150	130	60	107.4	58.7	1.75	1.75	18	8.5	133
EXP • EXPE15- 8-20□□	151	81	200	130	60	107.4	58.7	1.75	1.75	18	8.5	183
EXP • EXPE15-10-11□□	151	101	110	130	80	107.4	78.7	1.75	1.75	18	8.5	93
EXP • EXPE15-10-15□□	151	101	150	130	80	107.4	78.7	1.75	1.75	18	8.5	133
EXP • EXPE15-10-20□□	151	101	200	130	80	107.4	78.7	1.75	1.75	18	8.5	183

## EXW dimensions

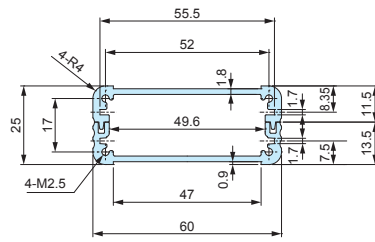


Product no.	W	H	D	a	b	c	d	e	f	g	h	i
EXW 7- 3- 6□□	69	34	58	52	17	46	16	1.5	1.5	12	6	46
EXW 7- 3- 9□□	69	34	85	52	17	46	16	1.5	1.5	12	6	73
EXW 7- 3-11□□	69	34	108	52	17	46	16	1.5	1.5	12	6	96
EXW 7- 4- 6□□	69	44	58	52	27	46	26	1.5	1.5	12	6	46
EXW 7- 4- 9□□	69	44	85	52	27	46	26	1.5	1.5	12	6	73
EXW 7- 4-11□□	69	44	108	52	27	46	26	1.5	1.5	12	6	96
EXW 7- 6- 6□□	69	59	58	52	42	46	41	1.5	1.5	12	6	46
EXW 7- 6- 9□□	69	59	85	52	42	46	41	1.5	1.5	12	6	73
EXW 7- 6-11□□	69	59	108	52	42	46	41	1.5	1.5	12	6	96
EXW 9- 4- 7□□	89	39	69	72	22	65.8	20	1.5	1.5	12	6.5	56
EXW 9- 4-10□□	89	39	99	72	22	65.8	20	1.5	1.5	12	6.5	86
EXW 9- 4-13□□	89	39	129	72	22	65.8	20	1.5	1.5	12	6.5	116
EXW 9- 5- 7□□	89	49	69	72	32	65.8	30	1.5	1.5	12	6.5	56
EXW 9- 5-10□□	89	49	99	72	32	65.8	30	1.5	1.5	12	6.5	86
EXW 9- 5-13□□	89	49	129	72	32	65.8	30	1.5	1.5	12	6.5	116
EXW 9- 6- 7□□	89	64	69	72	47	65.8	45	1.5	1.5	12	6.5	56
EXW 9- 6-10□□	89	64	99	72	47	65.8	45	1.5	1.5	12	6.5	86
EXW 9- 6-13□□	89	64	129	72	47	65.8	45	1.5	1.5	12	6.5	116
EXW12- 4- 9□□	116	41	88	95	20	89.6	18	1.75	1.75	16	7	74
EXW12- 4-13□□	116	41	128	95	20	89.6	18	1.75	1.75	16	7	114
EXW12- 4-18□□	116	41	174	95	20	89.6	18	1.75	1.75	16	7	160
EXW12- 6- 9□□	116	56	88	95	35	89.6	33	1.75	1.75	16	7	74
EXW12- 6-13□□	116	56	128	95	35	89.6	33	1.75	1.75	16	7	114
EXW12- 6-18□□	116	56	174	95	35	89.6	33	1.75	1.75	16	7	160
EXW12- 7- 9□□	116	71	88	95	50	89.6	48	1.75	1.75	16	7	74
EXW12- 7-13□□	116	71	128	95	50	89.6	48	1.75	1.75	16	7	114
EXW12- 7-18□□	116	71	174	95	50	89.6	48	1.75	1.75	16	7	160
EXW15- 5-11□□	151	46	107	130	25	103.4	18.2	1.75	1.75	18	7	93
EXW15- 5-15□□	151	46	147	130	25	103.4	18.2	1.75	1.75	18	7	133
EXW15- 5-20□□	151	46	197	130	25	103.4	18.2	1.75	1.75	18	7	183
EXW15- 6-11□□	151	61	107	130	40	103.4	33.2	1.75	1.75	18	7	93
EXW15- 6-15□□	151	61	147	130	40	103.4	33.2	1.75	1.75	18	7	133
EXW15- 6-20□□	151	61	197	130	40	103.4	33.2	1.75	1.75	18	7	183
EXW15- 8-11□□	151	81	107	130	60	103.4	53.2	1.75	1.75	18	7	93
EXW15- 8-15□□	151	81	147	130	60	103.4	53.2	1.75	1.75	18	7	133
EXW15- 8-20□□	151	81	197	130	60	103.4	53.2	1.75	1.75	18	7	183
EXW15-10-11□□	151	101	107	130	80	103.4	73.2	1.75	1.75	18	7	93
EXW15-10-15□□	151	101	147	130	80	103.4	73.2	1.75	1.75	18	7	133
EXW15-10-20□□	151	101	197	130	80	103.4	73.2	1.75	1.75	18	7	183

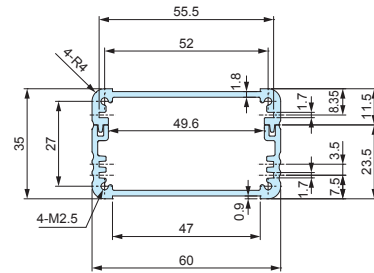
## Cross-section View

### EXP • EXPE • EXW • EX top / bottom covers

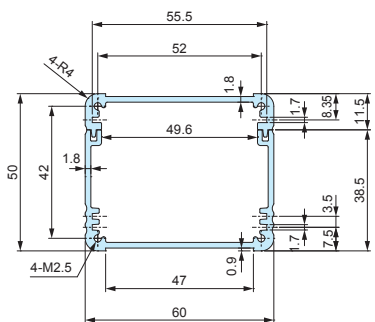
EXP • EXPE • EXW 7-3-□  
EX 6-3-□



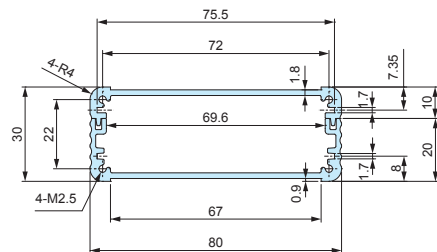
EXP • EXPE • EXW 7-4-□  
EX 6-4-□



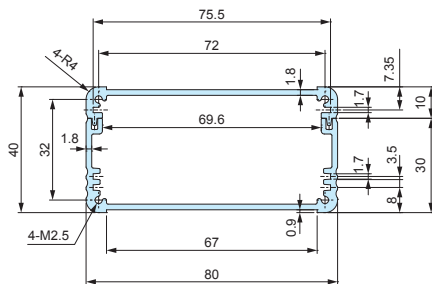
EXP • EXPE • EXW 7-6-□  
EX 6-5-□



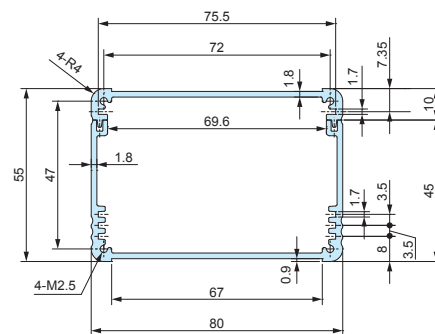
EXP • EXPE • EXW 9-4-□  
EX 8-3-□



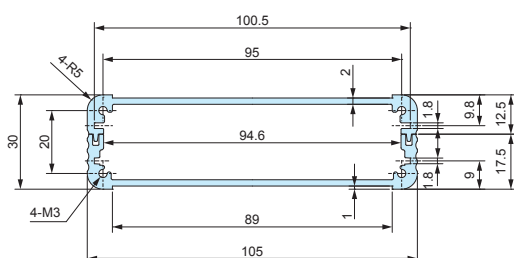
EXP • EXPE • EXW 9-5-□  
EX 8-4-□



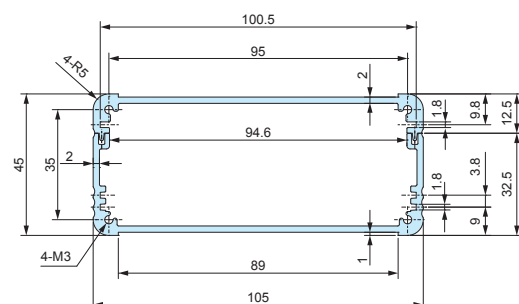
EXP • EXPE • EXW 9-6-□  
EX 8-6-□



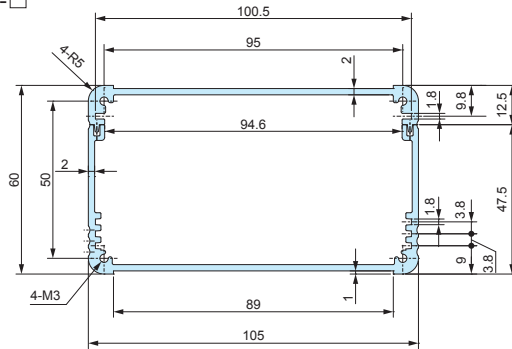
EXP • EXPE • EXW 12-4-□  
EX 11-3-□



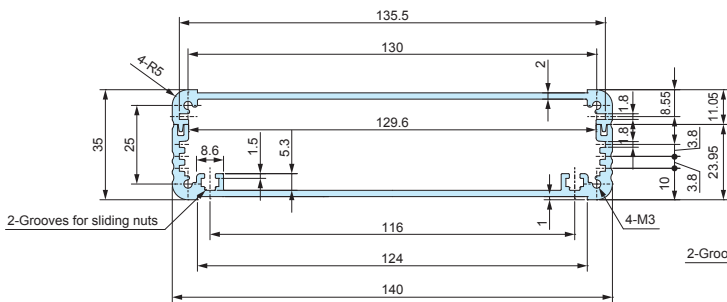
EXP • EXPE • EXW 12-6-□  
EX 11-5-□



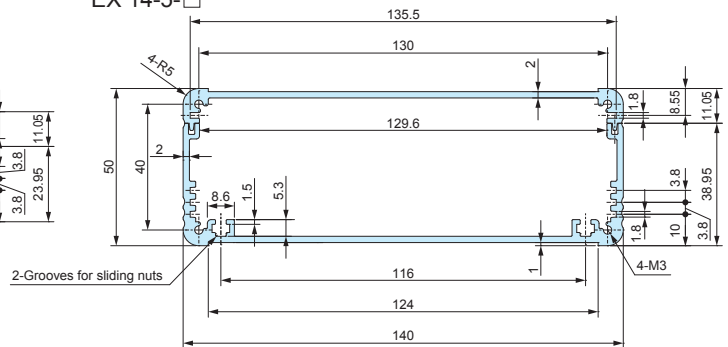
EXP • EXPE • EXW 12-7-□  
EX 11-6-□



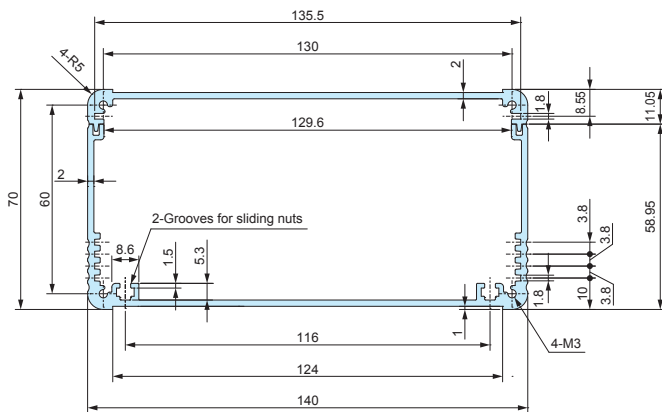
EXP • EXPE • EXW 15-5-□  
EX 14-4-□



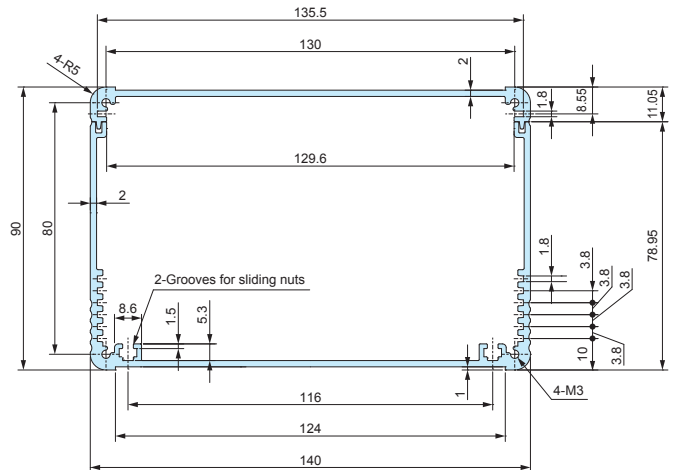
EXP • EXPE • EXW 15-6-□  
EX 14-5-□



EXP • EXPE • EXW 15-8-□  
EX 14-7-□



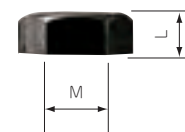
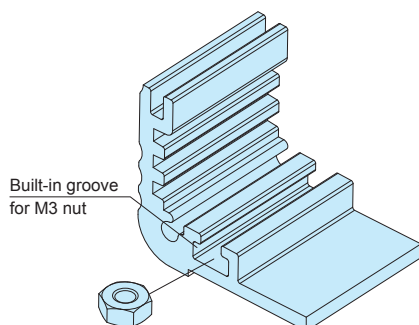
EXP • EXPE • EXW 15-10-□  
EX 14-9-□



## Accessories (Optional parts)

### MT-3N

### SLIDING NUT for EXP • EXPE • EXW • EX

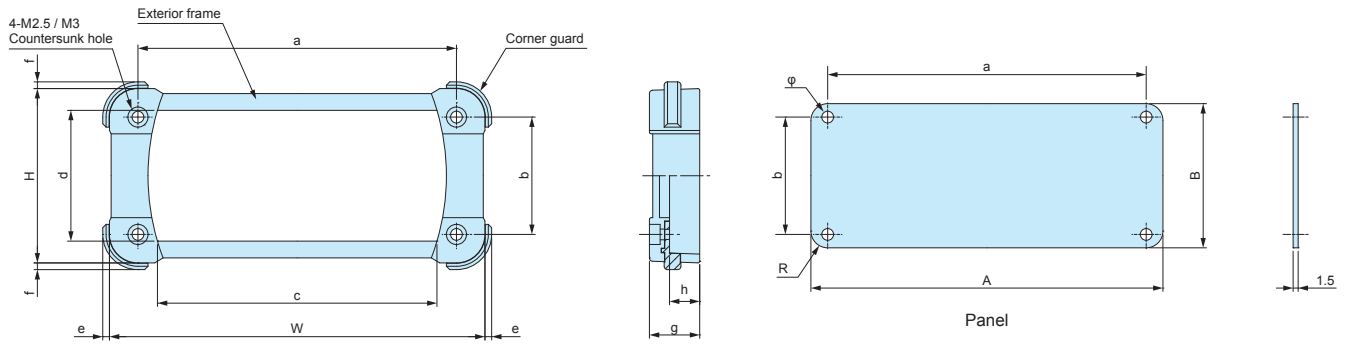


#### Product no. / Dimensions

Product no.	M	L	Material	Finish	Pack of
MT-3N	3	2.4	Steel	Black trivalent chromate	50

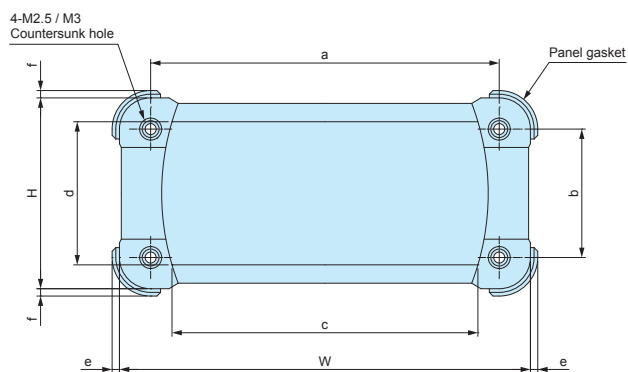
■ Sliding nut can be used on 140mm and larger bottom covers.

## EXP • EXPE exterior frame / panel



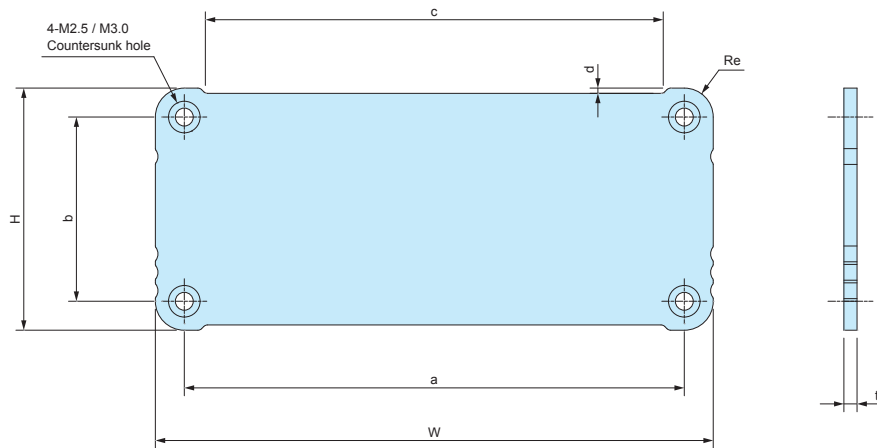
Product no.	W	H	a	b	c	d	e	f	g	h	A	B	φ	R
EXP / EXPE 7- 3-□	66	31	52	17	41.8	21	1.5	1.5	12	6.5	60.6	23.2	3	3.5
EXP / EXPE 7- 4-□	66	41	52	27	41.5	29.6	1.5	1.5	12	6.5	60.6	33.2	3	3.5
EXP / EXPE 7- 6-□	66	56	52	42	41.2	44.6	1.5	1.5	12	6.5	60.6	48.2	3	3.5
EXP / EXPE 9- 4-□	86	36	72	22	61.6	24	1.5	1.5	12	6.5	80.6	28.8	3	3.5
EXP / EXPE 9- 5-□	86	46	72	32	61.3	34	1.5	1.5	12	6.5	80.6	38.8	3	3.5
EXP / EXPE 9- 6-□	86	61	72	47	61	49	1.5	1.5	12	6.5	80.6	53.8	3	3.5
EXP / EXPE12- 4-□	112.5	37.5	95	20	82.8	23.8	1.75	1.75	16	9.5	105.6	28.6	3.5	4.5
EXP / EXPE12- 6-□	112.5	52.5	95	35	83.2	38.8	1.75	1.75	16	9.5	105.6	43.6	3.5	4.5
EXP / EXPE12- 7-□	112.5	67.5	95	50	82.8	53.8	1.75	1.75	16	9.5	105.6	58.6	3.5	4.5
EXP / EXPE15- 5-□	147.5	42.5	130	25	118	28.8	1.75	1.75	18	11	140.6	33.6	3.5	4.5
EXP / EXPE15- 6-□	147.5	57.5	130	40	117.8	43.8	1.75	1.75	18	11	140.6	48.6	3.5	4.5
EXP / EXPE15- 8-□	147.5	77.5	130	60	116.3	63.8	1.75	1.75	18	11	140.6	68.6	3.5	4.5
EXP / EXPE15-10-□	147.5	97.5	130	80	115.7	83.8	1.75	1.75	18	11	140.6	88.6	3.5	4.5

## EXW panel



Product no.	W	H	a	b	c	d	e	f	g	h
EXW 7- 3-□	66	31	52	17	41.7	21.8	1.5	1.5	12	6
EXW 7- 4-□	66	41	52	27	41.2	31.8	1.5	1.5	12	6
EXW 7- 6-□	66	56	52	42	41.2	45.8	1.5	1.5	12	6
EXW 9- 4-□	86	36	72	22	61.5	24.8	1.5	1.5	12	5.5
EXW 9- 5-□	86	46	72	32	61	34.8	1.5	1.5	12	5.5
EXW 9- 6-□	86	61	72	47	60.8	49.8	1.5	1.5	12	5.5
EXW12- 4-□	112.5	37.5	95	20	81.9	27.3	1.75	1.75	16	9
EXW12- 6-□	112.5	52.5	95	35	82.2	42.3	1.75	1.75	16	9
EXW12- 7-□	112.5	67.5	95	50	82.3	54.3	1.75	1.75	16	9
EXW15- 5-□	147.5	42.5	130	25	118.8	29.3	1.75	1.75	18	11
EXW15- 6-□	147.5	57.5	130	40	117.8	44.3	1.75	1.75	18	11
EXW15- 8-□	147.5	77.5	130	60	116.3	64.3	1.75	1.75	18	11
EXW15-10-□	147.5	97.5	130	80	116.6	84.3	1.75	1.75	18	11

## EX panel



Product no.	W	H	a	b	c	d	e	t
EX 6-3-□	60.6	25.6	52	17	45.2	0.9	4.3	2
EX 6-4-□	60.6	35.6	52	27	45.2	0.9	4.3	2
EX 6-5-□	60.6	50.6	52	42	45.2	0.9	4.3	2
EX 8-3-□	80.6	30.6	72	22	65.2	0.9	4.3	2
EX 8-4-□	80.6	40.6	72	32	65.2	0.9	4.3	2
EX 8-6-□	80.6	55.6	72	47	65.2	0.9	4.3	2
EX11-3-□	106	31	95	20	87	1	5.5	2.5
EX11-5-□	106	46	95	35	87	1	5.5	2.5
EX11-6-□	106	61	95	50	87	1	5.5	2.5
EX14-4-□	141	36	130	25	122	1	5.5	2.5
EX14-5-□	141	51	130	40	122	1	5.5	2.5
EX14-7-□	141	71	130	60	122	1	5.5	2.5
EX14-9-□	141	91	130	80	122	1	5.5	2.5

## Accessories (Optional parts)

## EXEG-2.5

## EMC SHIELDING FABRIC-OVER-FOAM GASKET for EXPE ★★ NEW

- EMC shielding fabric-over-foam gasket for EXPE series.



## Product no. / Dimensions

Product no.	Φ	Material	Color	Sales unit
EXEG-2.5	2.5	Wire mesh gasket • TPE	Metallic gray	500mm x 1 pc

Length tolerance = +/- 10%

## SGK-2.5

## SILICONE GASKET for EXW

- Sealing gasket for EXW series.



## Product no. / Dimensions

Product no.	Φ	Material	Color	Sales unit
SGK-2.5	2.5	Silicone	White gray	1000mm x 1 pc

Length tolerance = +/- 10%



# MX•MXA ALUMINIUM MOBILE ENCLOSURE

The MXA mobile enclosure is designed with a beautiful and elegant finish in mind. With its tapered panel edges and rounded design, it fits comfortably in your hand, while giving off a simple yet sleek look. Suitable for use as small audio devices and as an amplifier unit, among others.

## APPLICATION EXAMPLE

### DESKTOP AUDIO PREAMPLIFIER with USB



Product by: Conisis lab.inc. (Japan) Web: [conisis.com](http://conisis.com)

### WIRELESS MICROPHONE SYSTEM



Product by: Catchbox (Finland) Web: [eu.getcatchbox.com](http://eu.getcatchbox.com)

A throwable wireless microphone and sound transmission system. Built with audiences in mind, its soft exterior and auto-mute technology allows it to be passed or thrown around without being damaged, or having unwanted noise interference.

Using a universal license-free wireless radio frequency band, the unit can be used in almost any parts of the world, without requiring special permissions to operate a radio device in this frequency.



### MODEL RAILROAD CONTROLLER



Product by: Calura Ltd (Japan) Web: [calura.co.jp](http://calura.co.jp)

Control box for a high efficiency performance controller for model railroad trains. By utilizing high / low RF signals, it enables higher operation response, providing a realistic driving experience.

## ETHERNET CELLULAR ROUTER



Product by: NimbeLink (USA)  
Web: [nimbelink.com](http://nimbelink.com)

## AIS (AUTOMATIC IDENTIFICATION SYSTEM) SIGNAL RECEIVER



Product by: SRT Marine System Solutions Ltd. (UK)  
Web: [srt-marinesystems.com](http://srt-marinesystems.com)

## MOBILE MOISTURE METER



Product by: ARP Co., Ltd. (Japan)  
Web: [arp-id.co.jp](http://arp-id.co.jp)

## VEHICLE IDENTIFY CAMERA DATA TRANSMITTER



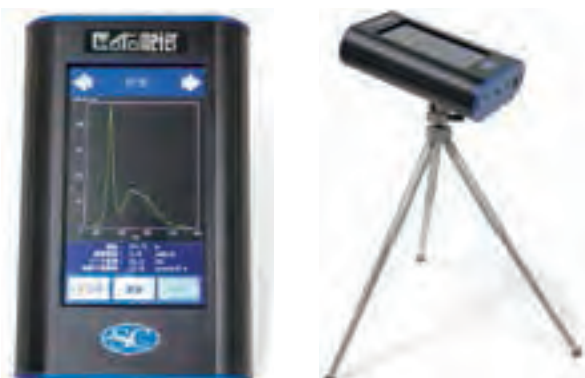
Product by: Sensor Dynamics (Australia)  
Web: [sensordynamics.com.au](http://sensordynamics.com.au)

## FULL COLOR LED TABLETOP LIGHTING DEVICE



Product by: DAISHO DENKI INC. (Japan)  
Web: [daisho-denki.com](http://daisho-denki.com)

## SPECTRAL LUMINOMETER



Product by: Spectra Co-op (Japan)  
Web: [spectra.co.jp](http://spectra.co.jp)

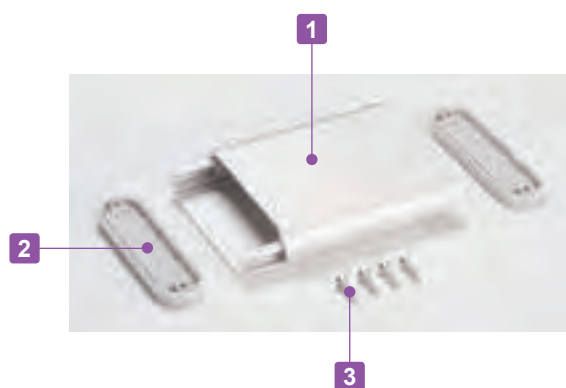
## RTD SENSOR TESTER



Product by: Turbomation (USA)  
Web: [turbomation.com](http://turbomation.com)

## MX SERIES

## MOBILE ENCLOSURE



- 12 different color combinations and 30 different sizes available to choose from.
- Mobile case with easy to hold rounded design.
- Grooves are built into the internal enclosure, allowing for easy sliding/insertion of pcb boards.
- Frame is made from extruded aluminium material, whereas the panel is ABS plastic.
- MX1-5 models do not have internal grooves.

## Components

■ Please refer to page 159 ~ 161 for part drawings.

No.	Part Name	Pcs	Material	Color / Finish
1	Frame	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Panel	2	ABS UL94HB	Gray • Black / Unpainted Navy • Lime • Orange • Red / Painted
3	Self tapping screw	4	Steel	Nickel plated • Black trivalent chromate

## Color Type

Please choose from the color combinations listed below.

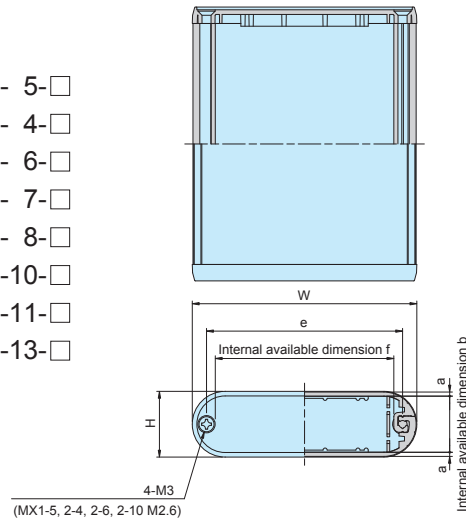
Code	<b>B B</b> Black / Black	<b>B G</b> Black / Gray	<b>B N</b> Black / Navy	<b>B L</b> Black / Lime	<b>B O</b> Black / Orange	<b>B R</b> Black / Red
Color						
Code	<b>S B</b> Silver / Black	<b>S G</b> Silver / Gray	<b>S N</b> Silver / Navy	<b>S L</b> Silver / Lime	<b>S O</b> Silver / Orange	<b>S R</b> Silver / Red
Color						



## MX dimensions

■ DXF/DWG/PDF drawings available on our website.

MX1- 5-□  
MX2- 4-□  
MX2- 6-□  
MX2- 7-□  
MX2- 8-□  
MX2-10-□  
MX3-11-□  
MX4-13-□

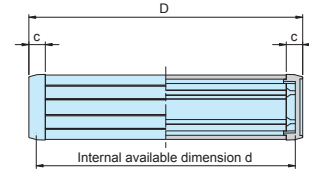


## Included screws

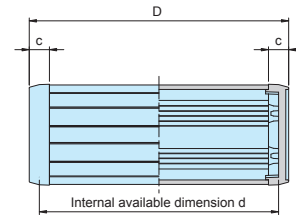
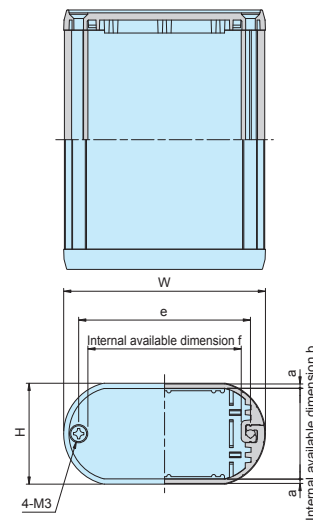
MX1-5, 2-4, 2-10 models: M2.6-10 x 4 pcs

MX2-7, 2-8, 3-11 models: M3-12 x 4 pcs

MX4-7, 4-10, 4-13 models: M3-14 x 4 pcs



MX4- 7-□  
MX4-10-□



## Screw Type

P	H
Plus head	Hexalobular head

Please request / order by indicating the combination part number as below.

**MX 1 - 5 - 6** □ □ □

Color code      Screw P or H

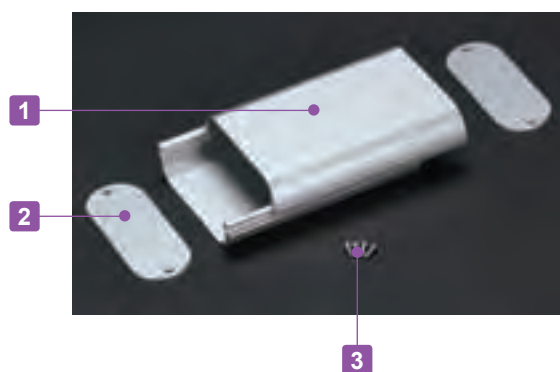
## Product no. / Dimensions

■ Please suffix color and screw code at the end of the product number.

Product no.	H	W	D	a	b	c	d	e	f	Weight (g)
MX1- 5- 6 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	13	48	55	1.2	10.2	6	50	38.8	33.6	25
MX1- 5- 9 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	13	48	85	1.2	10.2	6	80	38.8	33.6	40
MX1- 5-12 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	13	48	115	1.2	10.2	6	110	38.8	33.6	55
MX2- 4- 5 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	15	41	50	1.2	12.2	6	44.6	31.8	26.6	20
MX2- 4- 8 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	15	41	80	1.2	12.2	6	74.6	31.8	26.6	35
MX2- 4-11 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	15	41	110	1.2	12.2	6	104.6	31.8	26.6	50
MX2- 6- 5 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	18	57	50	1.2	15.1	5	45	47.7	42.5	35
MX2- 6- 8 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	18	57	75	1.2	15.1	5	70	47.7	42.5	50
MX2- 6-10 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	18	57	100	1.2	15.1	5	95	47.7	42.5	70
MX2- 7- 6 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20	70	60	1.5	16.5	6	54.6	59.6	53.2	50
MX2- 7- 9 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20	70	90	1.5	16.5	6	84.6	59.6	53.2	80
MX2- 7-12 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20	70	120	1.5	16.5	6	114.6	59.6	53.2	105
MX2- 8- 7 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	24	82	70	1.5	20.5	6	64.6	71.6	65.2	75
MX2- 8-10 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	24	82	100	1.5	20.5	6	94.6	71.6	65.2	105
MX2- 8-13 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	24	82	130	1.5	20.5	6	124.6	71.6	65.2	140
MX2-10- 8 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	16	100	80	1.2	13.2	6	74.6	90.8	85.6	70
MX2-10-11 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	16	100	110	1.2	13.2	6	104.6	90.8	85.6	95
MX2-10-15 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	16	100	150	1.2	13.2	6	144.6	90.8	85.6	130
MX3-11- 8 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	30	110	80	1.5	26.5	7	74.6	99.6	93.2	110
MX3-11-12 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	30	110	120	1.5	26.5	7	114.6	99.6	93.2	165
MX3-11-17 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	30	110	170	1.5	26.5	7	164.6	99.6	93.2	235
MX4- 7- 6 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	35	70	60	1.55	31.4	7	53	59.6	53.2	65
MX4- 7- 9 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	35	70	90	1.55	31.4	7	83	59.6	53.2	100
MX4- 7-12 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	35	70	120	1.55	31.4	7	113	59.6	53.2	130
MX4-10- 8 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	40	95	80	1.55	36.4	8	73	84.6	78.2	115
MX4-10-12 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	40	95	120	1.55	36.4	8	113	84.6	78.2	175
MX4-10-15 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	40	95	150	1.55	36.4	8	143	84.6	78.2	215
MX4-13-10 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	35	130	100	1.75	31	8	94.4	119.6	113.2	175
MX4-13-15 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	35	130	150	1.75	31	8	144.4	119.6	113.2	265
MX4-13-21 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	35	130	210	1.75	31	8	204.4	119.6	113.2	375

## MXA SERIES

## ALUMINIUM MOBILE ENCLOSURE



- 14 different color combinations and 30 different sizes available to choose from.
- Suitable to be used as digital audio amplifiers, communication devices, measurement tools, etc.
- Grooves are built into the internal enclosure, allowing for easy sliding/insertion of pcb boards.
- MXA1-5 models do not have internal grooves.

## Components

■ Please refer to page 159 ~ 160 and 162 for part drawings.

No.	Part name	Pcs	Material	Color / Finish
1	Frame	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Panel	2	Aluminium A1050P	Black • Silver • Cobalt • Green • Purple • Orange • Red / Anodized
3	Self tapping screw	4	Steel	Nickel plated • Black trivalent chromate

## Color Type

Please choose from the color combinations listed below.

Code	B B Black / Black	B S Black / Silver	B C Black / Cobalt	B G Black / Green	B P Black / Purple	B O Black / Orange	B R Black / Red
Color							
Code	S B Silver / Black	S S Silver / Silver	S C Silver / Cobalt	S G Silver / Green	S P Silver / Purple	S O Silver / Orange	S R Silver / Red
Color							

## MXA dimensions

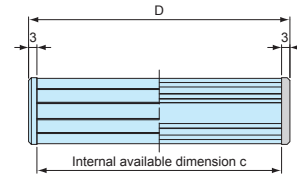
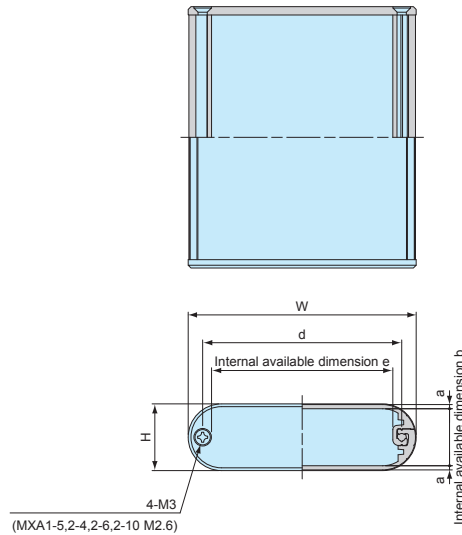
MXA1- 5-□  
 MXA2- 4-□  
 MXA2- 6-□  
 MXA2- 7-□  
 MXA2- 8-□  
 MXA2-10-□  
 MXA3-11-□  
 MXA4-13-□

■ DXF/DWG/PDF drawings available on our website.

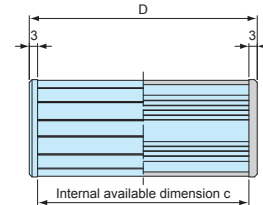
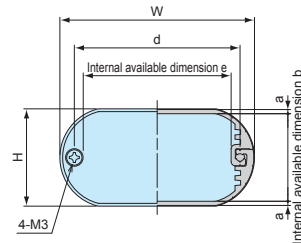
Included screws

MXA1-5, 2-4, 2-6, 2-10 models: M2.6-10 x 4 pcs

MX2-7, 2-8, 3-11, 4-7, 4-13 models: M3-10 x 4 pcs



MXA4- 7-□  
 MXA4-10-□



## Screw Type

P	H
Plus head	Hexalobular head

Please request / order by indicating the combination part number as below.

**MXA 1 – 5 – 5** □ □ □

Color code      Screw P or H

## Product no. / Dimensions

■ Please suffix color and screw code at the end of the product number.

Product no.	H	W	D	a	b	c	d	e	Weight (g)
MXA1- 5- 5□□□	13	48	49	1.2	10.2	43	38.8	33.6	25
MXA1- 5- 8□□□	13	48	79	1.2	10.2	73	38.8	33.6	40
MXA1- 5-11□□□	13	48	109	1.2	10.2	103	38.8	33.6	55
MXA2- 4- 4□□□	15	41	44	1.2	12.2	38	31.8	26.6	25
MXA2- 4- 7□□□	15	41	74	1.2	12.2	68	31.8	26.6	40
MXA2- 4-10□□□	15	41	104	1.2	12.2	98	31.8	26.6	50
MXA2- 6- 5□□□	18	57	46	1.2	15.1	40	47.7	42.5	35
MXA2- 6- 7□□□	18	57	71	1.2	15.1	65	47.7	42.5	50
MXA2- 6-10□□□	18	57	96	1.2	15.1	90	47.7	42.5	65
MXA2- 7- 5□□□	20	70	54	1.5	16.5	48	59.6	53.2	55
MXA2- 7- 8□□□	20	70	84	1.5	16.5	78	59.6	53.2	80
MXA2- 7-11□□□	20	70	114	1.5	16.5	108	59.6	53.2	110
MXA2- 8- 6□□□	24	82	64	1.5	20.5	58	71.6	65.2	75
MXA2- 8- 9□□□	24	82	94	1.5	20.5	88	71.6	65.2	105
MXA2- 8-12□□□	24	82	124	1.5	20.5	118	71.6	65.2	135
MXA2-10- 7□□□	16	100	74	1.2	13.2	68	90.8	85.6	70
MXA2-10-10□□□	16	100	104	1.2	13.2	98	90.8	85.6	100
MXA2-10-14□□□	16	100	144	1.2	13.2	138	90.8	85.6	135
MXA3-11- 7□□□	30	110	72	1.5	26.5	66	99.6	93.2	115
MXA3-11-11□□□	30	110	112	1.5	26.5	106	99.6	93.2	165
MXA3-11-16□□□	30	110	162	1.5	26.5	156	99.6	93.2	235
MXA4- 7- 5□□□	35	70	52	1.55	31.4	46	59.6	53.2	70
MXA4- 7- 8□□□	35	70	82	1.55	31.4	76	59.6	53.2	100
MXA4- 7-11□□□	35	70	112	1.55	31.4	106	59.6	53.2	135
MXA4-10- 7□□□	40	95	70	1.55	36.4	64	84.6	78.2	120
MXA4-10-11□□□	40	95	110	1.55	36.4	104	84.6	78.2	175
MXA4-10-14□□□	40	95	140	1.55	36.4	134	84.6	78.2	220
MXA4-13- 9□□□	35	130	90	1.75	31	84	119.6	113.2	180
MXA4-13-14□□□	35	130	140	1.75	31	134	119.6	113.2	265
MXA4-13-20□□□	35	130	200	1.75	31	194	119.6	113.2	370



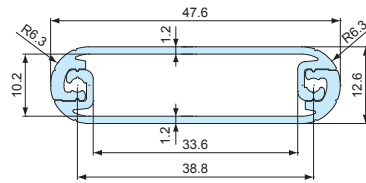
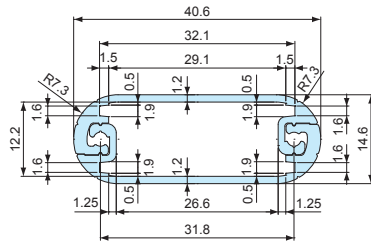
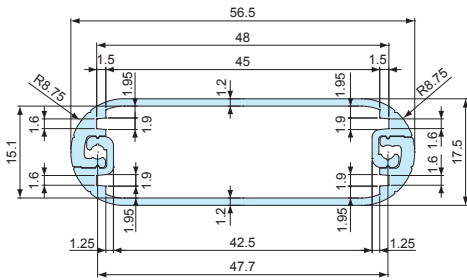
## Component Parts Drawings

## MX • MXA frame

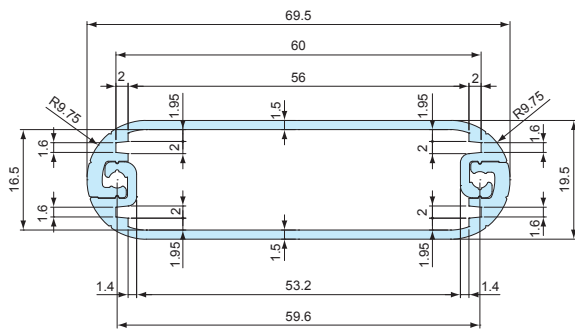
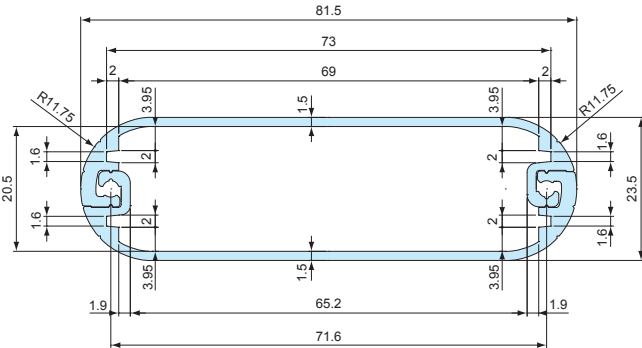
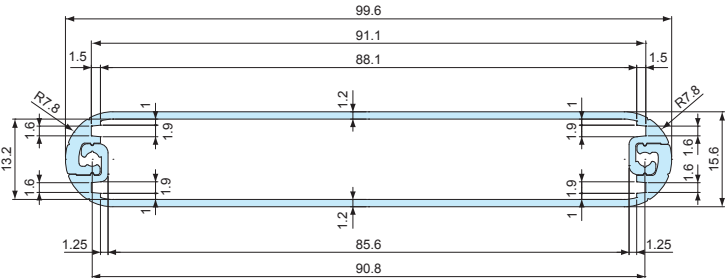
### Color Type

Code	Material	Color / Finish
S	Extruded alminium	Silver / Anodized
B	Extruded alminium	Black / Anodized

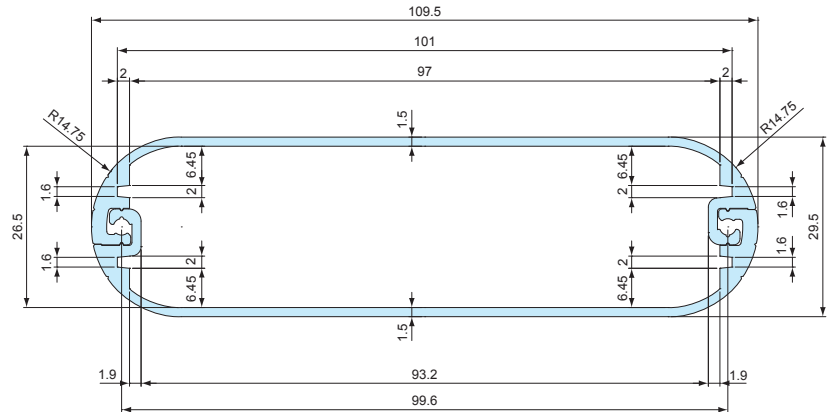
MX/MXA1-5-□

MX/MXA2-4-MX/MXA2-6-☐

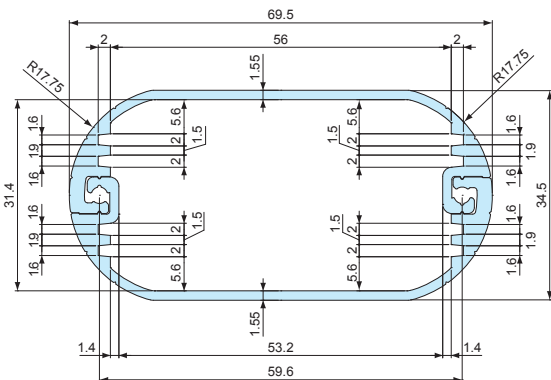
MX/MXA2-7-□

MX/MXA2-8-☐MX/MXA2-10-☐

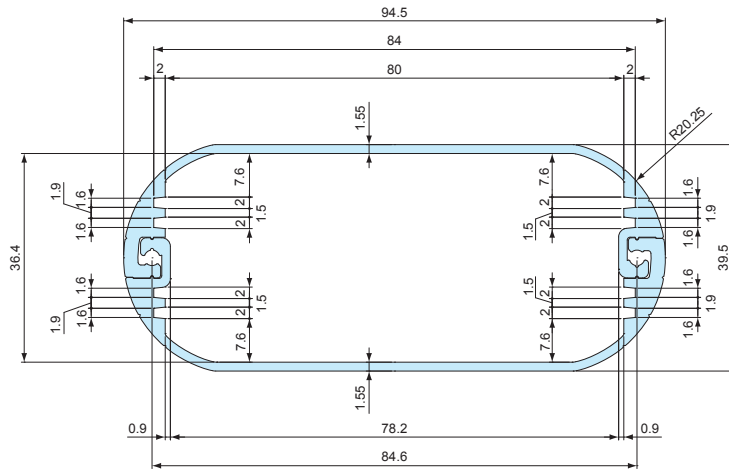
MX/MXA3-11-□



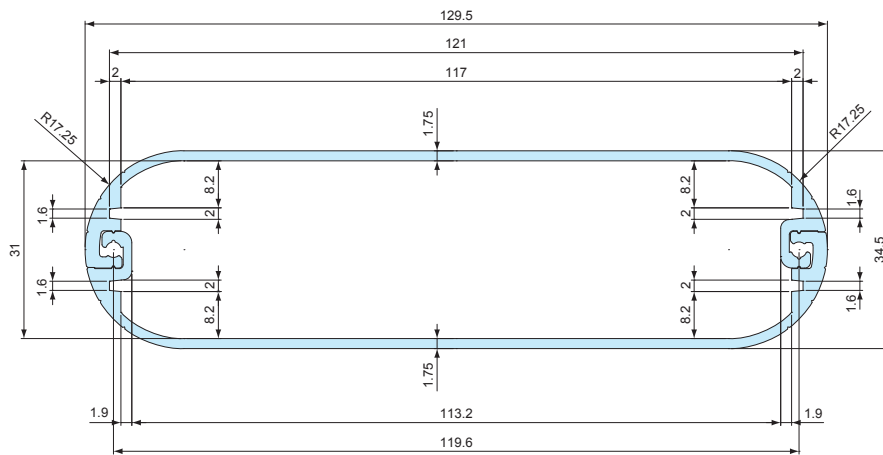
MX/MXA4-7-□



MX/MXA4-10-□



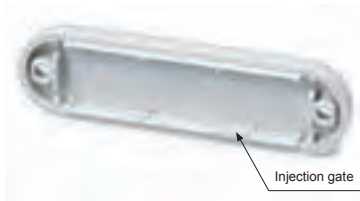
MX/MXA4-13-□



Product no.	Frame length
MX1- 5- 6	43
MX1- 5- 9	73
MX1- 5-12	103
MX2- 4- 5	38
MX2- 4- 8	68
MX2- 4-11	98
MX2- 6- 5	40
MX2- 6- 8	65
MX2- 6-10	90
MX2- 7- 6	48
MX2- 7- 9	78
MX2- 7-12	108
MX2- 8- 7	58
MX2- 8-10	88
MX2- 8-13	118
MX2-10- 8	68
MX2-10-11	98
MX2-10-15	138
MX3-11- 8	66
MX3-11-12	106
MX3-11-17	156
MX4- 7- 6	46
MX4- 7- 9	76
MX4- 7-12	106
MX4-10- 8	64
MX4-10-12	104
MX4-10-15	134
MX4-13-10	84
MX4-13-15	134
MX4-13-21	194

Product no.	Frame length
MXA1- 5- 5	43
MXA1- 5- 8	73
MXA1- 5-11	103
MXA2- 4- 4	38
MXA2- 4- 7	68
MXA2- 4-10	98
MXA2- 6- 5	40
MXA2- 6- 7	65
MXA2- 6-10	90
MXA2- 7- 5	48
MXA2- 7- 8	78
MXA2- 7-11	108
MXA2- 8- 6	58
MXA2- 8- 9	88
MXA2- 8-12	118
MXA2-10- 7	68
MXA2-10-10	98
MXA2-10-14	138
MXA3-11- 7	66
MXA3-11-11	106
MXA3-11-16	156
MXA4- 7- 5	46
MXA4- 7- 8	76
MXA4- 7-11	106
MXA4-10- 7	64
MXA4-10-11	104
MXA4-10-14	134
MXA4-13- 9	84
MXA4-13-14	134
MXA4-13-20	194

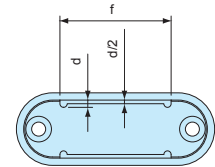
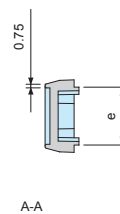
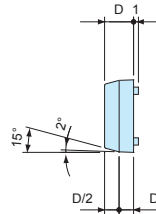
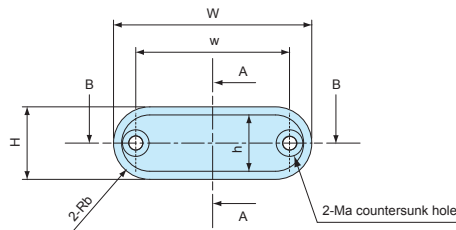
# MX panel



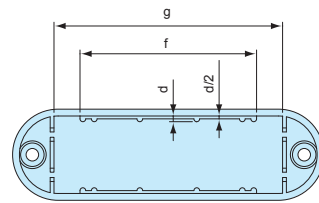
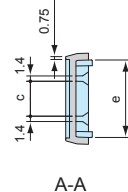
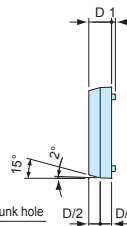
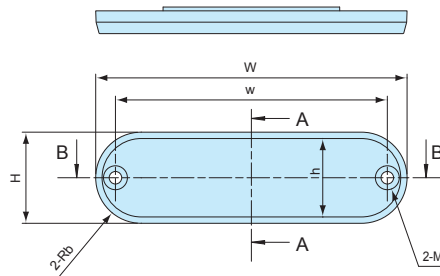
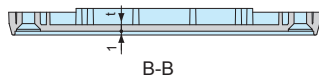
- The MX panels are manufactured with an injection gate. Take caution when fitting your components inside the enclosure.

## Color Type

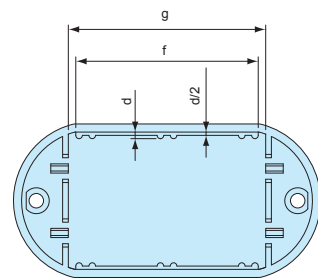
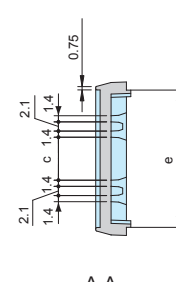
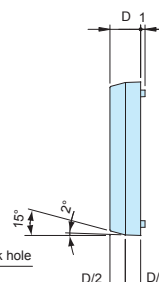
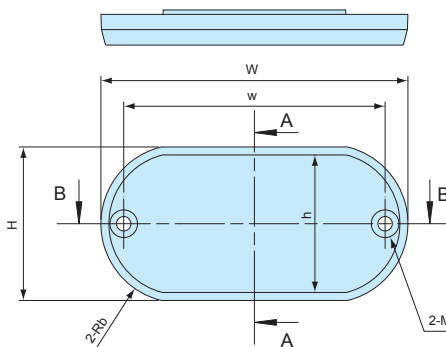
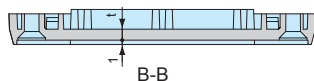
Code	Color / Finish
G	Gray / Unpainted
B	Black / Unpainted
N	Navy / Painted
L	Lime / Painted
O	Orange / Painted
R	Red / Painted



Enclosure model	W	H	D	w	a	b	d	e	f	h	t
MX1- 5-□	48	13	6	38.8	2.6	6.5	1.5	10	32	9.6	1.7
MX2- 4-□	41	15	6	31.8	2.6	7.5	1.5	12	23	11.6	1.7
MX2-10-□	100	16	6	90.8	2.6	8	1.5	13	81	12.6	1.7

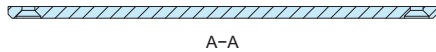


Enclosure model	W	H	D	w	a	b	c	d	e	f	g	h	t
MX2- 6-□	57	18	5	47.7	2.6	9	7.9	1.3	15	38.3	41.2	14.9	1.5
MX2- 7-□	70	20	6	59.6	3	10	9.2	1.5	16.3	49.5	52.6	16.6	1.7
MX2- 8-□	82	24	6	71.6	3	12	9.2	1.5	20.4	46.5	60.2	20.6	1.7
MX3-11-□	110	30	7	99.6	3	15	10.2	1.5	26.4	61.5	87.3	26.3	1.7
MX4-13-□	130	35	8	119.6	3	17.5	11.2	1.5	30.9	76.5	104.3	31	1.8



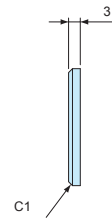
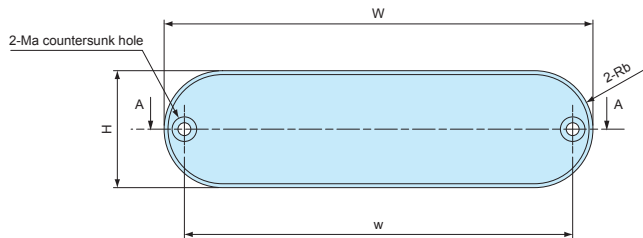
Enclosure model	W	H	D	w	a	b	c	d	e	f	g	h	t
MX4- 7-□	70	35	7	59.6	3	18	9.8	1.5	31.3	41.6	45	31.3	2.5
MX4-10-□	95	40	8	84.6	3	20.5	10.8	1.5	36.3	61.6	65	36	2.5

## MXA panel



## Color Type

Code	Color / Finish
S	Silver / Anodized
B	Black / Anodized
C	Cobalt / Anodized
P	Purple / Anodized
G	Green / Anodized
O	Orange / Anodized
R	Red / Anodized



Enclosure model	W	H	w	a	b
MXA1- 5-□	48	13	38.8	2.6	6.5
MXA2- 4-□	41	15	31.8	2.6	7.5
MXA2- 6-□	57	18	47.7	2.6	9
MXA2- 7-□	70	20	59.6	3	10
MXA2- 8-□	82	24	71.6	3	12
MXA2-10-□	100	16	90.8	2.6	8
MXA3-11-□	110	30	99.6	3	15
MXA4- 7-□	70	35	59.6	3	18
MXA4-10-□	95	40	84.6	3	20.5
MXA4-13-□	130	35	119.6	3	17.5

## Accessories (Optional parts)

## AFS • AFM SERIES

## ALUMINIUM ISOLATION FEET

See page 265 ~ 266



External type / Shot blast finish (AFS series)



Internal type / Reflective finish (AFM series)



APPLICATION EXAMPLE

- The surface treatment and finish allows the feet to exhibit a polished and luxurious feel.
- Hole milling is required for installation.



# AW·AWN·AWP IP67 ALUMINIUM ENCLOSURE

AW·AWN·AWP series are highly functional aluminium enclosures which are IP67 rated with heat dissipating heat-sink fins.

34 sizes available. Standard, Flanged, Shielding, Silicone protector types are available.

Suitable for LED power supply, industrial camera, controller or measuring instrument where waterproof and cooling performance are crucial.

## APPLICATION EXAMPLE

### LIQUID LEVEL SENSOR

Product by Watty Corporation (Japan)

website: [watty.co.jp](http://watty.co.jp)



### OPTICAL PHASE INTERROGATOR (OPI) - DEVELOPMENT KIT

Product by Broadcom Limited. (USA)

website : [broadcom.com](http://broadcom.com)



### RADIO-CONTROLLED ELECTRONIC EXPLODER



Product by CODETEL (France)

website: [codetel.fr](http://codetel.fr)

### OUTDOOR LED POWER SUPPLY



### RECHARGEABLE LED WORK LIGHT

Product by Shin-Tomoe Electronic Manufacturing Co., Ltd. (Japan)

website: [s-tomoedenki.co.jp](http://s-tomoedenki.co.jp)





**MEASURING INSTRUMENT****DC CONVERTER****TOUCH PANEL CONTROLLER****CAMERA****Wi-Fi ACCESS POINT****CUSTOMIZATION**

No minimum order quantity required for customization requests.

**CNC Milling****Digital Printing****Custom Color Painting  
Powder-Coating****Embossed Overlay Sheet Making****CUSTOM LENGTH AVAILABLE**

Flexible frame length from 50mm to 700mm in 1mm intervals.

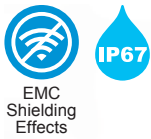
No minimum order quantity and short lead time for small quantity order.





## AW SERIES

## IP67 FLANGED ALUMINIUM ENCLOSURE



- IP67 and heat dissipation enclosure. Designed with flanged end panels.
- PCB or chassis is mounted by sliding it horizontally into an inner-grooved body frame.
- Designed for a tough environment where waterproof and heat countermeasures are required.
- Suitable for outdoor use such as LED power supply and junction boxes.

## Technical Data

Protection class: IP67  
 Operating temperature: -40°C ~ +105°C  
 Recommended torque:  
 1.0N · m (10kgf · cm)

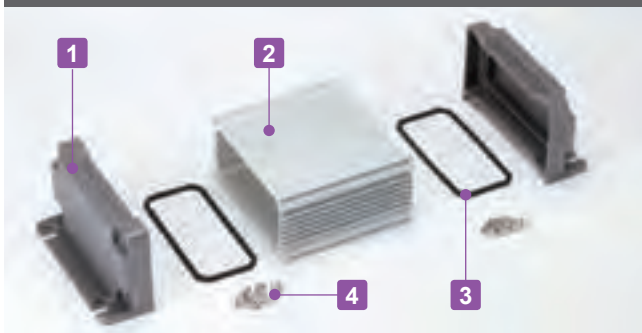
## Normal N type Components

No.	Part name	Pcs	Material	Color / Finish
1	Flanged end panel	2	Diecast aluminium ADC12	Metallic gray • Black / Powder coated
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Gasket	2	Silicone	Black
4	Screw	8	Stainless steel	Unfinished

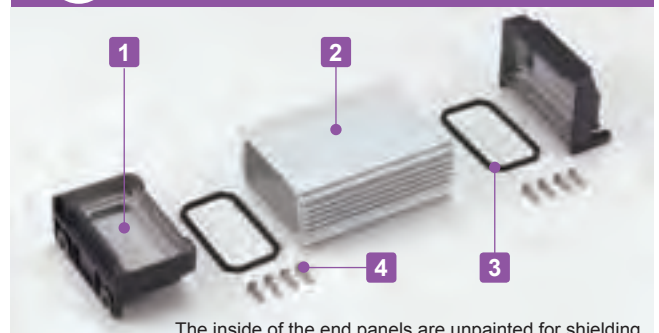
## EMC Shielded E type Components

No.	Part name	Pcs	Material	Color / Finish
1	Flanged end panel	2	Diecast aluminium ADC12	Silver • Black / Painted (unfinished inside)
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Conductive gasket	2	Conductive silicone	Black
4	Screw	8	Stainless steel	Unfinished

## Normal - N type



## EMC Shielded - E type



## Accessories (Optional parts)



Mounting plate  
AWC series  
See page 180



Hexagon socket head screw  
HCS series  
See page 180



Cable gland  
See page 308 ~ 314



Protective vent  
PMF Series  
See page 301 ~ 302

## Normal / EMC Shielded • Color Code

## Normal - N type



Metallic gray / Silver

N G S



Black / Silver

N B S



Black / Black

N B B

## EMC Shielded - E type



Silver / Silver

E S S



Black / Silver

E B S



Black / Black

E B B

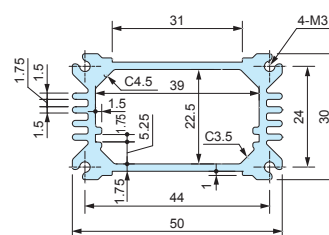
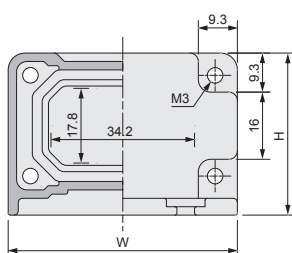
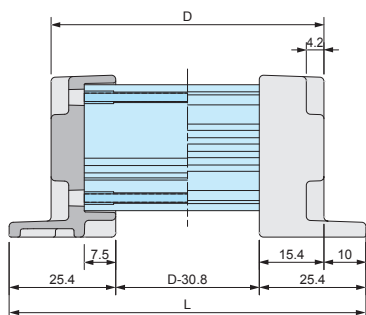
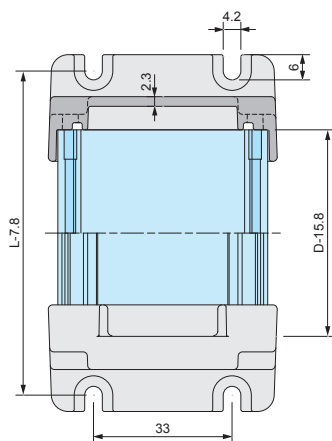
- ※ Thermal resistance test condition
- Ambient air cooling
  - Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
  - Anodized aluminium extrusion
  - Heat source is applied on the opposite side (inner side) of the fins.

## Product no. / Dimensions

■ Please suffix color code at the end of the product number.

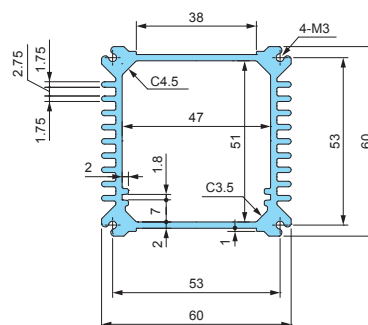
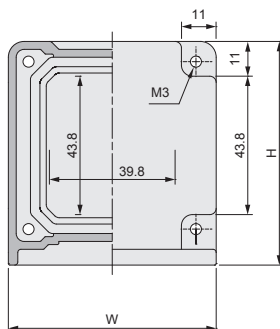
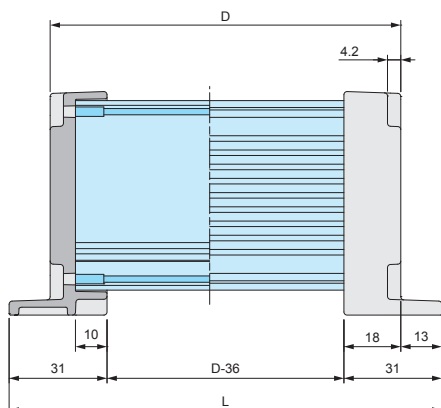
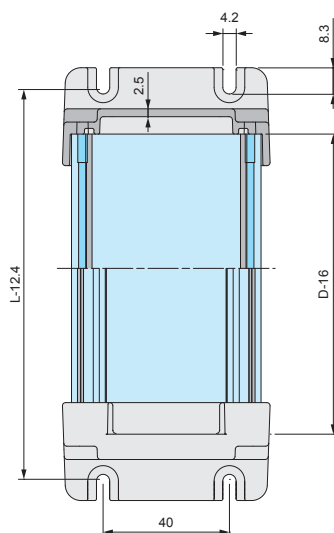
Product no.	W	H	D	※Thermal resistance (°C/W)	Weight (g)
AW 5-4- 7□□□	54.6	38.6	65	11.2	128.5
AW 5-4- 9□□□	54.6	38.6	85	9.18	149
AW 5-4-11□□□	54.6	38.6	110	7.64	175
AW 5-4-14□□□	54.6	38.6	135	6.63	201.5
AW 7-7- 8□□□	65.8	70.8	80	4.41	294.5
AW 7-7-11□□□	65.8	70.8	110	3.5	350
AW 7-7-15□□□	65.8	70.8	150	2.83	424.5
AW 7-7-20□□□	65.8	70.8	200	2.33	517
AW 7-7-25□□□	65.8	70.8	250	2.02	610
AW 8-5- 9□□□	80.8	50.8	90	5.97	289.5
AW 8-5-12□□□	80.8	50.8	115	5.01	330.5
AW 8-5-14□□□	80.8	50.8	140	4.37	372
AW 8-5-18□□□	80.8	50.8	175	3.76	429.5
AW 9-9-10□□□	86.3	92	100	3.1	560.5
AW 9-9-13□□□	86.3	92	125	2.63	633.5
AW 9-9-17□□□	86.3	92	170	2.12	764.5
AW 9-9-22□□□	86.3	92	220	1.79	910.5
AW 9-9-28□□□	86.3	92	275	1.54	1,071
AW11-6-11□□□	106.3	62	110	4.52	526.5
AW11-6-15□□□	106.3	62	150	3.62	625
AW11-6-19□□□	106.3	62	190	3.08	723.5
AW11-6-24□□□	106.3	62	240	2.64	847
AW12-8-11□□□	120	77	105	3.6	614.5
AW12-8-14□□□	120	77	140	2.93	720.5
AW12-8-17□□□	120	77	179.5	2.47	840
AW12-8-22□□□	120	77	215	2.18	947.5
AW16-9-14□□□	156.3	87	135	2.64	945.5
AW16-9-18□□□	156.3	87	175	2.2	1,092.5
AW16-9-23□□□	156.3	87	225	1.86	1,275.5
AW16-9-28□□□	156.3	87	275	1.63	1,459
AW21-9-17□□□	206.3	87	170	2.3	1,303
AW21-9-21□□□	206.3	87	210	1.99	1,473.5
AW21-9-26□□□	206.3	87	260	1.72	1,686.5
AW21-9-31□□□	206.3	87	310	1.54	1,899.5

■ Dimensions on page 167 ~ 170

AW5-4-☐

- Body frame length =  $D - 15.8$

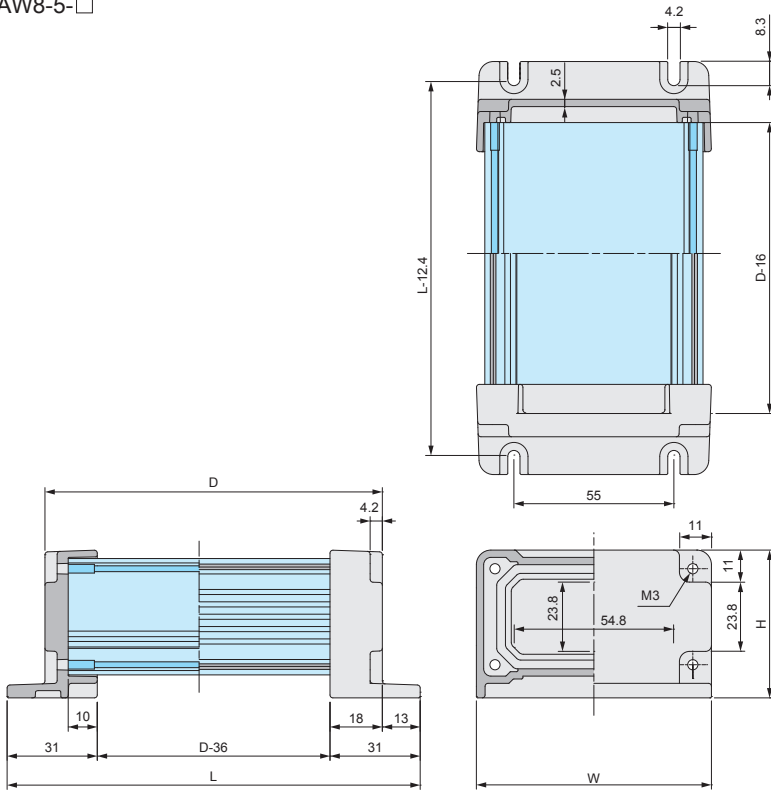
Product no.	W	H	D (Body length)	L (Overall length)
AW5-4- 7	54.6	38.6	65	85
AW5-4- 9	54.6	38.6	85	105
AW5-4-11	54.6	38.6	110	130
AW5-4-14	54.6	38.6	135	155

AW7-7-☐

- Body frame length =  $D - 16$

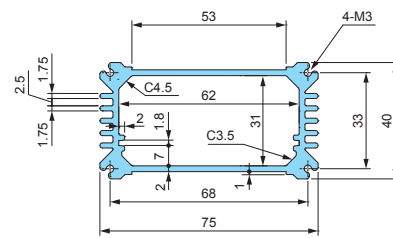
Product no.	W	H	D (Body length)	L (Overall length)
AW7-7- 8	65.8	70.8	80	106
AW7-7-11	65.8	70.8	110	136
AW7-7-15	65.8	70.8	150	176
AW7-7-20	65.8	70.8	200	226
AW7-7-25	65.8	70.8	250	276

AW8-5-□

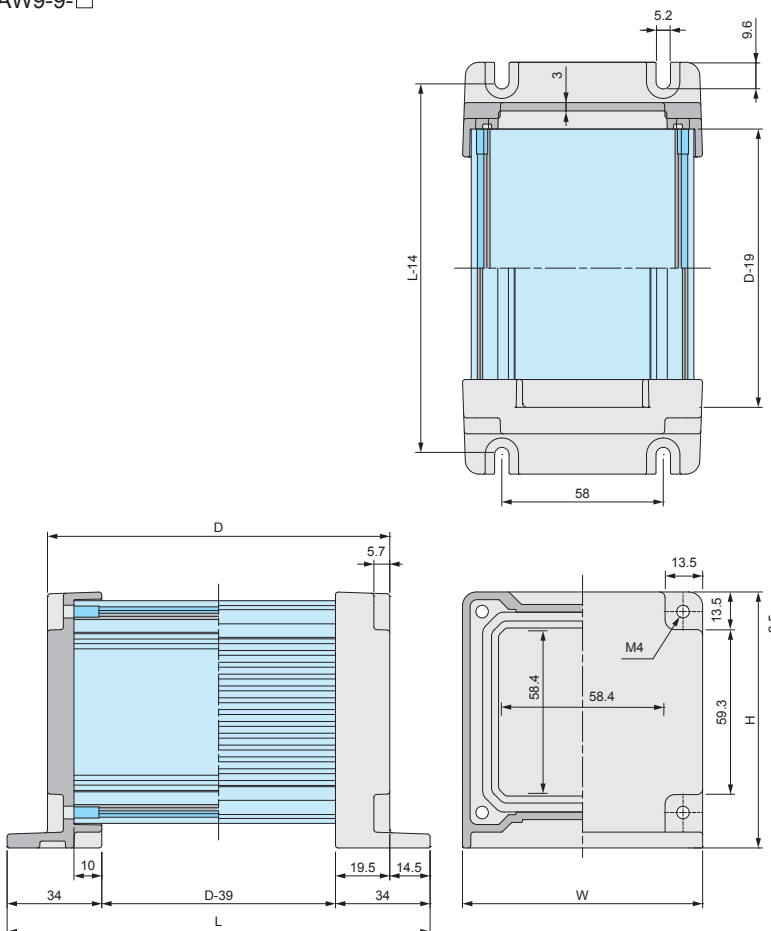


Product no.	W	H	D (Body length)	L (Overall length)
AW8-5- 9	80.8	50.8	90	116
AW8-5-12	80.8	50.8	115	141
AW8-5-14	80.8	50.8	140	166
AW8-5-18	80.8	50.8	175	201

■ Body frame length = D - 16

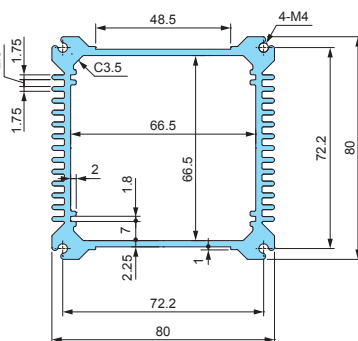


AW9-9-□



Product no.	W	H	D (Body length)	L (Overall length)
AW9-9-10	86.3	92	100	129
AW9-9-13	86.3	92	125	154
AW9-9-17	86.3	92	170	199
AW9-9-22	86.3	92	220	249
AW9-9-28	86.3	92	275	304

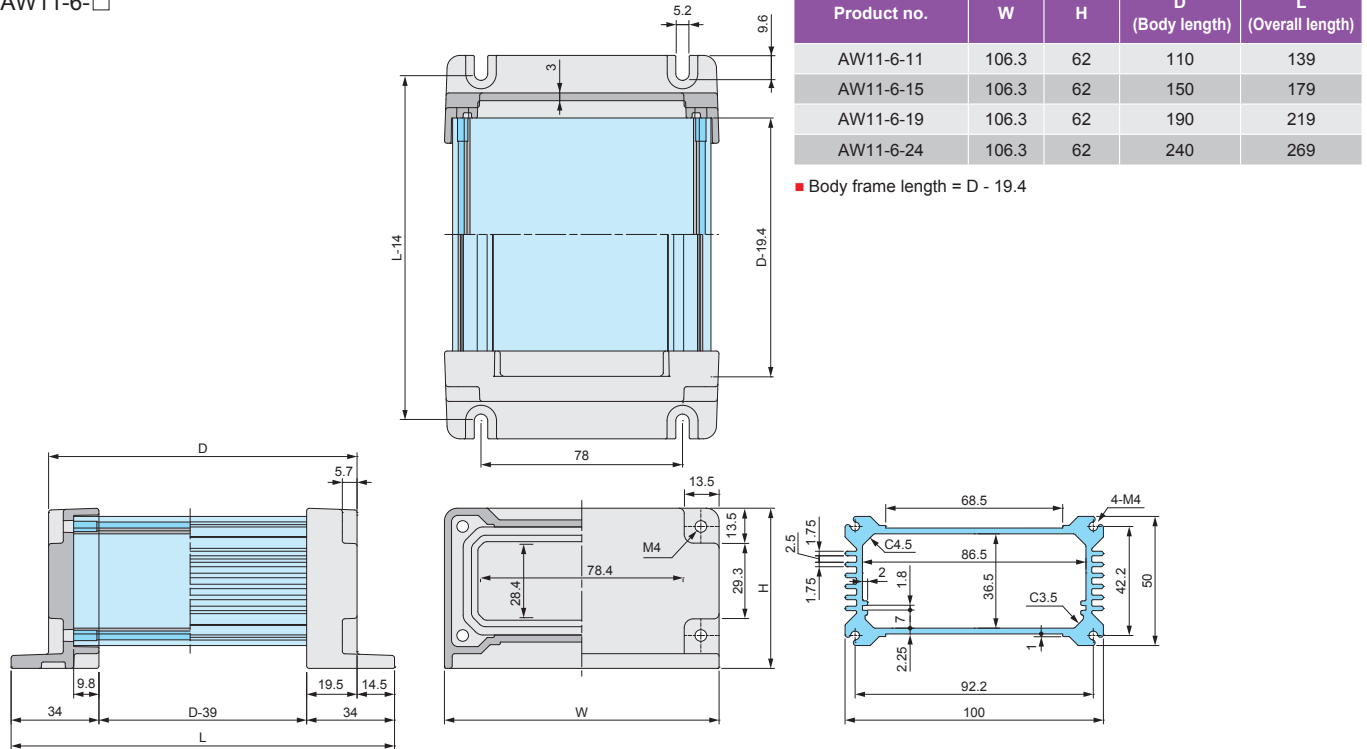
■ Body frame length = D - 19



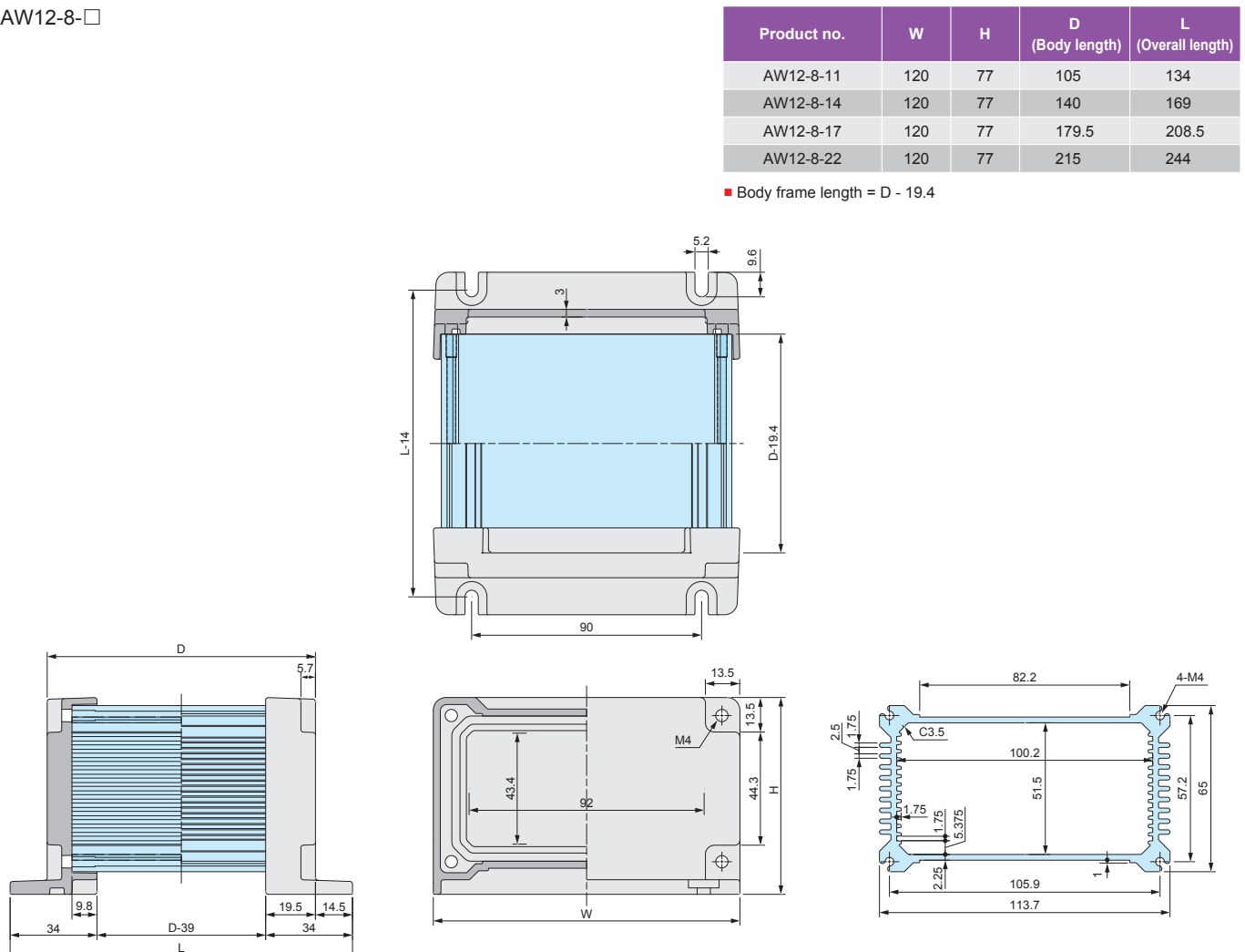
# AW dimensions

■ DXF/DWG/PDF drawings available on our website.

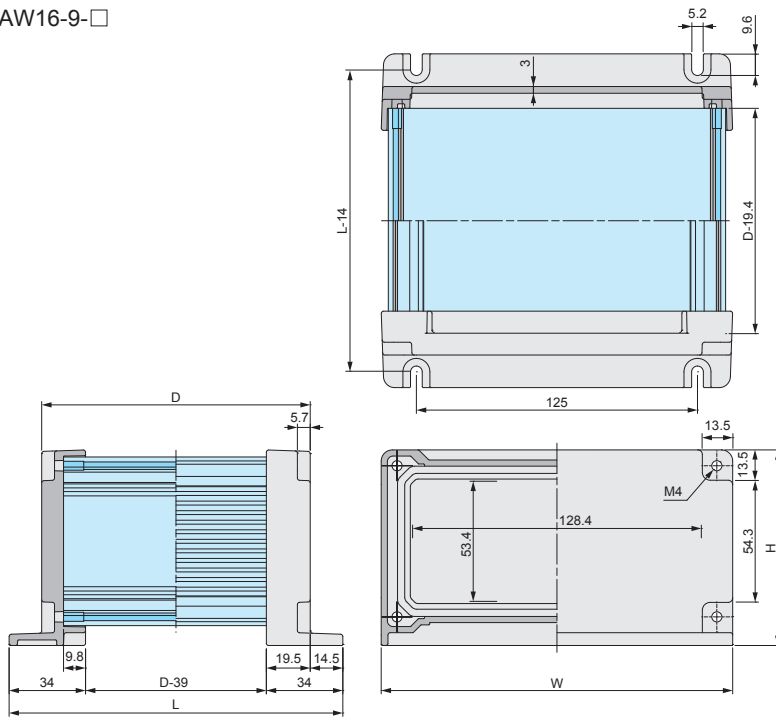
## AW11-6-□



## AW12-8-□

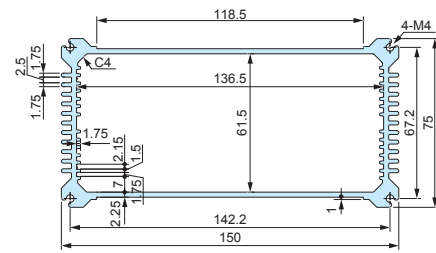


AW16-9-□



Product no.	W	H	D (Body length)	L (Overall length)
AW16-9-14	156.3	87	135	164
AW16-9-18	156.3	87	175	204
AW16-9-23	156.3	87	225	254
AW16-9-28	156.3	87	275	304

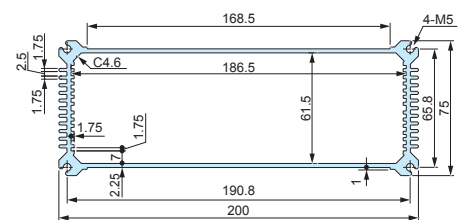
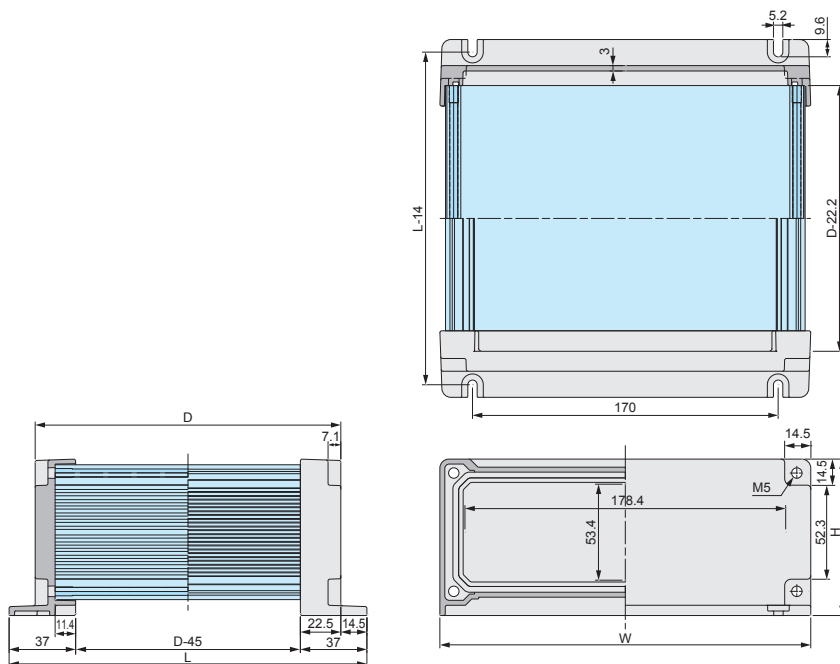
■ Body frame length = D - 19.4



AW21-9-□

Product no.	W	H	D (Body length)	L (Overall length)
AW21-9-17	206.3	87	170	199
AW21-9-21	206.3	87	210	239
AW21-9-26	206.3	87	260	289
AW21-9-31	206.3	87	310	339

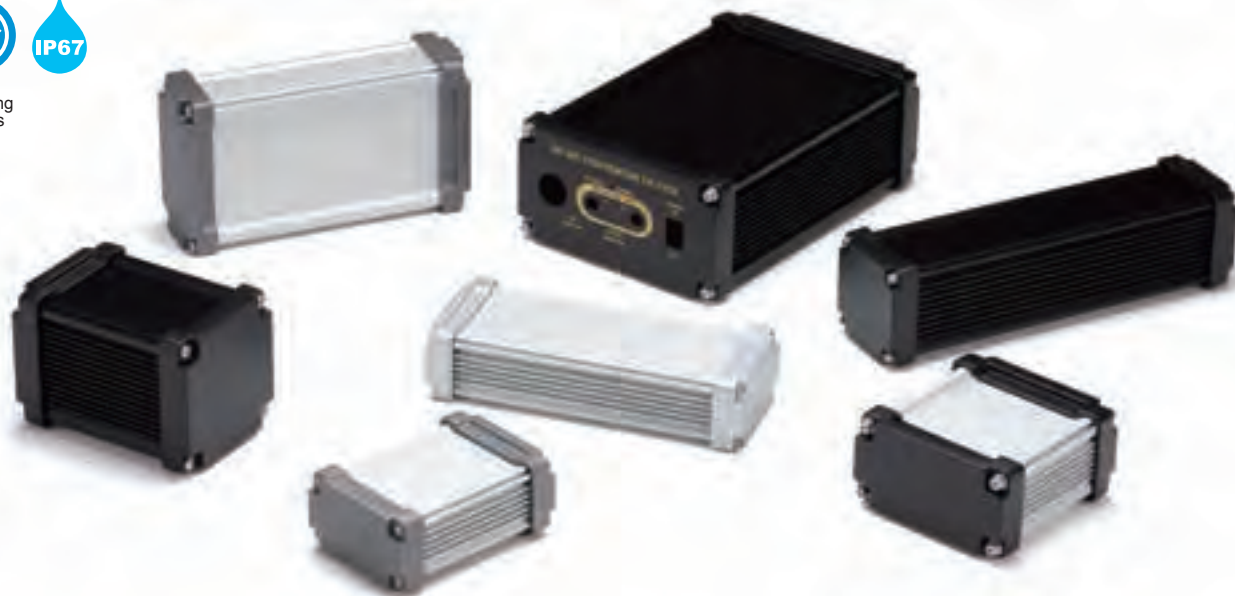
■ Body frame length = D - 22.2





## AWN SERIES

## IP67 HEAT-SINK ALUMINIUM ENCLOSURE



- IP67 and heat dissipation enclosure design. Selectable in both Normal or EMC Shielded type.
- The extruded aluminium frame and diecast aluminium panels makes it extremely suitable to be used in harsh environments where waterproofing and heat dissipation is essential.
- PCB or chassis can be mounted by sliding it horizontally into inner-grooved body frame.
- Suitable for measuring instruments, industrial control box, and industrial camera housing, among others.

## Technical Data

Protection class: IP67  
Operating temperature: -40°C ~ +105°C  
Recommended torque:  
1.0N • m (10kgf • cm)

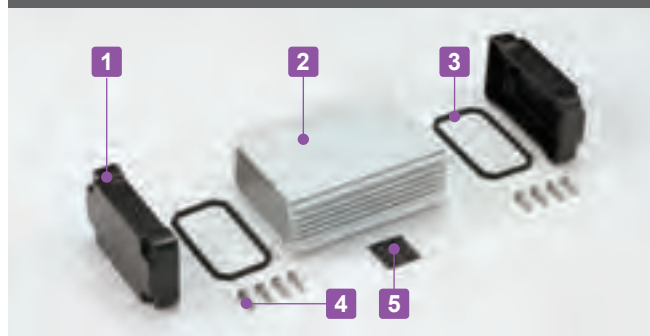
## Normal N type Components

No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	Diecast aluminium ADC12	Metallic gray • Black / Powder coated
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Gasket	2	Silicone	Black
4	Screw	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane	Black

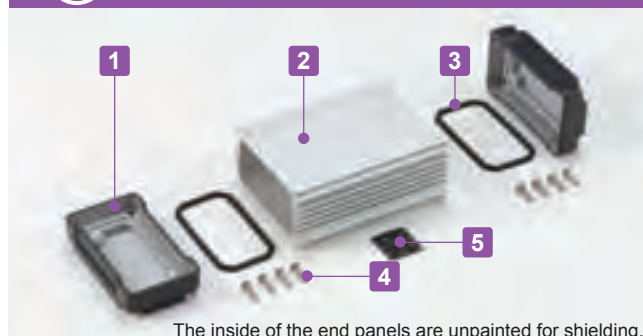
## EMC Shielded E type Components

No.	Part name	Pcs	Material	Color / Finish
1	Flanged end panel	2	Diecast aluminium ADC12	Silver • Black / Painted (unfinished inside)
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Conductive gasket	2	Conductive silicone	Black
4	Screw	8	Stainless steel	Unfinished
5	Rubber	4	Polyurethane	Black

## Normal - N type



## EMC Shielded - E type



## Accessories (Optional parts)



Mounting plate  
AWC series  
See page 180



Hexagon socket head screw  
HCS series  
See page 180



Cable gland  
See page 308 ~ 314



Silicone protector  
AWSP series  
See page 179



Protective vent  
PMF Series  
See page 301 ~ 302

## Normal / EMC Shielded • Color Code

## Normal - N type



Metallic gray / Silver

N G S

Black / Silver

N B S

Black / Black

N B B

## EMC Shielded - E type



Silver / Silver

E S S

Black / Silver

E B S

Black / Black

E B B

- ※ Thermal resistance test condition
- Ambient air cooling
  - Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
  - Anodized aluminium extrusion
  - Heat source is applied on the opposite side (inner side) of the fins.

## Product no. / Dimensions

■ Please suffix color code at the end of the product number.

Product no.	W	H	D	※ Thermal resistance (°C/W)	Weight (g)
AWN 5-4- 7□□□	54.6	34.6	65	11.2	118.5
AWN 5-4- 9□□□	54.6	34.6	85	9.18	139
AWN 5-4-11□□□	54.6	34.6	110	7.64	165
AWN 5-4-14□□□	54.6	34.6	135	6.63	191.5
AWN 7-7- 8□□□	65.8	65.8	80	4.41	272.5
AWN 7-7-11□□□	65.8	65.8	110	3.5	328
AWN 7-7-15□□□	65.8	65.8	150	2.83	402.5
AWN 7-7-20□□□	65.8	65.8	200	2.33	495
AWN 7-7-25□□□	65.8	65.8	250	2.02	588
AWN 8-5- 9□□□	80.8	45.8	90	5.97	259.5
AWN 8-5-12□□□	80.8	45.8	115	5.01	300.5
AWN 8-5-14□□□	80.8	45.8	140	4.37	342
AWN 8-5-18□□□	80.8	45.8	175	3.76	399.5
AWN 9-9-10□□□	86.3	86.3	100	3.1	521.5
AWN 9-9-13□□□	86.3	86.3	125	2.63	594.5
AWN 9-9-17□□□	86.3	86.3	170	2.12	725.5
AWN 9-9-22□□□	86.3	86.3	220	1.79	871.5
AWN 9-9-28□□□	86.3	86.3	275	1.54	1,032
AWN11-6-11□□□	106.3	56.3	110	4.52	479.5
AWN11-6-15□□□	106.3	56.3	150	3.62	578
AWN11-6-19□□□	106.3	56.3	190	3.08	676.5
AWN11-6-24□□□	106.3	56.3	240	2.64	800
AWN12-8-11□□□	120	71.3	105	3.6	590.5
AWN12-8-14□□□	120	71.3	140	2.93	696.5
AWN12-8-17□□□	120	71.3	179.5	2.47	816
AWN12-8-22□□□	120	71.3	215	2.18	923.5
AWN16-9-14□□□	156.3	81.3	135	2.64	871.5
AWN16-9-18□□□	156.3	81.3	175	2.2	1,018.5
AWN16-9-23□□□	156.3	81.3	225	1.86	1,201.5
AWN16-9-28□□□	156.3	81.3	275	1.63	1,385
AWN21-9-17□□□	206.3	81.3	170	2.3	1,261
AWN21-9-21□□□	206.3	81.3	210	1.99	1,431.5
AWN21-9-26□□□	206.3	81.3	260	1.72	1,644.5
AWN21-9-31□□□	206.3	81.3	310	1.54	1,857.5

■ Dimensions on page 167 ~ 170

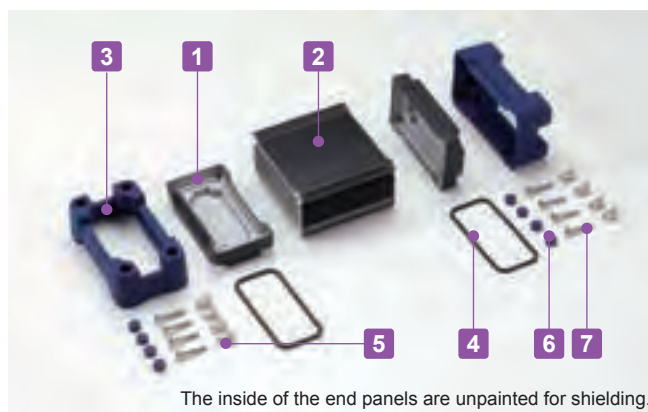
## AWP SERIES

## IP67 ALUMINIUM ENCLOSURE with SILICONE PROTECTOR



## Technical Data

Protection class: IP67  
 Operating temperature: -40°C ~ +105°C  
 Recommended torque: 1.0N • m (10kgf • cm)











- Strong impact resistant enclosure with tough silicone boot protectors.
- Specifically designed with heat dissipation effect, EMC shielding and IP67 rating.
- PCB or chassis can be horizontally mounted by sliding into an inner-grooved body frame.
- Available in 30 sizes and 8 different color combinations. Selectable from a total of 240 different combinations.
- Suitable for measuring instruments, industrial control box, industrial camera housing, etc.

## Components

No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	Diecast aluminium ADC12	Silver • Black / Painted (unfinished inside)
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Protector	2	Silicone	Black • Gray • Navy • Yellow
4	Conductive gasket	2	Conductive silicone	Black
5	Spacer	8	Brass	Nickel plated
6	Blind cap	8	Silicone	Black • Gray • Navy • Yellow
7	Screw	8	Stainless steel	Unfinished

## Color Type

Code	S B Silver / Black	S G Silver / Gray	S N Silver / Navy	S Y Silver / Yellow
Color				
Code	B B Black / Black	B G Black / Gray	B N Black / Navy	B Y Black / Yellow
Color				

## Ordering Number

For example, in case of ordering AWP7-7-8 size, Black enclosure and Navy silicone protector.

Product no. : AWP7-7-8



Put a color code SB, SG, SN, SY, BB, BG, BN or BY.

- ※ Thermal resistance test condition
- Ambient air cooling
  - Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
  - Anodized aluminium extrusion
  - Heat source is applied on the opposite side (inner side) of the fins.

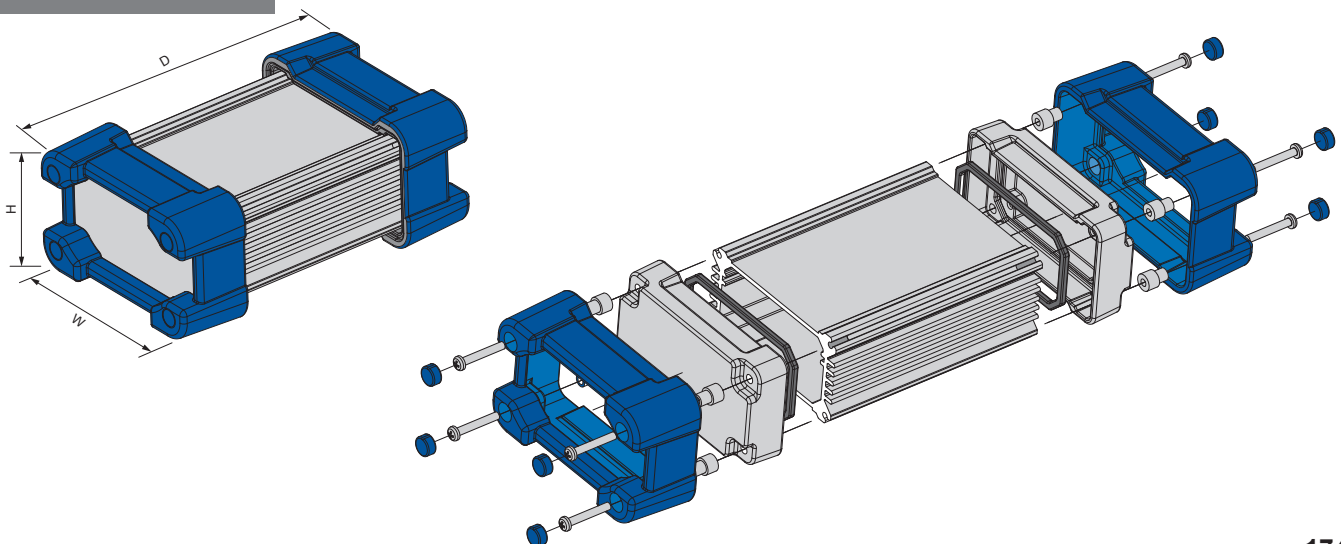
## Product no. / Dimensions

Product no.	W	H	D	※Thermal resistance rate (°C/W)	Weight (g)
AWP 7-7- 8□□	72.4(65.8)	73.6(65.8)	104 (80)	4.41	363.5
AWP 7-7-11□□	72.4(65.8)	73.6(65.8)	134(110)	3.5	419
AWP 7-7-15□□	72.4(65.8)	73.6(65.8)	174(150)	2.83	493.5
AWP 7-7-20□□	72.4(65.8)	73.6(65.8)	224(200)	2.33	586
AWP 7-7-25□□	72.4(65.8)	73.6(65.8)	274(250)	2.02	679
AWP 8-5- 9□□	87.4(80.8)	53.6(45.8)	114 (90)	5.97	353.5
AWP 8-5-12□□	87.4(80.8)	53.6(45.8)	139(115)	5.01	394.5
AWP 8-5-14□□	87.4(80.8)	53.6(45.8)	164(140)	4.37	436
AWP 8-5-18□□	87.4(80.8)	53.6(45.8)	199(175)	3.76	493.5
AWP 9-9-10□□	93.9(86.3)	95.1(86.3)	130(100)	3.1	693
AWP 9-9-13□□	93.9(86.3)	95.1(86.3)	155(125)	2.63	766
AWP 9-9-17□□	93.9(86.3)	95.1(86.3)	200(170)	2.12	897
AWP 9-9-22□□	93.9(86.3)	95.1(86.3)	250(220)	1.79	1,043
AWP 9-9-28□□	93.9(86.3)	95.1(86.3)	305(275)	1.54	1,203.5
AWP11-6-11□□	113.9(106.3)	65.1(56.3)	140(110)	4.52	652.5
AWP11-6-15□□	113.9(106.3)	65.1(56.3)	180(150)	3.62	751.5
AWP11-6-19□□	113.9(106.3)	65.1(56.3)	220(190)	3.08	850
AWP11-6-24□□	113.9(106.3)	65.1(56.3)	270(240)	2.64	973
AWP12-8-11□□	127.6(120)	80.1(71.3)	135(105)	3.6	778.5
AWP12-8-14□□	127.6(120)	80.1(71.3)	170(140)	2.93	885
AWP12-8-17□□	127.6(120)	80.1(71.3)	209.5(179.5)	2.47	1,004.5
AWP12-8-22□□	127.6(120)	80.1(71.3)	245(215)	2.18	1,112
AWP16-9-14□□	163.9(156.3)	90.1(81.3)	165(135)	2.64	1,094
AWP16-9-18□□	163.9(156.3)	90.1(81.3)	205(175)	2.2	1,240.5
AWP16-9-23□□	163.9(156.3)	90.1(81.3)	255(225)	1.86	1,424
AWP16-9-28□□	163.9(156.3)	90.1(81.3)	305(275)	1.63	1,607.5
AWP21-9-17□□	213.9(206.3)	90.1(81.3)	202(170)	2.3	1,571.5
AWP21-9-21□□	213.9(206.3)	90.1(81.3)	242(210)	1.99	1,742
AWP21-9-26□□	213.9(206.3)	90.1(81.3)	292(260)	1.72	1,955.5
AWP21-9-31□□	213.9(206.3)	90.1(81.3)	342(310)	1.54	2,168.5

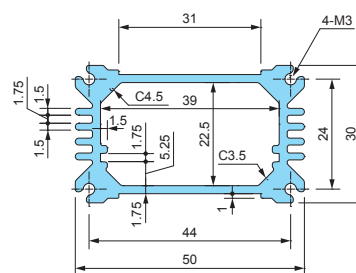
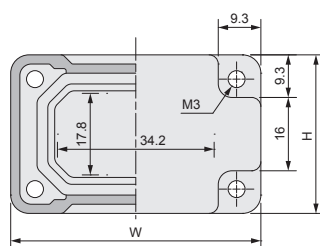
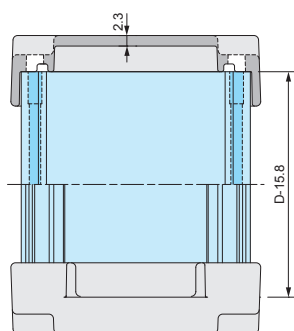
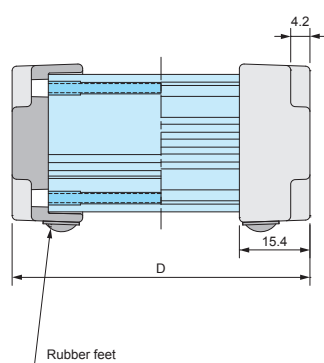
■ ( ) value = enclosure dimension.

## AWP dimensions

■ Refer to page 175 ~ 180 for detailed dimensions.





AWN5-4-

Product no.	W	H	D
AWN5-4- 7	54.6	34.6	65
AWN5-4- 9	54.6	34.6	85
AWN5-4-11	54.6	34.6	110
AWN5-4-14	54.6	34.6	135

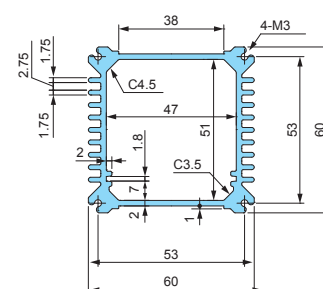
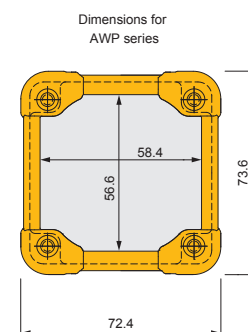
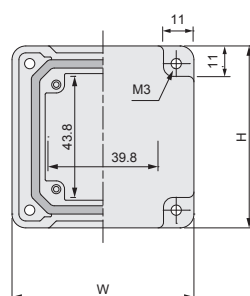
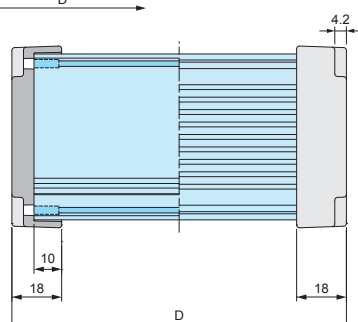
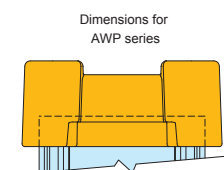
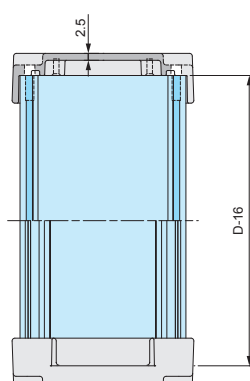
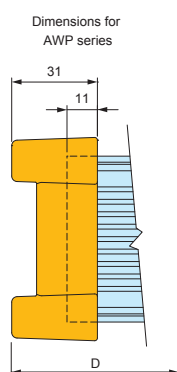
- Body frame length =  $D - 15.8$

AWN / AWP7-7-

Product no.	W	H	D
AWN / AWP7-T- 8	65.8	65.8	80 (104)
AWN / AWP7-T-11	65.8	65.8	110 (134)
AWN / AWP7-T-15	65.8	65.8	150 (174)
AWN / AWP7-T-20	65.8	65.8	200 (224)
AWN / AWP7-T-25	65.8	65.8	250 (274)

- ( ) value = enclosure dimensions with silicone cover.

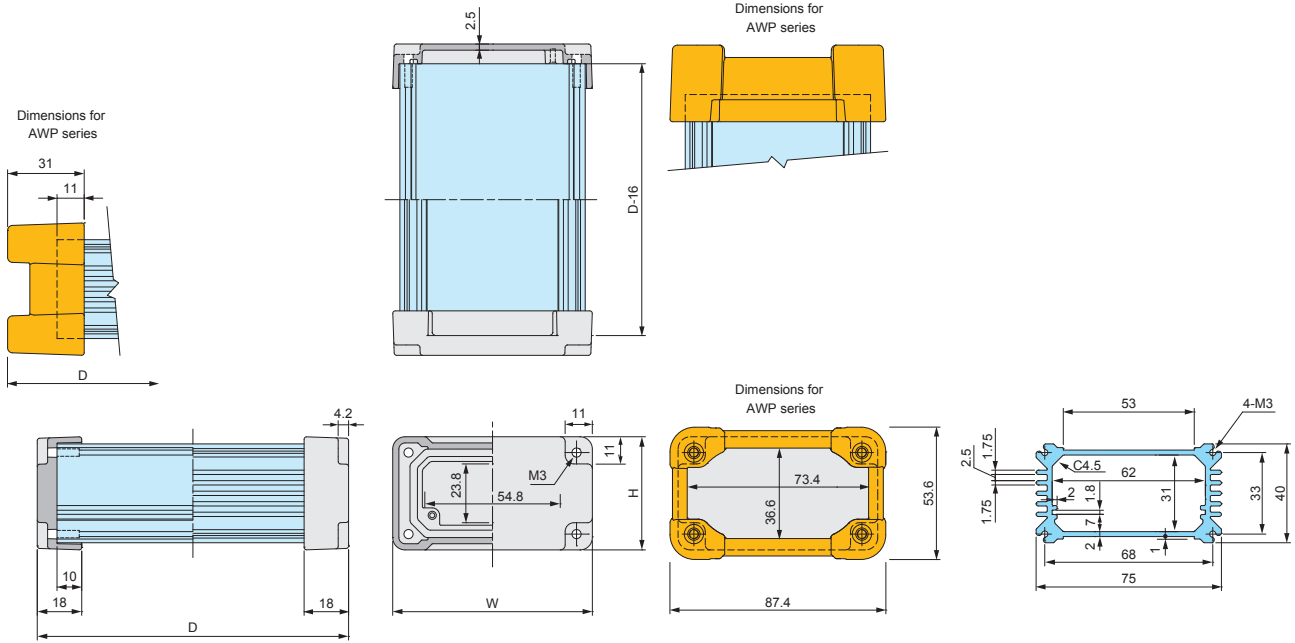
- Body frame length =  $D - 16$



AWN / AWP8-5-□

Product no.	W	H	D
AWN / AWP 8-5- 9	80.8	45.8	90 (114)
AWN / AWP 8-5-12	80.8	45.8	115 (139)
AWN / AWP 8-5-14	80.8	45.8	140 (164)
AWN / AWP 8-5-18	80.8	45.8	175 (199)

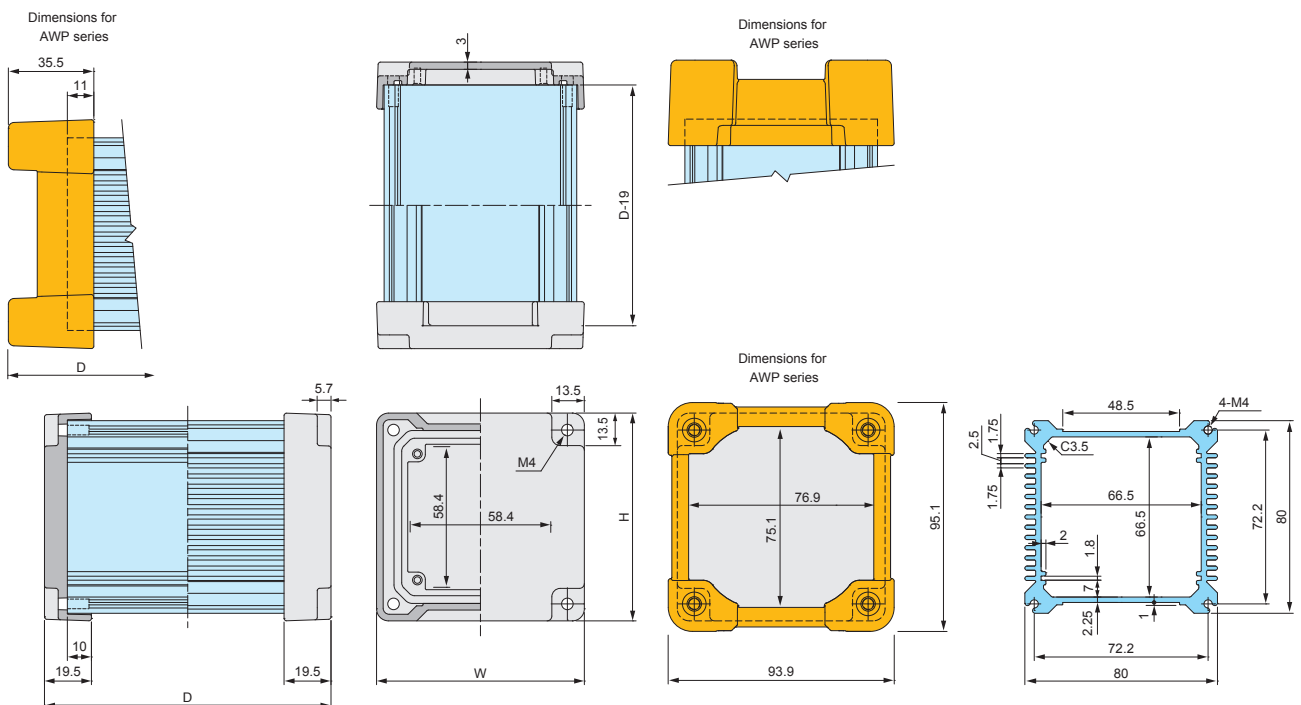
- ( ) value = enclosure length with silicone cover.
- Body frame length = D - 16



AWN / AWP9-9-□

Product no.	W	H	D
AWN / AWP 9-9-10	86.3	86.3	100 (130)
AWN / AWP 9-9-13	86.3	86.3	125 (155)
AWN / AWP 9-9-17	86.3	86.3	170 (200)
AWN / AWP 9-9-22	86.3	86.3	220 (250)
AWN / AWP 9-9-28	86.3	86.3	275 (305)

- ( ) value = enclosure length with silicone cover.
- Body frame length = D - 19





AWN / AWP11-6-☐

- ( ) value = enclosure length with silicone cover.
- Body frame length = D - 19.4



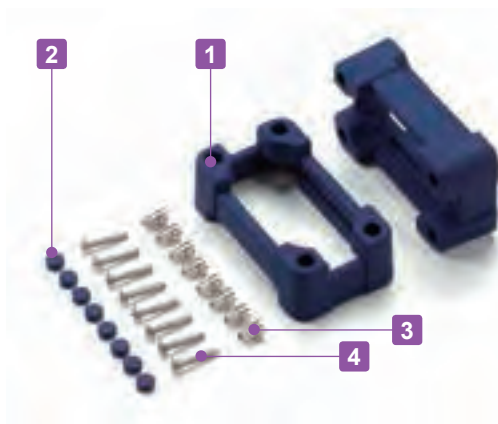
- ( ) value = enclosure length with silicone cover.
- Body frame length = D - 19.4





## AWSP SERIES

## SILICONE PROTECTOR

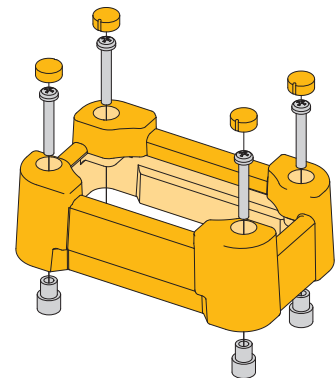
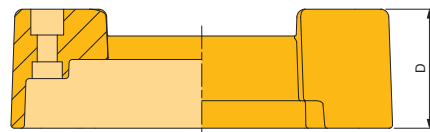
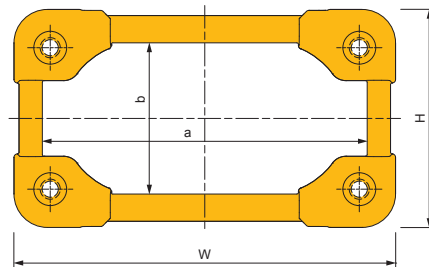
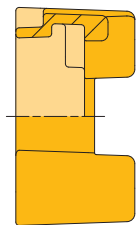


## Color Type

Code	B Black	G Gray	N Navy	Y Yellow
Color				

- Silicone protector for AWN series.
- Protect switches and/or connectors on end panels from impact when dropped, etc.

## AWSP dimensions



## Components

No.	Part name	Pcs	Material	Color / Finish
1	Protector	2	Silicone	Black • Gray • Navy • Yellow
2	Blind cap	8	Silicone	Black • Gray • Navy • Yellow
3	Spacer	8	Brass	Nickel plated
4	Screw	8	Stainless steel	Unfinished

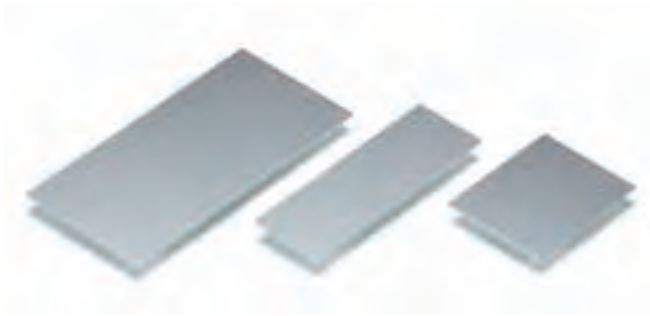
## Product no. / Dimensions

■ Please suffix color code at the end of the product number.

Product no.	W	H	D	a	b	Screw size	Suitable enclosure	Weight (g)
AWSP 7-7□	72.4	73.6	31	58.4	56.6	M3	AWN 7-7-□	99
AWSP 8-5□	87.4	53.6	31	73.4	36.6	M3	AWN 8-5-□	100.5
AWSP 9-9□	93.9	95.1	35.5	76.9	75.1	M4	AWN 9-9-□	184.5
AWSP11-6□	113.9	65.1	35.5	96.9	45.1	M4	AWN11-6-□	186
AWSP12-8□	127.6	80.1	35.5	110.6	60.1	M4	AWN12-8-□	201
AWSP16-9□	163.9	90.1	35.5	145.9	69.1	M4	AWN16-9-□	235
AWSP21-9□	213.9	90.1	39.5	192.9	66.1	M5	AWN21-9-□	333

## AWC SERIES

## ALUMINIUM MOUNTING PLATE



APPLICATION EXAMPLE

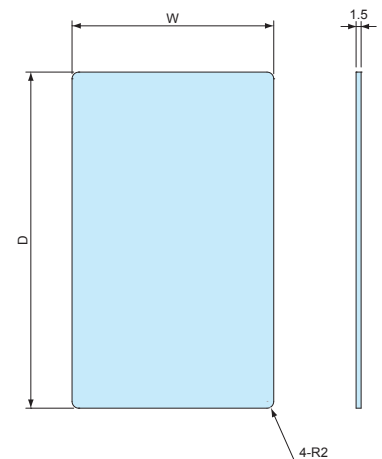


- Material: Aluminium A1050P t=1.5 / Silver anodized
- Mounting plate for AW, AWN, and AWP series enclosures.
- Utilize for mounting PCB, power supply, terminal blocks, etc.

■ DXF/DWG/PDF drawings available on our website.

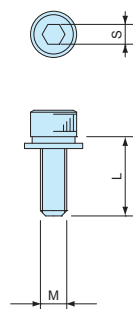
## Product no. / Dimensions

Product no.	W	D	Suitable enclosure
AWC 5- 7	38.9	49.2	AW • AWN 5-4-7
AWC 5- 9	38.9	69.2	AW • AWN 5-4-9
AWC 5-11	38.9	94.2	AW • AWN 5-4-11
AWC 5-14	38.9	119.2	AW • AWN 5-4-14
AWC 7- 8	47	64	AW • AWN • AWP 7-7-8
AWC 7-11	47	94	AW • AWN • AWP 7-7-11
AWC 7-15	47	134	AW • AWN • AWP 7-7-15
AWC 7-20	47	184	AW • AWN • AWP 7-7-20
AWC 7-25	47	234	AW • AWN • AWP 7-7-25
AWC 8- 9	61.8	74	AW • AWN • AWP 8-5-9
AWC 8-12	61.8	99	AW • AWN • AWP 8-5-12
AWC 8-14	61.8	124	AW • AWN • AWP 8-5-14
AWC 8-18	61.8	159	AW • AWN • AWP 8-5-18
AWC 9-10	66.5	81	AW • AWN • AWP 9-9-10
AWC 9-13	66.5	106	AW • AWN • AWP 9-9-13
AWC 9-17	66.5	151	AW • AWN • AWP 9-9-17
AWC 9-22	66.5	201	AW • AWN • AWP 9-9-22
AWC 9-28	66.5	256	AW • AWN • AWP 9-9-28
AWC11-11	86.5	90.6	AW • AWN • AWP11-6-11
AWC11-15	86.5	130.6	AW • AWN • AWP11-6-15
AWC11-19	86.5	170.6	AW • AWN • AWP11-6-19
AWC11-24	86.5	220.6	AW • AWN • AWP11-6-24
AWC12-11	100.2	85.6	AW • AWN • AWP12-8-11
AWC12-14	100.2	120.6	AW • AWN • AWP12-8-14
AWC12-17	100.2	160.1	AW • AWN • AWP12-8-17
AWC12-22	100.2	195.6	AW • AWN • AWP12-8-22
AWC16-14	136.3	115.6	AW • AWN • AWP16-9-14
AWC16-18	136.3	155.6	AW • AWN • AWP16-9-18
AWC16-23	136.3	205.6	AW • AWN • AWP16-9-23
AWC16-28	136.3	255.6	AW • AWN • AWP16-9-28
AWC21-17	186.1	147.8	AW • AWN • AWP21-9-17
AWC21-21	186.1	187.8	AW • AWN • AWP21-9-21
AWC21-26	186.1	237.8	AW • AWN • AWP21-9-26
AWC21-31	186.1	287.8	AW • AWN • AWP21-9-31



## HCS SERIES

## HEXAGON SOCKET HEAD SCREW



- Hexagon socket head screws for fastening the end panels of AW and AWN enclosures.
- Utilize for tamper-resistance functionality or for an elegant sleek look.

## Product no. / Dimensions

Product no.	M	L	S	Material	Pack of
HCS3-12S	3	12	2.5	Stainless steel	8
HCS4-12S	4	12	3	Stainless steel	8
HCS5-12S	5	12	4	Stainless steel	8

# FC ALUMINIUM CONTROL BOX

FC, FCW and FCH series are applicable for various purposes such as control and switch box, touch panel display, monitor box, and so on.

## APPLICATION EXAMPLE

### COIL WINDING MACHINE

Product by TNK Co.,Ltd. (Japan) Website : [tnk-ltd.com](http://tnk-ltd.com)



### CONTROL BOX

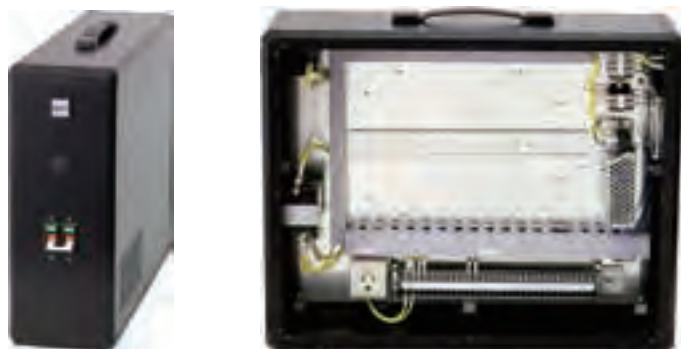


### STREAMING VIDEO PROVIDER



Product by StreamingVideoProvider (UK)  
Website : [streamingvideoprovider.com](http://streamingvideoprovider.com)

### HAND-CARRY CONTROL BOX



Product by Coms Co. Ltd. (Japan)  
Website : [coms-corp.co.jp](http://coms-corp.co.jp)

### SPEED CONTROLLER



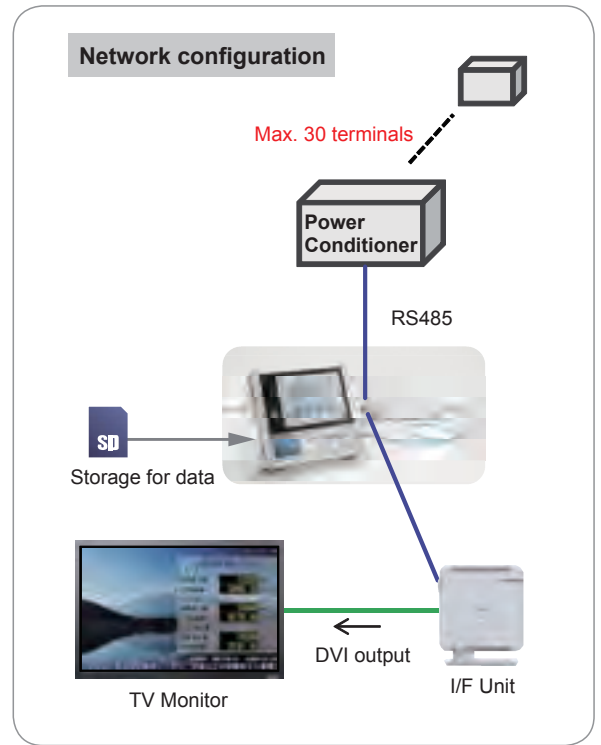


## SOLAR MONITORING SYSTEM



A functional monitor enables warning record save and operation status monitoring via direct communication with a power conditioner. Easy touch panel operation displays the current and integrated power generation, solar radiation, temperature graph, and warning records etc.

Product by Tokai EC Co., Ltd. (Japan)  
Website: [tokaiec.co.jp](http://tokaiec.co.jp)



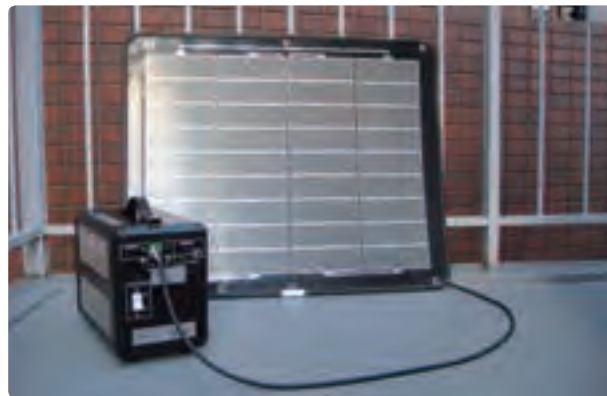
## TAG READER • TRIGGER



Easy installation as an all-in-one box.  
Hands-free type with both transmitting and receiving antennas in a box.  
Possible to receive RF signal within 140m distance if using a high-sensitive active tag.  
Touch type is useful as an access control system for tracking and monitoring purposes.

Product by Matrix Co., Ltd. (Japan) Website: [matrix-inc.co.jp](http://matrix-inc.co.jp)

## COMPACT SOLAR POWER SUPPLY



A compact power unit enables the storing of electric power by connecting to the solar cells. Also equipped with a display function showing current charge level, power consumption, and battery status.

Product by Elenagic Co., Ltd. (Japan) Website: [elenagic.co.jp](http://elenagic.co.jp)



## FC SERIES

## ALUMINIUM CONTROL BOX

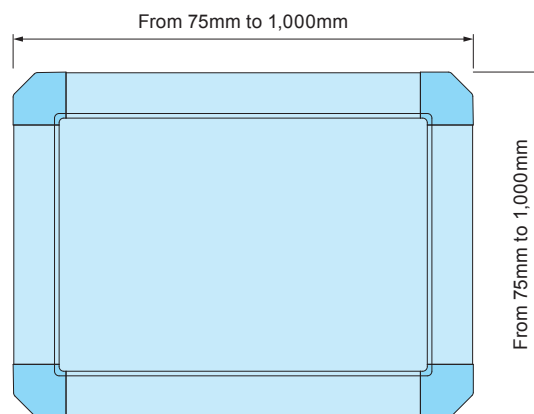


## Technical Data

Protection class: IP40

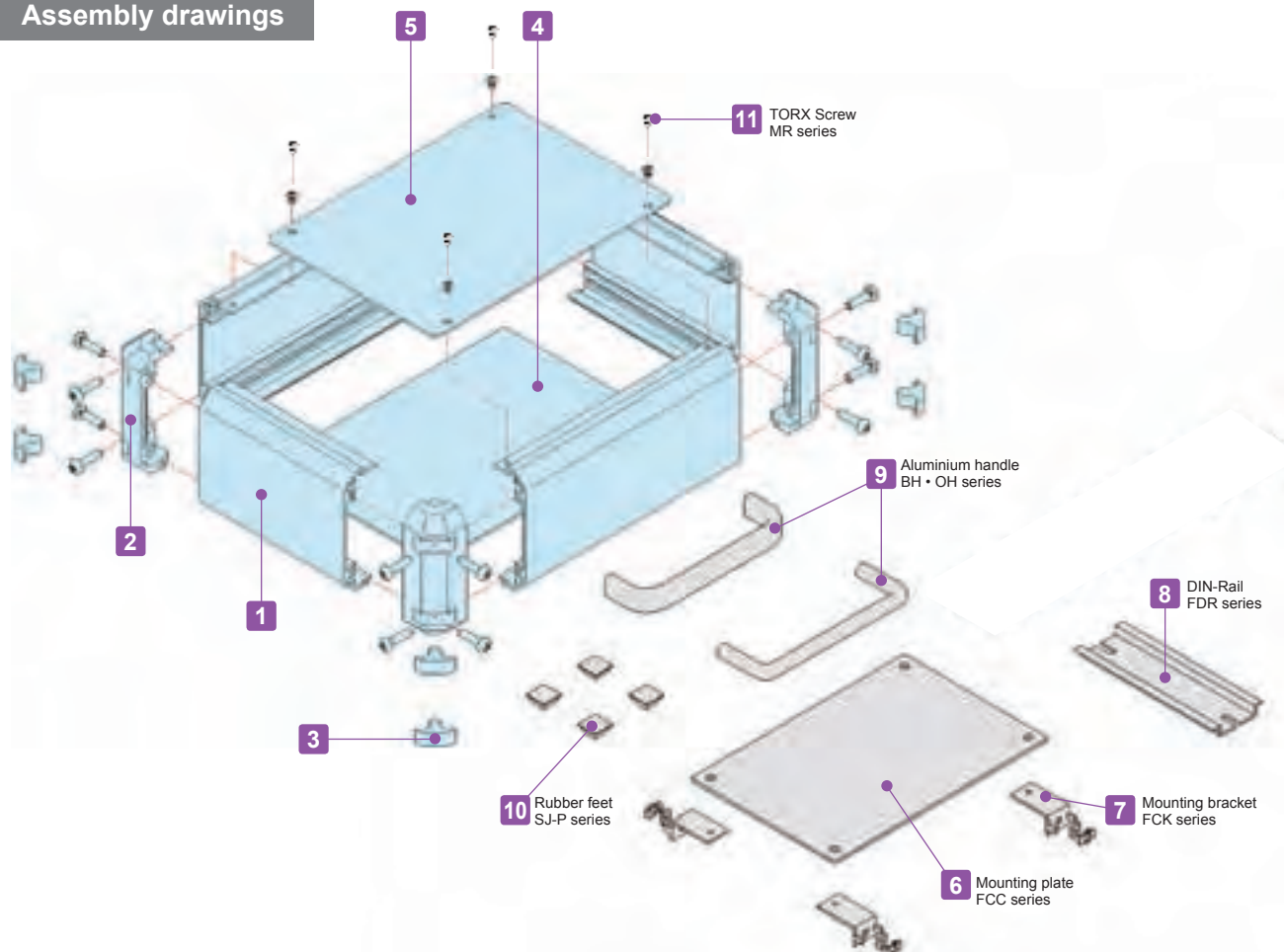
- 175 different sizes in 4 different color variations available.
- Simple designed aluminium utility box composed of extruded aluminium frames, aluminium panels and ABS corner joints.
- Suitable for touch panel display, industrial control equipment, and various other devices.

## Custom width / length available in 1mm intervals



- Flexible frame width / length from 75mm to 1,000mm in 1mm intervals.
- No minimum order quantity and short lead time for small quantity order.

## Assembly drawings

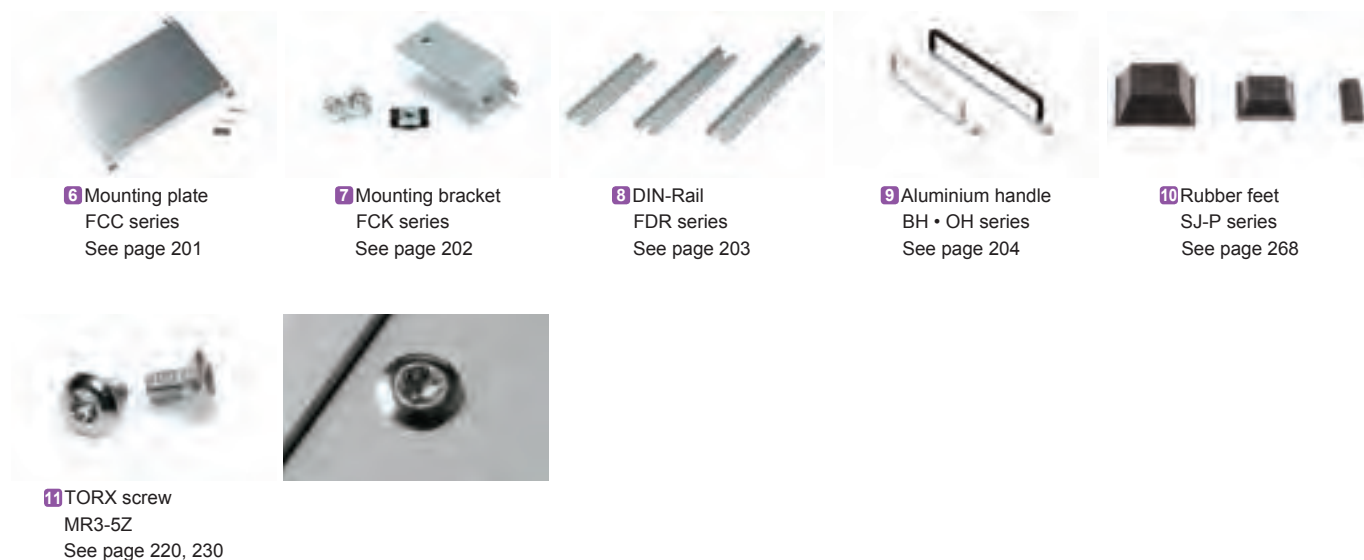


Included screws  
M4-15 Trivalent chromate  
(M3-15 for FC4 series)  
M3-5 Slotted raised countersunk / Silver = Nickel plated, Black = Trivalent chromate

### Components

No.	Part name	Pcs	Material	Color / Finish
1	Frame	4	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Corner block	4	ABS UL94HB	Light gray • Black
3	Blind plug	8	TPE	Light gray • Black
4	Slide panel	1	Aluminium A1050P t=1.5	Silver / Hairline brushed & Anodized
			Aluminium A1100P t=1.5	Black / painted
5	Screwed panel	1	Aluminium A1050P t=1.5	Silver / Hairline brushed & Anodized
			Aluminium A1100P t=1.5	Black / painted

### Accessories (Optional parts)

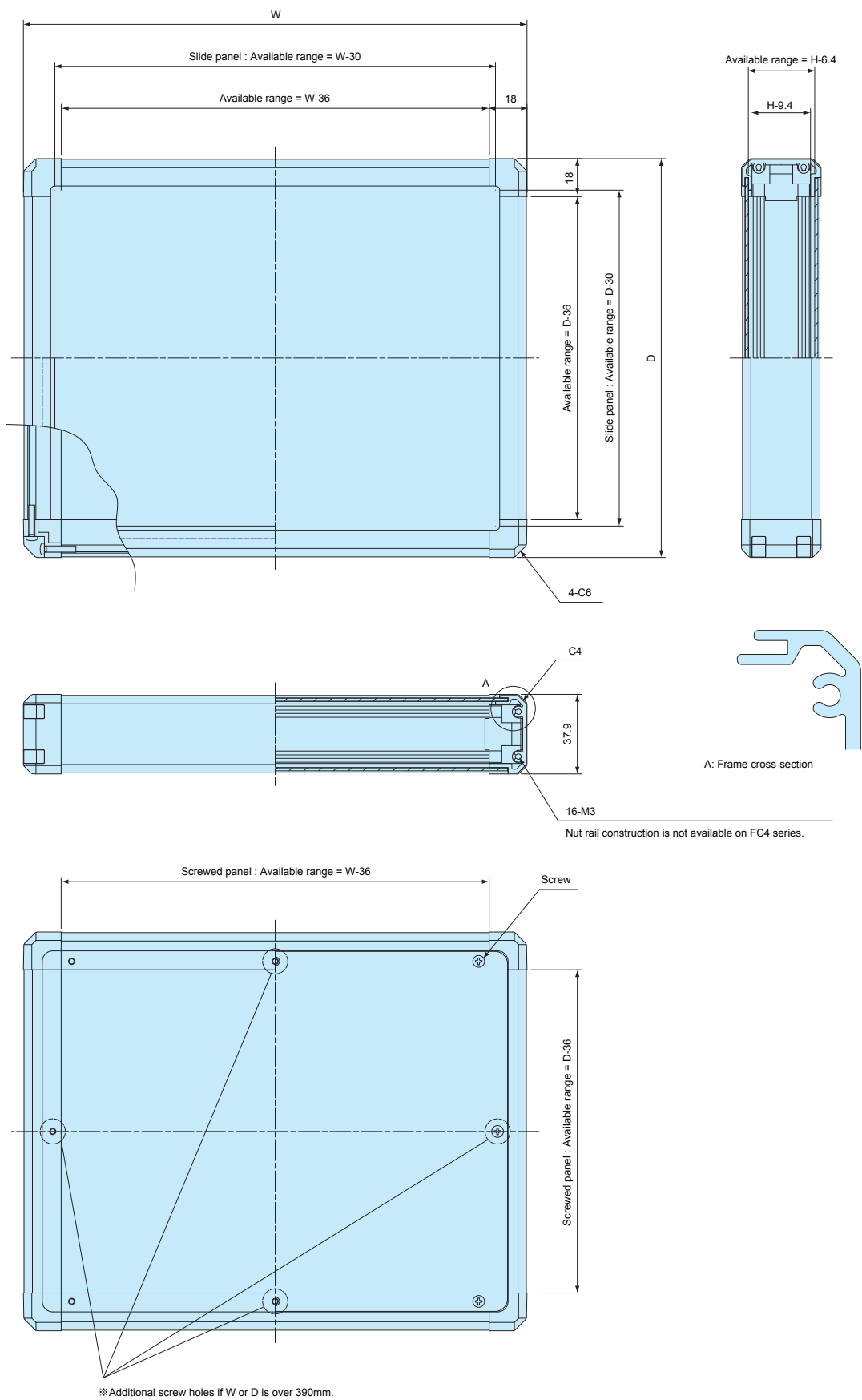


## FC dimensions

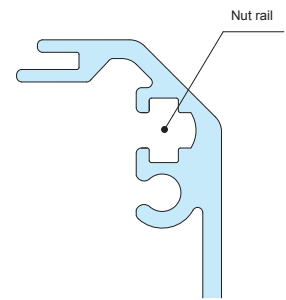
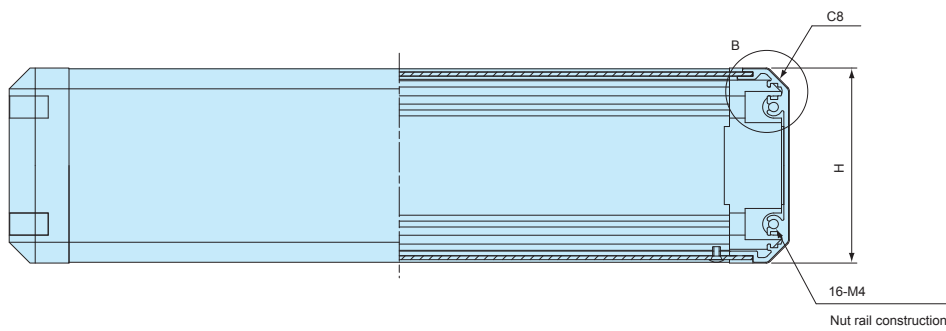
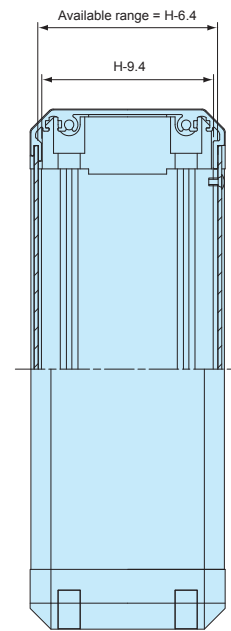
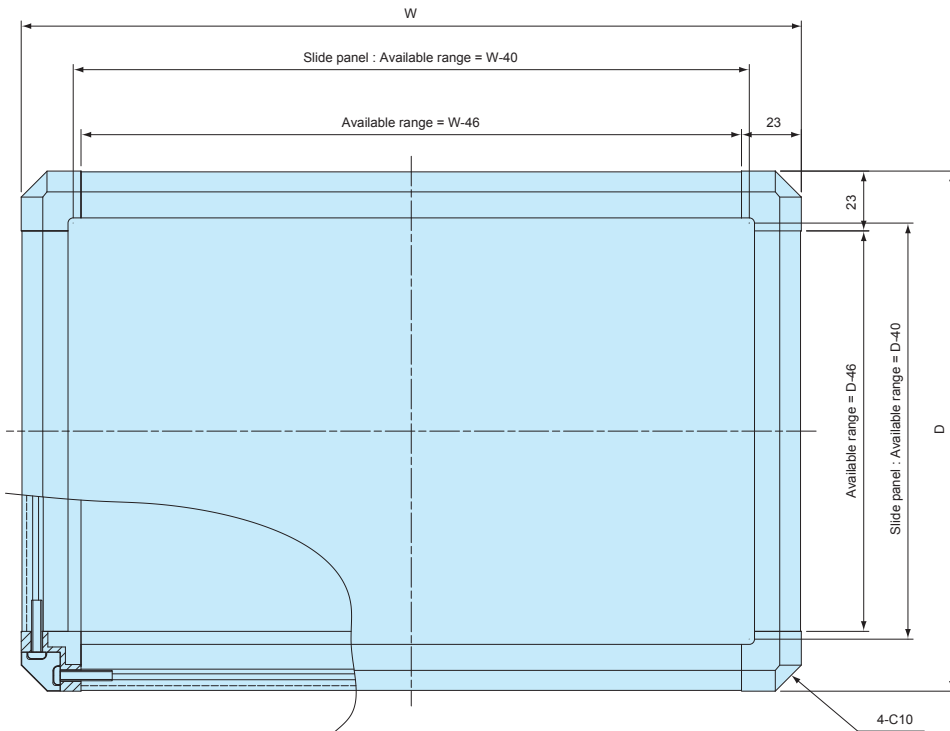
■ DXF/DWG/PDF drawings available on our website.

## FC4 series

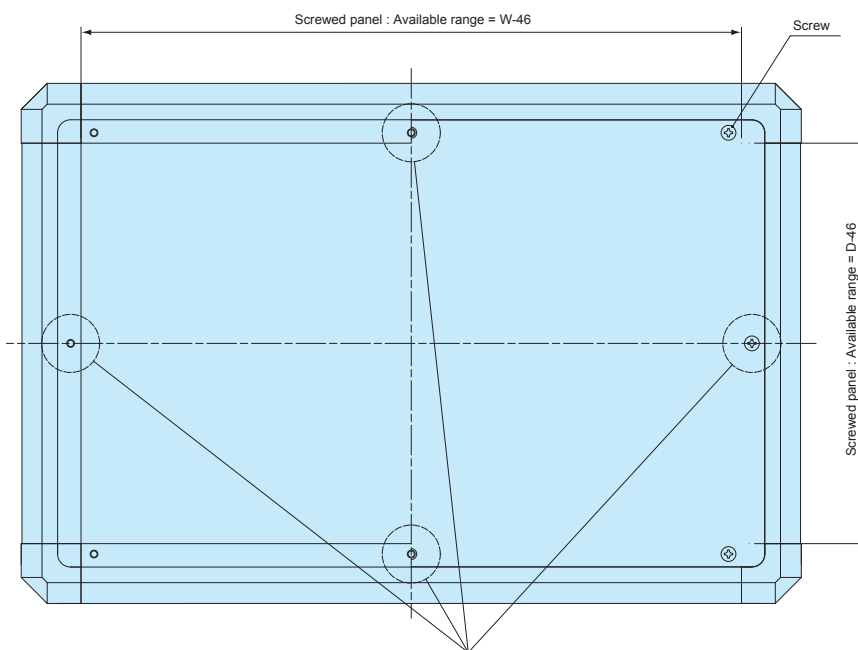
■ Refer to page 187 ~ 188 for enclosure dimensions.



FC5 • FC6 • FC8 • FC10 • FC13 • FC15 series



A: Frame cross-section



※Additional screw holes if  $W$  or  $D$  is over 400mm.

**Color Type**

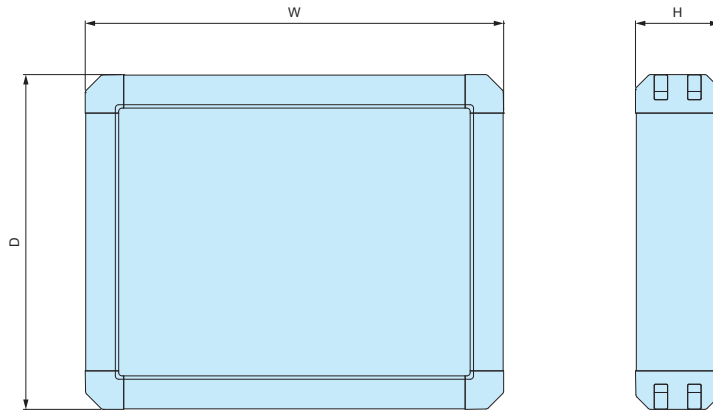
GS		BS		BX		BB	
							
Panel	Silver	Panel	Silver	Panel	Silver	Panel	Black
Frame	Silver	Frame	Silver	Frame	Black	Frame	Black
Corner	Light gray	Corner	Black	Corner	Black	Corner	Black

**Product no. / Dimensions**

■ Please suffix color code at the end of the product number.

Product no.	H	W	D	Weight (kg)	Panel mount screw pcs
FC4- 9- 9□	37.9	90	90	0.17	4
FC4-14- 9□	37.9	140	90	0.24	4
FC4-14-14□	37.9	140	140	0.33	4
FC4-19- 9□	37.9	190	90	0.31	4
FC4-19-14□	37.9	190	140	0.50	4
FC4-19-19□	37.9	190	190	0.53	4
FC4-24-14□	37.9	240	140	0.51	4
FC4-24-19□	37.9	240	190	0.64	4
FC4-24-24□	37.9	240	240	0.78	4
FC4-29-14□	37.9	290	140	0.60	4
FC4-29-19□	37.9	290	190	0.75	4
FC4-29-24□	37.9	290	240	0.91	4
FC4-29-29□	37.9	290	290	1.07	4
FC4-34-19□	37.9	340	190	0.87	4
FC4-34-24□	37.9	340	240	1.04	4
FC4-34-29□	37.9	340	290	0.94	4
FC4-39-19□	37.9	390	190	0.97	6
FC4-39-24□	37.9	390	240	1.17	6
FC4-39-29□	37.9	390	290	1.37	6
FC4-39-39□	37.9	390	390	1.77	8
FC4-49-24□	37.9	490	240	1.39	6
FC4-49-29□	37.9	490	290	1.64	6
FC4-49-39□	37.9	490	390	2.12	8
FC4-59-29□	37.9	590	290	1.92	6
FC4-59-39□	37.9	590	390	2.46	8
FC5-10-10□	50.4	100	100	0.24	4
FC5-15-10□	50.4	150	100	0.33	4
FC5-15-15□	50.4	150	150	0.44	4
FC5-20-10□	50.4	200	100	0.42	4
FC5-20-15□	50.4	200	150	0.55	4
FC5-20-20□	50.4	200	200	0.68	4
FC5-25-15□	50.4	250	150	0.66	4
FC5-25-20□	50.4	250	200	0.81	4
FC5-25-25□	50.4	250	250	0.97	4
FC5-30-15□	50.4	300	150	0.77	4
FC5-30-20□	50.4	300	200	0.94	4
FC5-30-25□	50.4	300	250	1.11	4
FC5-30-30□	50.4	300	300	1.29	4
FC5-35-20□	50.4	350	200	1.07	4
FC5-35-25□	50.4	350	250	1.26	4
FC5-35-30□	50.4	350	300	1.46	4
FC5-40-20□	50.4	400	200	1.20	6
FC5-40-25□	50.4	400	250	1.42	6
FC5-40-30□	50.4	400	300	1.64	6

Product no.	H	W	D	Weight (kg)	Panel mount screw pcs
FC5-40-40□	50.4	400	400	2.07	8
FC5-50-25□	50.4	500	250	1.66	6
FC5-50-30□	50.4	500	300	1.92	6
FC5-50-40□	50.4	500	400	2.44	8
FC5-60-30□	50.4	600	300	2.22	6
FC5-60-40□	50.4	600	400	2.81	8
FC6-10-10□	62.9	100	100	0.26	4
FC6-15-10□	62.9	150	100	0.35	4
FC6-15-15□	62.9	150	150	0.47	4
FC6-20-10□	62.9	200	100	0.45	4
FC6-20-15□	62.9	200	150	0.58	4
FC6-20-20□	62.9	200	200	0.72	4
FC6-25-15□	62.9	250	150	0.70	4
FC6-25-20□	62.9	250	200	0.85	4
FC6-25-25□	62.9	250	250	1.01	4
FC6-30-15□	62.9	300	150	0.81	4
FC6-30-20□	62.9	300	200	0.99	4
FC6-30-25□	62.9	300	250	1.16	4
FC6-30-30□	62.9	300	300	1.35	4
FC6-35-20□	62.9	350	200	1.12	4
FC6-35-25□	62.9	350	250	1.32	4
FC6-35-30□	62.9	350	300	1.52	4
FC6-40-20□	62.9	400	200	1.25	6
FC6-40-25□	62.9	400	250	1.47	6
FC6-40-30□	62.9	400	300	1.70	6
FC6-40-40□	62.9	400	400	2.15	8
FC6-50-25□	62.9	500	250	1.72	6
FC6-50-30□	62.9	500	300	1.99	6
FC6-50-40□	62.9	500	400	2.52	8
FC6-60-30□	62.9	600	300	2.29	6
FC6-60-40□	62.9	600	400	2.43	8
FC8-10-10□	75.4	100	100	0.28	4
FC8-15-10□	75.4	150	100	0.38	4
FC8-15-15□	75.4	150	150	0.50	4
FC8-20-10□	75.4	200	100	0.48	4
FC8-20-15□	75.4	200	150	0.62	4
FC8-20-20□	75.4	200	200	0.76	4
FC8-25-15□	75.4	250	150	0.74	4
FC8-25-20□	75.4	250	200	0.90	4
FC8-25-25□	75.4	250	250	1.07	4
FC8-30-15□	75.4	300	150	0.86	4
FC8-30-20□	75.4	300	200	1.04	4
FC8-30-25□	75.4	300	250	1.23	4
FC8-30-30□	75.4	300	300	1.42	4



Product no.	H	W	D	Weight (kg)	Panel mount screw pcs
FC 8-35-20□	75.4	350	200	1.19	4
FC 8-35-25□	75.4	350	250	1.39	4
FC 8-35-30□	75.4	350	300	1.51	4
FC 8-40-20□	75.4	400	200	1.32	6
FC 8-40-25□	75.4	400	250	1.46	6
FC 8-40-30□	75.4	400	300	1.78	6
FC 8-40-40□	75.4	400	400	2.24	8
FC 8-50-25□	75.4	500	250	1.81	6
FC 8-50-30□	75.4	500	300	2.08	6
FC 8-50-40□	75.4	500	400	2.62	8
FC 8-60-30□	75.4	600	300	2.39	6
FC 8-60-40□	75.4	600	400	3.00	8
FC10-10-10□	100.4	100	100	0.31	4
FC10-15-10□	100.4	150	100	0.43	4
FC10-15-15□	100.4	150	150	0.56	4
FC10-20-10□	100.4	200	100	0.54	4
FC10-20-15□	100.4	200	150	0.70	4
FC10-20-20□	100.4	200	200	0.85	4
FC10-25-15□	100.4	250	150	0.83	4
FC10-25-20□	100.4	250	200	1.01	4
FC10-25-25□	100.4	250	250	1.19	4
FC10-30-15□	100.4	300	150	0.97	4
FC10-30-20□	100.4	300	200	1.16	4
FC10-30-25□	100.4	300	250	1.36	4
FC10-30-30□	100.4	300	300	1.57	4
FC10-35-20□	100.4	350	200	1.32	4
FC10-35-25□	100.4	350	250	1.54	4
FC10-35-30□	100.4	350	300	1.77	4
FC10-40-20□	100.4	400	200	1.47	6
FC10-40-25□	100.4	400	250	1.72	6
FC10-40-30□	100.4	400	300	1.96	6
FC10-40-40□	100.4	400	400	2.45	8
FC10-50-25□	100.4	500	250	1.99	6
FC10-50-30□	100.4	500	300	2.27	6
FC10-50-40□	100.4	500	400	2.84	8
FC10-60-30□	100.4	600	300	2.60	6
FC10-60-40□	100.4	600	400	2.70	8
FC13-10-10□	125.4	100	100	0.35	4
FC13-15-10□	125.4	150	100	0.47	4
FC13-15-15□	125.4	150	150	0.61	4
FC13-20-10□	125.4	200	100	0.59	4
FC13-20-15□	125.4	200	150	0.75	4
FC13-20-20□	125.4	200	200	0.92	4
FC13-25-15□	125.4	250	150	0.90	4

Product no.	H	W	D	Weight (kg)	Panel mount screw pcs
FC13-25-20□	125.4	250	200	1.08	4
FC13-25-25□	125.4	250	250	1.27	4
FC13-30-15□	125.4	300	150	1.04	4
FC13-30-20□	125.4	300	200	1.24	4
FC13-30-25□	125.4	300	250	1.44	4
FC13-30-30□	125.4	300	300	1.66	4
FC13-35-20□	125.4	350	200	1.40	4
FC13-35-25□	125.4	350	250	1.63	4
FC13-35-30□	125.4	350	300	1.86	4
FC13-40-20□	125.4	400	200	1.56	6
FC13-40-25□	125.4	400	250	1.81	6
FC13-40-30□	125.4	400	300	2.06	6
FC13-40-40□	125.4	400	400	2.56	8
FC13-50-25□	125.4	500	250	2.09	6
FC13-50-30□	125.4	500	300	2.38	6
FC13-50-40□	125.4	500	400	2.96	8
FC13-60-30□	125.4	600	300	2.89	6
FC13-60-40□	125.4	600	400	3.36	8
FC15-10-10□	150.4	100	100	0.40	4
FC15-15-10□	150.4	150	100	0.54	4
FC15-15-15□	150.4	150	150	0.70	4
FC15-20-10□	150.4	200	100	0.68	4
FC15-20-15□	150.4	200	150	0.85	4
FC15-20-20□	150.4	200	200	1.04	4
FC15-25-15□	150.4	250	150	1.02	4
FC15-25-20□	150.4	250	200	1.22	4
FC15-25-25□	150.4	250	250	1.42	4
FC15-30-15□	150.4	300	150	1.17	4
FC15-30-20□	150.4	300	200	1.40	4
FC15-30-25□	150.4	300	250	1.62	4
FC15-30-30□	150.4	300	300	1.85	4
FC15-35-20□	150.4	350	200	1.58	4
FC15-35-25□	150.4	350	250	1.82	4
FC15-35-30□	150.4	350	300	2.07	4
FC15-40-20□	150.4	400	200	1.76	6
FC15-40-25□	150.4	400	250	2.02	6
FC15-40-30□	150.4	400	300	2.29	6
FC15-40-40□	150.4	400	400	2.83	8
FC15-50-25□	150.4	500	250	2.32	6
FC15-50-30□	150.4	500	300	2.63	6
FC15-50-40□	150.4	500	400	3.25	8
FC15-60-30□	150.4	600	300	2.98	6
FC15-60-40□	150.4	600	400	3.66	8

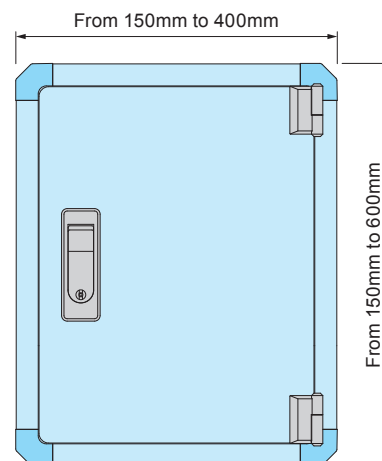


**FCW** SERIES**OPEN-CLOSING CONTROL BOX**

- 108 different sizes in 4 different color variations available.
- Easy access to the inside of the case with open/closing cover.
- Both with and without key lock types are available.
- Suitable for touch panel display, industrial control equipment and many others.

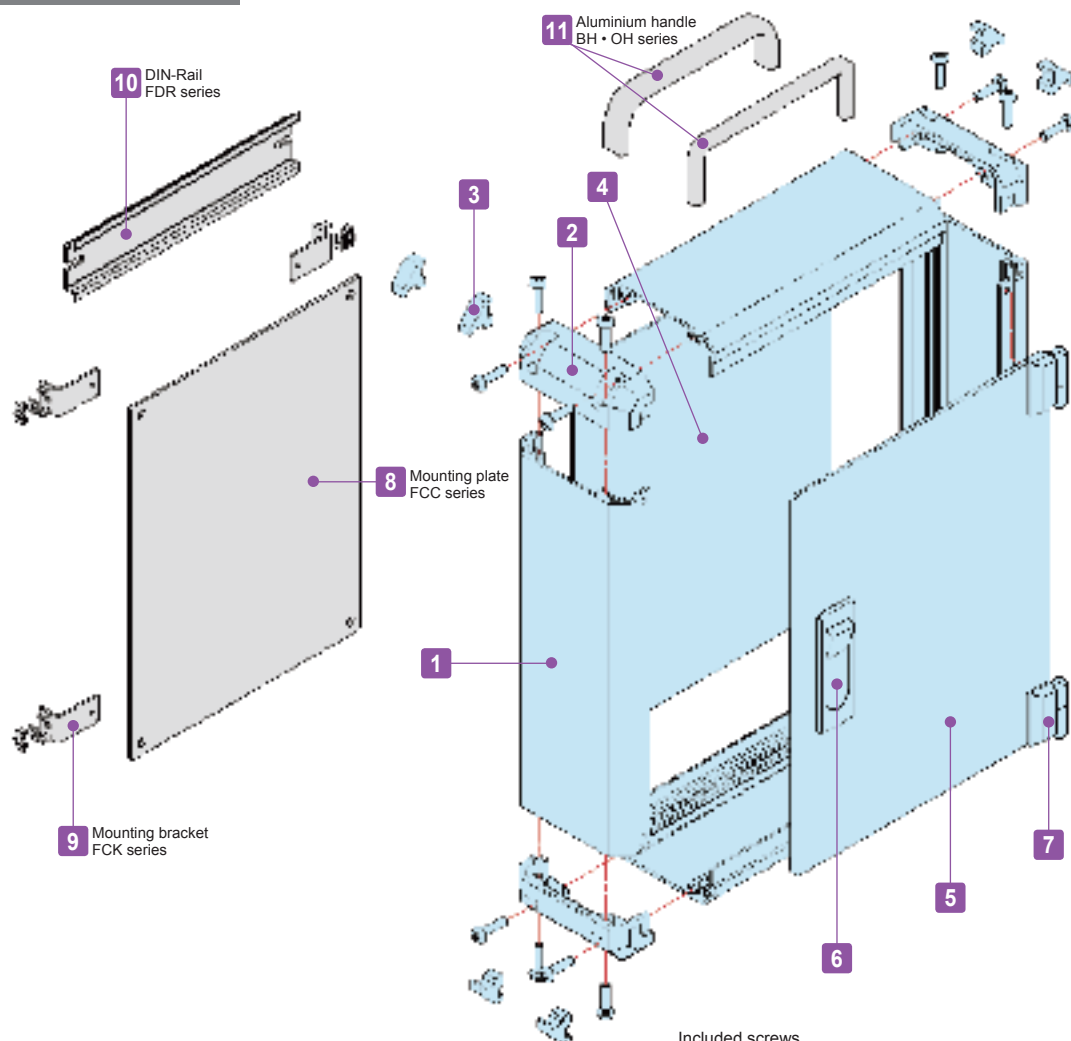
**Technical Data**

Protection class: IP40

**Custom width / length available**

- Flexible frame width / length in 1mm intervals.
- No minimum order quantity and short lead time for small quantity order.

## Assembly drawings



### Included screws

M4-15 pan head, trivalent chromate / black trivalent chromate x 16 pcs  
 M3-5 pan head, trivalent chromate / black trivalent chromate x 2 pcs or 3 pcs  
 M3-5 countersunk trivalent chromate / black trivalent chromate x 2 pcs or 3 pcs  
 M4-8 trivalent chromate with washer x 2 pcs or 4 pcs  
 M4-6 trivalent chromate with washer x 2 pcs or 4 pcs

### Components

No.	Part name	Pcs	Material	Color / Finish
1	Frame	4	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Corner block	4	ABS UL94HB	Light gray • Black
3	Blind plug	8	TPE	Light gray • Black
4	Slide panel	1	Aluminium A1050P t=1.5	Silver / Hairline brushed & Anodized
			Aluminium A1100P t=1.5	Black / Painted
5	Open-closing panel	1	Aluminium A1050P t=2.0	Silver / Hairline brushed & Anodized
			Aluminium A1050P t=2.0	Black / Anodized
6	Flat handle	1 set	Diecast zinc	Silver • Black / Painted
7	Hinge	1 set	Diecast zinc	Silver • Black / Painted
-	Panel protection pad	6	Polyolefin foam	Black





### Accessories (Optional parts)



**Flat Handle Type**



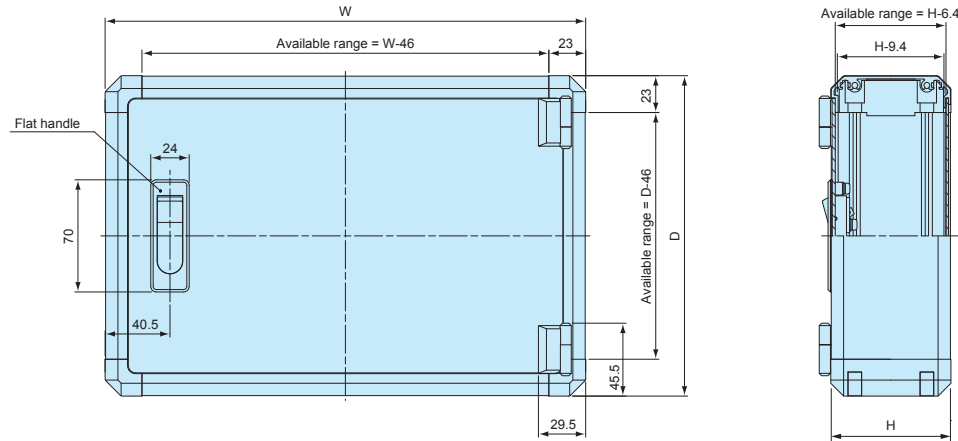
**Color Type**

GS		BS		BX		BB	
							
Panel	Silver	Panel	Silver	Panel	Silver	Panel	Black
Frame	Silver	Frame	Silver	Frame	Black	Frame	Black
Corner	Light gray	Corner	Black	Corner	Black	Corner	Black
Flat handle	Silver	Flat handle	Silver	Flat handle	Black	Flat handle	Black

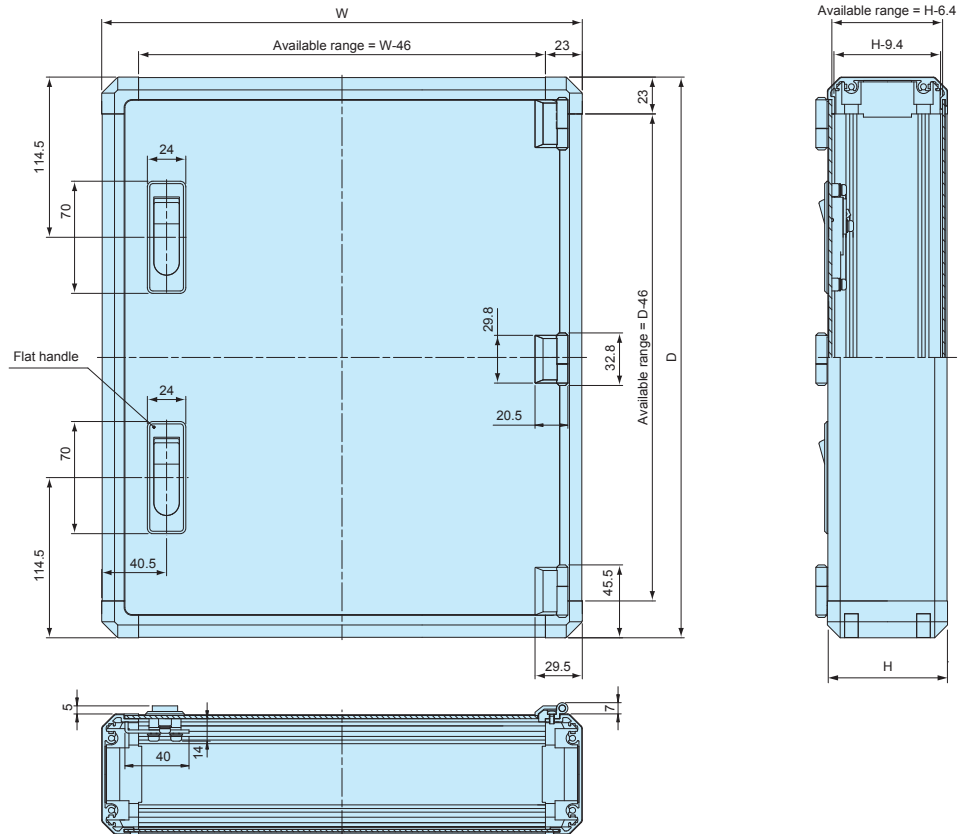
**FCW dimensions**

■ DXF/DWG/PDF drawings available on our website.

Handle - 1 pc / Hinge - 2 pcs type  
Not applicable for FCW□-30-50, FCW□-40-50, and FCW□-40-60 models.



Handle - 2 pcs / Hinge - 3 pcs type  
Applicable for FCW□-30-50, FCW□-40-50, and FCW□-40-60 models.

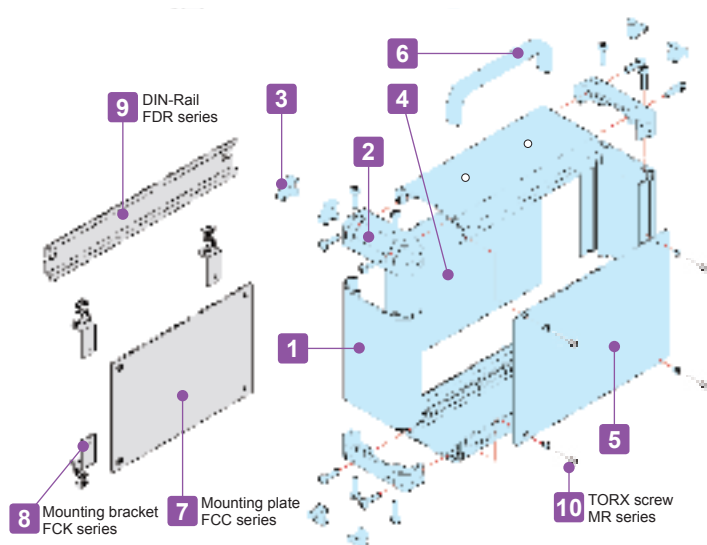


Specify your order with complete combination product number as per below

**FCW 5 - 20 - 15**Flat Handle Type  
( N or K )Color Code  
( GS, BS, BX, or BB )**Product no. / Dimensions**

Product no.	H	W	D	Weight (kg)	Flat handle / Hinge pcs
FCW5-15-20□□	50.4	150	200	0.69	1 / 2
FCW5-15-25□□	50.4	150	250	0.80	1 / 2
FCW5-20-15□□	50.4	200	150	0.69	1 / 2
FCW5-20-20□□	50.4	200	200	0.83	1 / 2
FCW5-20-25□□	50.4	200	250	0.97	1 / 2
FCW5-20-30□□	50.4	200	300	1.11	1 / 2
FCW5-25-25□□	50.4	250	250	1.14	1 / 2
FCW5-25-30□□	50.4	250	300	1.30	1 / 2
FCW5-25-40□□	50.4	250	400	1.63	1 / 2
FCW5-30-20□□	50.4	300	200	1.11	1 / 2
FCW5-30-30□□	50.4	300	300	1.50	1 / 2
FCW5-30-40□□	50.4	300	400	1.87	1 / 2
FCW5-30-50□□	50.4	300	500	2.28	2 / 3
FCW5-35-25□□	50.4	350	250	1.47	1 / 2
FCW5-40-30□□	50.4	400	300	1.88	1 / 2
FCW5-40-40□□	50.4	400	400	2.37	1 / 2
FCW5-40-50□□	50.4	400	500	2.82	2 / 3
FCW5-40-60□□	50.4	400	600	3.28	2 / 3
FCW6-15-20□□	62.9	150	200	0.72	1 / 2
FCW6-15-25□□	62.9	150	250	0.84	1 / 2
FCW6-20-15□□	62.9	200	150	0.72	1 / 2
FCW6-20-20□□	62.9	200	200	0.86	1 / 2
FCW6-20-25□□	62.9	200	250	1.01	1 / 2
FCW6-20-30□□	62.9	200	300	1.16	1 / 2
FCW6-25-25□□	62.9	250	250	1.18	1 / 2
FCW6-25-30□□	62.9	250	300	1.35	1 / 2
FCW6-25-40□□	62.9	250	400	1.69	1 / 2
FCW6-30-20□□	62.9	300	200	1.16	1 / 2
FCW6-30-30□□	62.9	300	300	1.55	1 / 2
FCW6-30-40□□	62.9	300	400	1.93	1 / 2
FCW6-30-50□□	62.9	300	500	2.35	2 / 3
FCW6-35-25□□	62.9	350	250	1.46	1 / 2
FCW6-40-30□□	62.9	400	300	1.94	1 / 2
FCW6-40-40□□	62.9	400	400	2.44	1 / 2
FCW6-40-50□□	62.9	400	500	2.94	2 / 3
FCW6-40-60□□	62.9	400	600	3.36	2 / 3
FCW8-15-20□□	75.4	150	200	0.76	1 / 2
FCW8-15-25□□	75.4	150	250	0.88	1 / 2
FCW8-20-15□□	75.4	200	150	0.76	1 / 2
FCW8-20-20□□	75.4	200	200	0.91	1 / 2
FCW8-20-25□□	75.4	200	250	1.06	1 / 2
FCW8-20-30□□	75.4	200	300	1.21	1 / 2
FCW8-25-25□□	75.4	250	250	1.24	1 / 2
FCW8-25-30□□	75.4	250	300	1.41	1 / 2
FCW8-25-40□□	75.4	250	400	1.76	1 / 2
FCW8-30-20□□	75.4	300	200	1.21	1 / 2
FCW8-30-30□□	75.4	300	300	1.62	1 / 2
FCW8-30-40□□	75.4	300	400	2.02	1 / 2
FCW8-30-50□□	75.4	300	500	2.44	2 / 3
FCW8-35-25□□	75.4	350	250	1.59	1 / 2
FCW8-40-30□□	75.4	400	300	2.02	1 / 2
FCW8-40-40□□	75.4	400	400	2.53	1 / 2
FCW8-40-50□□	75.4	400	500	3.05	2 / 3
FCW8-40-60□□	75.4	400	600	3.47	2 / 3

Product no.	H	W	D	Weight (kg)	Flat handle / Hinge pcs
FCW10-15-20□□	100.4	150	200	0.83	1 / 2
FCW10-15-25□□	100.4	150	250	0.97	1 / 2
FCW10-20-15□□	100.4	200	150	0.83	1 / 2
FCW10-20-20□□	100.4	200	200	1.00	1 / 2
FCW10-20-25□□	100.4	200	250	1.17	1 / 2
FCW10-20-30□□	100.4	200	300	1.33	1 / 2
FCW10-25-25□□	100.4	250	250	1.36	1 / 2
FCW10-25-30□□	100.4	250	300	1.55	1 / 2
FCW10-25-40□□	100.4	250	400	1.93	1 / 2
FCW10-30-20□□	100.4	300	200	1.34	1 / 2
FCW10-30-30□□	100.4	300	300	1.77	1 / 2
FCW10-30-40□□	100.4	300	400	2.20	1 / 2
FCW10-30-50□□	100.4	300	500	2.64	2 / 3
FCW10-35-25□□	100.4	350	250	1.74	1 / 2
FCW10-40-30□□	100.4	400	300	2.21	1 / 2
FCW10-40-40□□	100.4	400	400	2.74	1 / 2
FCW10-40-50□□	100.4	400	500	3.27	2 / 3
FCW10-40-60□□	100.4	400	600	3.71	2 / 3
FCW13-15-20□□	125.4	150	200	0.89	1 / 2
FCW13-15-25□□	125.4	150	250	1.04	1 / 2
FCW13-20-15□□	125.4	200	150	0.89	1 / 2
FCW13-20-20□□	125.4	200	200	1.06	1 / 2
FCW13-20-25□□	125.4	200	250	1.32	1 / 2
FCW13-20-30□□	125.4	200	300	1.41	1 / 2
FCW13-25-25□□	125.4	250	250	1.44	1 / 2
FCW13-25-30□□	125.4	250	300	1.63	1 / 2
FCW13-25-40□□	125.4	250	400	2.02	1 / 2
FCW13-30-20□□	125.4	300	200	1.41	1 / 2
FCW13-30-30□□	125.4	300	300	1.94	1 / 2
FCW13-30-40□□	125.4	300	400	2.30	1 / 2
FCW13-30-50□□	125.4	300	500	2.74	2 / 3
FCW13-35-25□□	125.4	350	250	1.83	1 / 2
FCW13-40-30□□	125.4	400	300	2.30	1 / 2
FCW13-40-40□□	125.4	400	400	2.86	1 / 2
FCW13-40-50□□	125.4	400	500	3.39	2 / 3
FCW13-40-60□□	125.4	400	600	3.84	2 / 3
FCW15-15-20□□	150.4	150	200	0.96	1 / 2
FCW15-15-25□□	150.4	150	250	1.07	1 / 2
FCW15-20-15□□	150.4	200	150	0.91	1 / 2
FCW15-20-20□□	150.4	200	200	1.18	1 / 2
FCW15-20-25□□	150.4	200	250	1.37	1 / 2
FCW15-20-30□□	150.4	200	300	1.57	1 / 2
FCW15-25-25□□	150.4	250	250	1.59	1 / 2
FCW15-25-30□□	150.4	250	300	1.80	1 / 2
FCW15-25-40□□	150.4	250	400	2.23	1 / 2
FCW15-30-20□□	150.4	300	200	1.57	1 / 2
FCW15-30-30□□	150.4	300	300	2.05	1 / 2
FCW15-30-40□□	150.4	300	400	2.53	1 / 2
FCW15-30-50□□	150.4	300	500	2.99	2 / 3
FCW15-35-25□□	150.4	350	250	2.02	1 / 2
FCW15-40-30□□	150.4	400	300	2.53	1 / 2
FCW15-40-40□□	150.4	400	400	3.12	1 / 2
FCW15-40-50□□	150.4	400	500	3.68	2 / 3
FCW15-40-60□□	150.4	400	600	4.14	2 / 3

**FCH** SERIES**CONTROL BOX with CARRYING HANDLE****Technical Data**

Protection class: IP40

- 23 different sizes in 4 different color variations available.
- Equipped with an aluminium carrying handle for mobile use.
- Comes with a 25kg maximum load carrying handle attachment.
- Simple designed aluminium utility box composed of extruded aluminium frames, aluminium panels and ABS corner joints.

**Included screws**

M4-15 pan head trivalent chromate x 16 pcs

M3-5 slotted raised countersunk / Silver = Nickel plated, Black = Trivalent chromate x 8 pcs

M4-10 pan head trivalent chromate with spring washer x 2 pcs

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Frame	4	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Corner block	4	ABS UL94HB	Light gray • Black
3	Blind plug	8	TPE	Light gray • Black
4	Slide panel	1	Aluminium A1050P t=1.5	Silver / Hairline brushed & Anodized
			Aluminium A1100P t=1.5	Black / Painted
5	Screwed panel	1	Aluminium A1050P t=1.5	Silver / Hairline brushed & Anodized
			Aluminium A1100P t=1.5	Black / Painted
6	Carrying handle	1	Aluminium A6063S-T5	Silver • Black / Anodized

**Accessories (Optional parts)**

7 Mounting plate  
FCC series  
See page 201



8 Mounting bracket  
FCK series  
See page 202



9 DIN-Rail  
FDR series  
See page 203

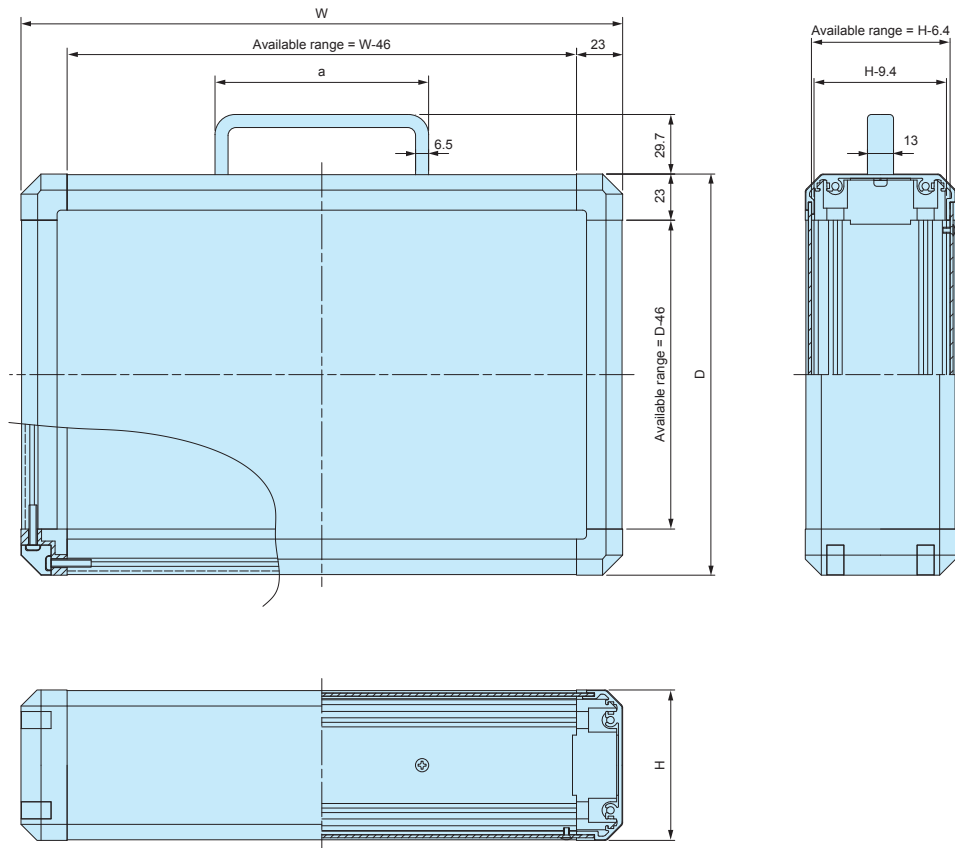


10 TORX screw  
MR3-5Z  
See page 220, 230



## FCH dimensions

■ DXF/DWG/PDF drawings available on our website.



## Product no. / Dimensions

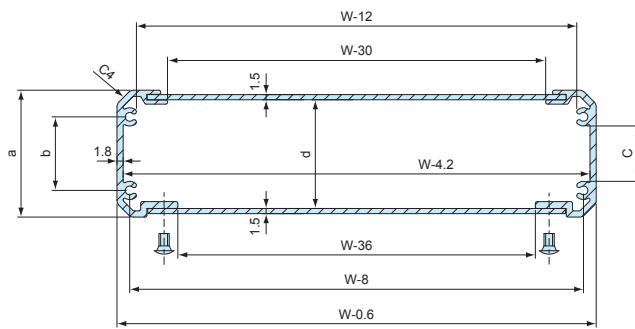
Product no.		H	W	D	a	Weight (kg)
● Light gray • Silver	● Black • Black					
FCH 8-20-15GS	FCH 8-20-15BB	75.4	200	150	106.5	0.65
FCH 8-20-20GS	FCH 8-20-20BB	75.4	200	200	106.5	0.79
FCH 8-25-15GS	FCH 8-25-15BB	75.4	250	150	106.5	0.77
FCH 8-25-20GS	FCH 8-25-20BB	75.4	250	200	106.5	0.93
FCH 8-25-25GS	FCH 8-25-25BB	75.4	250	250	106.5	1.10
FCH 8-30-20GS	FCH 8-30-20BB	75.4	300	200	126.5	1.07
FCH 8-30-25GS	FCH 8-30-25BB	75.4	300	250	126.5	1.26
FCH 8-30-30GS	FCH 8-30-30BB	75.4	300	300	126.5	1.45
FCH 8-35-20GS	FCH 8-35-20BB	75.4	350	200	126.5	1.22
FCH 8-35-25GS	FCH 8-35-25BB	75.4	350	250	126.5	1.42
FCH 8-35-30GS	FCH 8-35-30BB	75.4	350	300	126.5	1.54
FCH 8-40-25GS	FCH 8-40-25BB	75.4	400	250	126.5	1.49
FCH 8-40-30GS	FCH 8-40-30BB	75.4	400	300	126.5	1.81
FCH 8-40-40GS	FCH 8-40-40BB	75.4	400	400	126.5	2.27
FCH10-30-20GS	FCH10-30-20BB	100.4	300	200	126.5	1.19
FCH10-30-25GS	FCH10-30-25BB	100.4	300	250	126.5	1.39
FCH10-30-30GS	FCH10-30-30BB	100.4	300	300	126.5	1.60
FCH10-35-20GS	FCH10-35-20BB	100.4	350	200	126.5	1.35
FCH10-35-25GS	FCH10-35-25BB	100.4	350	250	126.5	1.57
FCH10-35-30GS	FCH10-35-30BB	100.4	350	300	126.5	1.80
FCH10-40-25GS	FCH10-40-25BB	100.4	400	250	126.5	1.75
FCH10-40-30GS	FCH10-40-30BB	100.4	400	300	126.5	1.99
FCH10-40-40GS	FCH10-40-40BB	100.4	400	400	126.5	2.48



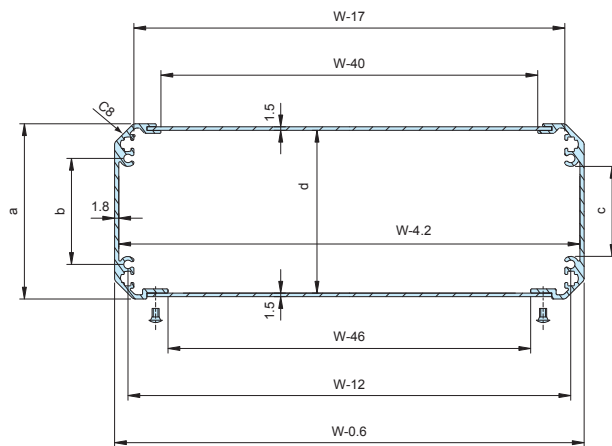
**FC • FCW • FCH cross-section view**

■ DXF/DWG/PDF drawings available on our website.

**FC4 Model**

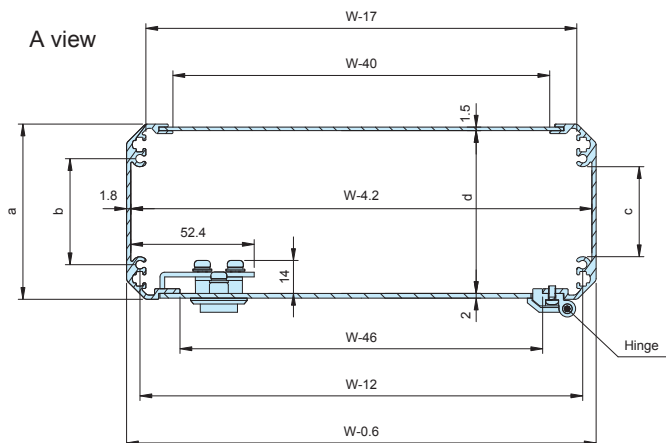


**FC5 • FC6 • FC8 • FC10 • FC13 • FC15 • FCH Series**

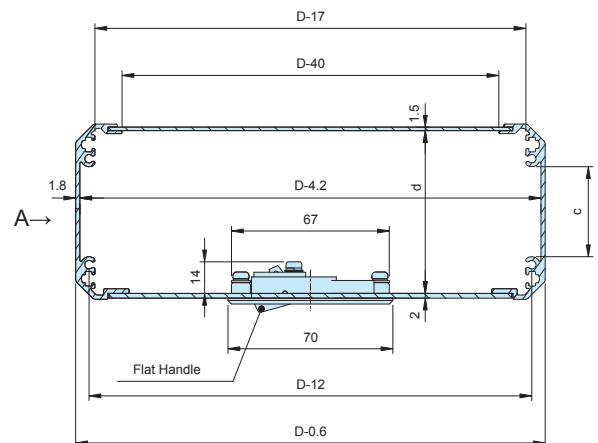


**FCW Series**

**A view**



**W Side**



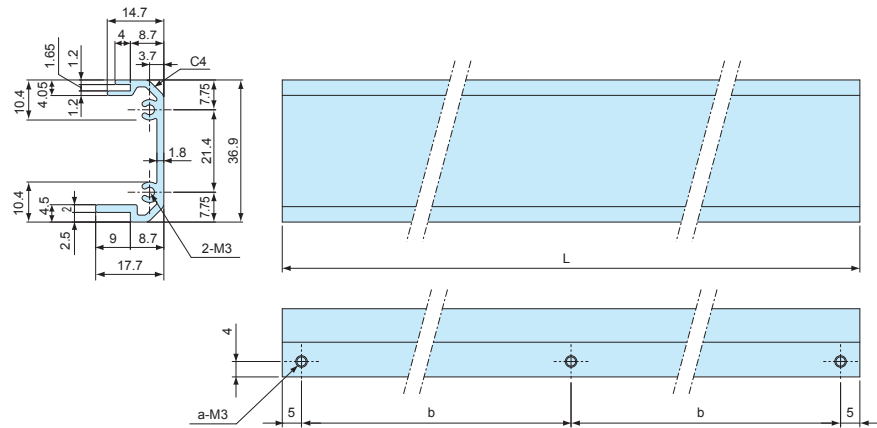
**D Side**

Box height	a	b	c	d
37.9	36.9	21.4	16	31.5
50.4	49.4	20	13.2	44
62.9	61.9	32.5	25.7	56.5
75.4	74.4	45	38.2	69
100.4	99.4	70	63.2	94
125.4	124.4	95	88.2	119
150.4	149.4	120	113.2	144

## Component Drawings

### FC • FCW • FCH frame

#### FC4

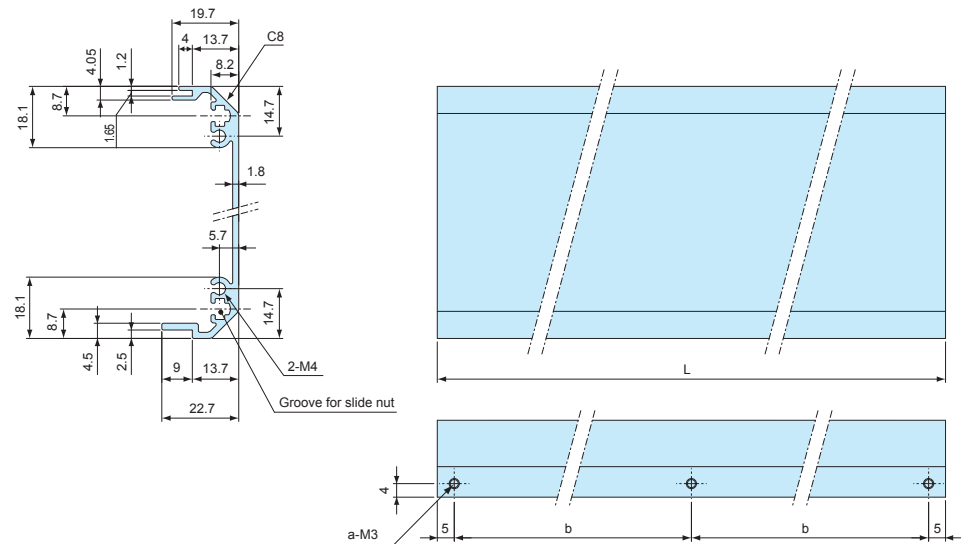


#### Part Details

Color code	Material	Color / Finish
GS • BS	Extruded aluminium A6063S-T5	Silver / Anodized
BX • BB	Extruded aluminium A6063S-T5	Black / Anodized

Box W / D size	L	a	b
90	54	2	-
140	104	2	-
190	154	2	-
240	204	2	-
290	254	2	-
340	304	2	-
390	354	3	172
490	454	3	222
590	554	3	272

#### FC5 • FC6 • FC8 • FC10 • FC13 • FC15 • FCW • FCH

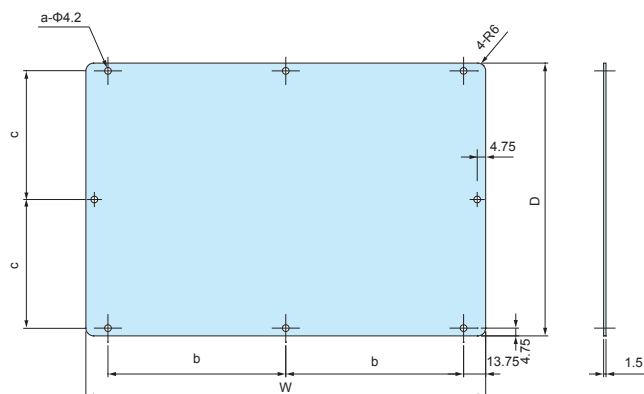


#### Part Details

Color code	Material	Color / Finish
GS • BS	Extruded aluminium A6063S-T5	Silver / Anodized
BX • BB	Extruded aluminium A6063S-T5	Black / Anodized

Box W / D size	L	a	b
100	54	2	-
150	104	2	-
200	154	2	-
250	204	2	-
300	254	2	-
350	304	2	-
400	354	3	172
500	454	3	222
600	554	3	272

## FC • FCH screwed panel



■ DXF/DWG/PDF drawings available on our website.

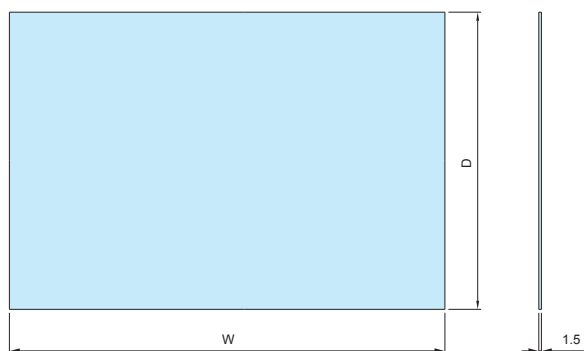
## Part Details

Color code	Material	Color / Finish
GS • BS	Aluminium A1050P t=1.5	Silver / Hairline brushed & Anodized
BX • BB	Aluminium A1100P t=1.5	Black / Painted

Box W / D size	W	D	a	b	c
100×100 ( 90× 90 )	71.5	71.5	4	—	—
150×100 (140× 90)	121.5	71.5	4	—	—
150×150 (140×140)	121.5	121.5	4	—	—
200×100 (190× 90)	171.5	71.5	4	—	—
200×150 (190×140)	171.5	121.5	4	—	—
200×200 (190×190)	171.5	171.5	4	—	—
250×150 (240×140)	221.5	121.5	4	—	—
250×200 (240×190)	221.5	171.5	4	—	—
250×250 (240×240)	221.5	221.5	4	—	—
300×150 (290×140)	271.5	121.5	4	—	—
300×200 (290×190)	271.5	171.5	4	—	—
300×250 (290×240)	271.5	221.5	4	—	—
300×300 (290×290)	271.5	271.5	4	—	—
350×200 (340×190)	321.5	171.5	4	—	—
350×250 (340×240)	321.5	221.5	4	—	—
350×300 (340×290)	321.5	271.5	4	—	—
400×200 (390×190)	371.5	171.5	6	172	—
400×250 (390×240)	371.5	221.5	6	172	—
400×300 (390×290)	371.5	271.5	6	172	—
400×400 (390×390)	371.5	371.5	8	172	181
500×250 (490×240)	471.5	221.5	6	222	—
500×300 (490×290)	471.5	271.5	6	222	—
500×400 (490×390)	471.5	371.5	8	222	181
600×300 (590×290)	571.5	271.5	6	272	—
600×400 (590×390)	571.5	371.5	8	272	181

■ Values in ( ) = FC4 model.

## FC • FCW • FCH slide panel



## Part Details

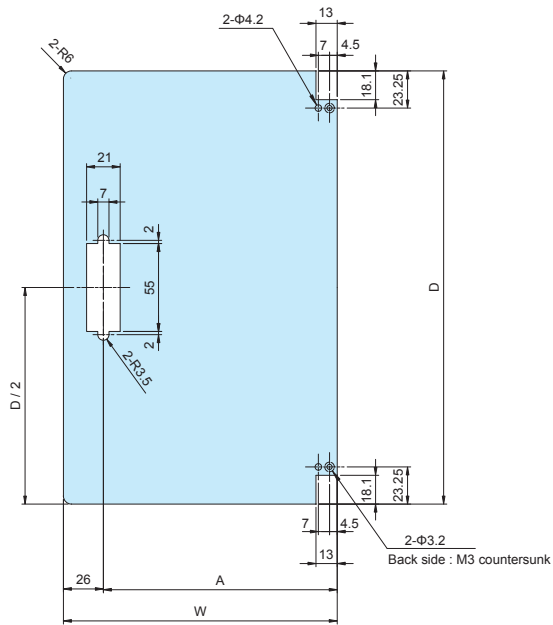
Color code	Material	Color / Finish
GS • BS	Aluminium A1050P t=1.5	Silver / Hairline brushed & Anodized
BX • BB	Aluminium A1100P t=1.5	Black / Painted

Box W / D size	W	D
100×100 ( 90× 90 )	71.9	71.9
150×100 (140× 90)	121.9	71.9
150×150 (140×140)	121.9	121.9
200×100 (190× 90)	171.9	71.9
200×150 (190×140)	171.9	121.9
200×200 (190×190)	171.9	171.9
250×150 (240×140)	221.9	121.9
250×200 (240×190)	221.9	171.9
250×250 (240×240)	221.9	221.9
300×150 (290×140)	271.9	121.9
300×200 (290×190)	271.9	171.9
300×250 (290×240)	271.9	221.9
300×300 (290×290)	271.9	271.9
350×200 (340×190)	321.9	171.9
350×250 (340×240)	321.9	221.9
350×300 (340×290)	321.9	271.9
400×200 (390×190)	371.9	171.9
400×250 (390×240)	371.9	221.9
400×300 (390×290)	371.9	271.9
400×400 (390×390)	371.9	371.9
500×250 (490×240)	471.9	221.9
500×300 (490×290)	471.9	271.9
500×400 (490×390)	471.9	371.9
600×300 (590×290)	571.9	271.9
600×400 (590×390)	571.9	371.9

■ Values in ( ) = FC4 model.

## FCW open-closing panel

Handle - 1 pc / Hinge - 2 pcs type

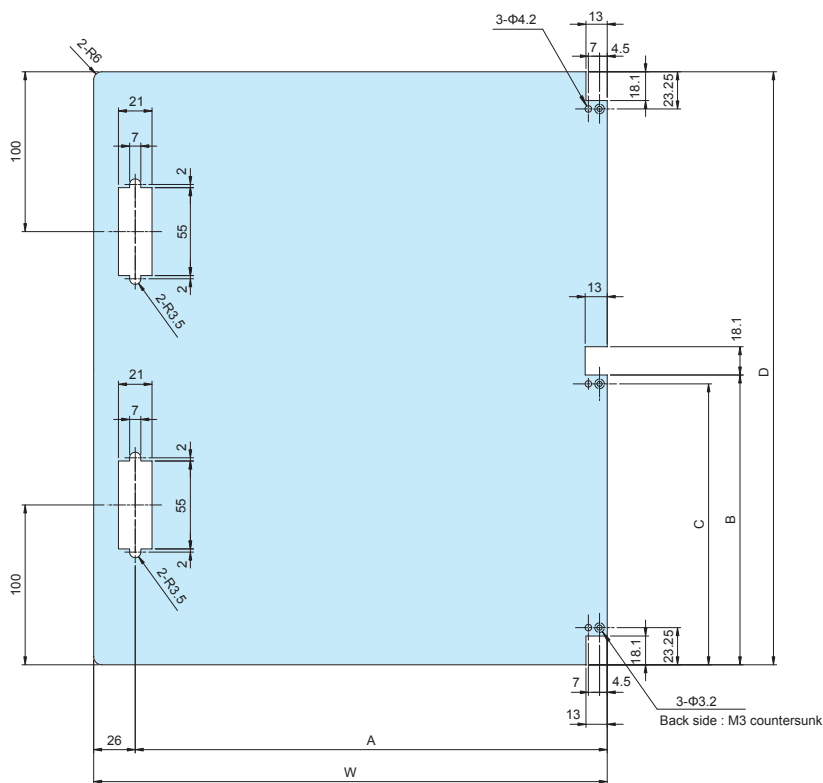


### Part Details

Color code	Material	Color / Finish
GS • BS	Aluminium A1050P t=2.0	Silver / Hairline brushed & Anodized
BX • BB	Aluminium A1050P t=2.0	Black / Anodized

Box W / D size	W	D	A
150×200	121	171	95
150×250	121	221	95
200×150	171	121	145
200×200	171	171	145
200×250	171	221	145
200×300	171	271	145
250×250	221	221	195
250×300	221	271	195
250×400	221	371	195
300×200	271	171	245
300×300	271	271	245
300×400	271	371	245
350×250	321	221	295
400×300	371	271	345
400×400	371	371	345

Handle - 2 pcs / Hinge - 3 pcs type

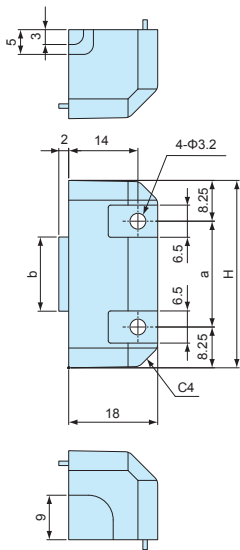


Box W / D size	W	D	A	B	C
300×500	271	471	245	231.3	225.75
400×500	371	471	345	231.3	225.75
400×600	371	571	345	281.3	275.75

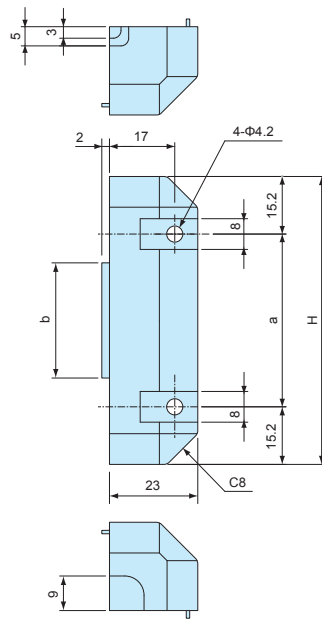
## FC • FCW • FCH corner block

■ DXF/DWG/PDF drawings available on our website.

FC4



FC5 • FC6 • FC8 • FC10 • FC13 • FC15 • FCW • FCH



### Part Details

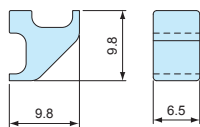
Color code	Material	Color / Finish
GS • BS	ABS UL94HB	Light gray
BX • BB	ABS UL94HB	Black

Box height	H	a	b
37.9	37.9	21.4	15
50.4	50.4	20	10
62.9	62.9	32.5	20
75.4	75.4	45	30
100.4	100.4	70	55
125.4	125.4	95	80
150.4	150.4	120	105

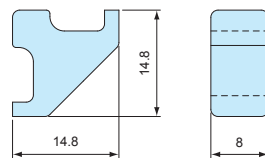
## FC • FCW • FCH blind plug

- FC-BK-SG and FC-BK-SB are for FC4 model only.
- For other height boxes, use FC-BK-G or FC-BK-B

FC-BK-S□

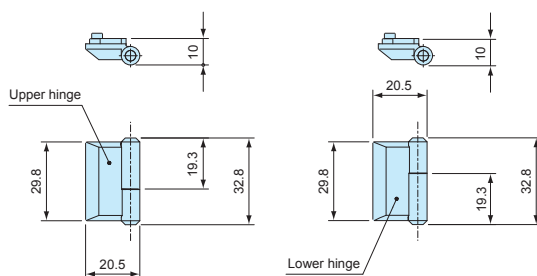


FC-BK-□



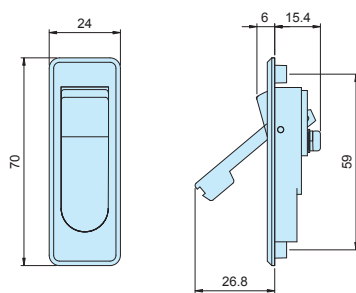
Product no.	Material	Color	Pack of
FC-BK-SG	TPE	Light gray	1 set (4 pcs)
FC-BK-SB	TPE	Black	1 set (4 pcs)
FC-BK-G	TPE	Light gray	1 set (4 pcs)
FC-BK-B	TPE	Black	1 set (4 pcs)

## FCW hinge

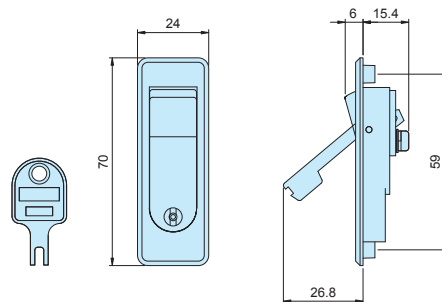


Product no.	Material	Color	Pack of
FW-2S	Diecast zinc	Silver / Painted	1 set (Upper/Lower)
FW-2B	Diecast zinc	Black / Painted	1 set (Upper/Lower)

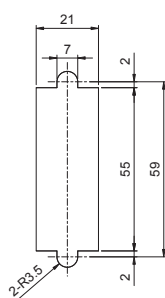
## FCW flat handle



Normal type



Key lock type



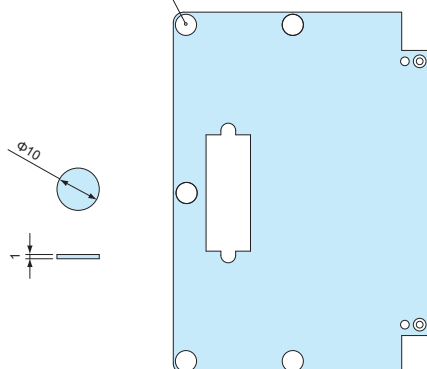
Mounting hole dimensions

Product no.	Key	Material	Color / Finish
PH-88A-2S	No	Diecast zinc	Silver / Painted
PH-88A-2B	No	Diecast zinc	Black / Painted
PH-88 -2S	Yes	Diecast zinc	Silver / Painted
PH-88 -2B	Yes	Diecast zinc	Black / Painted

## FCW panel protection pad

- Used to protect the panel from impact when closing, and to prevent wobbling or rattling when closed.
- Refer to illustration on recommended placement position.

Recommended placement position



Back side of open / closing panel

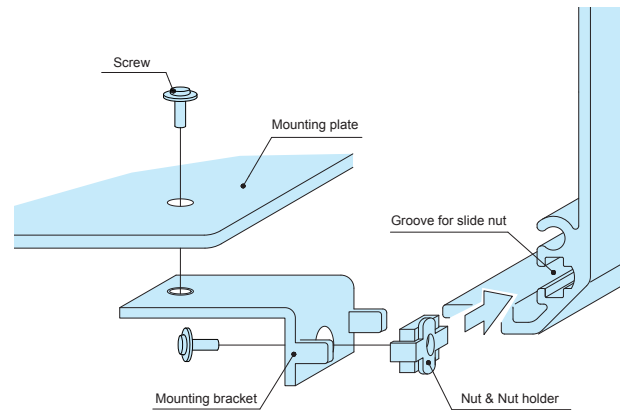
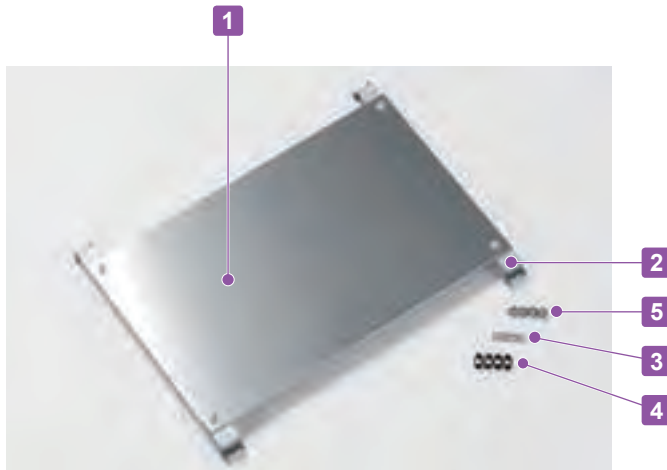
### Part Details

Material	Color
Polyolefin foam	Black



## FCC SERIES

## MOUNTING PLATE for FC • FCW • FCH



## How to assemble

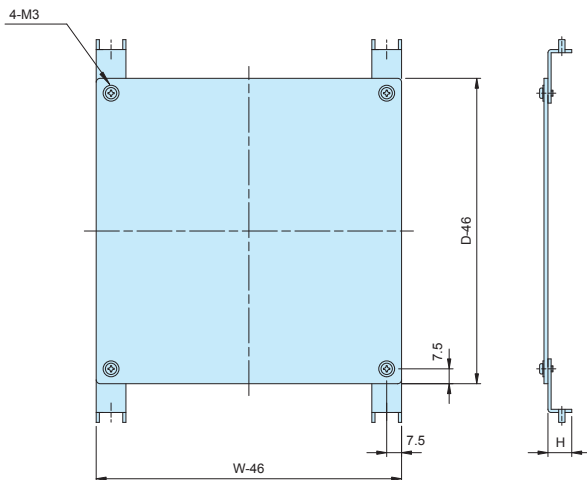
- ① Slide a M3 nut and nut holder into the groove on the frame.
- ② Screw the mounting bracket into the nut holder.
- ③ Screw the mounting plate onto the mounting bracket.

- The mounting bracket comes in 2 different height versions, 12mm and 22mm.
- Use 22mm height version when set on the open/close panel side of FCW series.
- Not suitable for FC4 (H = 37.9mm)
- Mounting brackets (FCK) are included with FCC series.
- DXF/DWG/PDF drawings available on our website.

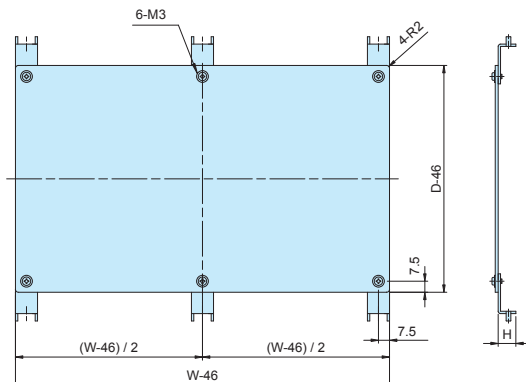
## Components

No.	Part name	Material	Color / Finish
1	Mounting plate	Aluminium A1050P t=2.0	Unfinished
2	Mounting bracket	Steel SECC t=1.6	Zinc coated
3	M3 nut	Steel SPCC t=1.6	Trivalent chromate
4	Nut holder	POM	Black
5	Screw	Steel M3-6	Trivalent chromate

For box size (W x D or D x W) 100 x 100mm to 350 x 300mm



For box size (W x D or D x W) 400/500/600 x 200/250/300 mm



## Product no. / Dimensions

Product no.	H	Box W x D or D x W	Product no.	H	Box W x D or D x W
FCC10-10-1	12	100×100	FCC10-10-2	22	100×100
FCC15-10-1	12	150×100	FCC15-10-2	22	150×100
FCC15-15-1	12	150×150	FCC15-15-2	22	150×150
FCC20-10-1	12	200×100	FCC20-10-2	22	200×100
FCC20-15-1	12	200×150	FCC20-15-2	22	200×150
FCC20-20-1	12	200×200	FCC20-20-2	22	200×200
FCC25-15-1	12	250×150	FCC25-15-2	22	250×150
FCC25-20-1	12	250×200	FCC25-20-2	22	250×200
FCC25-25-1	12	250×250	FCC25-25-2	22	250×250
FCC30-15-1	12	300×150	FCC30-15-2	22	300×150
FCC30-20-1	12	300×200	FCC30-20-2	22	300×200
FCC30-25-1	12	300×250	FCC30-25-2	22	300×250
FCC30-30-1	12	300×300	FCC30-30-2	22	300×300
FCC35-20-1	12	350×200	FCC35-20-2	22	350×200
FCC35-25-1	12	350×250	FCC35-25-2	22	350×250
FCC35-30-1	12	350×300	FCC35-30-2	22	350×300

Included screws: M3-6 pan head trivalent chromate with flat washer x 8 pcs

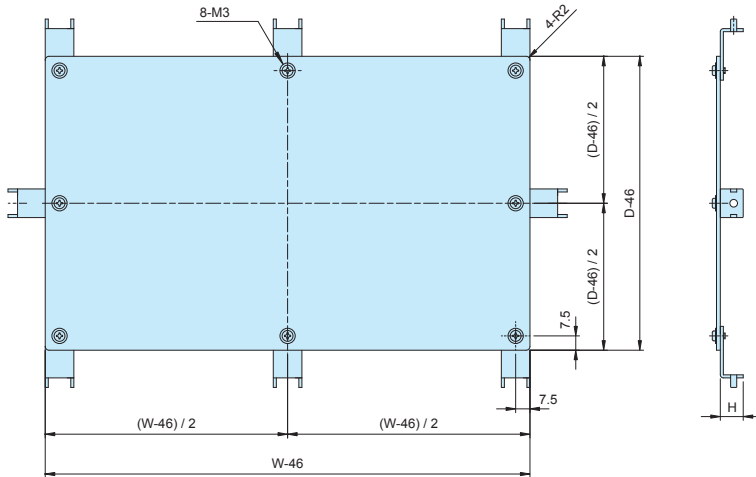
## Product no. / Dimensions

Product no.	H	Box W x D or D x W	Product no.	H	Box W x D or D x W
FCC40-20-1	12	400×200	FCC40-20-2	22	400×200
FCC40-25-1	12	400×250	FCC40-25-2	22	400×250
FCC40-30-1	12	400×300	FCC40-30-2	22	400×300
FCC50-25-1	12	500×250	FCC50-25-2	22	500×250
FCC50-30-1	12	500×300	FCC50-30-2	22	500×300
FCC60-30-1	12	600×300	FCC60-30-2	22	600×300

Included screws: M3-6 pan head trivalent chromate with flat washer x 12 pcs

For box size (W x D or D x W) 400/500/600 x 400mm

■ DXF/DWG/PDF drawings available on our website.



#### Product no. / Dimensions

Product no.	H	Box W x D or D x W	Product no.	H	Box W x D or D x W
FCC40-40-1	12	400×400	FCC40-40-2	22	400×400
FCC50-40-1	12	500×400	FCC50-40-2	22	500×400
FCC60-40-1	12	600×400	FCC60-40-2	22	600×400

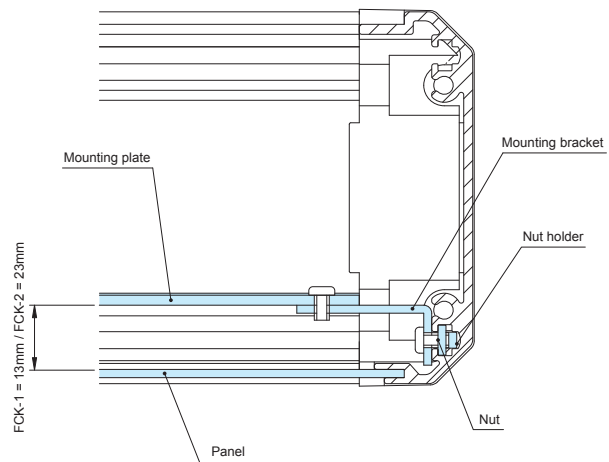
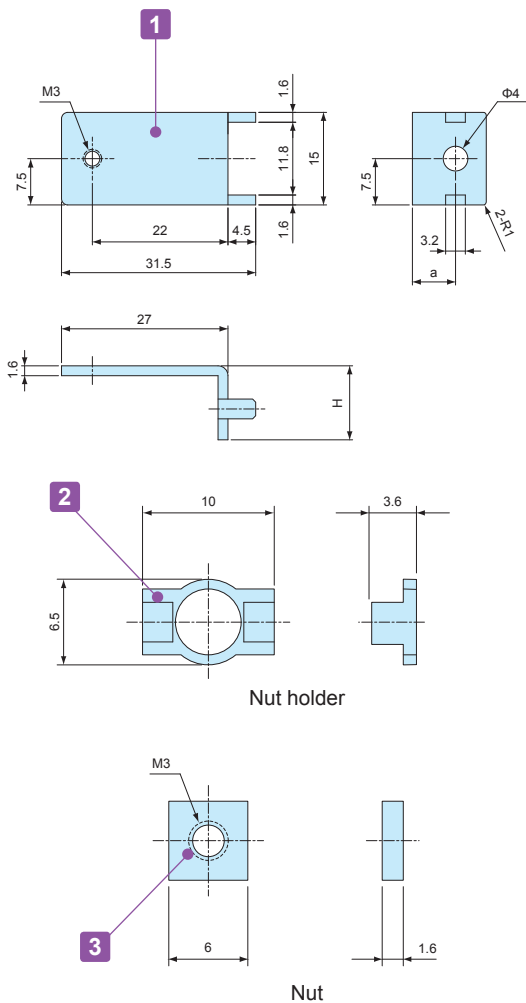
Included screws: M3-6 pan head trivalent chromate with flat washer x 16 pcs

#### Accessories (Optional parts)

### FCK SERIES

### MOUNTING BRACKET

■ DXF/DWG/PDF drawings available on our website.



- 2 mounting brackets for PCB or DIN-Rail.
- FCK mounting bracket comes with FCC mounting plate.  
Additional FCK is not necessary when purchasing FCC series.
- Not suitable for FC4 (H = 37.9mm).

#### Components

No.	Part name	Material	Color / Finish
1	Mounting bracket	Steel SECC t=1.6	Zinc coated
2	Nut holder	POM	Black
3	M3 nut	Steel SPCC t=1.6	Trivalent chromate

#### Product no. / Dimensions

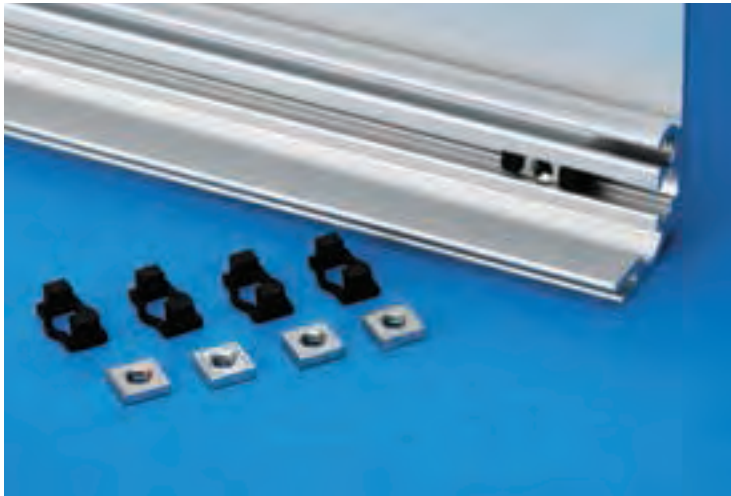
Product no.	H	a	Pack of
FCK-1	12	7	10
FCK-2	22	17	10

Included screws: M3-6 pan head trivalent chromate with flat washer x 20 pcs

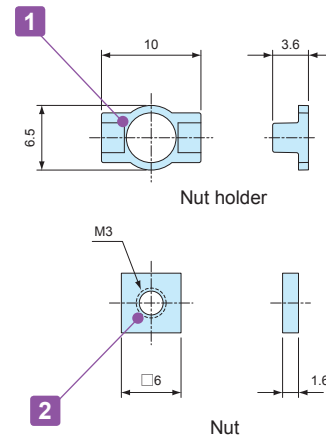
**FZ-3**

**SLIDE NUT**

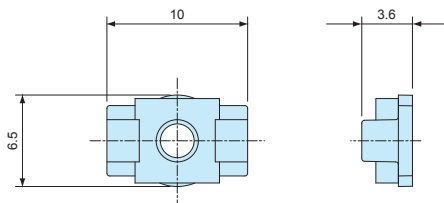
- M3 slide nut set for FC • FCW • FCH series.



- DXF/DWG/PDF drawings available on our website.



**FZ-3 dimensions**



- FZ-3 slide nut comes with FCC mounting plate.  
Additional FZ-3 is not necessary when purchasing FCC series.
- FZ-3 slide nut comes with FCK mounting bracket.  
Additional FZ-3 is not necessary when purchasing FCK series.
- Not suitable for FC4 (H = 37.9mm).

**Components**

No.	Part name	Material	Color / Finish
1	Nut holder	POM	Black
2	M3 nut	Steel SPCC t=1.6	Trivalent chromate

**Product no. / Dimensions**

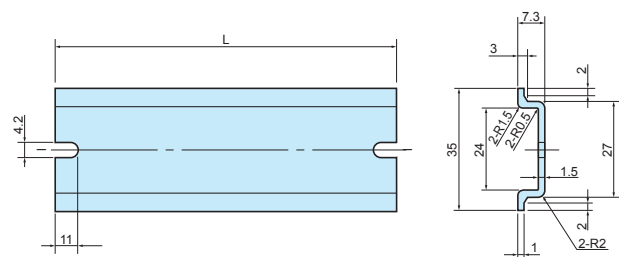
Product no.	Screw size	Pack of
FZ-3	M3	10

**FDR SERIES**

**DIN-RAIL**



- FCK mounting bracket is required for installation.  
(See page 202 for FCK mounting bracket).
- Not suitable for FC4 (H = 37.9mm).



**Components**

Material	Color / Finish
Aluminium A6063S-T5	Silver / Anodized

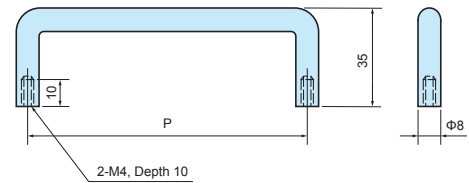
**Product no. / Dimensions**

Product no.	L	Box length
FDR- 50	50	100
FDR-100	100	150
FDR-150	150	200
FDR-205	205	250
FDR-249	249	300
FDR-300	300	350
FDR-350	350	400
FDR-450	450	500
FDR-550	550	600

## Accessories (Optional parts)

## BH SERIES

## ALUMINIUM HANDLE



■ Rounded aluminium handle for FC series.

■ Hole milling is required for installation.

## Components

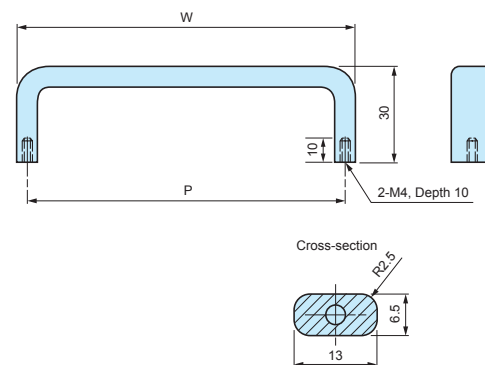
No.	Part name	PCS	Material	Color / Finish
1	Handle	1	Aluminium A5056S	Silver • Black / Anodized
2	Screw	2	Steel M4-10 (with spring washer)	Trivalent chromate

## Product no. / Dimensions

Product no.		P	Pack of
● Silver	● Black		
BH-100K	BH-100B	100	2
BH-120K	BH-120B	120	2
BH-150K	BH-150B	150	2
BH-180K	BH-180B	180	2

## OH SERIES

## ALUMINIUM HANDLE



■ Aluminium flat bar shaped handle for FC series.

■ Hole milling is required for installation.

## Components

No.	Part name	PCS	Material	Color / Finish
1	Handle	1	Aluminium A5056S	Silver • Black / Anodized
2	Screw	2	Steel M4-10 (with spring washer)	Trivalent chromate

## Product no. / Dimensions

Product no.		P	W	Pack of
● Silver	● Black			
OH-100K	OH-100B	100	106.5	2
OH-120K	OH-120B	120	126.5	2
OH-140K	OH-140B	140	146.5	2
OH-170K	OH-170B	170	176.5	2

# EXH HEAT-SINK ALUMINIUM ENCLOSURE

EXH series is an aluminium enclosure with a highly efficient heat-sink top cover.

Suitable to be used as fanless PC, power amplifier, and power supply box where heat dissipation is required.

Wide range, 30 different sizes available.



## Waved surface heat-sink fins for maximum cooling performance!

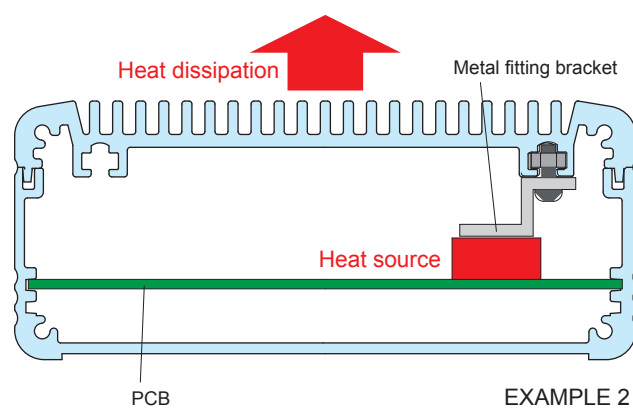
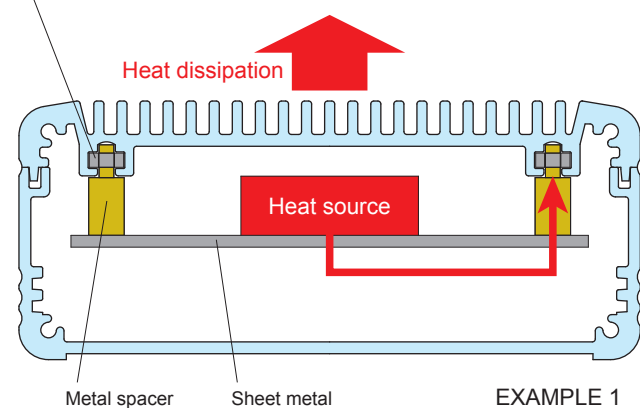
- Each heat-sink fin has a waved surface construction for maximum cooling performance.

### Waved Surface



## HEAT DISSIPATION EXAMPLE

- EXH series has grooves to put M3 nuts inside its heat-sink cover. It is possible to construct a heat conduction route from your heat source to heat-sink cover easily for better heat dissipation performance.





## APPLICATION EXAMPLE

### INDUSTRIAL FANLESS PC

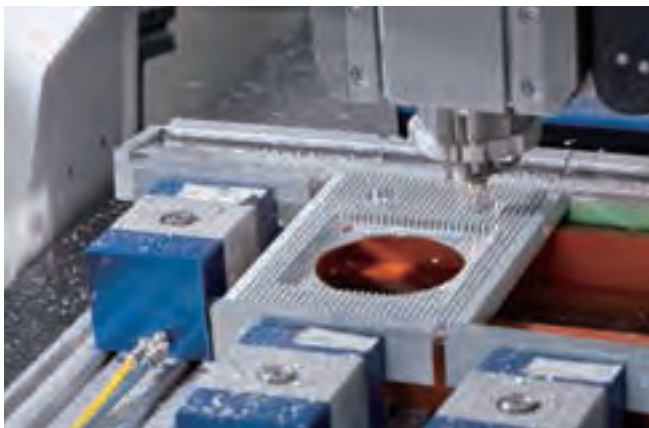


### POWER AMPLIFIER



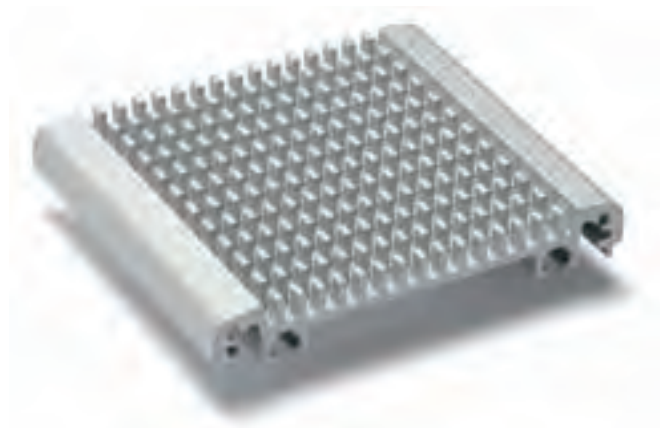
## CUSTOMIZATION EXAMPLE

### CNC MACHINING on HEAT-SINK COVER



Heat-sink plates can be customized with our high speed CNC machines.

### PIN TYPE FIN CUSTOMIZATION



Pin type heat-sink fin can be customized for better cooling performance.

### VENTILATION SLITS



Heat-sink plate can be customized as ventilation slit for better cooling / ventilation performance.

### COLOR ANODIZING



Various colors, such as blue, red, orange, green or purple can be anodized as per your requirements.

■ Not all colors and shades of colors are possible.



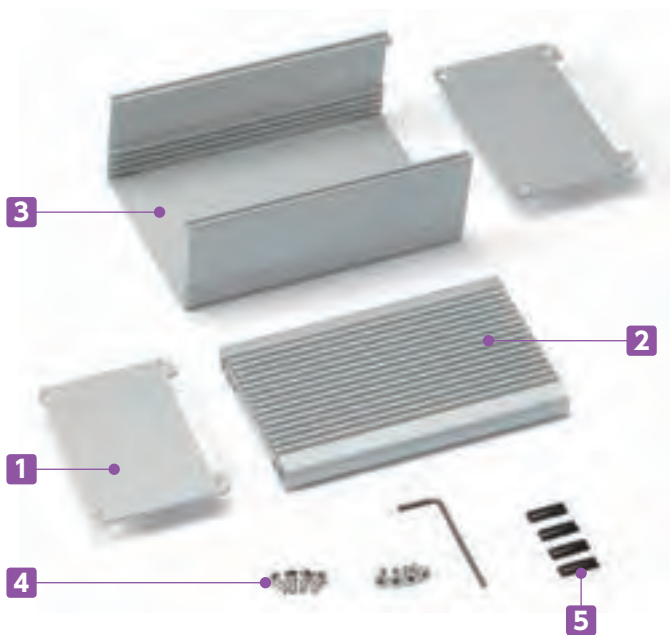
# EXH SERIES

# HEAT-SINK ALUMINIUM ENCLOSURE

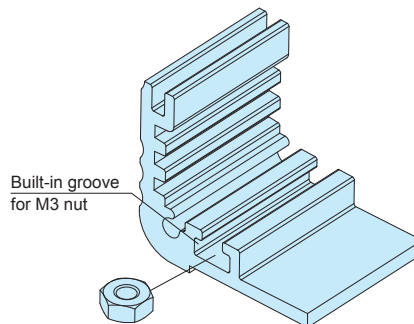


## Technical Data

Protection class: IP40



- Aluminium enclosure equipped with a highly efficient heat-sink top cover.
- Suitable to be used as a fanless PC, power amplifier, power supply etc. where heat dissipation is required.
- Selectable in 30 different sizes and 4 color types.
- Grooves are built into the heat-sink top cover and bottom frame for M3 nut insertion.



## Components

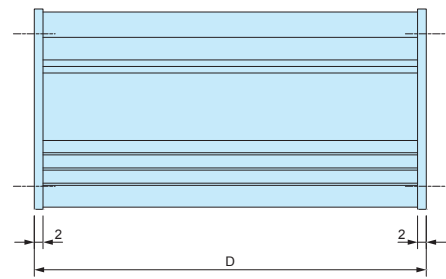
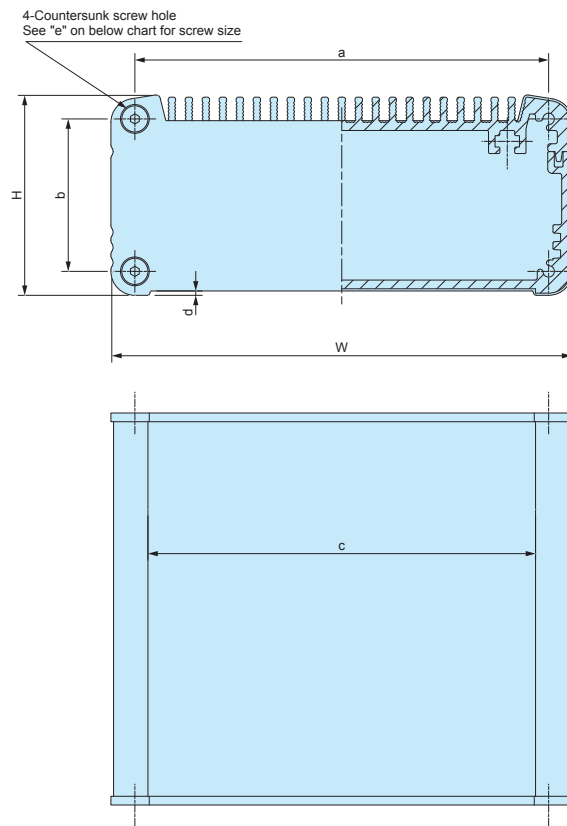
No.	Part name	Pcs	Material	Color / Finish
1	Panel	2	Aluminium A1050P	Silver • Black / Anodized
2	Heat-sink top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Screw	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane	Black

## Color Type

Code	S S Silver / Silver	S B Silver / Black	B S Black / Silver	B B Black / Black
Color				

## EXH dimensions

■ See page 209 ~ 210 for detailed dimensions.



Included screws  
EXH8 series : M2.5-8 x 8 pcs  
EXH11 and EXH14 series : M3-8 x 8 pcs  
※Hexagonal wrench included.

- ※ Thermal resistance test condition
- Ambient air cooling
  - Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
  - Anodized aluminium extrusion
  - Heat source is applied on the opposite side (inner side) of the fins.

## Product no. / Dimensions

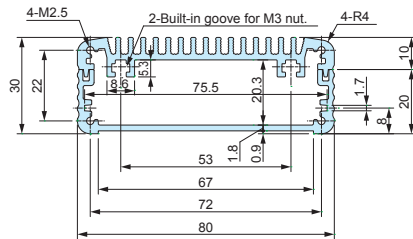
■ Please suffix color code at the end of the product number.

Product no.	W	H	D	a	b	c	d	e	※ Thermal resistance rate (°C/W)
EXH 8-3- 6□□	80.6	30.7	60	72	22	67	0.9	2.5	7.32
EXH 8-3- 9□□	80.6	30.7	90	72	22	67	0.9	2.5	5.65
EXH 8-3-12□□	80.6	30.7	120	72	22	67	0.9	2.5	4.72
EXH 8-4- 6□□	80.6	40.7	60	72	32	67	0.9	2.5	7.32
EXH 8-4- 9□□	80.6	40.7	90	72	32	67	0.9	2.5	5.65
EXH 8-4-12□□	80.6	40.7	120	72	32	67	0.9	2.5	4.72
EXH 8-6- 6□□	80.6	55.7	60	72	47	67	0.9	2.5	7.32
EXH 8-6- 9□□	80.6	55.7	90	72	47	67	0.9	2.5	5.65
EXH 8-6-12□□	80.6	55.7	120	72	47	67	0.9	2.5	4.72
EXH11-3- 8□□	106	31.1	78	95	20	89	1	3	4.82
EXH11-3-12□□	106	31.1	118	95	20	89	1	3	3.72
EXH11-3-16□□	106	31.1	164	95	20	89	1	3	3.03
EXH11-5- 8□□	106	46.1	78	95	35	89	1	3	4.82
EXH11-5-12□□	106	46.1	118	95	35	89	1	3	3.72
EXH11-5-16□□	106	46.1	164	95	35	89	1	3	3.03
EXH11-6- 8□□	106	61.1	78	95	50	89	1	3	4.82
EXH11-6-12□□	106	61.1	118	95	50	89	1	3	3.72
EXH11-6-16□□	106	61.1	164	95	50	89	1	3	3.03
EXH14-4-10□□	141	36.1	97	130	25	124	1	3	3.4
EXH14-4-14□□	141	36.1	137	130	25	124	1	3	2.75
EXH14-4-19□□	141	36.1	187	130	25	124	1	3	2.27
EXH14-5-10□□	141	51.1	97	130	40	124	1	3	3.4
EXH14-5-14□□	141	51.1	137	130	40	124	1	3	2.75
EXH14-5-19□□	141	51.1	187	130	40	124	1	3	2.27
EXH14-7-10□□	141	71.1	97	130	60	124	1	3	3.4
EXH14-7-14□□	141	71.1	137	130	60	124	1	3	2.75
EXH14-7-19□□	141	71.1	187	130	60	124	1	3	2.27
EXH14-9-10□□	141	91.1	97	130	80	124	1	3	3.4
EXH14-9-14□□	141	91.1	137	130	80	124	1	3	2.75
EXH14-9-19□□	141	91.1	187	130	80	124	1	3	2.27

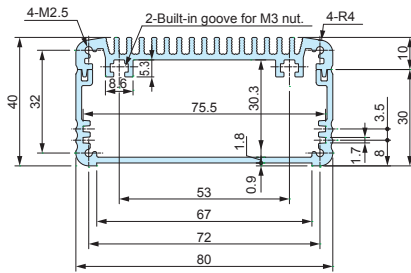
## Cross-section View

### EXH heat-sink top cover / bottom frame

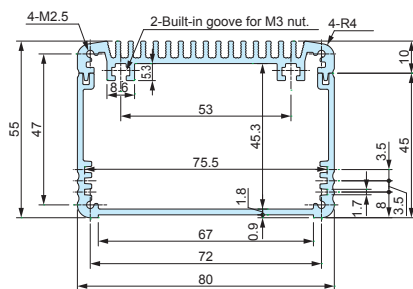
8-3-□



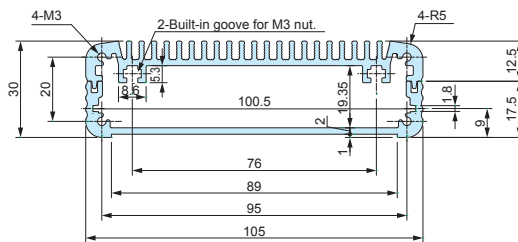
8-4-□



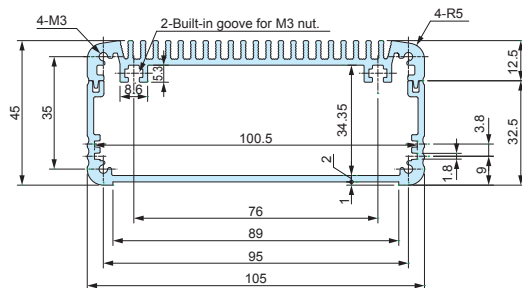
8-6-□



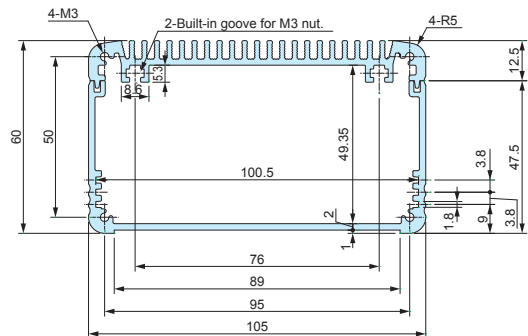
11-3-□



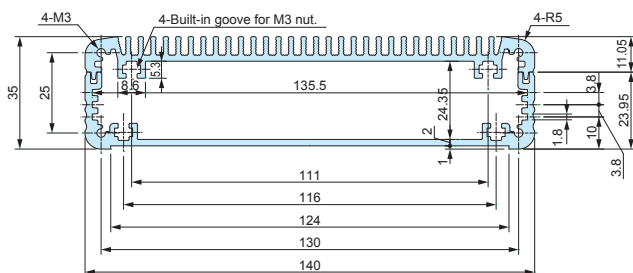
11-5-□



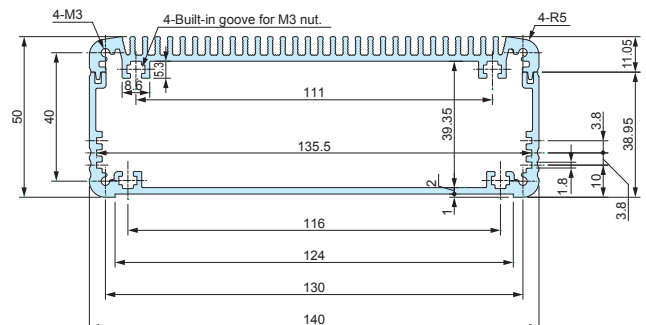
11-6-□



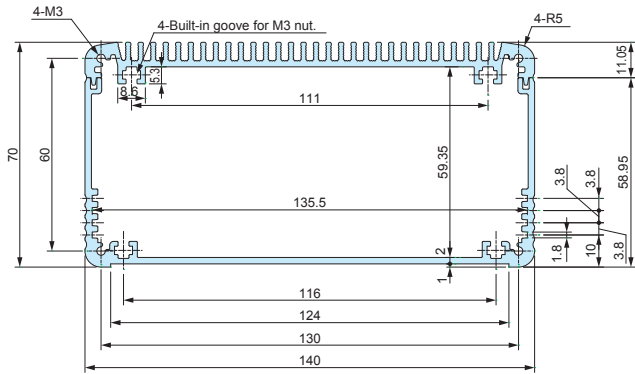
14-4-□



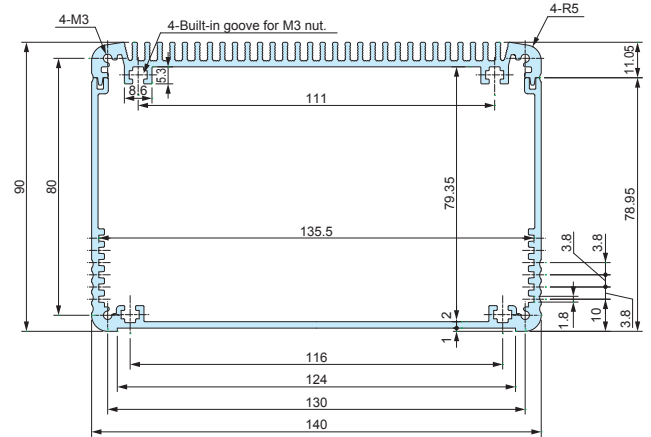
14-5-□



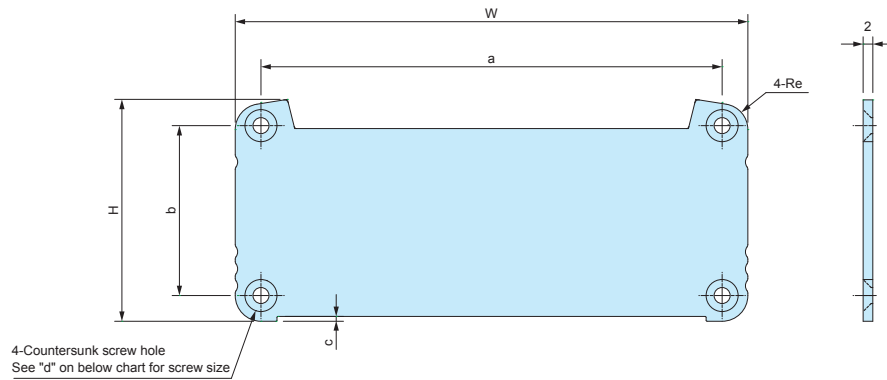
14-7-□



14-9-□



## EXH panel

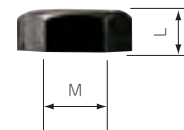
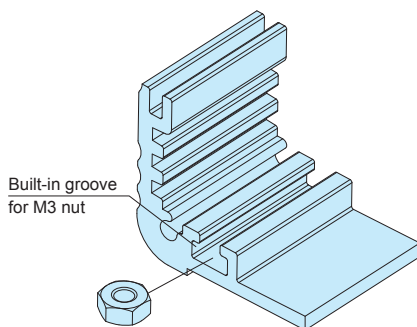


Product no.	W	H	a	b	c	d	e
EXH 8-3-□	80.6	30.7	72	22	0.9	2.5	4.3
EXH 8-4-□	80.6	40.7	72	32	0.9	2.5	4.3
EXH 8-6-□	80.6	55.7	72	47	0.9	2.5	4.3
EXH11-3-□	106	31.1	95	20	1	3	5.5
EXH11-5-□	106	46.1	95	35	1	3	5.5
EXH11-6-□	106	61.1	95	50	1	3	5.5
EXH14-4-□	141	36.1	130	25	1	3	5.5
EXH14-5-□	141	51.1	130	40	1	3	5.5
EXH14-7-□	141	71.1	130	60	1	3	5.5
EXH14-9-□	141	91.1	130	80	1	3	5.5

## Accessories (Optional parts)

### MT-3N

### SLIDING NUT for EXH



#### Product no. / Dimensions

Product no.	M	L	Material	Finish	Pack of
MT-3N	3	2.4	Steel	Black trivalent chromate	50

- Sliding nut can be used on all EXH heat-sink top covers and EXH14 bottom frames.

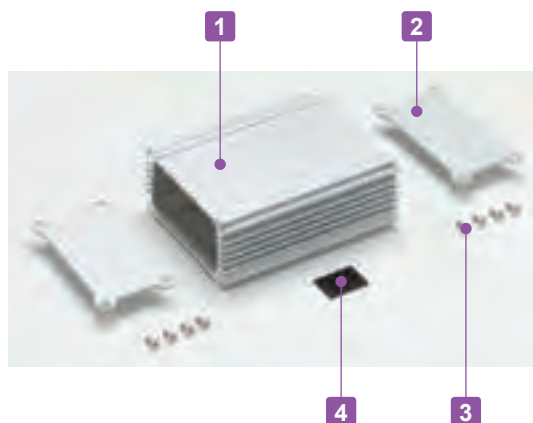
## AWA SERIES

## HEAT-SINK ALUMINIUM ENCLOSURE



## Technical Data

Protection class: IP40  
 Operating temperature: -40°C ~ +105°C  
 Recommended torque: 1.0N • m (10kgf • cm)



- Extruded aluminium frame manufactured with heat-sink sides.
- Silver anodized end panels makes for a luxurious finish.
- Conductivity is achieved by utilizing the contact between the unfinished end panels backside and inside of the frame.
- PCB or chassis can be horizontally mounted by sliding into an inner-grooved body frame.
- Suitable for industrial fanless PC, measuring instrument, digital audio amplifier and so on.

## Components

No.	Part name	Pcs	Material	Color / Finish
1	Body frame	1	Extruded aluminium A6063S-T5	Silver / Anodized (outside) : Unfinished (inside)
2	End panel	2	Aluminium	Silver / Anodized (outside) : Unfinished (backside)
3	Hex socket screw	8	Stainless steel	Unfinished
4	Rubber feet	4	Polyurethane	Black

## Accessories (Optional parts)



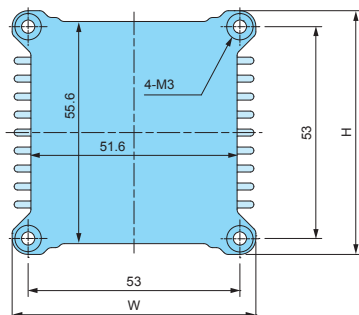
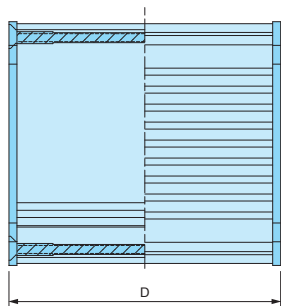
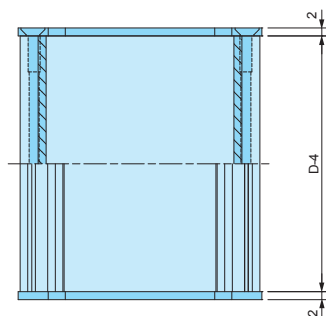
Mounting plate  
 AWC series  
 See page 216



Aluminium isolation feet  
 AFS • AFM series  
 See page 265 ~ 266

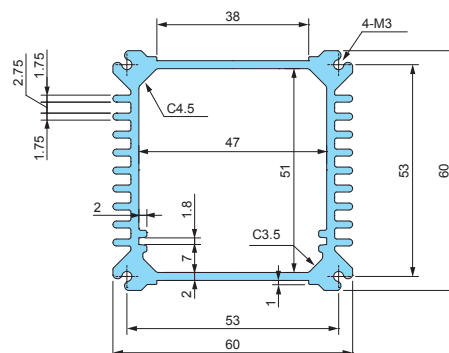
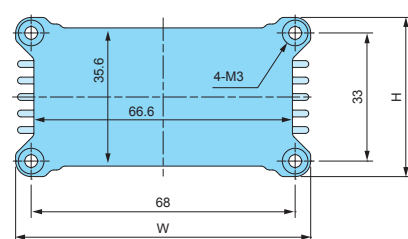
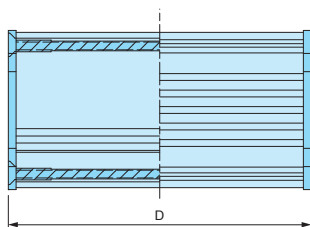
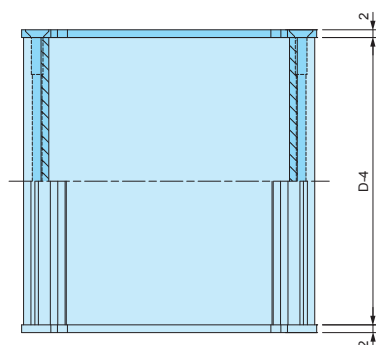




AWA6-6-

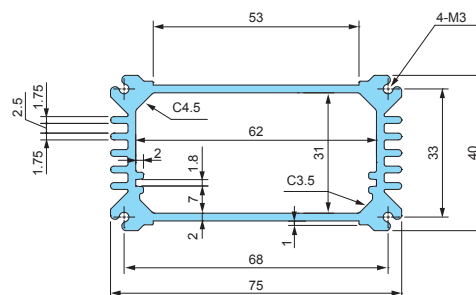
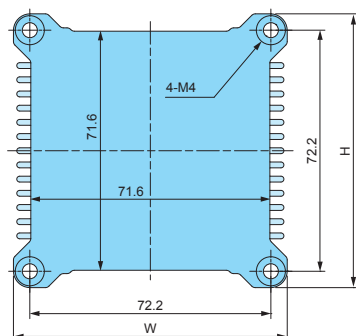
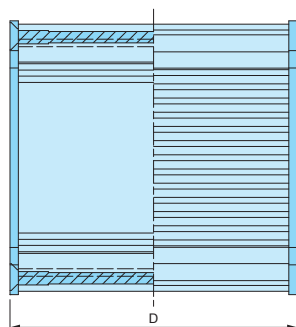
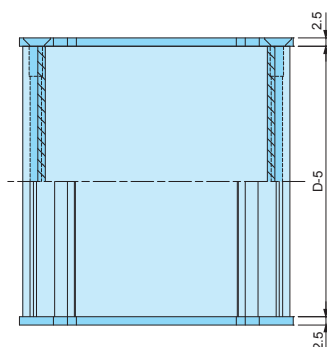
Product no.	W	H	D
AWA 6-6- 7SS	61	61	68
AWA 6-6-10SS	61	61	98
AWA 6-6-14SS	61	61	138
AWA 6-6-19SS	61	61	188
AWA 6-6-24SS	61	61	238

- Body frame length =  $D - 4$

AWA8-4-

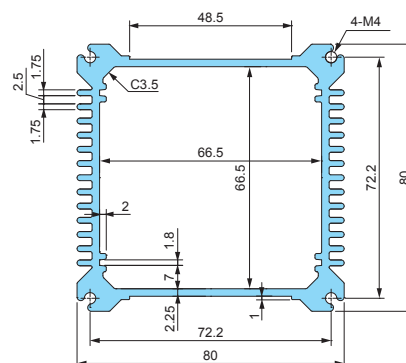
Product no.	W	H	D
AWA 8-4- 8SS	76	41	78
AWA 8-4-10SS	76	41	103
AWA 8-4-13SS	76	41	128
AWA 8-4-16SS	76	41	163

- Body frame length =  $D - 4$

AWA8-8-

Product no.	W	H	D
AWA 8-8- 9SS	82	82	86
AWA 8-8-11SS	82	82	111
AWA 8-8-16SS	82	82	156
AWA 8-8-21SS	82	82	206
AWA 8-8-26SS	82	82	261

- Body frame length =  $D - 5$





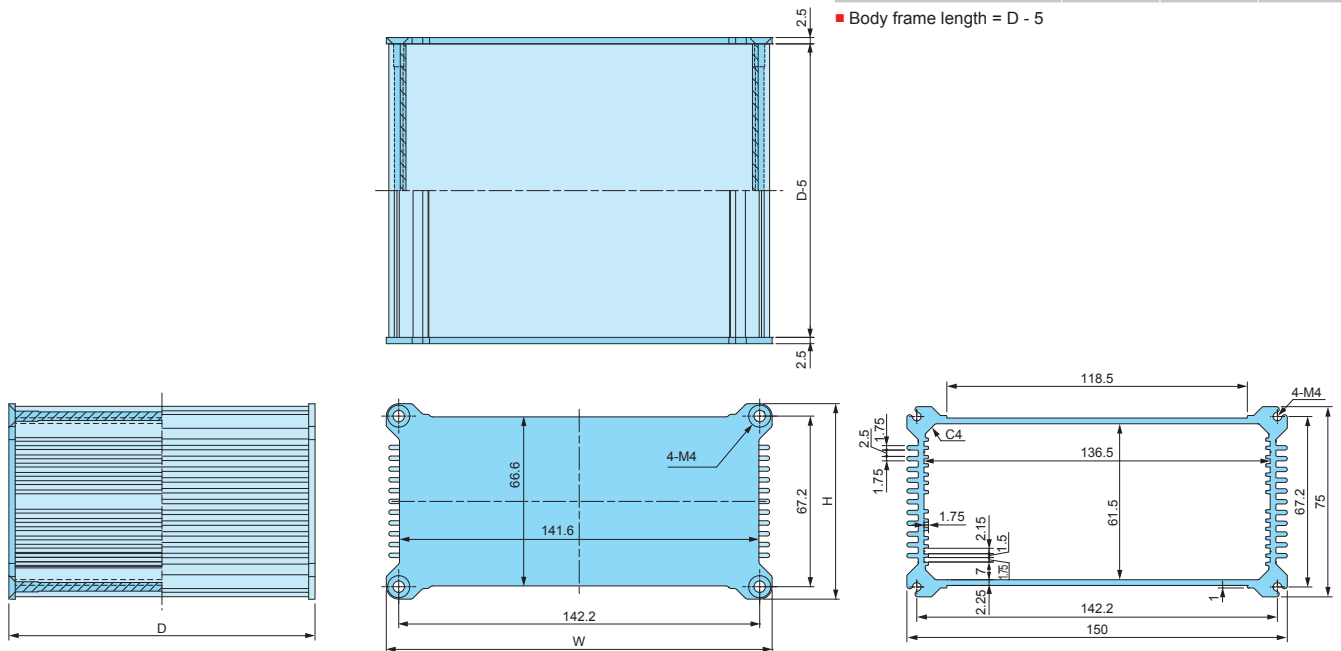
## AWA dimensions

■ DXF/DWG/PDF drawings available on our website.

AWA15-8-☐

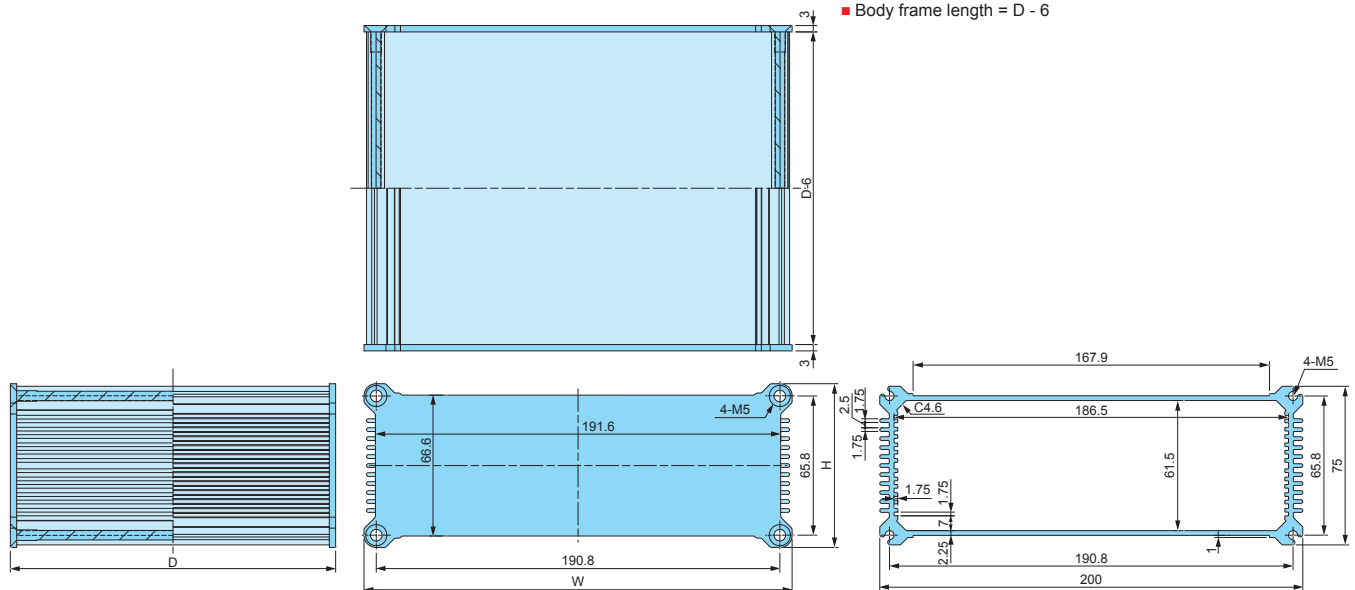
Product no.	W	H	D
AWA15-8-12SS	152	77	120.6
AWA15-8-16SS	152	77	160.6
AWA15-8-21SS	152	77	210.6
AWA15-8-26SS	152	77	260.6

- Body frame length =  $D - 5$

AWA20-8-

Product no.	W	H	D
AWA20-8-15SS	202.4	77.4	153.8
AWA20-8-19SS	202.4	77.4	193.8
AWA20-8-24SS	202.4	77.4	243.8
AWA20-8-29SS	202.4	77.4	293.8

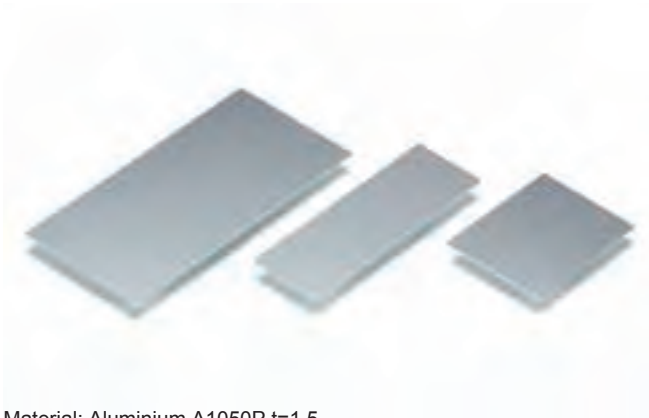
- Body frame length =  $D - 6$



## AWC SERIES

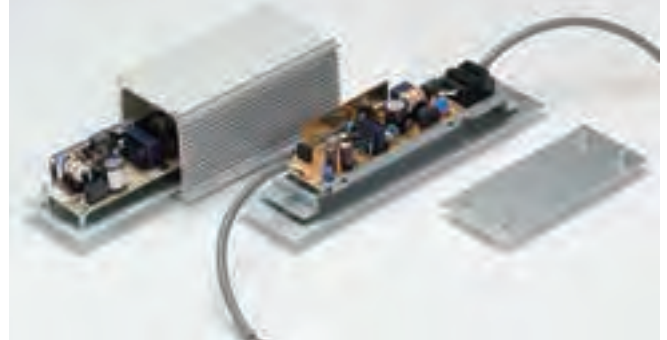
## ALUMINIUM MOUNTING PLATE

- Mounting plate for AWA series.
- Utilize for mounting PCB, power supply, terminal blocks, etc.



Material: Aluminium A1050P t=1.5  
Silver anodized

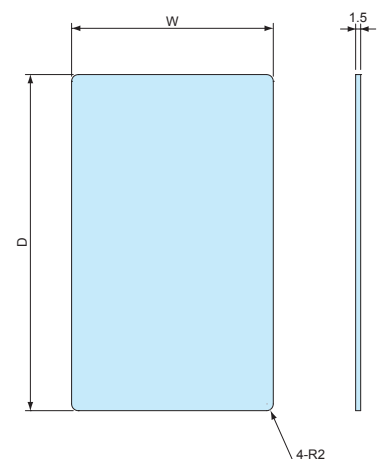
## APPLICATION EXAMPLE

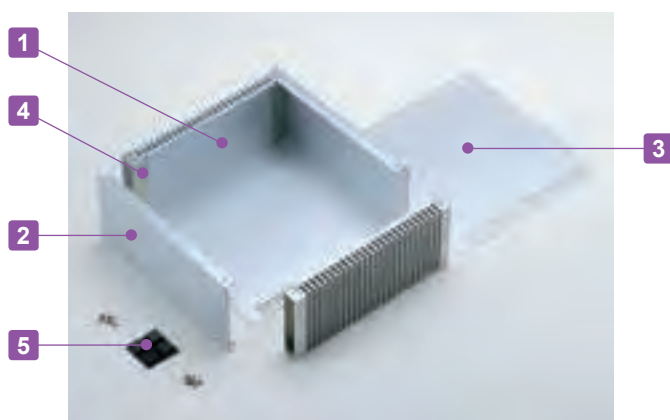


- DXF/DWG/PDF drawings available on our website.

## Product no. / Dimensions

Product no.	W	D	Suitable enclosure
AWC 5- 7	38.9	49.2	AWA 5-3- 5
AWC 5- 9	38.9	69.2	AWA 5-3- 7
AWC 5-11	38.9	94.2	AWA 5-3-10
AWC 5-14	38.9	119.2	AWA 5-3-12
AWC 7- 8	47	64	AWA 6-6- 7
AWC 7-11	47	94	AWA 6-6-10
AWC 7-15	47	134	AWA 6-6-14
AWC 7-20	47	184	AWA 6-6-19
AWC 7-25	47	234	AWA 6-6-24
AWC 8- 9	61.8	74	AWA 8-4- 8
AWC 8-12	61.8	99	AWA 8-4-10
AWC 8-14	61.8	124	AWA 8-4-13
AWC 8-18	61.8	159	AWA 8-4-16
AWC 9-10	66.5	81	AWA 8-8- 9
AWC 9-13	66.5	106	AWA 8-8-11
AWC 9-17	66.5	151	AWA 8-8-16
AWC 9-22	66.5	201	AWA 8-8-21
AWC 9-28	66.5	256	AWA 8-8-26
AWC11-11	86.5	90.6	AWA10-5-10
AWC11-15	86.5	130.6	AWA10-5-14
AWC11-19	86.5	170.6	AWA10-5-18
AWC11-24	86.5	220.6	AWA10-5-23
AWC12-11	100.2	85.6	AWA12-7- 9
AWC12-14	100.2	120.6	AWA12-7-12
AWC12-17	100.2	160.1	AWA12-7-17
AWC12-22	100.2	195.6	AWA12-7-20
AWC16-14	136.3	115.6	AWA15-8-12
AWC16-18	136.3	155.6	AWA15-8-16
AWC16-23	136.3	205.6	AWA15-8-21
AWC16-28	136.3	255.6	AWA15-8-26
AWC21-17	186.1	147.8	AWA20-8-15
AWC21-21	186.1	187.8	AWA20-8-19
AWC21-26	186.1	237.8	AWA20-8-24
AWC21-31	186.1	287.8	AWA20-8-29





## Technical Data

Protection class: IP40

- Stylish and elegantly designed with a hairline finish.
- Excellent cooling performance with the heat-sink side plates.
- Now available in 56 sizes, and 2 different colors.
- Tough and robust enclosure from using aluminium extrusion parts.
- Simple and easy to assemble construction.
- Flat back heat-sink plates for more effective heat spreading.

## Components

No.	Part name	Pcs	Material	Color / Finish
1	Heat-sink side plate	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Panel	2	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
3	Top • Bottom cover	2	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
4	Corner support	4	Steel SPCC t=1.6	Trivalent chromate
5	Rubber feet	4	Polyurethane	Black
-	Screw	1 set	Steel M3	Nickel plated • Black trivalent chromate

## Accessories (Optional parts)



Mounting plate  
HYC series  
See page 226



L-bracket  
HYCL series  
See page 226

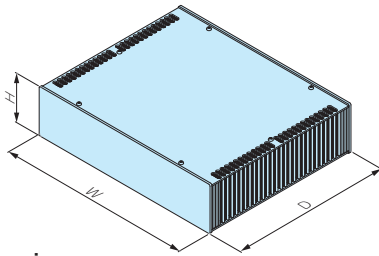


Aluminium isolation feet  
AFS • AFM series  
See page 265 ~ 266



TORX screw - for top / bottom cover  
MR3-5Z series  
See page 220, 230





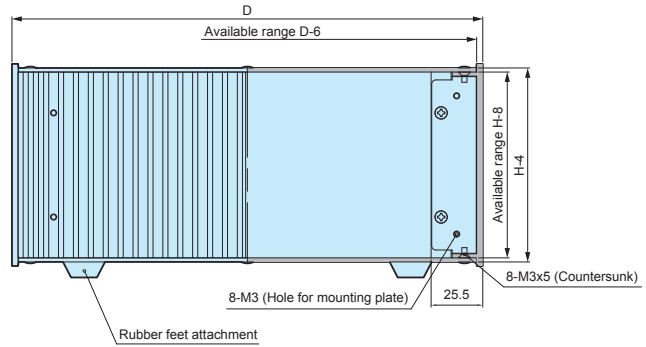
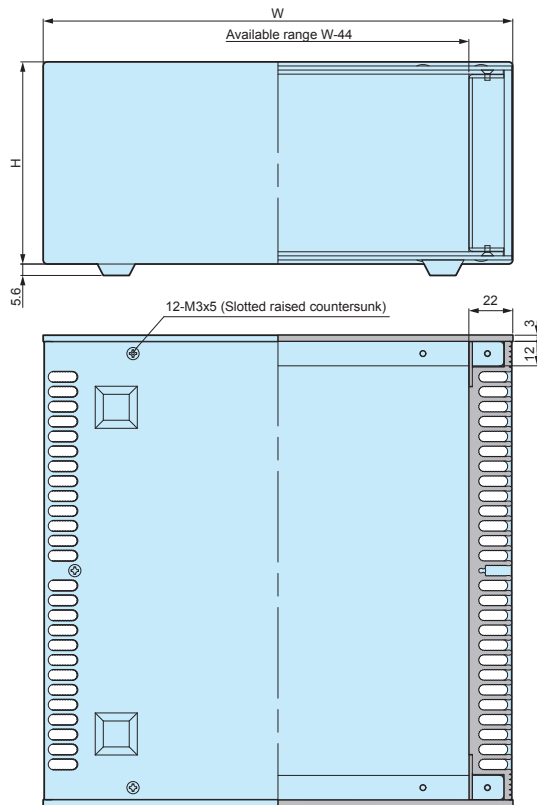
■ For more information on enclosure dimensions and drawings, please refer to page 219~220

### Product no. / Dimensions

Product no.		W	H	D	Weight (kg)
● Silver	● Black				
<b>NEW</b> HY 44-23-23SS	<b>NEW</b> HY 44-23-23BB	230	44	231	1.1
<b>NEW</b> HY 44-23-33SS	<b>NEW</b> HY 44-23-33BB	230	44	330	1.6
<b>NEW</b> HY 44-28-23SS	<b>NEW</b> HY 44-28-23BB	280	44	231	1.4
<b>NEW</b> HY 44-28-33SS	<b>NEW</b> HY 44-28-33BB	280	44	330	1.9
<b>NEW</b> HY 44-33-23SS	<b>NEW</b> HY 44-33-23BB	330	44	231	1.5
<b>NEW</b> HY 44-33-33SS	<b>NEW</b> HY 44-33-33BB	330	44	330	2.2
<b>NEW</b> HY 44-43-23SS	<b>NEW</b> HY 44-43-23BB	430	44	231	1.9
<b>NEW</b> HY 44-43-33SS	<b>NEW</b> HY 44-43-33BB	430	44	330	2.6
HY 70-23-23SS	HY 70-23-23BB	230	70	231	1.6
<b>NEW</b> HY 70-23-33SS	<b>NEW</b> HY 70-23-33BB	230	70	330	2.2
HY 70-28-23SS	HY 70-28-23BB	280	70	231	1.8
<b>NEW</b> HY 70-28-33SS	<b>NEW</b> HY 70-28-33BB	280	70	330	2.5
HY 70-33-23SS	HY 70-33-23BB	330	70	231	2.0
<b>NEW</b> HY 70-33-33SS	<b>NEW</b> HY 70-33-33BB	330	70	330	2.8
HY 70-43-23SS	HY 70-43-23BB	430	70	231	2.3
<b>NEW</b> HY 70-43-33SS	<b>NEW</b> HY 70-43-33BB	430	70	330	3.2
HY 88-23-23SS	HY 88-23-23BB	230	88	231	1.9
<b>NEW</b> HY 88-23-33SS	<b>NEW</b> HY 88-23-33BB	230	88	330	2.6
HY 88-28-23SS	HY 88-28-23BB	280	88	231	2.1
<b>NEW</b> HY 88-28-33SS	<b>NEW</b> HY 88-28-33BB	280	88	330	2.8
HY 88-33-23SS	HY 88-33-23BB	330	88	231	2.3
<b>NEW</b> HY 88-33-33SS	<b>NEW</b> HY 88-33-33BB	330	88	330	3.1
HY 88-43-23SS	HY 88-43-23BB	430	88	231	2.7
<b>NEW</b> HY 88-43-33SS	<b>NEW</b> HY 88-43-33BB	430	88	330	3.6
HY 99-23-23SS	HY 99-23-23BB	230	99	231	2.1
<b>NEW</b> HY 99-23-33SS	<b>NEW</b> HY 99-23-33BB	230	99	330	2.7
HY 99-28-23SS	HY 99-28-23BB	280	99	231	2.3
<b>NEW</b> HY 99-28-33SS	<b>NEW</b> HY 99-28-33BB	280	99	330	3.1
HY 99-33-23SS	HY 99-33-23BB	330	99	231	2.5
<b>NEW</b> HY 99-33-33SS	<b>NEW</b> HY 99-33-33BB	330	99	330	3.4
HY 99-43-23SS	HY 99-43-23BB	430	99	231	2.9
<b>NEW</b> HY 99-43-33SS	<b>NEW</b> HY 99-43-33BB	430	99	330	3.9
HY133-23-23SS	HY133-23-23BB	230	132.5	231	2.6
<b>NEW</b> HY133-23-33SS	<b>NEW</b> HY133-23-33BB	230	132.5	330	3.4
HY133-28-23SS	HY133-28-23BB	280	132.5	231	2.8
<b>NEW</b> HY133-28-33SS	<b>NEW</b> HY133-28-33BB	280	132.5	330	3.8
HY133-33-23SS	HY133-33-23BB	330	132.5	231	3.0
<b>NEW</b> HY133-33-33SS	<b>NEW</b> HY133-33-33BB	330	132.5	330	4.1
HY133-43-23SS	HY133-43-23BB	430	132.5	231	3.5
<b>NEW</b> HY133-43-33SS	<b>NEW</b> HY133-43-33BB	430	132.5	330	4.7
HY149-23-23SS	HY149-23-23BB	230	149	231	2.8
<b>NEW</b> HY149-23-33SS	<b>NEW</b> HY149-23-33BB	230	149	330	3.8
HY149-28-23SS	HY149-28-23BB	280	149	231	3.1
<b>NEW</b> HY149-28-33SS	<b>NEW</b> HY149-28-33BB	280	149	330	4.2
HY149-33-23SS	HY149-33-23BB	330	149	231	3.3
<b>NEW</b> HY149-33-33SS	<b>NEW</b> HY149-33-33BB	330	149	330	4.5
HY149-43-23SS	HY149-43-23BB	430	149	231	3.8
<b>NEW</b> HY149-43-33SS	<b>NEW</b> HY149-43-33BB	430	149	330	5.1
<b>NEW</b> HY177-23-23SS	<b>NEW</b> HY177-23-23BB	230	177	231	3.4
<b>NEW</b> HY177-23-33SS	<b>NEW</b> HY177-23-33BB	230	177	330	4.5
<b>NEW</b> HY177-28-23SS	<b>NEW</b> HY177-28-23BB	280	177	231	3.6
<b>NEW</b> HY177-28-33SS	<b>NEW</b> HY177-28-33BB	280	177	330	4.8
<b>NEW</b> HY177-33-23SS	<b>NEW</b> HY177-33-23BB	330	177	231	3.9
<b>NEW</b> HY177-33-33SS	<b>NEW</b> HY177-33-33BB	330	177	330	5.2
<b>NEW</b> HY177-43-23SS	<b>NEW</b> HY177-43-23BB	430	177	231	4.5
<b>NEW</b> HY177-43-33SS	<b>NEW</b> HY177-43-33BB	430	177	330	5.8



## HY dimensions (outside view)



### Included screws

#### BB Color type

M3-6 countersunk screw, black trivalent chromate x 16 pcs

M3-5 slotted raised countersunk screw, black trivalent chromate x 12 pcs

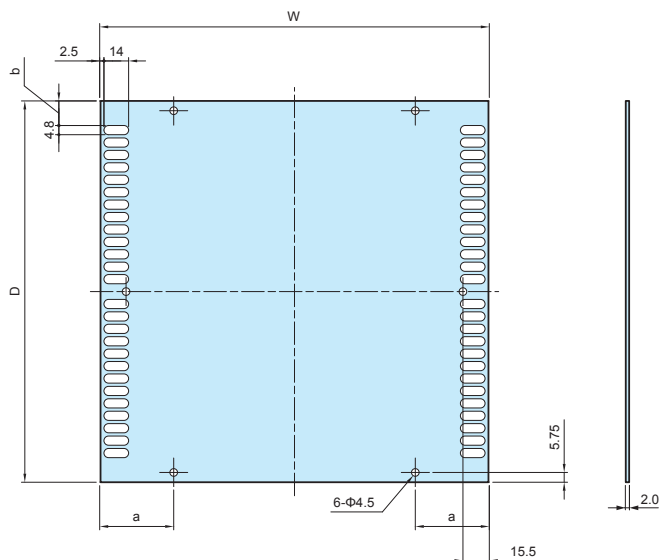
#### SS Color type

M3-6 countersunk screw, nickel plated x 16 pcs

M3-5 slotted raised countersunk screw, nickel plated x 12 pcs

## Component Parts Drawings

### HY • HYR • HYRH top / bottom cover



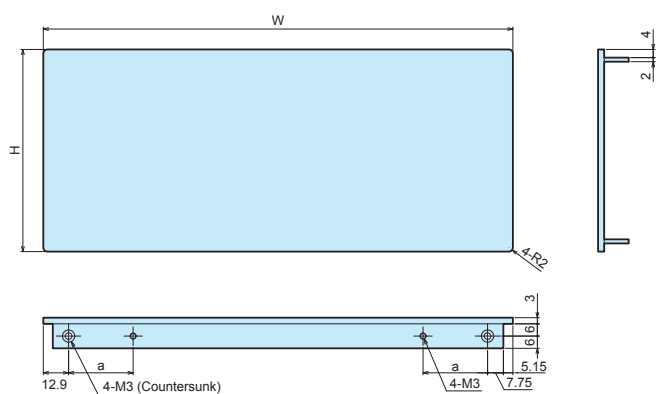
### Color Type

Code	Material	Color / Finish
SS	Aluminium	Silver / Hairline brushed & Anodized
BB	Aluminium	Black / Hairline brushed & Anodized

### Dimensions

Enclosure W x D	W	D	a	b
230 × 231	229	224.5	45.7	14.95
230 × 330	229	323.5	45.7	15.1
280 × 231	279	224.5	55.8	14.95
280 × 330	279	323.5	55.8	15.1
330 × 231	329	224.5	65.8	14.95
330 × 330	329	323.5	65.8	15.1
430 × 231	429	224.5	85.8	14.95
430 × 330	429	323.5	85.8	15.1

### HY front / rear panels & HYR • HYRH rear panel



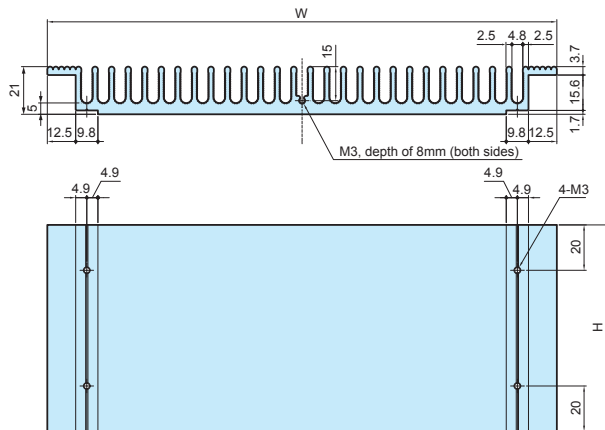
### Color Type

Code	Material	Color / Finish
SS	Extruded aluminium	Silver / Hairline brushed & Anodized
BB	Extruded aluminium	Black / Hairline brushed & Anodized

### Dimensions

Enclosure W	W	a	H(44)	H(70)	H(88)	H(99)	H(132.5)	H(149)	H(177)
230	230	33.3	44	70	88	99	132.5	149	177
280	280	43.4	44	70	88	99	132.5	149	177
330	330	53.4	44	70	88	99	132.5	149	177
430	430	73.4	44	70	88	99	132.5	149	177

## HY • HYR • HYRH heat-sink side plate



## Color Type

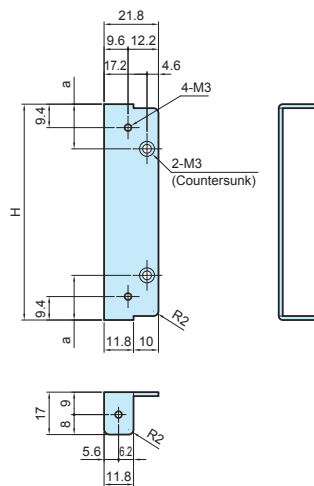
Code	Material	Color / Finish
SS	Extruded aluminium	Silver / Anodized
BB	Extruded aluminium	Black / Anodized

## Dimensions

Enclosure D x H	W	H	Thermal resistance (°C/W)
231 × 44	224.6	36	2.41
330 × 44	323.6	36	1.89
231 × 70	224.6	62	1.49
330 × 70	323.6	62	1.36
231 × 88	224.6	80	1.49
330 × 88	323.6	80	1.17
231 × 99	224.6	91	1.38
330 × 99	323.6	91	1.08
231 × 132.5	224.6	124.5	1.14
330 × 132.5	323.6	124.5	0.89
231 × 149	224.6	141	1.06
330 × 149	323.6	141	0.83
231 × 177	224.6	169	0.95
330 × 177	323.6	169	0.74

■ Thermal resistance calculation is based on the fins being perpendicular to the ground with temperature at 60°C.

## HY • HYR • HYRH corner support



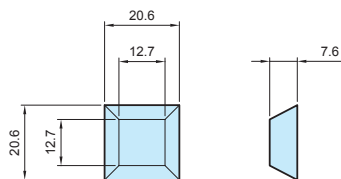
## Part Information

Part name	Material	Finish
Corner support	Steel t=1.6	Trivalent chromate

## Dimensions

Enclosure H	H	a
44	31.8	10.9
70	57.8	17.9
88	75.8	17.9
99	86.8	17.9
132.5	120.3	17.9
149	136.8	17.9
177	164.8	17.9

## HY • HYR • HYRH rubber feet



## Part Information

Part name	Material	Color
Rubber feet	Polyurethane	Black

## Accessories (Optional parts)

## MR SERIES

## SLOTTED RAISED COUNTERSUNK TORX SCREW



- For use with top/bottom cover.
- Recommended for aesthetic purposes, or for tampering resistance.
- Requires the use of a specialized screwdriver.

## Product no. / Dimensions

Product no.	M	L	TORX head no.	Material	Color / Finish	Pack of
MR3-5ZS	3	5	T10	Steel	Nickel plated	20
MR3-5ZB	3	5	T10	Steel	Black trivalent chromate	20

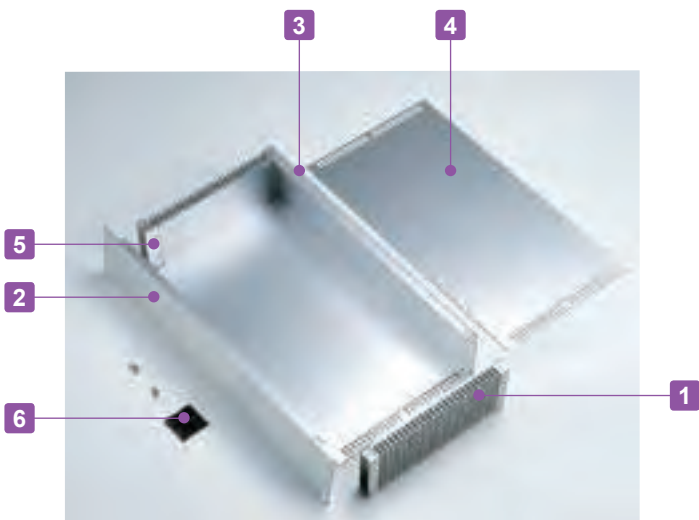
# HYR SERIES

# HEAT-SINK RACK MOUNTING ENCLOSURE



## Technical Data

Protection class: IP40

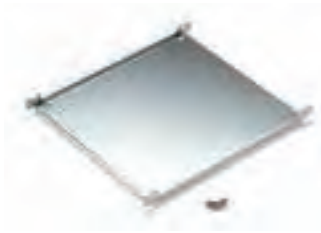


- Now available in 8 sizes, and 2 different colors.
- Stylish and elegantly designed with a hairline finish.
- Excellent cooling performance with the heat-sink side plates.
- Tough and robust enclosure from using aluminium extrusion parts.
- Simple and easy to assemble construction.

## Components

No.	Part name	Pcs	Material	Color / Finish
1	Heat-sink side plate	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Front panel	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
3	Rear panel	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
4	Top • Bottom cover	2	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
5	Corner support	4	Steel SPCC t=1.6	Trivalent chromate
6	Rubber feet	4	Polyurethane	Black
-	Screw	1 set	Steel M3	Nickel plated • Black trivalent chromate

## Accessories (Optional parts)



Mounting plate  
HYC series  
See page 226



L-bracket  
HYCL series  
See page 226

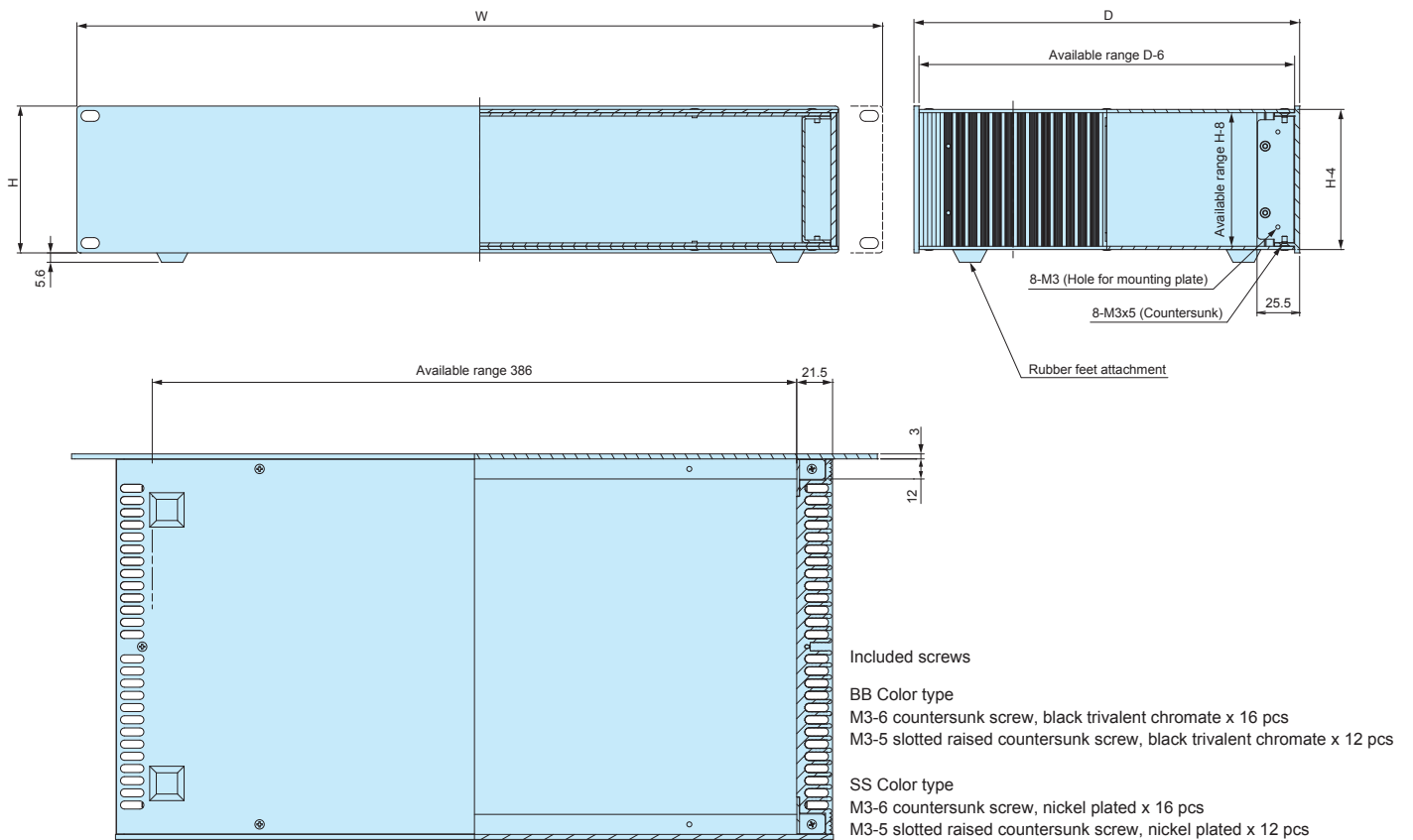


TORX screw - for top / bottom cover  
MR3-5Z series  
See page 220, 230



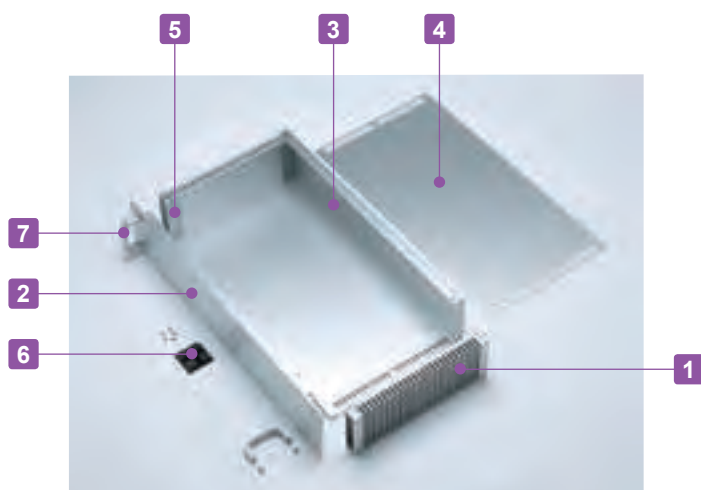
## HYR dimensions (outside view)

■ DXF/DWG/PDF drawings available on our website.



## Product no. / Dimensions

Product no.		W	H	D	Standard	Weight (kg)
● Silver	● Black					
<b>NEW</b> HYR 44-43-23SS	<b>NEW</b> HYR 44-43-23BB	482.6	44	231	EIA	1.9
<b>NEW</b> HYR 44-43-33SS	<b>NEW</b> HYR 44-43-33BB	482.6	44	330	EIA	2.6
HYR 88-43-23SS	HYR 88-43-23BB	482.6	88	231	EIA	2.8
<b>NEW</b> HYR 88-43-33SS	<b>NEW</b> HYR 88-43-33BB	482.6	88	330	EIA	3.7
HYR133-43-23SS	HYR133-43-23BB	482.6	133	231	EIA	3.6
<b>NEW</b> HYR133-43-33SS	<b>NEW</b> HYR133-43-33BB	482.6	133	330	EIA	4.7
<b>NEW</b> HYR177-43-23SS	<b>NEW</b> HYR177-43-23BB	482.6	177	231	EIA	4.5
<b>NEW</b> HYR177-43-33SS	<b>NEW</b> HYR177-43-33BB	482.6	177	330	EIA	5.9

**HYRH** SERIES**HEAT-SINK RACK MOUNTING ENCLOSURE with HANDLE****Technical Data**

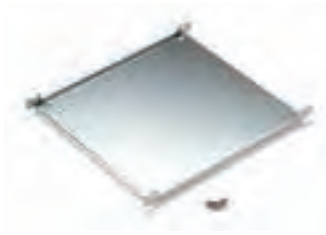
Protection class: IP40

- Equipped with handy rack mount / pull out handles.
- Available in 8 sizes, and 2 different colors.
- Excellent cooling performance with the heat-sink side plates.
- Tough and robust enclosure from using aluminium extrusion parts.
- Simple and easy to assemble construction.

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Heat-sink side plate	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Front panel	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
3	Rear panel	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
4	Top • Bottom cover	2	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
5	Corner support	4	Steel SPCC t=1.6	Trivalent chromate
6	Rubber feet	4	Polyurethane	Black
7	Handle	2	Extruded aluminium	Silver • Black / Anodized
-	Screw	1 set	Steel M3	Nickel plated • Black trivalent chromate

## Accessories (Optional parts)



Mounting plate  
HYC series  
See page 226



L-bracket  
HYCL series  
See page 226

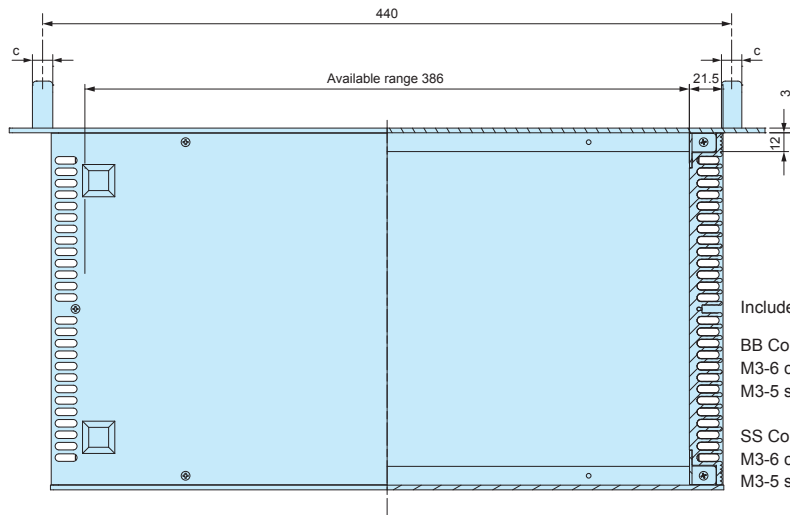
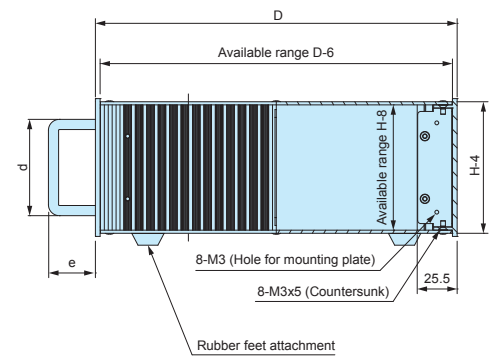
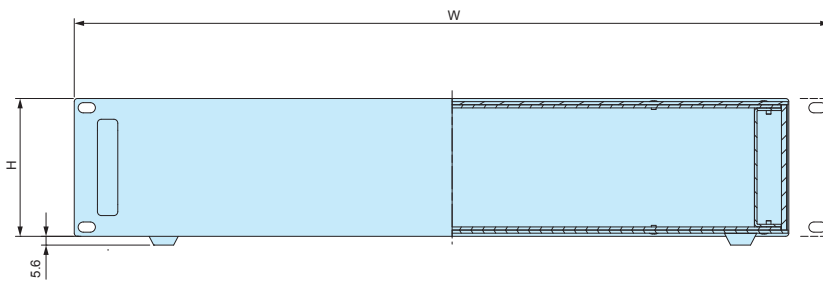


TORX screw - for top / bottom cover  
MR3-5Z series  
See page 220, 230



## HYRH dimensions (outside view)

■ DXF/DWG/PDF drawings available on our website.



### Included screws

#### BB Color type

M3-6 countersunk screw, black trivalent chromate x 16 pcs

M3-5 slotted raised countersunk screw, black trivalent chromate x 12 pcs

#### SS Color type

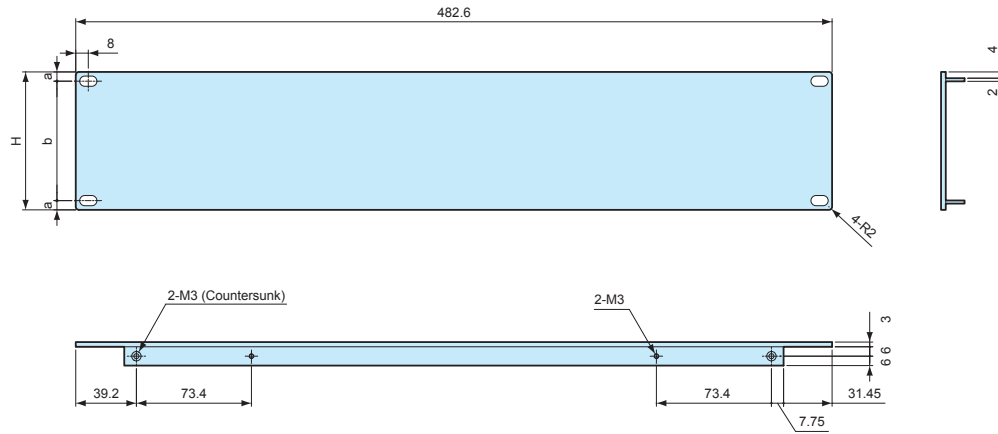
M3-6 countersunk screw, nickel plated x 16 pcs

M3-5 slotted raised countersunk screw, nickel plated x 12 pcs

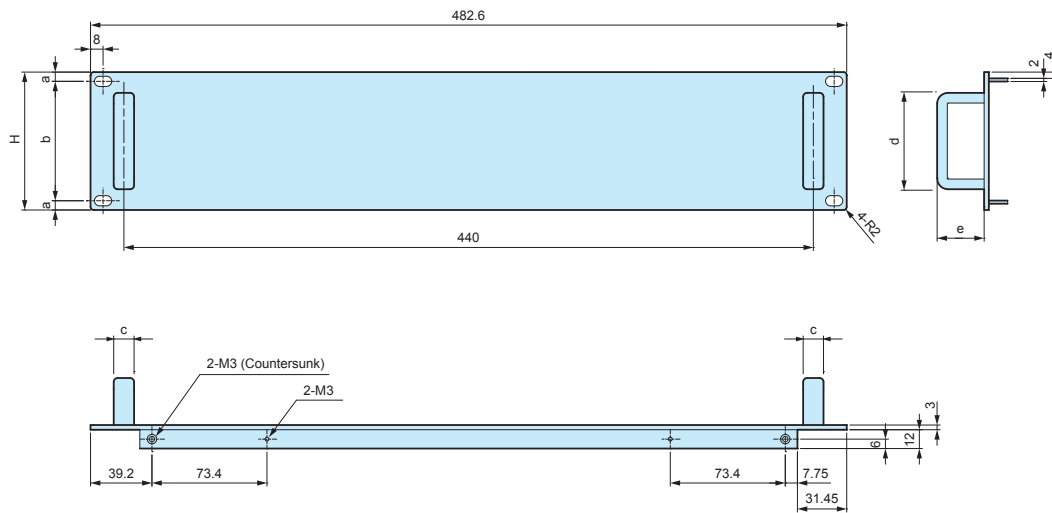
Product no.		W	H	D	c	d	e	Standard	Weight (kg)
● Silver	● Black								
HYRH 44-43-23SS	HYRH 44-43-23BB	482.6	44	231	12	41.0	40	EIA	2.0
HYRH 44-43-33SS	HYRH 44-43-33BB	482.6	44	330	12	41.0	40	EIA	2.6
HYRH 88-43-23SS	HYRH 88-43-23BB	482.6	88	231	13	61.5	30	EIA	2.8
HYRH 88-43-33SS	HYRH 88-43-33BB	482.6	88	330	13	61.5	30	EIA	3.7
HYRH133-43-23SS	HYRH133-43-23BB	482.6	133	231	13	106.5	30	EIA	3.6
HYRH133-43-33SS	HYRH133-43-33BB	482.6	133	330	13	106.5	30	EIA	4.8
HYRH177-43-23SS	HYRH177-43-23BB	482.6	177	231	13	126.5	30	EIA	4.6
HYRH177-43-33SS	HYRH177-43-33BB	482.6	177	330	13	126.5	30	EIA	5.9



## HYR front panel



## HYRH front panel



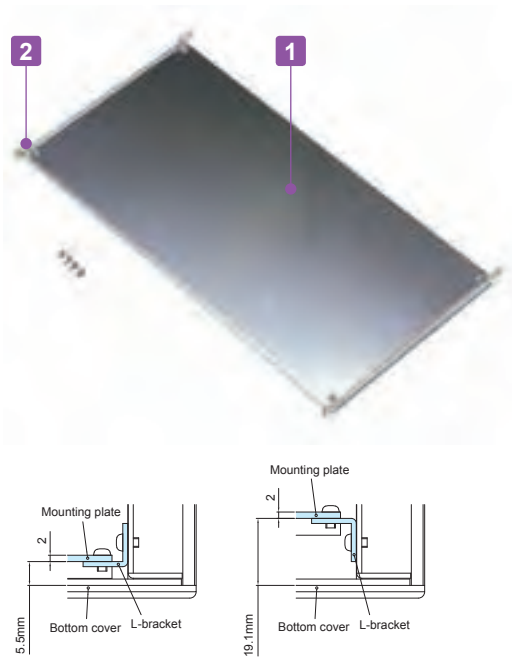
### Color Type

Code	Material	Color / Finish
SS	Extruded aluminium	Silver / Hairline brushed & Anodized
BB	Extruded aluminium	Black / Hairline brushed & Anodized

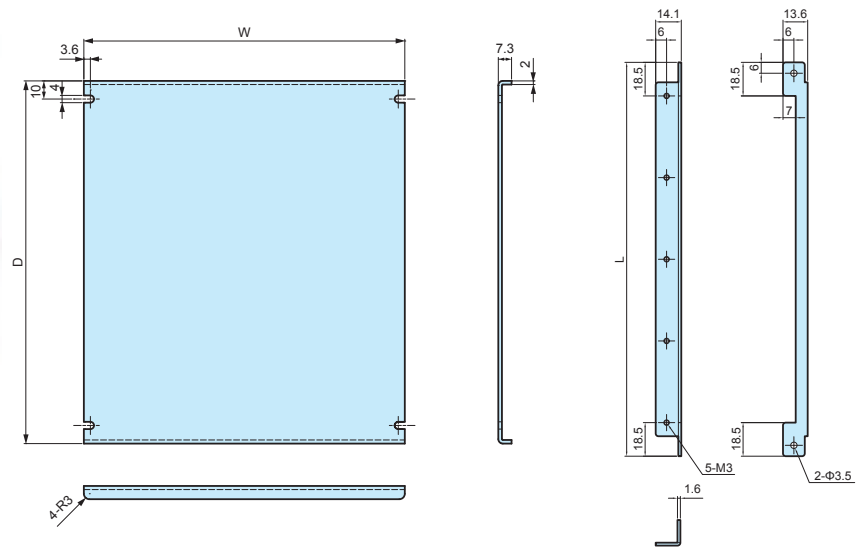
Product no.	H	a	b	c	d	e
HYR/HYRH 44-43-23□	44	6.1	31.8	12	41	40
HYR/HYRH 44-43-33□	44	6.1	31.8	12	41	40
HYR/HYRH 88-43-23□	88	5.9	76.2	13	61.5	30
HYR/HYRH 88-43-33□	88	5.9	76.2	13	61.5	30
HYR/HYRH133-43-23□	132.5	37.7	57.1	13	106.5	30
HYR/HYRH133-43-33□	132.5	37.7	57.1	13	106.5	30
HYR/HYRH177-43-23□	177	37.7	101.6	13	126.5	30
HYR/HYRH177-43-33□	177	37.7	101.6	13	126.5	30

## HYC SERIES

## MOUNTING PLATE for HY · HYR · HYRH



■ Mounting plate and L-bracket set.

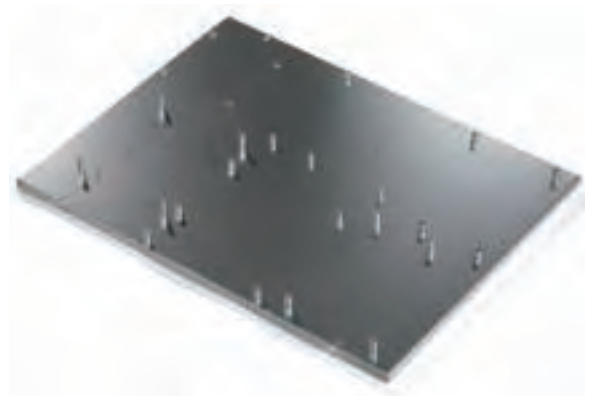


## Components

No.	Part name	Pcs	Material	Color / Finish
1	Mounting plate	1	Aluminium A1050P t=2.0	Unfinished
2	L-bracket	2	Steel SPCC t=1.6	Tivalent chromate
-	Screw	1 set	Steel M3	Tivalent chromate

## Product no. / Dimensions

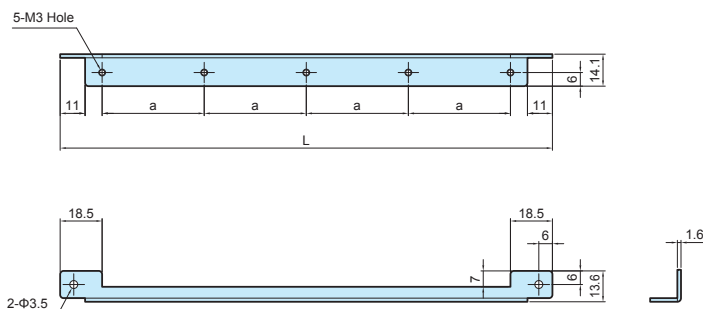
Product no.	W	D	L	Enclosure D x W	Weight (g)
HYC23-23	177	200	217	231 × 230	300
HYC23-28	227	200	217	231 × 280	350
HYC23-33	277	200	217	231 × 330	410
HYC23-43	377	200	217	231 × 430	520
<b>NEW</b> HYC33-23	177	299	316	330 × 230	450
<b>NEW</b> HYC33-28	227	299	316	330 × 280	550
<b>NEW</b> HYC33-33	277	299	316	330 × 330	710
<b>NEW</b> HYC33-43	377	299	316	330 × 430	800



Clinching stud customization service available.

## HYCL SERIES

## L-bracket for HY · HYR · HYRH



- Simple L-bracket and screw set.
- Use with your original mounting plate or PCB.

## Components

No.	Part name	Material	Color / Finish
1	L-bracket	Steel t=1.6	Tivalent chromate
2	Screw	Steel M3	Tivalent chromate

## Product no. / Dimensions

Product no.	L	a	b	Pack of
HYCL-23	217	45	5	2
<b>NEW</b> HYCL-33	316	46.5	7	2

## HIT SERIES

## HEAT-SINK ALUMINIUM CASE



- Heat dissipation and cooling via the utilization of extruded aluminium heat-sink side plates.
- Rounded corners gives it an elegant feel.
- Aluminium extrusion parts provides high structural durability.
- Suitable for use as small-type fanless PC, digital audio equipment, and so on.
- Available in both Silver and Black color types.

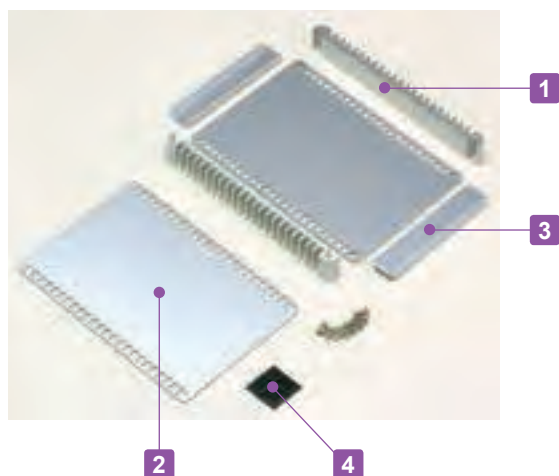
## APPLICATION EXAMPLE

## FIBER OPTICS EXTENSION UNIT



Product by Sanritz Automation Co., Ltd. (Japan)

Website: [sanritz.co.jp](http://sanritz.co.jp)



Included screws

Enclosure (Silver) M3-8 Hexagonal countersunk screw Stainless steel: Silver unfinished x 8 pcs

Enclosure (Black) M3-8 Hexagonal countersunk screw Stainless steel: Black trivalent chromate x 8 pcs

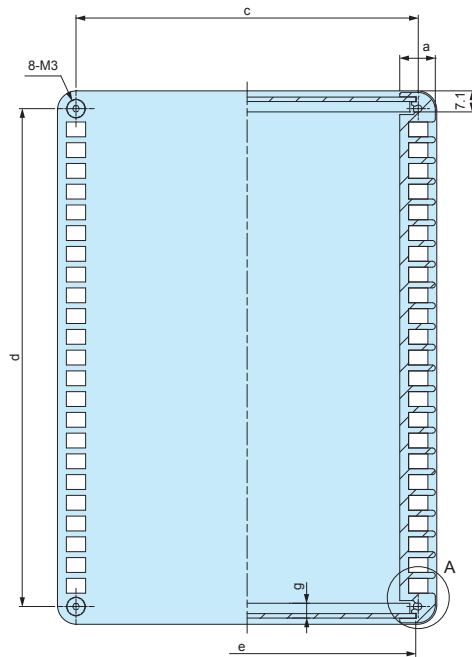
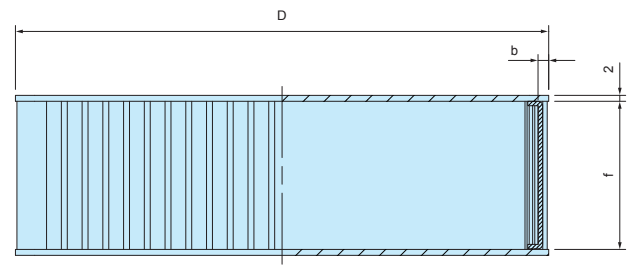
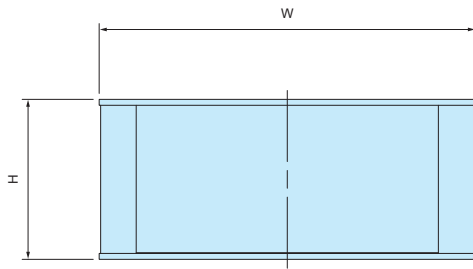
※Hexagonal screwdriver included

## Components

No.	Part name	Pcs	Material	Color / Finish
1	Heat-sink side plate	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Top • Bottom cover	2	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
3	Front • Rear panel	2	Aluminium A1050P t=1.5	Silver • Black / Hairline brushed & Anodized
4	Rubber feet	1 set	Polyurethane	Black

# HIT dimensions

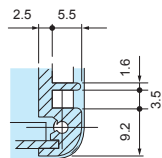
■ DXF/DWG/PDF drawings available on our website.



■ Optional aluminium isolation feet available  
See page 265 ~ 266

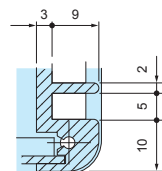


HIT□-□-13



A cross-section

HIT□-□-18



A cross-section

## APPLICATION EXAMPLE



## Product no. / Dimensions

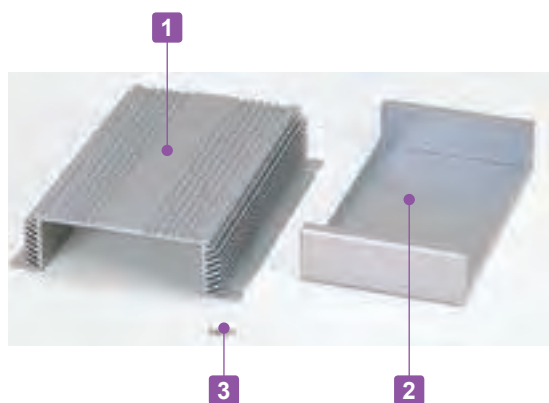
■ Please suffix color code at the end of the product number.

Product no.		W	H	D	a	b	c	d	e	f	g	Thermal resistance (°C / W)	Weight (g)
● Silver	● Black												
HIT 9-2-13SS	HIT 9-2-13BB	89	20	130	8	3.6	81	118.6	78.8	16	5	9.14	183
HIT 9-4-13SS	HIT 9-4-13BB	89	40	130	8	3.6	81	118.6	78.8	36	5	5.6	255
HIT13-3-13SS	HIT13-3-13BB	130	30	130	8	3.6	122	118.6	119.8	26	5	6.82	289
HIT13-5-13SS	HIT13-5-13BB	130	50	130	8	3.6	122	118.6	119.8	46	5	4.83	370
HIT18-4-13SS	HIT18-4-13BB	180	40	130	8	3.6	172	118.6	169.8	36	5	5.6	414
HIT18-6-13SS	HIT18-6-13BB	180	60	130	8	3.6	172	118.6	169.8	56	5	4.29	503
HIT13-3-18SS	HIT13-3-18BB	128	30	180	12	3.6	115.5	168	113.8	26	5	4.38	411
HIT13-5-18SS	HIT13-5-18BB	128	50	180	12	3.6	115.5	168	113.8	46	5	3.1	535
HIT17-4-18SS	HIT17-4-18BB	174	40	180	12	3.6	161.5	168	159.8	36	5	3.6	578
HIT17-6-18SS	HIT17-6-18BB	174	60	180	12	3.6	161.5	168	159.8	56	5	2.76	719
HIT23-5-18SS	HIT23-5-18BB	228	50	180	12	3.6	215.5	168	213.8	46	5	3.1	772
HIT23-7-18SS	HIT23-7-18BB	228	70	180	12	3.6	215.5	168	213.8	66	5	2.5	928

■ Thermal resistance calculation is based on the fins being perpendicular to the ground with temperature at 60°C.

**HS** SERIES**HEAT-SINK ALUMINIUM CASE**

- Aluminium case with heat dissipating heat-sink cover for superior cooling effect.
- Recommended for use with equipment requiring heat dissipation.
- Manufactured with mounting flange for easy attachment onto walls and other surfaces.

**APPLICATION EXAMPLE****HIGH-END PERFORMANCE AUDIO AMPLIFIER**

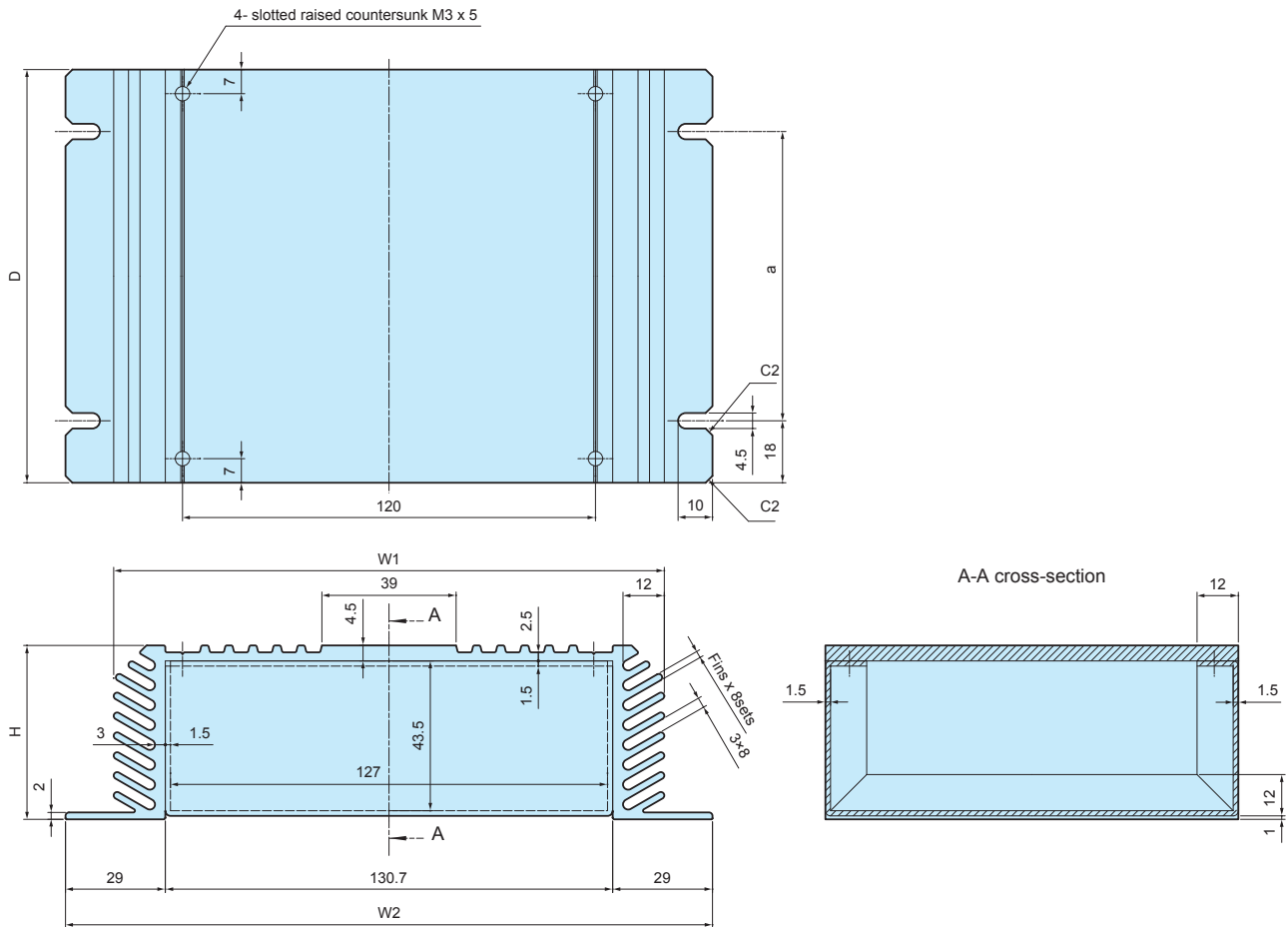
Product by: IC Technologies (Australia)  
Website: [ictechnologies.com.au](http://ictechnologies.com.au)

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Heat-sink cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Bottom chassis	1	Aluminium A1050P t=1.5	Silver • Black / Anodized
3	Screw	4	Steel M3-5	Nickel plated • Black trivalent chromate

## HS dimensions

■ DXF/DWG/PDF drawings available on our website.



### Product no. / Dimensions

Product no.		W1	W2	H	D	a	Thermal resistance (°C / W)	Weight (kg)
● Silver	● Black							
HS16-5-16S	HS16-5-16B	160	188.7	50.5	160	124	1.1	0.72
HS16-5-23S	HS16-5-23B	160	188.7	50.5	230	194	0.83	1.0
HS16-5-30S	HS16-5-30B	160	188.7	50.5	300	264	0.69	1.29

■ Thermal resistance calculation is based on the fins being perpendicular to the ground with temperature at 60°C.

### Accessories (Optional parts)

## MR SERIES

## SLOTTED RAISED COUNTERSUNK TORX SCREW



- For use with the heat-sink cover.
- Recommended for aesthetic purposes, or for tampering resistance.
- Requires the use of a specialized screwdriver.

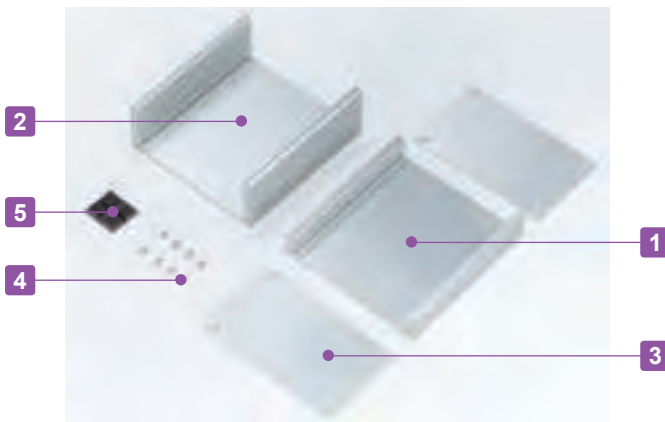
### Product no. / Dimensions

Product no.	M	L	TORX head no.	Material	Color / Finish	Pack of
MR3-5ZS	3	5	T10	Steel	Nickel plated	20
MR3-5ZB	3	5	T10	Steel	Black trivalent chromate	20



# HEN SERIES

# HEAT-SINK ALUMINIUM CASE



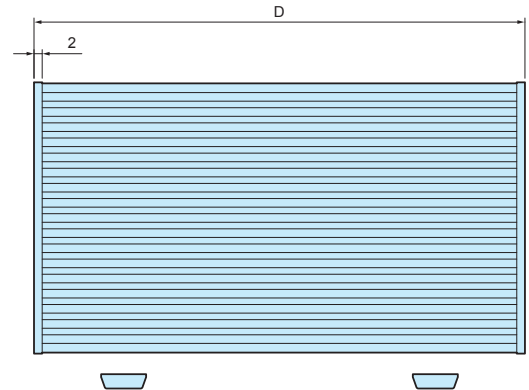
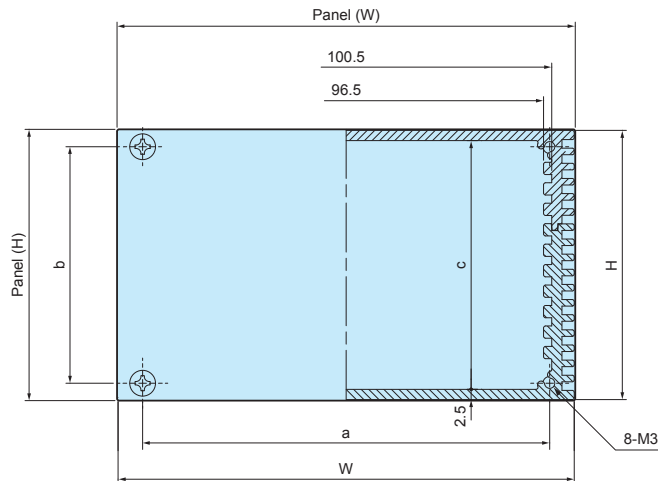
- Stylish design coupled with hairline brushed finish makes for a luxurious high-end case.
- Available in 18 sizes.
- Sturdy extruded case construction.

## Components

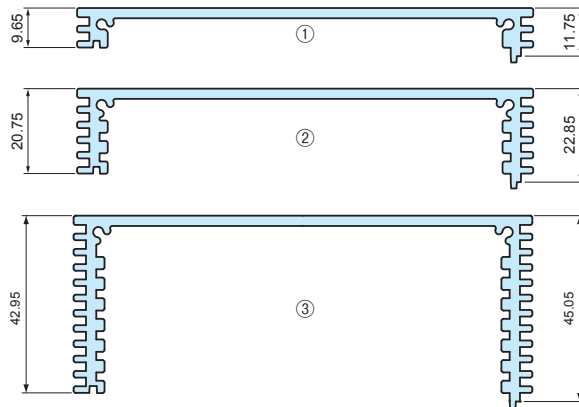
No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
2	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
3	Panel	2	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
4	Screw	8	Steel M3-6	Nickel plated • Black trivalent chromate
5	Rubber feet	4	Polyurethane	Black

## HEN dimensions

■ DXF/DWG/PDF drawings available on our website.



## Covers



## Cover Type

Cover	Cover length (= D - 4)	Thermal resistance rate (°C / W)
①	56	6.7
	116	3.6
	196	2.1
②	56	5
	116	2.6
	196	1.5
③	56	3.3
	116	1.7
	196	0.93

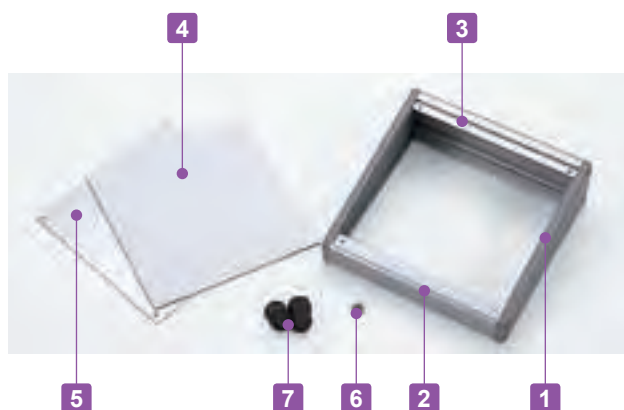
■ Thermal resistance calculation is based on the fins being perpendicular to the ground with temperature at 60°C.

## Product no. / Dimensions

Product no.		W	H	D	Panel (W)	Panel (H)	a	b	c	Cover combination	Weight (g)
● Silver	● Black										
HEN110206S	HEN110206B	111.2	21.4	60	112	21.9	99.2	13.4	16.4	①×2	143
HEN110212S	HEN110212B	111.2	21.4	120	112	21.9	99.2	13.4	16.4		258
HEN110220S	HEN110220B	111.2	21.4	200	112	21.9	99.2	13.4	16.4		411
HEN110306S	HEN110306B	111.2	32.5	60	112	33.0	99.2	24.5	27.5	①×1 ②×1	179
HEN110312S	HEN110312B	111.2	32.5	120	112	33.0	99.2	24.5	27.5		311
HEN110320S	HEN110320B	111.2	32.5	200	112	33.0	99.2	24.5	27.5		488
HEN110406S	HEN110406B	111.2	43.6	60	112	44.1	99.2	35.6	38.6	②×2	215
HEN110412S	HEN110412B	111.2	43.6	120	112	44.1	99.2	35.6	38.6		365
HEN110420S	HEN110420B	111.2	43.6	200	112	44.1	99.2	35.6	38.6		565
HEN110506S	HEN110506B	111.2	54.7	60	112	55.2	99.2	46.7	49.7	①×1 ③×1	250
HEN110512S	HEN110512B	111.2	54.7	120	112	55.2	99.2	46.7	49.7		417
HEN110520S	HEN110520B	111.2	54.7	200	112	55.2	99.2	46.7	49.7		640
HEN110606S	HEN110606B	111.2	65.8	60	112	66.3	99.2	57.8	60.8	②×1 ③×1	286
HEN110612S	HEN110612B	111.2	65.8	120	112	66.3	99.2	57.8	60.8		471
HEN110620S	HEN110620B	111.2	65.8	200	112	66.3	99.2	57.8	60.8		717
HEN110806S	HEN110806B	111.2	88.0	60	112	88.5	99.2	80.8	83.0	③×2	358
HEN110812S	HEN110812B	111.2	88.0	120	112	88.5	99.2	80.8	83.0		577
HEN110820S	HEN110820B	111.2	88.0	200	112	88.5	99.2	80.8	83.0		869

## CF SERIES

## SLOPED ENCLOSURE



- Simple designed box with 10° angle of inclination for operational ease.
- Both the Slide or Screwed panel side can be utilized as a front panel.
- Rubber feet can be attached in any position based on your design requirements.



Low-cost digital printed overlay customization is available with a short lead time.  
Refer to page Custom 1 ~ 2 for more details.

## Components

No.	Part name	Pcs	Material	Color / Finish
1	Side plate	2	ABS UL94V-0	Black • Gray
2	Front frame	1	Extruded aluminium A6063S-T5	Black • Silver / Anodized
3	Rear frame	1	Extruded aluminium A6063S-T5	Black • Silver / Anodized
4	Slide panel	1	Aluminium A1100P t=1.5	Black / Painted
			Aluminium A1100P t=1.5	Silver / Hairline brushed & Anodized
5	Screwed panel	1	Aluminium A1100P t=1.5	Black / Painted
			Aluminium A1100P t=1.5	Silver / Hairline brushed & Anodized
6	Screw	12	Steel	Black trivalent chromate • Nickel plated
7	Rubber feet	4	Rubber	Black

■ Please peel off the protection sheet cover on both panels before application.

## Product no. / Dimensions

Product no.		W	H1	H2	D	a	Weight (kg)
● Black	● Gray/Silver						
CF 7-11BB	CF 7-11GS	70	28.4	48.3	111	57	0.15
CF11-11BB	CF11-11GS	110	28.4	48.3	111	97	0.21
CF16-11BB	CF16-11GS	160	28.4	48.3	111	147	0.29
CF22-11BB	CF22-11GS	220	28.4	48.3	111	207	0.38
CF28-11BB	CF28-11GS	280	28.4	48.3	111	267	0.47
CF12-18BB	CF12-18GS	120	32.4	66.2	181.3	104	0.38
CF18-18BB	CF18-18GS	180	32.4	66.2	181.3	164	0.53
CF27-18BB	CF27-18GS	270	32.4	66.2	181.3	254	0.76
CF35-18BB	CF35-18GS	350	32.4	66.2	181.3	334	0.97
CF43-18BB	CF43-18GS	430	32.4	66.2	181.3	414	1.17

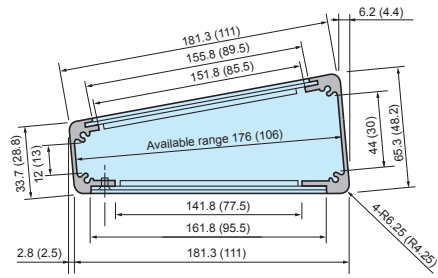
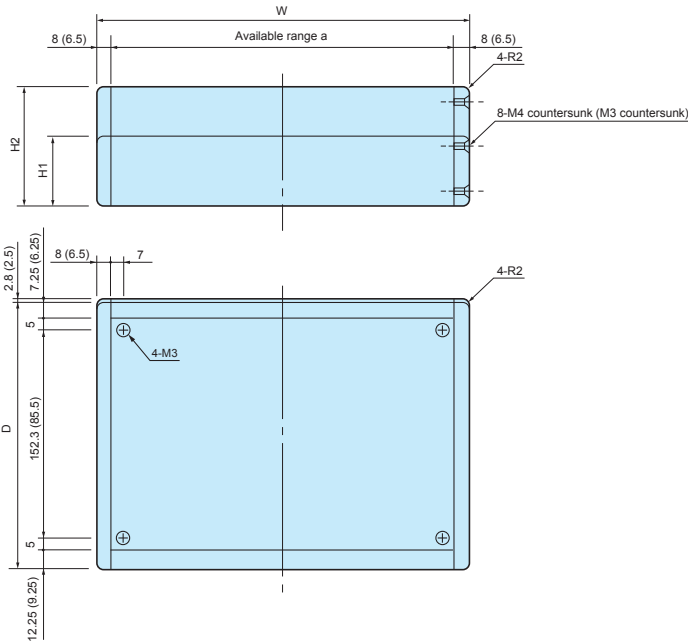
Product no.		W	H1	H2	D	a	Weight (kg)
● Black	● Gray/Silver						
CF15-23BB	CF15-23GS	150	39.6	79.7	230.9	131	0.52
CF21-23BB	CF21-23GS	210	39.6	79.7	230.9	191	0.7
CF27-23BB	CF27-23GS	270	39.6	79.7	230.9	251	0.88
CF36-23BB	CF36-23GS	360	39.6	79.7	230.9	341	1.14
CF45-23BB	CF45-23GS	450	39.6	79.7	230.9	431	1.41
CF21-28BB	CF21-28GS	210	49.8	98.6	281	191	0.93
CF28-28BB	CF28-28GS	280	49.8	98.6	281	261	1.17
CF36-28BB	CF36-28GS	360	49.8	98.6	281	341	1.46
CF45-28BB	CF45-28GS	450	49.8	98.6	281	431	1.77

## CF dimensions

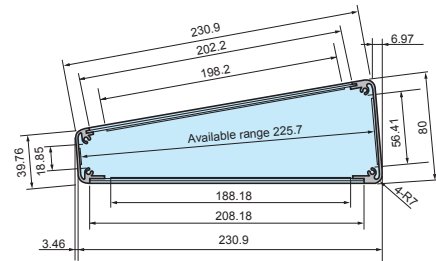
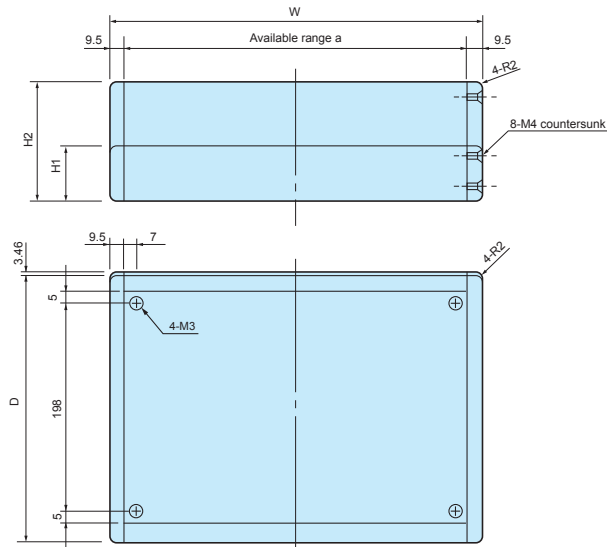
■ DXF/DWG/PDF drawings available on our website.

CF□-11 \* ( ) value = CF□-11 dimensions

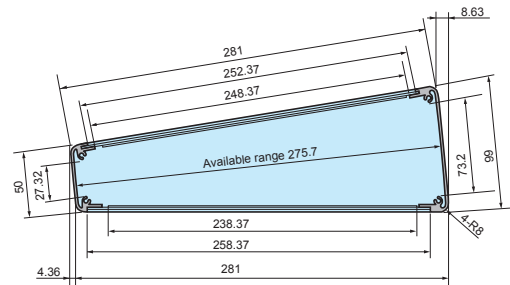
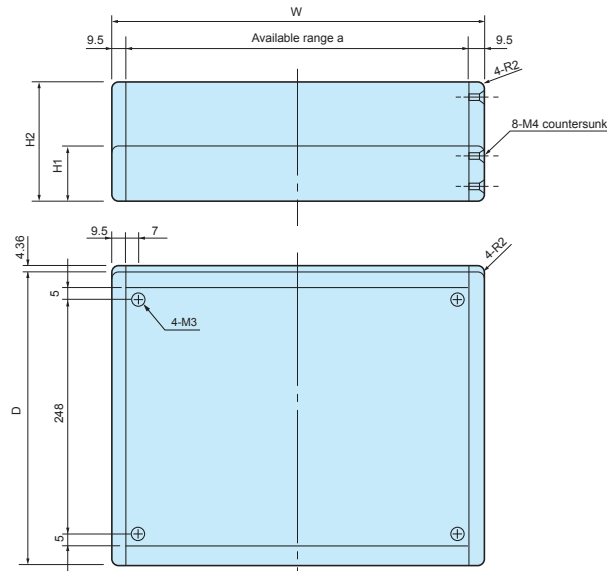
CF□-18



CF□-23



CF□-28



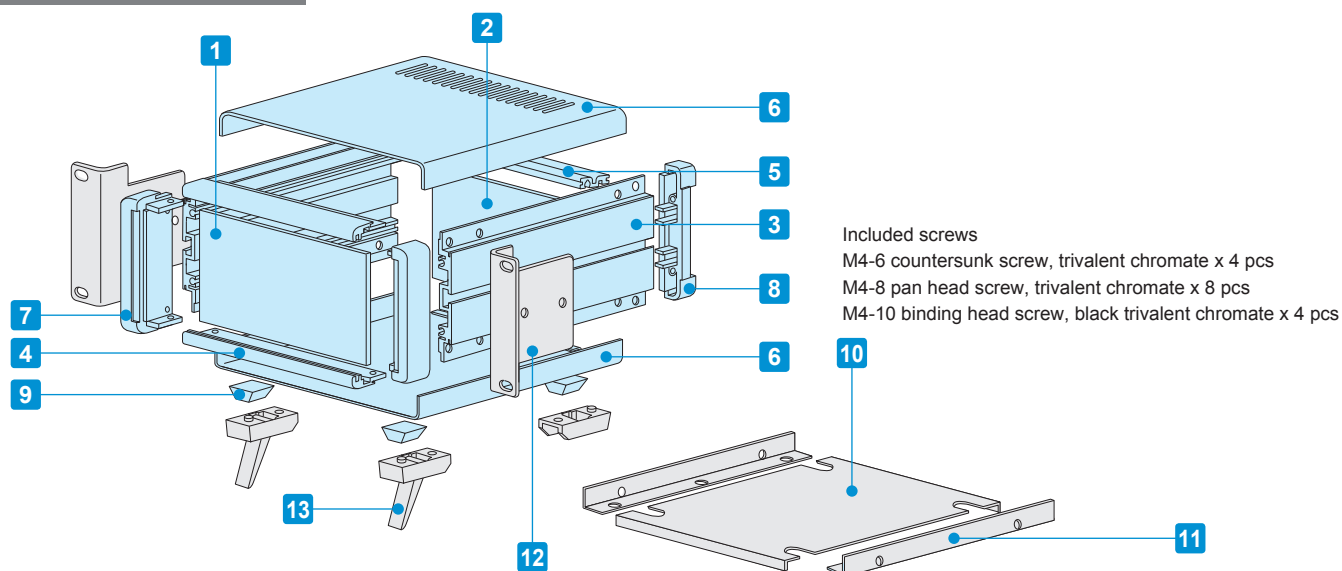
## MS SERIES

## DESKTOP ENCLOSURE



- Available in 3 different colors and 176 different sizes.
- Screws are hidden out of view for a sophisticated and elegant look.
- Suitable for use as measuring instruments, testing equipment, power supply controller, etc.

## Assembly drawings

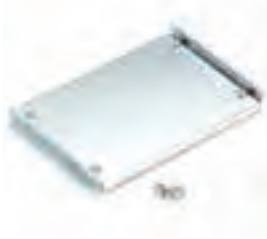


## Components

No.	Part name	Pcs	Material	Color / Finish
1	Front panel	1	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
2	Rear panel	1	Aluminium A1050P t=2.0	Silver • Black / Anodized
3	Side frame	2	Extruded aluminium A6063S-T5	Gray • Black / Painted
4	Front frame	2	Extruded aluminium A6063S-T5	Gray • Black / Painted
5	Rear frame	2	Extruded aluminium A6063S-T5	Silver / Anodized
6	Top • Bottom cover	1 each	Steel SPCC t=1.0	Light gray • Black / Painted
7	Corner block	2	Diecast aluminium ADC12	Gray • Black / Painted
8	Rear feet	2	ABS UL94V-0	Gray • Black
9	Rubber feet	4	Polyurethane	Black

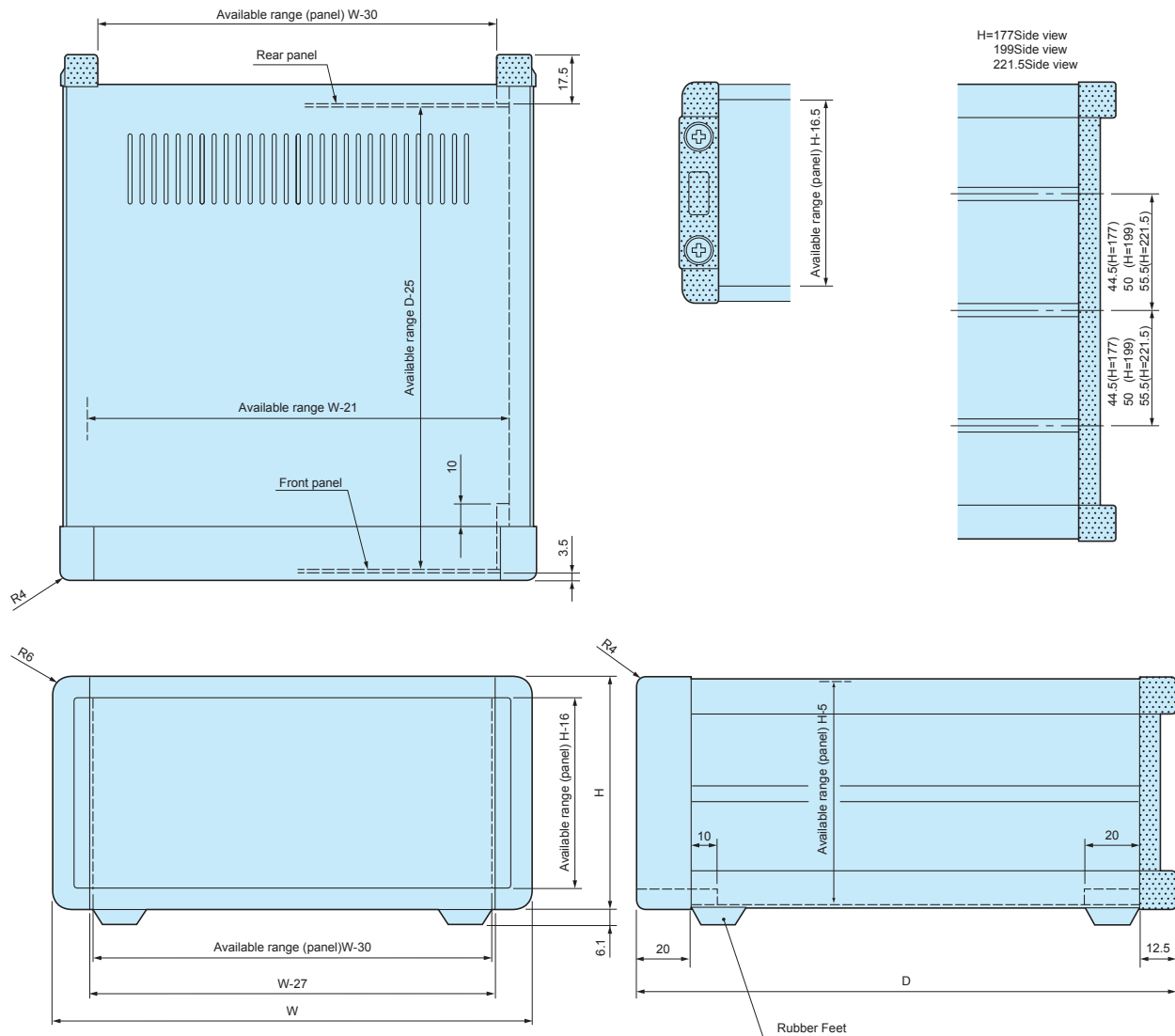
- Front • Rear panels comes with a protective sheet cover.

### Accessories (Optional parts)



## MS dimensions

■ DXF/DWG/PDF drawings available on our website.



■ Top • Bottom cover of sizes 160x160, 160x230, 160x280, 210x160 do not have ventilation holes.

### Color Type

■ Please suffix color code at the end of the product number.

G		B		BS	
					
Panel	Silver	Panel	Black	Panel	Silver
Top • Bottom cover	Light gray	Top • Bottom cover	Black	Top • Bottom cover	Black
Side frame	Gray	Side frame	Black	Side frame	Black



## Product no. / Dimensions

Product no.	H	W	D	Weight (kg)
MS 66-16-16□	66	160	160	1.0
MS 66-16-23□	66	160	230	1.3
MS 66-16-28□	66	160	280	1.6
MS 66-21-16□	66	210	160	1.2
MS 66-21-23□	66	210	230	1.6
MS 66-21-28□	66	210	280	1.8
MS 66-21-35□	66	210	350	2.2
MS 66-26-23□	66	260	230	1.8
MS 66-26-28□	66	260	280	2.1
MS 66-26-35□	66	260	350	2.6
MS 66-32-23□	66	320	230	2.1
MS 66-32-28□	66	320	280	2.5
MS 66-32-35□	66	320	350	3.0
MS 66-32-45□	66	320	450	3.7
MS 66-37-23□	66	370	230	2.4
MS 66-37-28□	66	370	280	2.8
MS 66-37-35□	66	370	350	3.3
MS 66-37-45□	66	370	450	4.1
MS 66-43-23□	66	430	230	2.7
MS 66-43-28□	66	430	280	3.1
MS 66-43-35□	66	430	350	3.7
MS 66-43-45□	66	430	450	4.6
MS 88-16-16□	88	160	160	1.1
MS 88-16-23□	88	160	230	1.5
MS 88-16-28□	88	160	280	1.7
MS 88-21-16□	88	210	160	1.3
MS 88-21-23□	88	210	230	1.8
MS 88-21-28□	88	210	280	2.1
MS 88-21-35□	88	210	350	2.5
MS 88-26-23□	88	260	230	2.0
MS 88-26-28□	88	260	280	2.5
MS 88-26-35□	88	260	350	2.8
MS 88-32-23□	88	320	230	2.3
MS 88-32-28□	88	320	280	2.8
MS 88-32-35□	88	320	350	3.2
MS 88-32-45□	88	320	450	4.0
MS 88-37-23□	88	370	230	2.6
MS 88-37-28□	88	370	280	3.0
MS 88-37-35□	88	370	350	3.6
MS 88-37-45□	88	370	450	4.4
MS 88-43-23□	88	430	230	2.9
MS 88-43-28□	88	430	280	3.4
MS 88-43-35□	88	430	350	4.0
MS 88-43-45□	88	430	450	5.0

Product no.	H	W	D	Weight (kg)
MS 99-16-16□	99	160	160	1.1
MS 99-16-23□	99	160	230	1.5
MS 99-16-28□	99	160	280	1.8
MS 99-21-16□	99	210	160	1.4
MS 99-21-23□	99	210	230	1.8
MS 99-21-28□	99	210	280	2.1
MS 99-21-35□	99	210	350	2.5
MS 99-26-23□	99	260	230	2.0
MS 99-26-28□	99	260	280	2.4
MS 99-26-35□	99	260	350	2.8
MS 99-32-23□	99	320	230	2.4
MS 99-32-28□	99	320	280	2.8
MS 99-32-35□	99	320	350	3.3
MS 99-32-45□	99	320	450	4.0
MS 99-37-23□	99	370	230	2.6
MS 99-37-28□	99	370	280	3.0
MS 99-37-35□	99	370	350	3.6
MS 99-37-45□	99	370	450	4.5
MS 99-43-23□	99	430	230	3.0
MS 99-43-28□	99	430	280	3.4
MS 99-43-35□	99	430	350	4.1
MS 99-43-45□	99	430	450	5.0
MS133-16-16□	133	160	160	1.3
MS133-16-23□	133	160	230	1.7
MS133-16-28□	133	160	280	2.0
MS133-21-16□	133	210	160	1.6
MS133-21-23□	133	210	230	2.1
MS133-21-28□	133	210	280	2.4
MS133-21-35□	133	210	350	2.9
MS133-26-23□	133	260	230	2.4
MS133-26-28□	133	260	280	2.8
MS133-26-35□	133	260	350	3.3
MS133-32-23□	133	320	230	2.7
MS133-32-28□	133	320	280	3.2
MS133-32-35□	133	320	350	3.7
MS133-32-45□	133	320	450	4.5
MS133-37-23□	133	370	230	3.0
MS133-37-28□	133	370	280	3.5
MS133-37-35□	133	370	350	4.1
MS133-37-45□	133	370	450	5.0
MS133-43-23□	133	430	230	3.4
MS133-43-28□	133	430	280	3.9
MS133-43-35□	133	430	350	4.6
MS133-43-45□	133	430	450	5.6

## Product no. / Dimensions

Product no.	H	W	D	Weight (kg)
MS149-16-16□	149	160	160	1.4
MS149-16-23□	149	160	230	1.8
MS149-16-28□	149	160	280	2.1
MS149-21-16□	149	210	160	1.6
MS149-21-23□	149	210	230	2.1
MS149-21-28□	149	210	280	2.4
MS149-21-35□	149	210	350	2.9
MS149-26-23□	149	260	230	2.4
MS149-26-28□	149	260	280	2.8
MS149-26-35□	149	260	350	3.3
MS149-32-23□	149	320	230	2.7
MS149-32-28□	149	320	280	3.2
MS149-32-35□	149	320	350	3.8
MS149-32-45□	149	320	450	4.6
MS149-37-23□	149	370	230	3.0
MS149-37-28□	149	370	280	3.5
MS149-37-35□	149	370	350	4.1
MS149-37-45□	149	370	450	5.1
MS149-43-23□	149	430	230	3.4
MS149-43-28□	149	430	280	3.9
MS149-43-35□	149	430	350	4.6
MS149-43-45□	149	430	450	5.6
MS177-16-16□	177	160	160	1.6
MS177-16-23□	177	160	230	2.2
MS177-16-28□	177	160	280	2.5
MS177-21-16□	177	210	160	1.9
MS177-21-23□	177	210	230	2.7
MS177-21-28□	177	210	280	3.1
MS177-21-35□	177	210	350	3.6
MS177-26-23□	177	260	230	3.0
MS177-26-28□	177	260	280	3.4
MS177-26-35□	177	260	350	4.0
MS177-32-23□	177	320	230	3.3
MS177-32-28□	177	320	280	3.9
MS177-32-35□	177	320	350	4.5
MS177-32-45□	177	320	450	5.5
MS177-37-23□	177	370	230	3.6
MS177-37-28□	177	370	280	4.2
MS177-37-35□	177	370	350	4.9
MS177-37-45□	177	370	450	6.0
MS177-43-23□	177	430	230	4.0
MS177-43-28□	177	430	280	4.6
MS177-43-35□	177	430	350	5.4
MS177-43-45□	177	430	450	6.6

Product no.	H	W	D	Weight (kg)
MS199-16-16□	199	160	160	1.9
MS199-16-23□	199	160	230	2.4
MS199-16-28□	199	160	280	2.7
MS199-21-16□	199	210	160	2.1
MS199-21-23□	199	210	230	2.7
MS199-21-28□	199	210	280	3.1
MS199-21-35□	199	210	350	3.7
MS199-26-23□	199	260	230	3.1
MS199-26-28□	199	260	280	3.5
MS199-26-35□	199	260	350	4.1
MS199-32-23□	199	320	230	3.4
MS199-32-28□	199	320	280	3.9
MS199-32-35□	199	320	350	4.7
MS199-32-45□	199	320	450	5.7
MS199-37-23□	199	370	230	3.8
MS199-37-28□	199	370	280	4.3
MS199-37-35□	199	370	350	5.1
MS199-37-45□	199	370	450	6.0
MS199-43-23□	199	430	230	4.2
MS199-43-28□	199	430	280	4.8
MS199-43-35□	199	430	350	5.6
MS199-43-45□	199	430	450	6.9
MS222-16-16□	222	160	160	2.0
MS222-16-23□	222	160	230	2.5
MS222-16-28□	222	160	280	2.8
MS222-21-16□	222	210	160	2.2
MS222-21-23□	222	210	230	2.8
MS222-21-28□	222	210	280	3.2
MS222-21-35□	222	210	350	3.8
MS222-26-23□	222	260	230	3.2
MS222-26-28□	222	260	280	3.6
MS222-26-35□	222	260	350	4.3
MS222-32-23□	222	320	230	3.6
MS222-32-28□	222	320	280	4.1
MS222-32-35□	222	320	350	4.9
MS222-32-45□	222	320	450	6.0
MS222-37-23□	222	370	230	3.9
MS222-37-28□	222	370	280	4.5
MS222-37-35□	222	370	350	5.3
MS222-37-45□	222	370	450	6.4
MS222-43-23□	222	430	230	4.4
MS222-43-28□	222	430	280	5.0
MS222-43-35□	222	430	350	5.9
MS222-43-45□	222	430	450	7.2

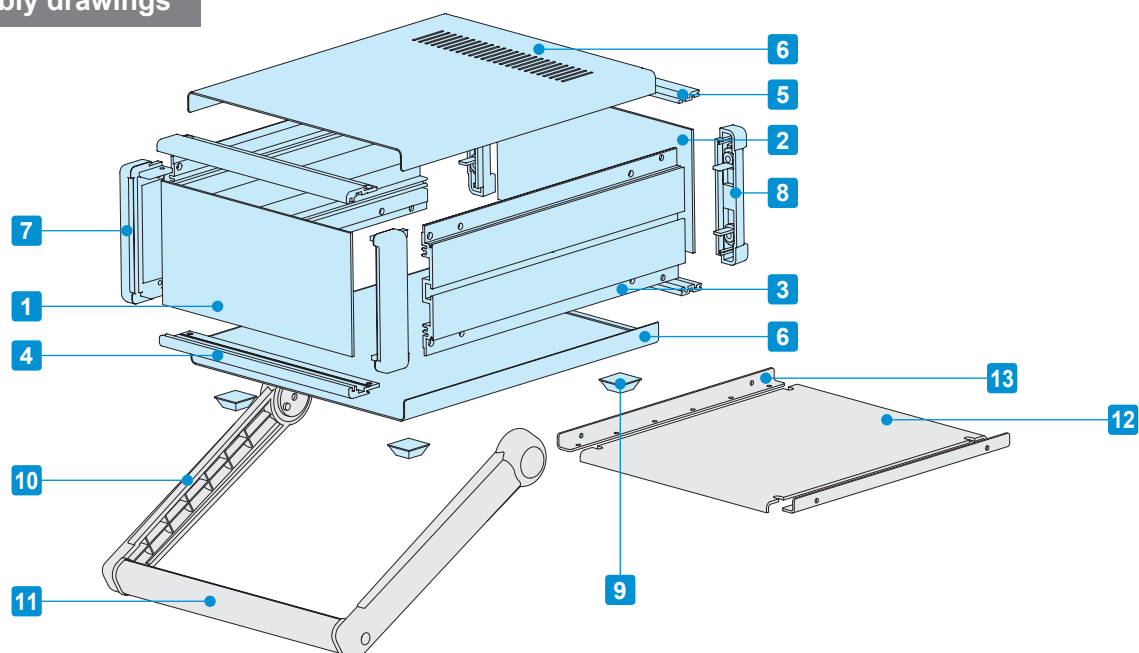
## MSN SERIES

## DESKTOP ENCLOSURE with STAND HANDLE



- Available in 3 different colors and 176 different sizes.
- Stand handle can be shifted and locked at 30° intervals.
- Maximum load support of 25kg.

## Assembly drawings



## Components

No.	Part name		Pcs	Material	Color / Finish
1	Front panel		1	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
2	Rear panel		1	Aluminium A1050P t=2.0	Silver • Black / Anodized
3	Side frame		2	Extruded aluminium A6063S-T5	Gray • Black / Painted
4	Front frame		2	Extruded aluminium A6063S-T5	Gray • Black / Painted
5	Rear frame		2	Extruded aluminium A6063S-T5	Silver / Anodized
6	Top • Bottom cover		1 each	Steel SPCC t=1.0	Light gray • Black / Painted
7	Corner block		2	Diecast aluminium ADC12	Gray • Black / Painted
8	Rear feet		2	ABS UL94V-0	Gray • Black
9	Rubber feet		4	Polyurethane	Black
10	Stand handle	Bracket	2	ABS UL94VHB	Light gray • Black
11		Grip	1	Extruded aluminium A6063S-T5	Silver • Black

■ Front • Rear panels comes with a protective sheet cover.

Included screws

M4-6 countersunk screw, trivalent chromate x 4 pcs

M4-8 pan head screw, trivalent chromate x 8 pcs

M4-10 binding head screw, black trivalent chromate x 4 pcs

## Accessories (Optional parts)



12 Mounting plate  
MSC series  
See page 249

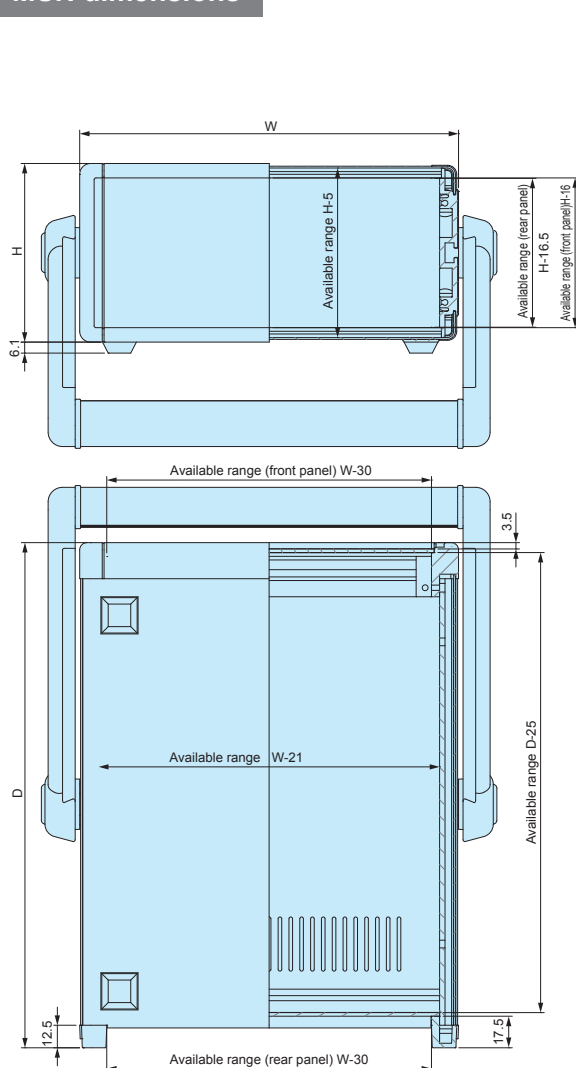


13 L-bracket  
MSCL series  
See page 249

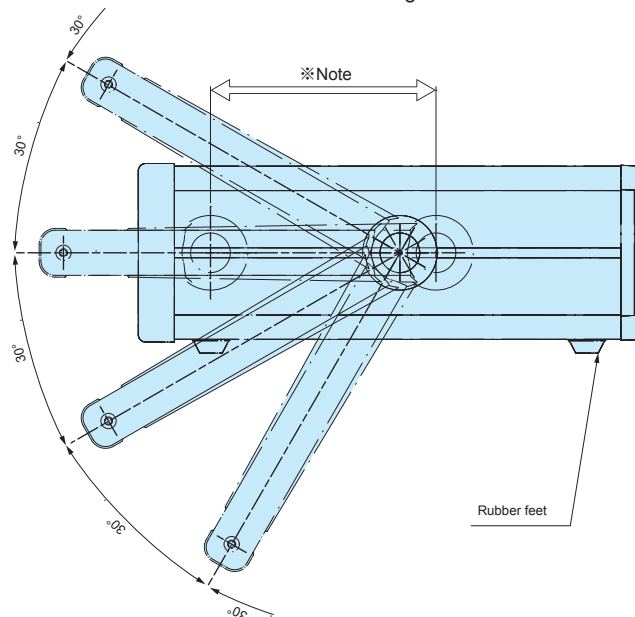


Cable hook  
CBF series  
See page 251

## MSN dimensions



■ DXF/DWG/PDF drawings available on our website.



※ Note  
Stand handle location can be freely affixed within denoted range.

■ Top • Bottom cover of sizes 160x160, 160x230, 160x280, 210x160 do not have ventilation holes.

## Color Type

■ Please suffix color code at the end of the product number.

G		B		BS	
Panel	Silver	Panel	Black	Panel	Silver
Top • Bottom cover	Light gray	Top • Bottom cover	Black	Top • Bottom cover	Black
Side frame	Gray	Side frame	Black	Side frame	Black

## Product no. / Dimensions

Product no.	H	W	D	Weight (kg)
MSN 66-16-16□	66	160	160	1.2
MSN 66-16-23□	66	160	230	1.5
MSN 66-16-28□	66	160	280	1.8
MSN 66-21-16□	66	210	160	1.4
MSN 66-21-23□	66	210	230	1.8
MSN 66-21-28□	66	210	280	2.1
MSN 66-21-35□	66	210	350	2.5
MSN 66-26-23□	66	260	230	2.1
MSN 66-26-28□	66	260	280	2.4
MSN 66-26-35□	66	260	350	2.9
MSN 66-32-23□	66	320	230	2.4
MSN 66-32-28□	66	320	280	2.8
MSN 66-32-35□	66	320	350	3.4
MSN 66-32-45□	66	320	450	4.1
MSN 66-37-23□	66	370	230	2.6
MSN 66-37-28□	66	370	280	3.1
MSN 66-37-35□	66	370	350	3.7
MSN 66-37-45□	66	370	450	4.4
MSN 66-43-23□	66	430	230	3.0
MSN 66-43-28□	66	430	280	3.5
MSN 66-43-35□	66	430	350	4.2
MSN 66-43-45□	66	430	450	5.2
MSN 88-16-16□	88	160	160	1.3
MSN 88-16-23□	88	160	230	1.6
MSN 88-16-28□	88	160	280	1.9
MSN 88-21-16□	88	210	160	1.5
MSN 88-21-23□	88	210	230	1.9
MSN 88-21-28□	88	210	280	2.3
MSN 88-21-35□	88	210	350	2.7
MSN 88-26-23□	88	260	230	2.3
MSN 88-26-28□	88	260	280	2.6
MSN 88-26-35□	88	260	350	3.1
MSN 88-32-23□	88	320	230	2.6
MSN 88-32-28□	88	320	280	3.0
MSN 88-32-35□	88	320	350	3.6
MSN 88-32-45□	88	320	450	4.4
MSN 88-37-23□	88	370	230	2.9
MSN 88-37-28□	88	370	280	3.3
MSN 88-37-35□	88	370	350	4.0
MSN 88-37-45□	88	370	450	4.7
MSN 88-43-23□	88	430	230	3.2
MSN 88-43-28□	88	430	280	3.7
MSN 88-43-35□	88	430	350	4.4
MSN 88-43-45□	88	430	450	5.5

Product no.	H	W	D	Weight (kg)
MSN 99-16-16□	99	160	160	1.3
MSN 99-16-23□	99	160	230	1.7
MSN 99-16-28□	99	160	280	2.0
MSN 99-21-16□	99	210	160	1.6
MSN 99-21-23□	99	210	230	2.0
MSN 99-21-28□	99	210	280	2.3
MSN 99-21-35□	99	210	350	2.8
MSN 99-26-23□	99	260	230	2.3
MSN 99-26-28□	99	260	280	2.7
MSN 99-26-35□	99	260	350	3.2
MSN 99-32-23□	99	320	230	2.6
MSN 99-32-28□	99	320	280	3.1
MSN 99-32-35□	99	320	350	3.7
MSN 99-32-45□	99	320	450	4.5
MSN 99-37-23□	99	370	230	2.9
MSN 99-37-28□	99	370	280	3.4
MSN 99-37-35□	99	370	350	4.1
MSN 99-37-45□	99	370	450	4.8
MSN 99-43-23□	99	430	230	3.3
MSN 99-43-28□	99	430	280	3.8
MSN 99-43-35□	99	430	350	4.5
MSN 99-43-45□	99	430	450	5.6
MSN133-16-16□	133	160	160	1.5
MSN133-16-23□	133	160	230	1.9
MSN133-16-28□	133	160	280	2.2
MSN133-21-16□	133	210	160	1.8
MSN133-21-23□	133	210	230	2.3
MSN133-21-28□	133	210	280	2.6
MSN133-21-35□	133	210	350	3.1
MSN133-26-23□	133	260	230	2.6
MSN133-26-28□	133	260	280	3.0
MSN133-26-35□	133	260	350	3.5
MSN133-32-23□	133	320	230	2.9
MSN133-32-28□	133	320	280	3.4
MSN133-32-35□	133	320	350	4.0
MSN133-32-45□	133	320	450	4.9
MSN133-37-23□	133	370	230	3.3
MSN133-37-28□	133	370	280	3.8
MSN133-37-35□	133	370	350	4.4
MSN133-37-45□	133	370	450	5.2
MSN133-43-23□	133	430	230	3.7
MSN133-43-28□	133	430	280	4.2
MSN133-43-35□	133	430	350	4.9
MSN133-43-45□	133	430	450	6.0

## Product no. / Dimensions

Product no.	H	W	D	Weight (kg)
MSN149-16-16□	149	160	160	1.6
MSN149-16-23□	149	160	230	2.0
MSN149-16-28□	149	160	280	2.4
MSN149-21-16□	149	210	160	1.8
MSN149-21-23□	149	210	230	2.4
MSN149-21-28□	149	210	280	2.7
MSN149-21-35□	149	210	350	3.2
MSN149-26-23□	149	260	230	2.7
MSN149-26-28□	149	260	280	3.1
MSN149-26-35□	149	260	350	3.6
MSN149-32-23□	149	320	230	3.1
MSN149-32-28□	149	320	280	3.5
MSN149-32-35□	149	320	350	4.2
MSN149-32-45□	149	320	450	5.1
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MSN149-43-35□	149	430	350	5.1
MSN149-43-45□	149	430	450	6.3
MSN177-16-16□	177	160	160	1.9
MSN177-16-23□	177	160	230	2.4
MSN177-16-28□	177	160	280	2.8
MSN177-21-16□	177	210	160	2.2
MSN177-21-23□	177	210	230	2.8
MSN177-21-28□	177	210	280	3.2
MSN177-21-35□	177	210	350	3.8
MSN177-26-23□	177	260	230	3.2
MSN177-26-28□	177	260	280	3.6
MSN177-26-35□	177	260	350	4.2
MSN177-32-23□	177	320	230	3.5
MSN177-32-28□	177	320	280	4.0
MSN177-32-35□	177	320	350	4.8
MSN177-32-45□	177	320	450	5.8
MSN177-37-23□	177	370	230	3.9
MSN177-37-28□	177	370	280	4.4
MSN177-37-35□	177	370	350	5.2
MSN177-37-45□	177	370	450	6.1
MSN177-43-23□	177	430	230	4.3
MSN177-43-28□	177	430	280	4.9
MSN177-43-35□	177	430	350	5.7
MSN177-43-45□	177	430	450	7.0

Product no.	H	W	D	Weight (kg)
MSN199-16-16□	199	160	160	2.0
MSN199-16-23□	199	160	230	2.6
MSN199-16-28□	199	160	280	2.9
MSN199-21-16□	199	210	160	2.3
MSN199-21-23□	199	210	230	2.9
MSN199-21-28□	199	210	280	3.3
MSN199-21-35□	199	210	350	3.9
MSN199-26-23□	199	260	230	3.3
MSN199-26-28□	199	260	280	3.7
MSN199-26-35□	199	260	350	4.4
MSN199-32-23□	199	320	230	3.7
MSN199-32-28□	199	320	280	4.2
MSN199-32-35□	199	320	350	4.9
MSN199-32-45□	199	320	450	5.9
MSN199-37-23□	199	370	230	4.0
MSN199-37-28□	199	370	280	4.6
MSN199-37-35□	199	370	350	5.4
MSN199-37-45□	199	370	450	6.3
MSN199-43-23□	199	430	230	4.5
MSN199-43-28□	199	430	280	5.1
MSN199-43-35□	199	430	350	5.9
MSN199-43-45□	199	430	450	7.2
MSN222-16-16□	222	160	160	2.2
MSN222-16-23□	222	160	230	2.7
MSN222-16-28□	222	160	280	3.0
MSN222-21-16□	222	210	160	2.5
MSN222-21-23□	222	210	230	3.0
MSN222-21-28□	222	210	280	3.4
MSN222-21-35□	222	210	350	4.1
MSN222-26-23□	222	260	230	3.4
MSN222-26-28□	222	260	280	3.8
MSN222-26-35□	222	260	350	4.5
MSN222-32-23□	222	320	230	3.8
MSN222-32-28□	222	320	280	4.3
MSN222-32-35□	222	320	350	5.1
MSN222-32-45□	222	320	450	6.2
MSN222-37-23□	222	370	230	4.2
MSN222-37-28□	222	370	280	4.8
MSN222-37-35□	222	370	350	5.6
MSN222-37-45□	222	370	450	6.6
MSN222-43-23□	222	430	230	4.7
MSN222-43-28□	222	430	280	5.2
MSN222-43-35□	222	430	350	6.1
MSN222-43-45□	222	430	450	7.5



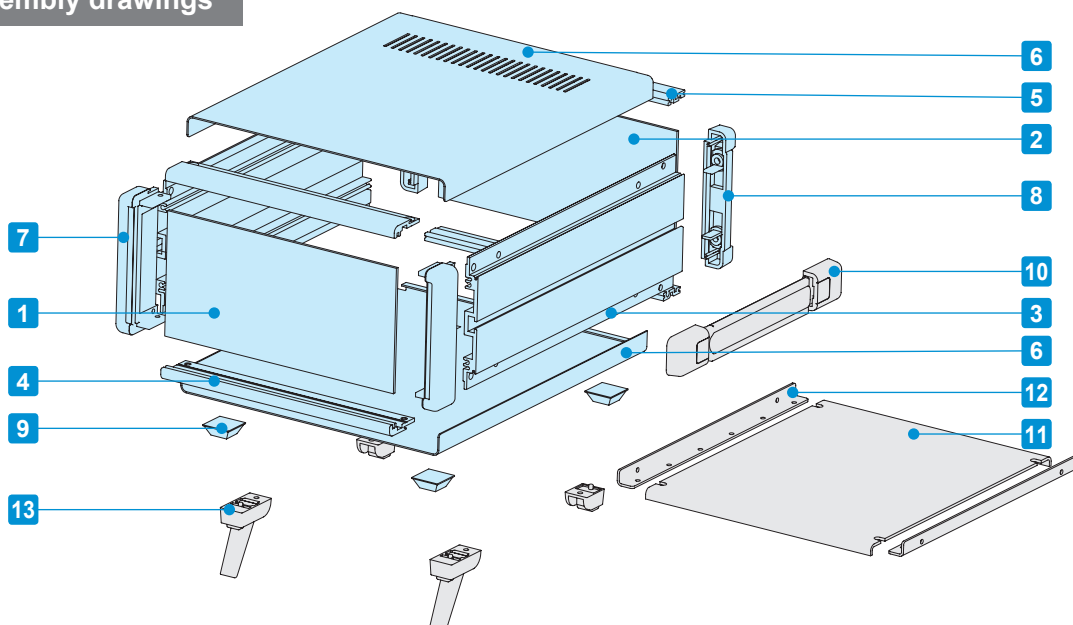
## MSY SERIES

## DESKTOP ENCLOSURE with CARRYING HANDLE



- Available in 3 different colors and 160 different sizes.
- Maximum load support of 20kg.

## Assembly drawings



## Components

No.	Part name	Pcs	Material	Color / Finish
1	Front panel	1	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
2	Rear panel	1	Aluminium A1050P t=2.0	Silver • Black / Anodized
3	Side frame	2	Extruded aluminium A6063S-T5	Gray • Black / Painted
4	Front frame	2	Extruded aluminium A6063S-T5	Gray • Black / Painted
5	Rear frame	2	Extruded aluminium A6063S-T5	Silver / Anodized
6	Top • Bottom cover	1 each	Steel SPCC t=1.0	Light gray • Black / Painted
7	Corner block	2	Diecast aluminium ADC12	Gray • Black / Painted
8	Rear feet	2	ABS UL94V-0	Gray • Black
9	Rubber feet	4	Polyurethane	Black
10	Carrying handle	1	PE	Gray • Black

■ Front • Rear panels comes with a protective sheet cover.

Included screws

M4-6 countersunk screw, trivalent chromate x 4 pcs

M4-8 pan head screw, trivalent chromate x 8 pcs

M4-10 binding head screw, black trivalent chromate x 4 pcs

## Accessories (Optional parts)



**11** Mounting plate  
MSC series  
See page 249



**12** L-bracket  
MSCL series  
See page 249



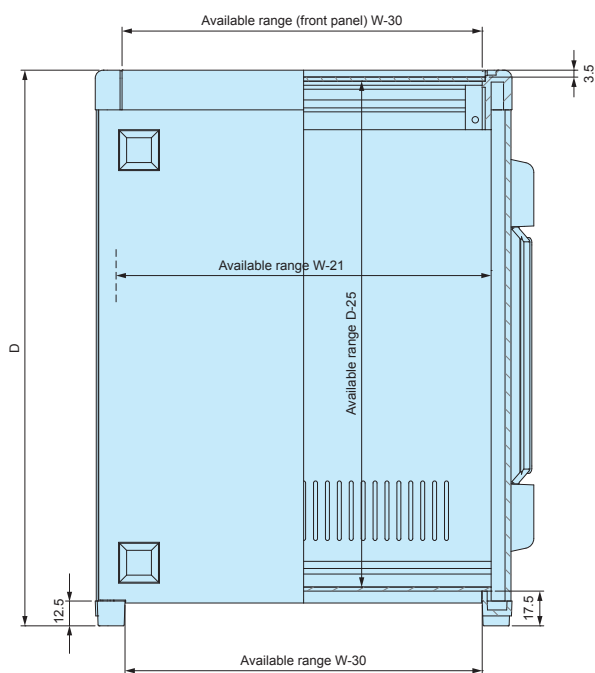
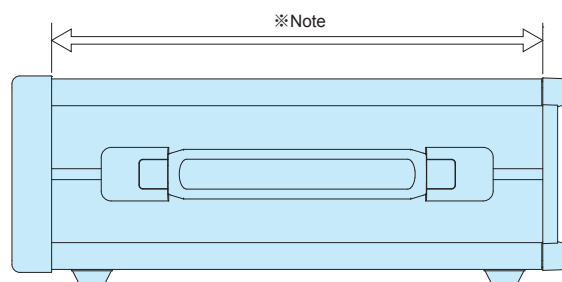
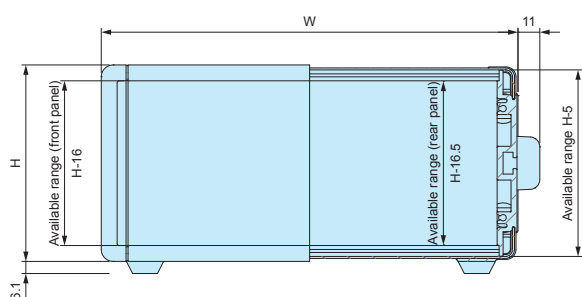
**13** Tilt leg  
TL series  
See page 251



Cable hook  
CBF series  
See page 251

## MSY dimensions

■ DXF/DWG/PDF drawings available on our website.



※ Note  
Carrying handle location can be freely affixed within denoted range.

■ Top • Bottom cover of sizes 160×230, 160×280 do not have ventilation holes.

## Color Type

■ Please suffix color code at the end of the product number.

● G		● B		● BS	
Panel	Silver	Panel	Black	Panel	Silver
Top • Bottom cover	Light gray	Top • Bottom cover	Black	Top • Bottom cover	Black
Side frame	Gray	Side frame	Black	Side frame	Black

## Product no. / Dimensions

Product no.	H	W	D	Weight (kg)
MSY 66-16-23□	66	160	230	1.4
MSY 66-16-28□	66	160	280	1.6
MSY 66-21-23□	66	210	230	1.6
MSY 66-21-28□	66	210	280	1.9
MSY 66-21-35□	66	210	350	2.3
MSY 66-26-23□	66	260	230	1.9
MSY 66-26-28□	66	260	280	2.2
MSY 66-26-35□	66	260	350	2.7
MSY 66-32-23□	66	320	230	2.2
MSY 66-32-28□	66	320	280	2.6
MSY 66-32-35□	66	320	350	3.1
MSY 66-32-45□	66	320	450	3.9
MSY 66-37-23□	66	370	230	2.5
MSY 66-37-28□	66	370	280	2.9
MSY 66-37-35□	66	370	350	3.5
MSY 66-37-45□	66	370	450	4.2
MSY 66-43-23□	66	430	230	2.8
MSY 66-43-28□	66	430	280	3.3
MSY 66-43-35□	66	430	350	3.9
MSY 66-43-45□	66	430	450	4.9
MSY 88-16-23□	88	160	230	1.5
MSY 88-16-28□	88	160	280	1.8
MSY 88-21-23□	88	210	230	1.8
MSY 88-21-28□	88	210	280	2.1
MSY 88-21-35□	88	210	350	2.5
MSY 88-26-23□	88	260	230	2.1
MSY 88-26-28□	88	260	280	2.4
MSY 88-26-35□	88	260	350	2.9
MSY 88-32-23□	88	320	230	2.4
MSY 88-32-28□	88	320	280	2.8
MSY 88-32-35□	88	320	350	3.4
MSY 88-32-45□	88	320	450	4.2
MSY 88-37-23□	88	370	230	2.7
MSY 88-37-28□	88	370	280	3.1
MSY 88-37-35□	88	370	350	3.7
MSY 88-37-45□	88	370	450	4.5
MSY 88-43-23□	88	430	230	3.0
MSY 88-43-28□	88	430	280	3.5
MSY 88-43-35□	88	430	350	4.2
MSY 88-43-45□	88	430	450	5.2

Product no.	H	W	D	Weight (kg)
MSY 99-16-23□	99	160	230	1.6
MSY 99-16-28□	99	160	280	1.8
MSY 99-21-23□	99	210	230	1.8
MSY 99-21-28□	99	210	280	2.1
MSY 99-21-35□	99	210	350	2.6
MSY 99-26-23□	99	260	230	2.2
MSY 99-26-28□	99	260	280	2.5
MSY 99-26-35□	99	260	350	3.0
MSY 99-32-23□	99	320	230	2.5
MSY 99-32-28□	99	320	280	2.9
MSY 99-32-35□	99	320	350	3.5
MSY 99-32-45□	99	320	450	4.3
MSY 99-37-23□	99	370	230	2.7
MSY 99-37-28□	99	370	280	3.2
MSY 99-37-35□	99	370	350	3.8
MSY 99-37-45□	99	370	450	4.6
MSY 99-43-23□	99	430	230	3.1
MSY 99-43-28□	99	430	280	3.6
MSY 99-43-35□	99	430	350	4.3
MSY 99-43-45□	99	430	450	5.3
MSY133-16-23□	133	160	230	1.8
MSY133-16-28□	133	160	280	2.1
MSY133-21-23□	133	210	230	2.1
MSY133-21-28□	133	210	280	2.4
MSY133-21-35□	133	210	350	2.9
MSY133-26-23□	133	260	230	2.4
MSY133-26-28□	133	260	280	2.8
MSY133-26-35□	133	260	350	3.3
MSY133-32-23□	133	320	230	2.7
MSY133-32-28□	133	320	280	3.2
MSY133-32-35□	133	320	350	3.8
MSY133-32-45□	133	320	450	4.6
MSY133-37-23□	133	370	230	3.0
MSY133-37-28□	133	370	280	3.5
MSY133-37-35□	133	370	350	4.2
MSY133-37-45□	133	370	450	5.0
MSY133-43-23□	133	430	230	3.4
MSY133-43-28□	133	430	280	3.9
MSY133-43-35□	133	430	350	4.7
MSY133-43-45□	133	430	450	5.8

## Product no. / Dimensions

Product no.	H	W	D	Weight (kg)
MSY149-16-23□	149	160	230	1.9
MSY149-16-28□	149	160	280	2.2
MSY149-21-23□	149	210	230	2.2
MSY149-21-28□	149	210	280	2.5
MSY149-21-35□	149	210	350	3.0
MSY149-26-23□	149	260	230	2.5
MSY149-26-28□	149	260	280	2.9
MSY149-26-35□	149	260	350	3.4
MSY149-32-23□	149	320	230	2.9
MSY149-32-28□	149	320	280	3.3
MSY149-32-35□	149	320	350	4.0
MSY149-32-45□	149	320	450	4.9
MSY149-37-23□	149	370	230	3.2
MSY149-37-28□	149	370	280	3.7
MSY149-37-35□	149	370	350	4.3
MSY149-37-45□	149	370	450	5.2
MSY149-43-23□	149	430	230	3.6
MSY149-43-28□	149	430	280	4.1
MSY149-43-35□	149	430	350	4.8
MSY149-43-45□	149	430	450	6.0
MSY177-16-23□	177	160	230	2.3
MSY177-16-28□	177	160	280	2.6
MSY177-21-23□	177	210	230	2.6
MSY177-21-28□	177	210	280	3.0
MSY177-21-35□	177	210	350	3.6
MSY177-26-23□	177	260	230	3.0
MSY177-26-28□	177	260	280	3.4
MSY177-26-35□	177	260	350	4.0
MSY177-32-23□	177	320	230	3.3
MSY177-32-28□	177	320	280	3.8
MSY177-32-35□	177	320	350	4.6
MSY177-32-45□	177	320	450	5.6
MSY177-37-23□	177	370	230	3.6
MSY177-37-28□	177	370	280	4.2
MSY177-37-35□	177	370	350	5.0
MSY177-37-45□	177	370	450	5.9
MSY177-43-23□	177	430	230	4.0
MSY177-43-28□	177	430	280	4.6
MSY177-43-35□	177	430	350	5.5
MSY177-43-45□	177	430	450	6.7

Product no.	H	W	D	Weight (kg)
MSY199-16-23□	199	160	230	2.4
MSY199-16-28□	199	160	280	2.8
MSY199-21-23□	199	210	230	2.7
MSY199-21-28□	199	210	280	3.1
MSY199-21-35□	199	210	350	3.7
MSY199-26-23□	199	260	230	3.1
MSY199-26-28□	199	260	280	3.5
MSY199-26-35□	199	260	350	4.2
MSY199-32-23□	199	320	230	3.5
MSY199-32-28□	199	320	280	4.0
MSY199-32-35□	199	320	350	4.7
MSY199-32-45□	199	320	450	5.7
MSY199-37-23□	199	370	230	3.8
MSY199-37-28□	199	370	280	4.4
MSY199-37-35□	199	370	350	5.1
MSY199-37-45□	199	370	450	6.1
MSY199-43-23□	199	430	230	4.2
MSY199-43-28□	199	430	280	4.8
MSY199-43-35□	199	430	350	5.6
MSY199-43-45□	199	430	450	6.9
MSY222-16-23□	222	160	230	2.5
MSY222-16-28□	222	160	280	2.9
MSY222-21-23□	222	210	230	2.9
MSY222-21-28□	222	210	280	3.3
MSY222-21-35□	222	210	350	3.9
MSY222-26-23□	222	260	230	3.3
MSY222-26-28□	222	260	280	3.7
MSY222-26-35□	222	260	350	4.4
MSY222-32-23□	222	320	230	3.6
MSY222-32-28□	222	320	280	4.1
MSY222-32-35□	222	320	350	4.9
MSY222-32-45□	222	320	450	6.0
MSY222-37-23□	222	370	230	4.0
MSY222-37-28□	222	370	280	4.5
MSY222-37-35□	222	370	350	5.3
MSY222-37-45□	222	370	450	6.4
MSY222-43-23□	222	430	230	4.4
MSY222-43-28□	222	430	280	5.0
MSY222-43-35□	222	430	350	5.9
MSY222-43-45□	222	430	450	7.2

## MSR SERIES

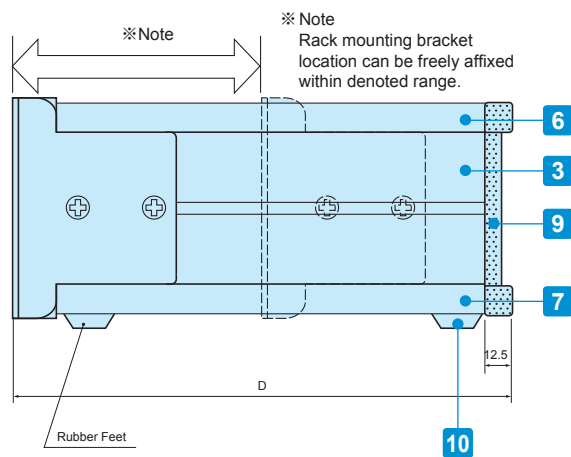
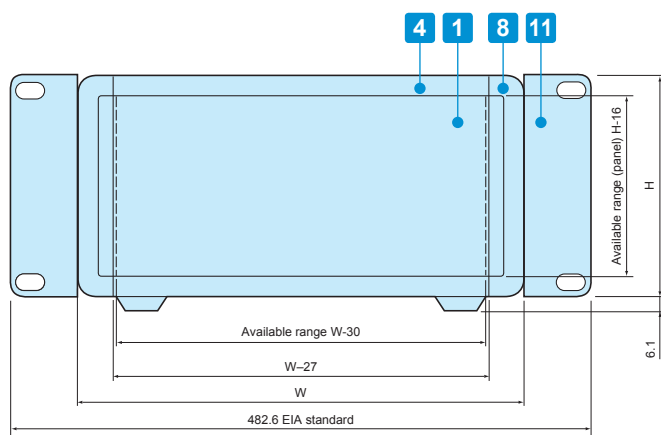
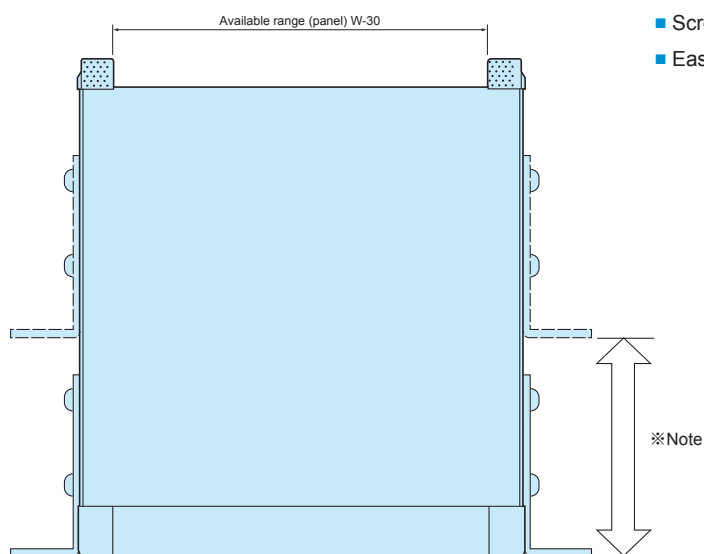
## RACK MOUNT ENCLOSURE



## MSR dimensions

■ DXF/DWG/PDF drawings available on our website.

- 16 different sizes available.
- Screws are hidden out of view for a sophisticated and elegant look.
- Easy to punch or mill holes both on front and rear panels.



## Components

■ Refer to page 250 for more information on rack mounting bracket.

No.	Part name	Pcs	Material	Color / Finish
1	Front panel	1	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
–	Rear panel	1	Aluminium A1050P t=2.0	Silver • Black / Anodized
3	Side frame	2	Extruded aluminium A6063S-T5	Gray • Black / Painted
4	Front frame	2	Extruded aluminium A6063S-T5	Gray • Black / Painted
–	Rear frame	2	Extruded aluminium A6063S-T5	Silver / Anodized
6	Top cover	1	Steel SPCC t=1.0	Light gray • Black / Painted
7	Bottom cover	1	Steel SPCC t=1.0	Light gray • Black / Painted
8	Corner block	2	Diecast aluminium ADC12	Gray • Black / Painted
9	Rear feet	2	ABS UL94V-0	Gray • Black
10	Rubber feet	4	Polyurethane	Black
11	Rack mounting bracket	2	Extruded aluminium A6063S-T5	Gray • Black painted

■ Front • Rear panels comes with a protective sheet cover.

Included screws and nuts

M4-6 countersunk screw, trivalent chromate x 4 pcs

M4-8 pan head screw, trivalent chromate x 8 pcs

M4-10 binding head screw, black trivalent chromate x 4 pcs

M5-10 flat head screw, black trivalent chromate x 4 pcs

M5 nut (Product no. MZ-5) x 4 pcs

## Accessories (Optional parts)



Mounting plate  
MSC series  
See page 249



L-bracket  
MSCL series  
See page 249



Aluminium handle  
OH series  
See page 204



Cable hook  
CBF series  
See page 251

## Color Type

■ Please suffix color code at the end of the product number.

● G		● B		● BS	
Panel	Silver	Panel	Black	Panel	Silver
Top • Bottom cover	Light gray	Top • Bottom cover	Black	Top • Bottom cover	Black
Side frame	Gray	Side frame	Black	Side frame	Black

## Product no. / Dimensions

Product no.	H	W	D	Weight (kg)
MSR 88-43-23□	88	430	230	3.1
MSR 88-43-28□	88	430	280	3.5
MSR 88-43-35□	88	430	350	4.2
MSR 88-43-45□	88	430	450	5.1
MSR133-43-23□	132.5	430	230	3.6
MSR133-43-28□	132.5	430	280	4.1
MSR133-43-35□	132.5	430	350	4.8
MSR133-43-45□	132.5	430	450	5.8
MSR177-43-23□	177	430	230	4.3
MSR177-43-28□	177	430	280	4.9
MSR177-43-35□	177	430	350	5.7
MSR177-43-45□	177	430	450	6.9
MSR222-43-23□	221.5	430	230	4.7
MSR222-43-28□	221.5	430	280	5.3
MSR222-43-35□	221.5	430	350	6.2
MSR222-43-45□	221.5	430	450	7.5



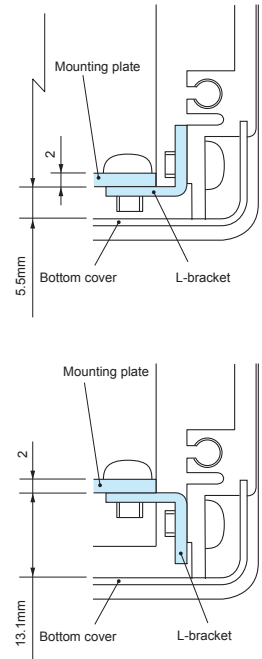
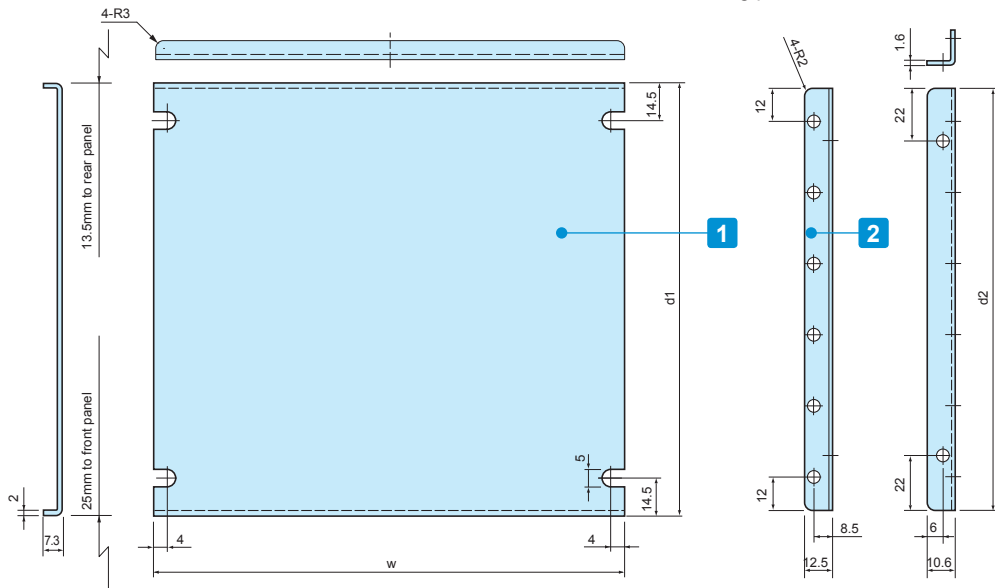
## MSC SERIES

## MOUNTING PLATE for MS • MSN • MSY

■ DXF/DWG/PDF drawings available on our website.

■ 1 set = Mounting plate + L-bracket

Mounting example



## Components

No.	Part name	Pcs	Material	Color / Finish
1	Mounting plate	1	Aluminium A1050P t=2.0	Unfinished
2	L-bracket	2	Steel SPCC	Trivalent chromate

Included screws: M4-6 pan head, trivalent chromate x8

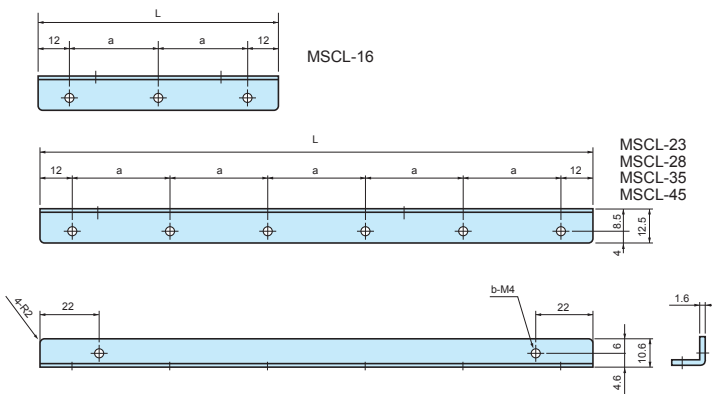
## Product no. / Dimensions

Product no.	w	d1	d2	Enclosure W×D	Weight (g)
MSC16-16	130	96.5	91.5	160 × 160	120
MSC16-23	130	166.5	161.5	160 × 230	210
MSC16-28	130	216.5	211.5	160 × 280	270
MSC21-16	180	96.5	91.5	210 × 160	150
MSC21-23	180	166.5	161.5	210 × 230	250
MSC21-28	180	216.5	211.5	210 × 280	330
MSC21-35	180	286.5	281.5	210 × 350	430
MSC26-23	230	166.5	161.5	260 × 230	300
MSC26-28	230	216.5	211.5	260 × 280	390
MSC26-35	230	286.5	281.5	260 × 350	510
MSC32-23	290	166.5	161.5	320 × 230	360

Product no.	w	d1	d2	Enclosure W×D	Weight (g)
MSC32-28	290	216.5	211.5	320 × 280	460
MSC32-35	290	286.5	281.5	320 × 350	600
MSC32-45	290	386.5	381.5	320 × 450	810
MSC37-23	340	166.5	161.5	370 × 230	410
MSC37-28	340	216.5	211.5	370 × 280	520
MSC37-35	340	286.5	281.5	370 × 350	680
MSC37-45	340	386.5	381.5	370 × 450	910
MSC43-23	400	166.5	161.5	430 × 230	460
MSC43-28	400	216.5	211.5	430 × 280	590
MSC43-35	400	286.5	281.5	430 × 350	770
MSC43-45	400	386.5	381.5	430 × 450	1,040

## MSCL SERIES

## L-BRACKET for MS • MSN • MSY



- Use with your original mounting plate or PCB.
- 1 pair of L-bracket are included with each MSC mounting plate.

## Components

Part name	Material	Color / Finish
L-bracket	Steel SPCC	Trivalent chromate

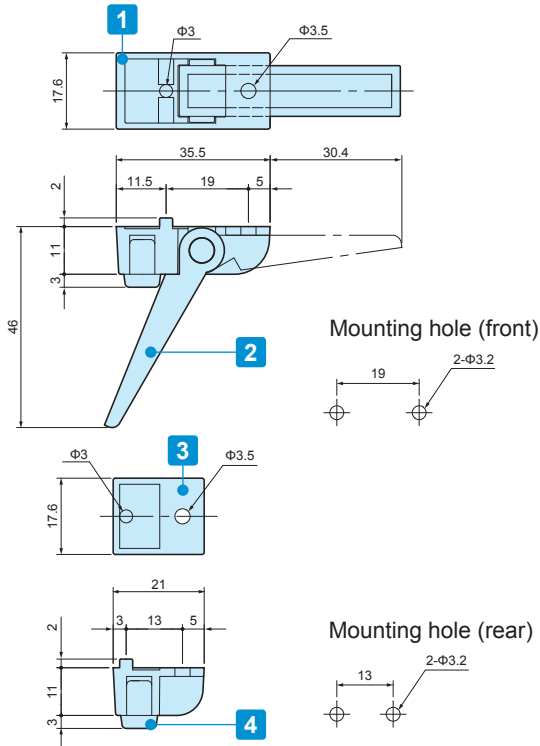
## Product no. / Dimensions

Product no.	L	a	b	Sales unit
MSCL-16	91.5	33.75	5	1 set (2 pcs)
MSCL-23	161.5	27.5	8	1 set (2 pcs)
MSCL-28	211.5	37.5	8	1 set (2 pcs)
MSCL-35	281.5	51.5	8	1 set (2 pcs)
MSCL-45	381.5	71.5	8	1 set (2 pcs)

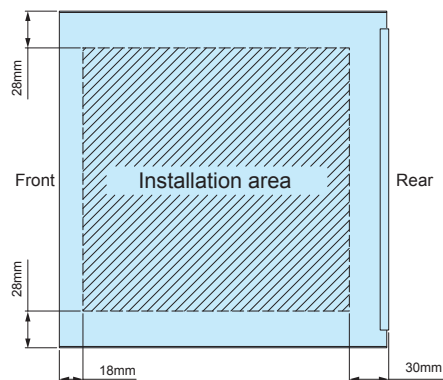


## TL SERIES

## TILT LEG



## MS SERIES INSTALLATION AREA



## Components

\* Maximum load = 7 kg

No.	Part name	Pcs	Material	Color / Finish
1	Front feet	2	ABS UL94HB	Black • Gray • Light gray
2	Leg	2	ABS UL94HB	Black • Gray • Light gray
3	Rear feet	2	ABS UL94HB	Black • Gray • Light gray
4	Rubber feet	4	EPDM	Gray • Black
-	Screw	4	Steel	Black trivalent chromate

■ Included screws: M3-8 and M3 nut (with washer) set.

## Product no. / Dimensions

Product no.	Color (body)	Color (rubber feet)	Sales unit
● TL-45BB	Black	Black	1 set
● TL-45GG	Gray	Gray	1 set
● TL-45SG	Light gray	Gray	1 set

■ EPDM (black) may have its color migrate onto the placement surface.



## CBF SERIES

## CABLE HOOK



- Used for wrapping and securing cords and wires.
- Can be used with a variety of different enclosure series and models.
- Requires a panel thickness of between 1.0 ~ 3.0mm.

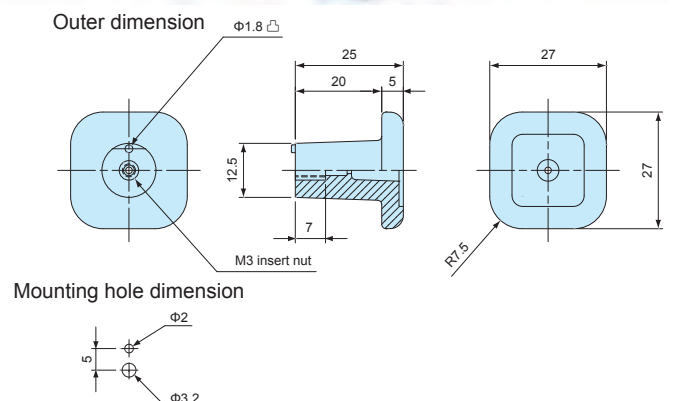
## Product no. / Dimensions

Product no.	Material	Pack of
● Gray	POM	4
● Black	POM	4

■ Included screws: M3-8 trivalent chromate (with washer) x 4 pcs

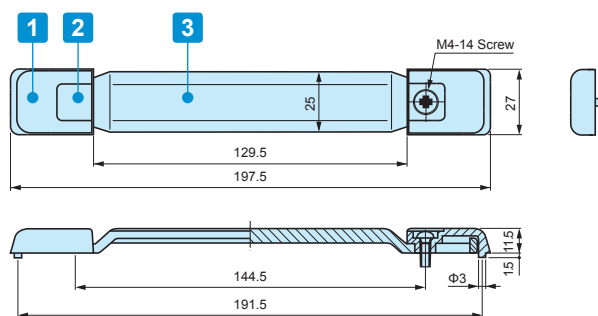


APPLICATION EXAMPLE



## MY SERIES

## CARRYING HANDLE



## Components

No.	Part name	Pcs	Material	Color / Finish
1	Holder	2	PC + ABS	Gray • Black
2	Blind cap	2	PP + Elastomer	Gray • Black
3	Grip	1	PP + Elastomer	Gray • Black
–	Screw	2	Steel	Trivalent chromate
–	Slide nut	2	Brass : PE	Nickel plated : Black

## Product no. / Dimensions

Product no.		Max load
● Gray	● Black	
MY-197G	MY-197B	20kgf

■ Not suitable for MS series if D = 160mm.

## MSN • MSY SERIES INSTALLATION METHOD

Insert the slide nut into the side frame.



Adjust the slide nut to the required position.



MSN series installation.



MSY series installation.

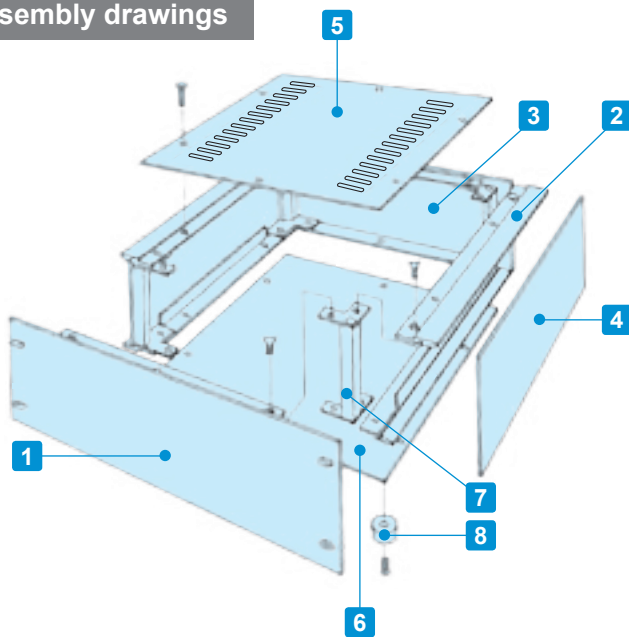


# ER SERIES

# EIA RACK MOUNT ENCLOSURE



## Assembly drawings



- Available in 35 different size combinations.
- Flat panels allows a wide range of customization to be performed easily, such as milling, silk-screening, engraving and so on.
- 2 different color types available - Silver and Black.

## Components

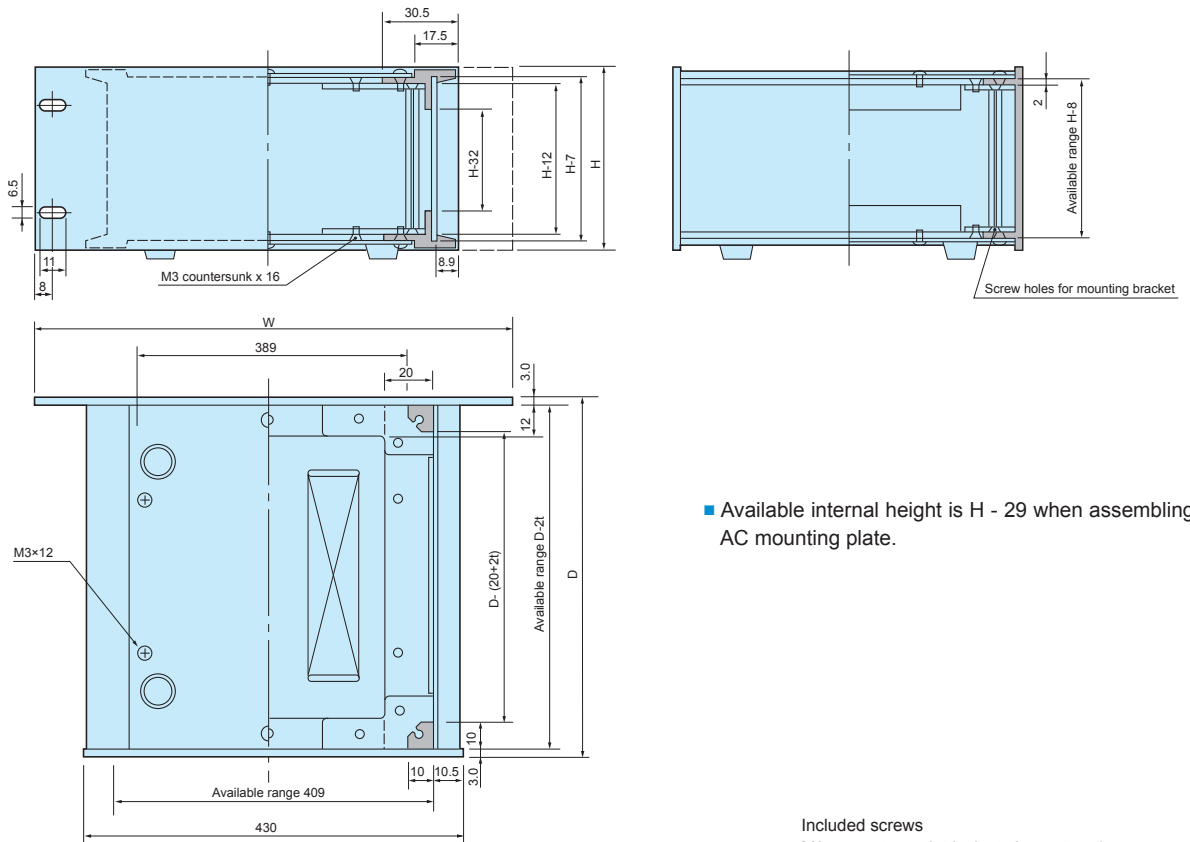
■ Refer to page 257 for AC series mounting plate

No.	Part name	Pcs	Material	Color / Finish
1	Panel	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
2	Frame	4	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
3	Rear panel	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
4	Side plate	2	Aluminium A1050P t=1.5	Silver • Black / Hairline brushed & Anodized
5	Top cover	1	Steel SPCC t=1.0	Black / Painted (leather tone)
6	Bottom cover	1	Steel SPCC t=1.0	Black / Painted
7	Support bracket	4	Steel SPCC t=2.0 : Extruded aluminium A6063S-T5	Trivalent chromate : Anodized
8	Rubber feet	4	Rubber	Black

■ Note: Side plates are covered with a protective film on one side. Remove before assembly.

## ER dimensions

■ DXF/DWG/PDF drawings available on our website.



■ Available internal height is  $H - 29$  when assembling AC mounting plate.

Included screws  
 M3-5 countersunk trivalent chromate x 17 pcs  
 M3-5 binding head black trivalent chromate x 13 pcs  
 M3-10 pan head trivalent chromate x 4 pcs

## Color Type

■ Please suffix color code at the end of the product number.

Code	Panel	Rear panel	Frame	Side plates	Top • Bottom cover
S	Silver	Silver	Silver	Silver	Black
B	Black	Black	Black	Black	Black

## Product no. / Dimensions

Product no.	H	W	D	Weight (kg)	Product no.	H	W	D	Weight (kg)
ER 44-16□	44	482.6	160	1.7	ER133-37□	132.5	482.6	370	4.2
44-20□	44	482.6	200	2.0	133-43□	132.5	482.6	430	4.7
44-26□	44	482.6	260	2.5	133-50□	132.5	482.6	500	5.3
44-32□	44	482.6	320	2.9	ER177-16□	177	482.6	160	2.8
44-37□	44	482.6	370	3.2	177-20□	177	482.6	200	3.3
44-43□	44	482.6	430	3.7	177-26□	177	482.6	260	3.8
44-50□	44	482.6	500	4.2	177-32□	177	482.6	320	4.4
ER 88-16□	88	482.6	160	2.1	177-37□	177	482.6	370	4.8
88-20□	88	482.6	200	2.5	177-43□	177	482.6	430	5.3
88-26□	88	482.6	260	2.9	177-50□	177	482.6	500	5.9
88-32□	88	482.6	320	3.4	ER222-16□	221.5	482.6	160	3.4
88-37□	88	482.6	370	3.7	222-20□	221.5	482.6	200	3.8
88-43□	88	482.6	430	4.2	222-26□	221.5	482.6	260	4.3
88-50□	88	482.6	500	4.8	222-32□	221.5	482.6	320	4.8
ER133-16□	132.5	482.6	160	2.5	222-37□	221.5	482.6	370	5.3
133-20□	132.5	482.6	200	2.9	222-43□	221.5	482.6	430	5.8
133-26□	132.5	482.6	260	3.3	222-50□	221.5	482.6	500	6.5
133-32□	132.5	482.6	320	3.8					

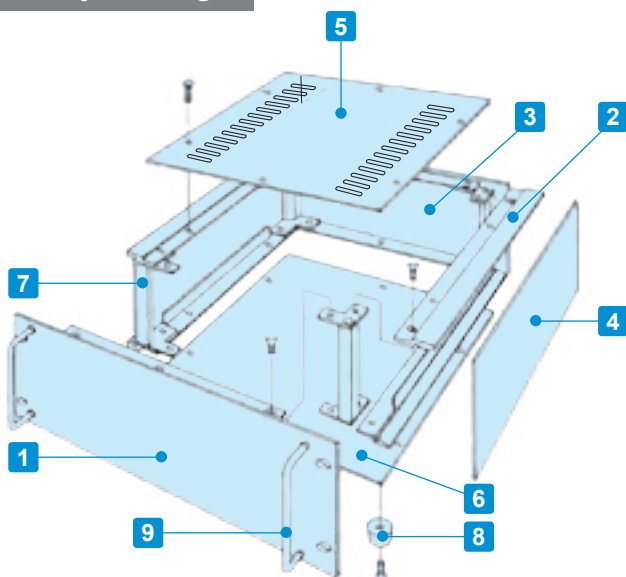


# ERH SERIES

# RACK MOUNT ENCLOSURE with HANDLE



## Assembly drawings



- Available in 35 different size combinations.
- Flat panels allows a wide range of customization to be performed, such as milling, silk-screening, engraving and so on.
- 2 different color types available - Silver and Black.

## Components

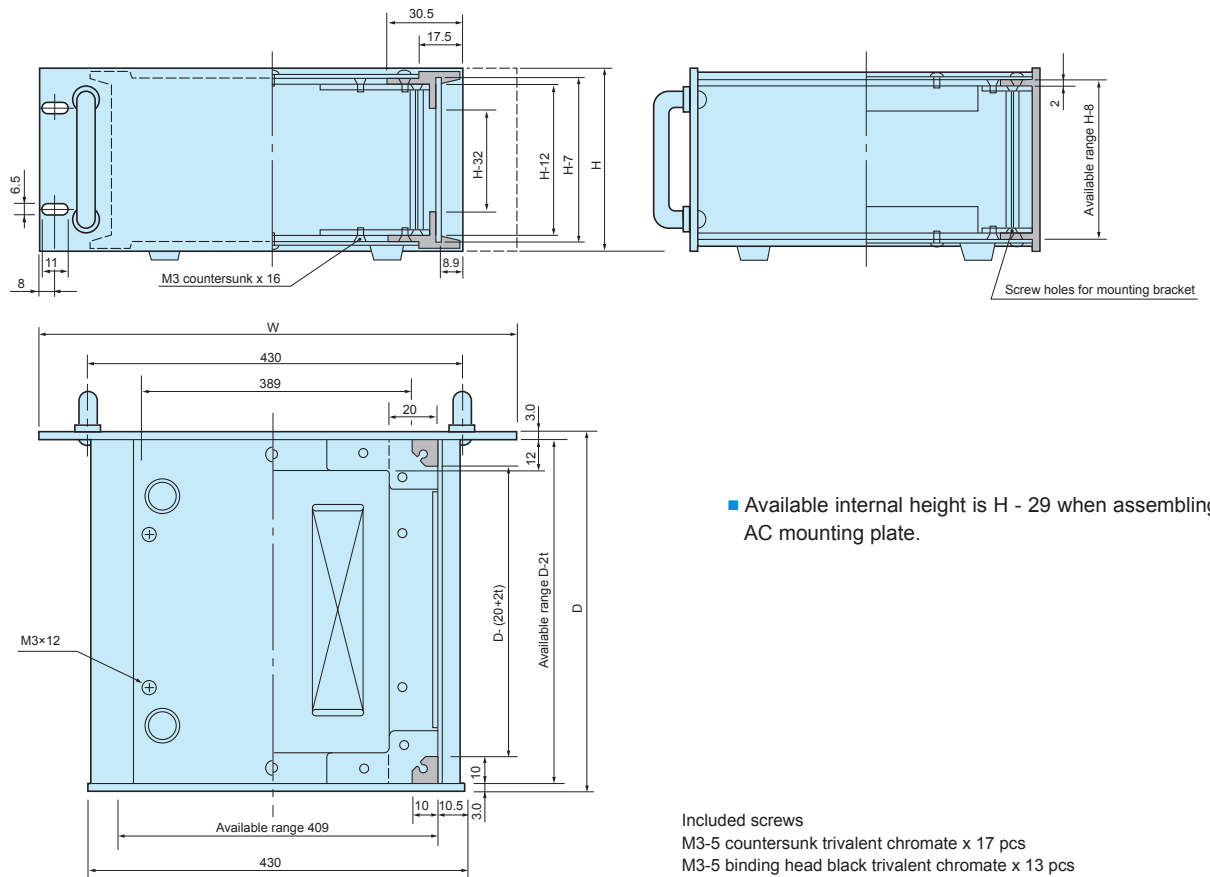
■ Refer to page 257 for AC series mounting plate.

No.	Part name	Pcs	Material	Color / Finish
1	Panel	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
2	Frame	4	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
3	Rear panel	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
4	Side plate	2	Aluminium A1050P t=1.5	Silver • Black / Hairline brushed & Anodized
5	Top cover	1	Steel SPCC t=1.0	Black / Painted (leather tone)
6	Bottom cover	1	Steel SPCC t=1.0	Black / Painted
7	Mounting bracket	4	Steel SPCC t=2.0 ; Extruded aluminium A6063S-T5	Trivalent chromate : Anodized
8	Rubber feet	4	Rubber	Black
9	Handle	2	Aluminium A5056S • Brass	Silver • Black / Anodized • Chrome plated

■ Note: Side plates are covered with a protective film on one side. Remove before assembly.

## ERH dimensions

■ DXF/DWG/PDF drawings available on our website.



■ Available internal height is H - 29 when assembling AC mounting plate.

Included screws  
 M3-5 countersunk trivalent chromate x 17 pcs  
 M3-5 binding head black trivalent chromate x 13 pcs  
 M3-10 pan head trivalent chromate x 4 pcs

## Color Type

■ Please suffix color code at the end of the product number.

Code	Panel	Rear panel	Frame	Side plates	Top • Bottom cover
S	Silver	Silver	Silver	Silver	Black
B	Black	Black	Black	Black	Black

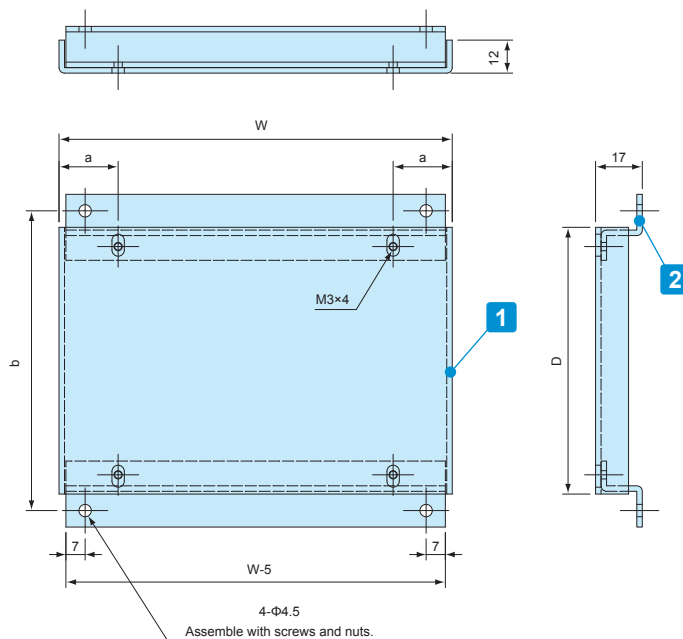
## Product no. / Dimensions

Product No.	H	W	D	Weight (kg)	Product No.	H	W	D	Weight (kg)
ERH 44-16□	44	482.6	160	1.7	ERH133-37□	132.5	482.6	370	4.2
44-20□	44	482.6	200	2.0	133-43□	132.5	482.6	430	4.7
44-26□	44	482.6	260	2.5	133-50□	132.5	482.6	500	5.4
44-32□	44	482.6	320	2.9	ERH177-16□	177	482.6	160	2.9
44-37□	44	482.6	370	3.2	177-20□	177	482.6	200	3.4
44-43□	44	482.6	430	3.7	177-26□	177	482.6	260	3.9
44-50□	44	482.6	500	4.2	177-32□	177	482.6	320	4.4
ERH 88-16□	88	482.6	160	2.2	177-37□	177	482.6	370	4.8
88-20□	88	482.6	200	2.5	177-43□	177	482.6	430	5.4
88-26□	88	482.6	260	3.0	177-50□	177	482.6	500	6.0
88-32□	88	482.6	320	3.4	ERH222-16□	221.5	482.6	160	3.5
88-37□	88	482.6	370	3.8	222-20□	221.5	482.6	200	3.9
88-43□	88	482.6	430	4.2	222-26□	221.5	482.6	260	4.4
88-50□	88	482.6	500	4.8	222-32□	221.5	482.6	320	4.9
ERH133-16□	132.5	482.6	160	2.5	222-37□	221.5	482.6	370	5.4
133-20□	132.5	482.6	200	2.9	222-43□	221.5	482.6	430	5.9
133-26□	132.5	482.6	260	3.4	222-50□	221.5	482.6	500	6.5
133-32□	132.5	482.6	320	3.9					

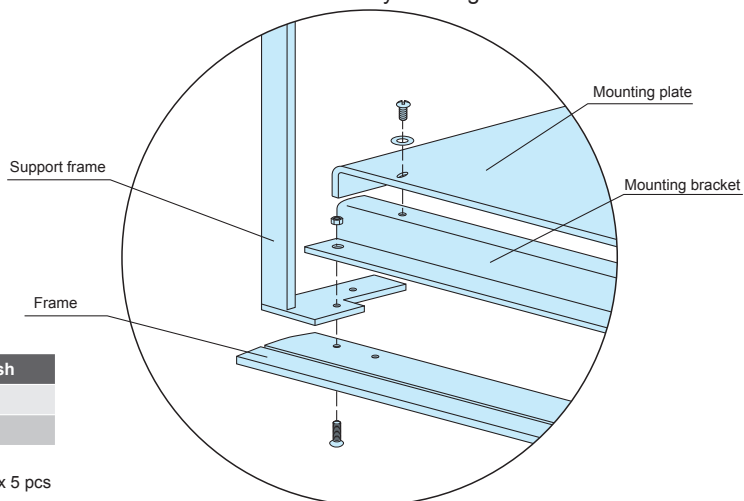
## AC SERIES

## MOUNTING PLATE for ER • ERH

■ DXF/DWG/PDF drawings available on our website.



Assembly drawings



## Components

No.	Part name	Pcs	Material	Color / Finish
1	Mounting plate	1	Aluminium A1050P t=2.0	Unfinished
2	Mounting bracket	2	Aluminium A1050P t=2.0	Unfinished

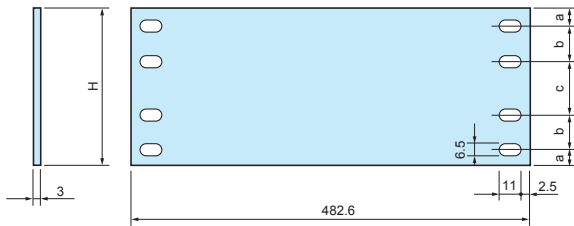
Included screws  
 M3-10 countersunk trivalent chromate x 5 pcs  
 M3-6 binding head nickel plated x 5 pcs  
 M3 nickel plated washer x 5 pcs  
 M3 trivalent chromate nut x 5 pcs

## Product no. / Dimensions

Product no.	W	D	a	b	Suitable enclosure	Weight (g)
AC16-43	143	367	21.5	379	ER□□-16 / ERH□□-16	370
AC20-43	183	367	24.5	379	ER□□-20 / ERH□□-20	460
AC26-43	243	367	31.5	379	ER□□-26 / ERH□□-26	610
AC32-43	303	367	39.5	379	ER□□-32 / ERH□□-32	740
AC37-43	353	367	46.5	379	ER□□-37 / ERH□□-37	860
AC43-43	413	367	54.5	379	ER□□-43 / ERH□□-43	990
AC50-43	483	367	64.5	379	ER□□-50 / ERH□□-50	1,160

## AP SERIES

## 19" ALUMINIUM RACK PANEL



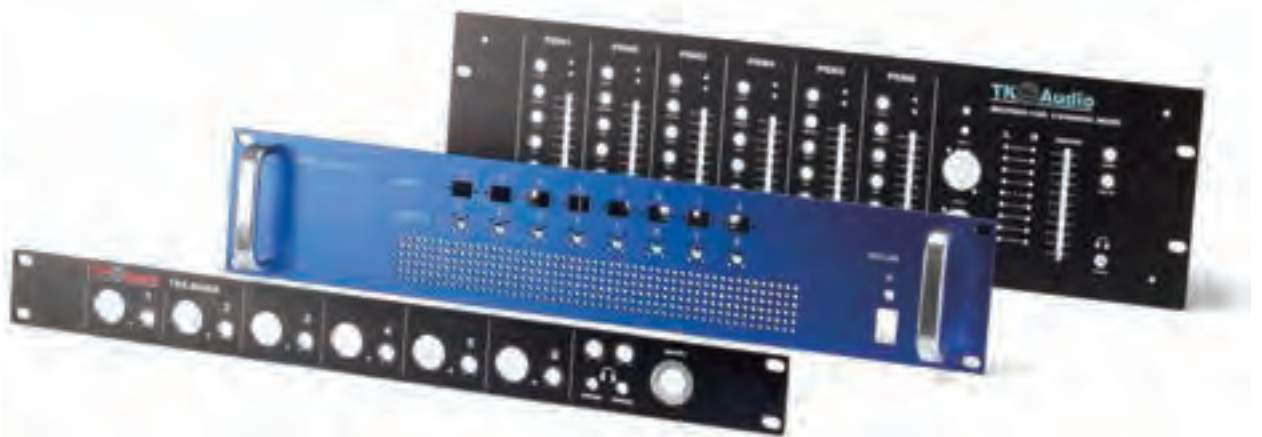
## Product no. / Dimensions

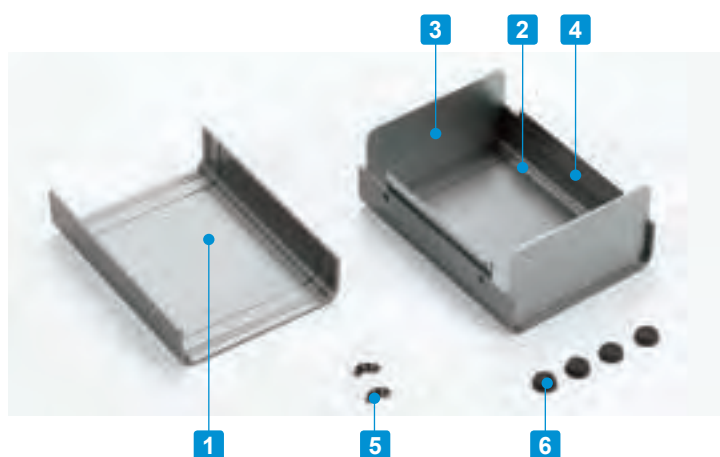
Product no.		H	a	b	c	Mounting hole (One side)	Material	Surface Finish	Weight (kg)
● Silver	● Black								
AP- 44S	AP- 44B	44	6.1	—	31.8	2	Extruded aluminium A6063S-T5	Hairline brushed & Anodized	0.18
AP- 88S	AP- 88B	88	5.9	—	76.2	2	Extruded aluminium A6063S-T5	Hairline brushed & Anodized	0.33
AP-133S	AP-133B	132.5	37.7	—	57.1	2	Extruded aluminium A6063S-T5	Hairline brushed & Anodized	0.48
AP-177S	AP-177B	177	37.7	—	101.6	2	Extruded aluminium A6063S-T5	Hairline brushed & Anodized	0.7
AP-222S	AP-222B	221.5	37.75	—	146	2	Aluminium A1050P	Hairline brushed & Anodized	0.87
AP-266S	AP-266B	265.9	37.7	57.2	76.1	4	Aluminium A1050P	Hairline brushed & Anodized	1.06
AP-311S	AP-311B	310.4	37.7	88.9	57.2	4	Aluminium A1050P	Hairline brushed & Anodized	1.24
AP-355S	AP-355B	354.8	37.7	101.6	76.2	4	Aluminium A1050P	Hairline brushed & Anodized	1.42

## CNC MACHINING



- CNC machining service is available from just 1 pc with a short lead time.
- Low-cost digital inkjet printing service is available for your customized front panel.
- Anodizing and painting services are also available.





- Simple structure and tough case with extruded aluminium covers.
- 36 sizes and 3 different colors for a total of 108 different combinations are available.
- 2 or 3 grooves available on top/bottom covers for adjusting front/rear panel positions or PCB insertion.

#### Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Extruded aluminium A6065S-T5	Bronze • Light gray • Dark gray / Anodized • Painted • Painted
2	Bottom cover	1	Extruded aluminium A6065S-T5	Bronze • Light gray • Dark gray / Anodized • Painted • Painted
3	Panel	2	Aluminium A1050P t=1.7	Bronze / Anodized
			Aluminium A5052P t=1.5	Light gray / Painted
			Aluminium A1100P t=1.5	Dark gray / Painted
4	Joint plate	2	Steel SPCC t=2.0	Trivalent chromate
5	Screw	12	Steel M3	Black trivalent chromate
6	Rubber feet	4	Rubber	Black

- Bronze anodized color varies slightly between each production lot.
- Panels are covered with a protective film on one side.

#### Accessories (Optional parts)



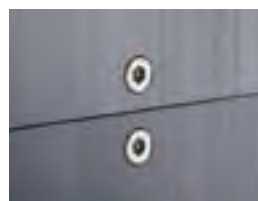
Mounting plate  
UCC series  
See page 261



Mounting bracket  
UCK-P series  
See page 262



Panel retainer  
UCF-26  
See page 262



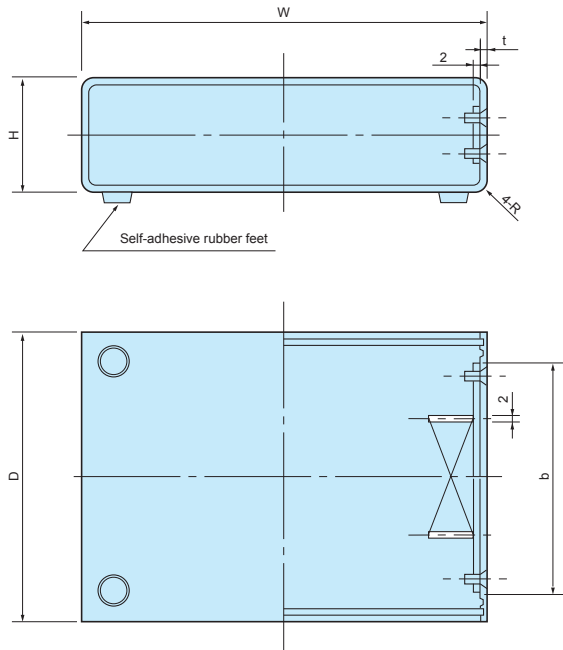
TORX screw  
MR-1  
See page 135



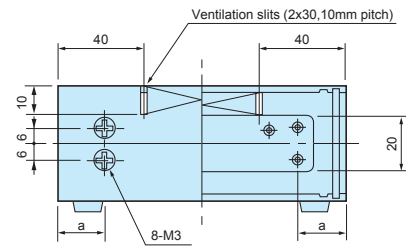
Aluminium isolation feet  
AFS • AFM series  
See page 265 ~ 266



## UC dimensions



■ DXF/DWG/PDF drawings available on our website.



## Color Type

NEW		GG	DD
Cover	Light gray / Painted	Cover	Bronze / Anodized
Panel	Light gray / Painted	Panel	Bronze / Anodized

GX	
Cover	Dark gray / Painted
Panel	Light gray (1 pc) & Dark gray (1 pc) / Painted

## Product no. / Dimensions

Product no.	W	H	D	R	t	a	b	Ventilation slits	Weight (kg)
UC 6- 3- 8□	60	35	80	5	2	16	58	—	0.12
UC 7- 3-10□	75	30	100	5	2	16	78	—	0.16
UC 9- 5-12□	90	50	120	7.5	2.5	18	94	—	0.29
UC10- 4-14□	100	40	140	7.5	2.5	28	94	—	0.32
UC12- 7-16□	120	70	160	11	3	30	110	—	0.56
UC13- 4-18□	130	40	180	11	3	30	130	—	0.56
UC15- 8-20□	150	80	200	11	3	30	150	○	0.86
UC16- 5-22□	165	50	220	11	3	30	170	○	0.84
UC18-10-24□	180	100	240	11	3	30	190	○	1.26
UC22-12-26□	220	120	260	11	3	30	210	○	1.70
UC24-14-34□	240	140	340	11.2	3.2	30	290	○	2.54
UC 8- 3- 6□	80	30	60	5	2	16	38	—	0.10
UC11- 3- 8□	110	30	80	5	2	16	58	—	0.17
UC11- 5- 8□	110	50	80	5	2	16	58	—	0.20
UC14- 4-10□	140	40	100	5	2	16	78	—	0.27
UC14- 6-10□	140	60	100	5	2	16	78	—	0.31
UC15-10-12□	150	100	120	7.5	2.5	18	94	—	0.53
UC17- 5-12□	170	50	120	7.5	2.5	18	94	—	0.45
UC17- 7-12□	170	70	120	7.5	2.5	18	94	—	0.51
UC20- 5-14□	200	50	140	7.5	2.5	28	94	—	0.56
UC20- 8-14□	200	80	140	7.5	2.5	28	94	—	0.67
UC20-12-16□	200	120	160	11	3	30	110	—	0.82
UC26- 5-18□	260	50	180	11	3	30	130	○	1.02
UC26-10-18□	260	100	180	11	3	30	130	○	1.26
UC26- 7-20□	260	70	200	11	3	30	150	○	1.23
UC32- 5-22□	320	50	220	11	3	30	170	○	1.45
UC32-12-22□	320	120	220	11	3	30	170	○	1.88
UC32- 8-24□	320	80	240	11	3	30	190	○	1.76
UC35-13-26□	350	130	260	11	3	30	210	○	2.45
UC43- 5-28□	430	50	280	11	3	30	230	○	2.37
UC43-14-28□	430	140	280	11	3	30	230	○	3.05
UC 7- 8-14□	75	85	140	7.5	2.5	28	94	—	0.37
UC10-11-18□	100	110	180	11	3	30	130	—	0.72
UC12-14-22□	120	140	220	11	3	30	170	○	1.08
UC15-18-28□	150	180	280	11	3	30	230	○	1.74
UC18-21-34□	180	210	340	11.2	3.2	30	290	○	2.63

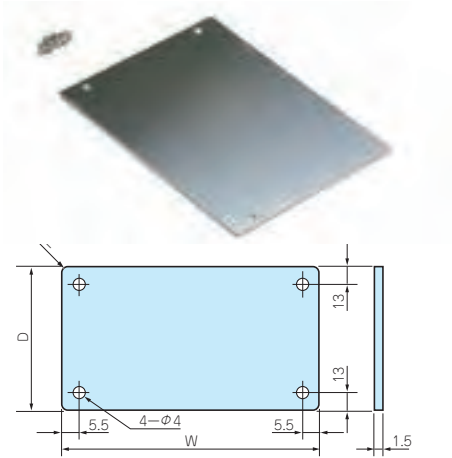


## UCC SERIES

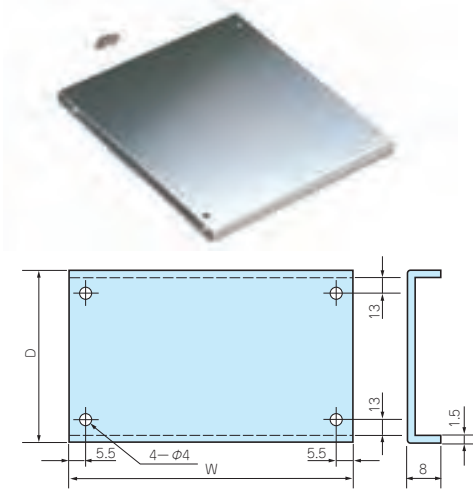
## MOUNTING PLATE for UC

■ DXF/DWG/PDF drawings available on our website.

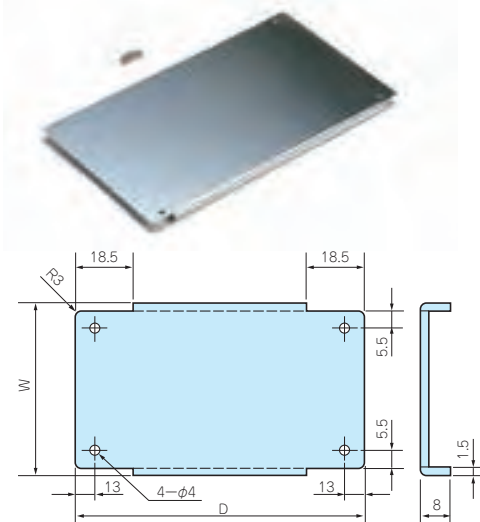
Type A



Type B



Type C



## Components

Part name	Pcs	Material	Color / Finish
Mounting plate	1	Aluminium A1050P t=1.5	Unfinished
Screw	4	Steel M3-5	Trivalent chromate

## Product no. / Dimensions (Type A)

Product no.	Suitable case	W	D
UCC 6- 8	UC 6- 3- 8	43	58
UCC 7-10	UC 7- 3-10	58	78
UCC 8- 6	UC 8- 3- 6	63	38
UCC11- 8	UC 11- 3- 8	93	58
	UC 11- 5- 8		
UCC 9-12	UC 9- 5-12	72	94
UCC10-14	UC 10- 4-14	82	94
UCC12-16	UC 12- 7-16	101	110
UCC13-18	UC 13- 4-18	111	130
UCC15-20	UC 15- 8-20	131	150
UCC14-10	UC 14- 4-10	123	78
	UC 14- 6-10		
UCC15-12	UC 15-10-12	132	94
UCC17-12	UC 17- 5-12	152	94
	UC 17- 7-12		
UCC 7-14	UC 7- 8-14	57	94
UCC10-18	UC 10-11-18	81	130
UCC12-22	UC 12-14-22	101	170

## Product no. / Dimensions (Type B)

Product no.	Suitable case	W	D
UCC16-22	UC 16- 5-22	146	173
UCC18-24	UC 18-10-24	161	193
UCC20-14	UC 20- 5-14	182	97
	UC 20- 8-14		
UCC22-26	UC 22-12-26	201	213
UCC20-16	UC 20-12-16	181	113
UCC26-18	UC 26- 5-18	241	133
	UC 26-10-18		
UCC26-20	UC 26- 7-20	241	153
UCC32-22	UC 32- 5-22	301	173
	UC 32-12-22		
UCC32-24	UC 32- 8-24	301	193
UCC35-26	UC 35-13-26	331	213
UCC43-28	UC 43- 5-28	411	233
	UC 43-14-28		

## Product no. / Dimensions (Type C)

Product no.	Suitable case	W	D
UCC15-28	UC 15-18-28	134	230
UCC18-34	UC 18-21-34	163.6	290
UCC24-34	UC 24-14-34	223.6	290

## UCC-P SERIES

## MOUNTING BRACKET for UC



## Components

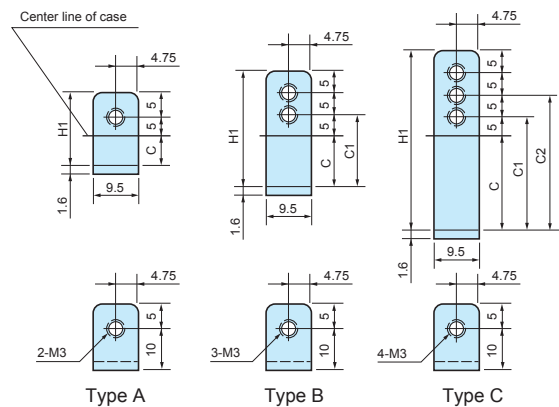
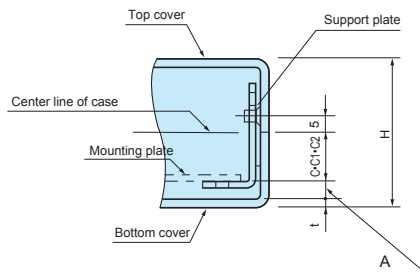
Product name	Material	Finish	Pack of
Mounting bracket	Steel SPCC t=1.6	Trivalent chromate	4

## Product no. / Dimensions

Product no.	Type	H1	C	C1	C2	Pack of
UCK-P 13	A	13	3	—	—	4
UCK-P 17	A	17	7	—	—	4
UCK-P 27	B	27	12	17	—	4
UCK-P 42	C	42	22	27	32	4
UCK-P 57	C	57	37	42	47	4
UCK-P 72	C	72	52	57	62	4
UCK-P 87	C	87	67	72	77	4
UCK-P102	C	102	82	87	92	4

■ DXF/DWG/PDF drawings available on our website.

## Assembly drawings



## Bracket matching chart / A dimension

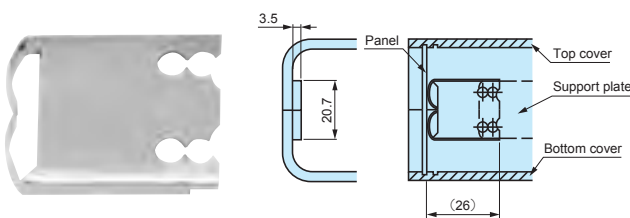
Product no.	Bracket no.	A
UC 6- 3- 8	UCK-P 13	12.5
	UCK-P 17	8.5
UC 7- 3-10	UCK-P 13	10
	UCK-P 17	6
UC 9- 5-12	UCK-P 17	15.5
	UCK-P 27	10.5 5.5
UC 10- 4-14	UCK-P 13	14.5
	UCK-P 17	10.5
	UCK-P 27	5.5
UC 12- 7-16	UCK-P 27	15
	UCK-P 42	10
UC 13- 4-18	UCK-P 13	14
	UCK-P 17	10
UC 15- 8-20	UCK-P 42	15 10 5
UC 16- 5-22	UCK-P 13	19
	UCK-P 17	15
	UCK-P 27	10
UC 24-14-34	UCK-P 57	19.8
	UCK-P 72	14.8 9.8
UC 8- 3- 6	UCK-P 13	10
	UCK-P 17	6

Product no.	Bracket no.	A
UC 11- 3- 8	UCK-P 13	10
	UCK-P 17	6
UC 11- 5- 8	UCK-P 17	16
	UCK-P 27	11 6
UC 14- 4-10	UCK-P 13	15
	UCK-P 17	11
	UCK-P 27	6
UC 14- 6-10	UCK-P 27	16 11
	UCK-P 42	6
UC 15-10-12	UCK-P 42	20.5 15.5
	UCK-P 57	10.5 5.5
UC 17- 5-12	UCK-P 17	15.5
	UCK-P 27	10.5 5.5
UC 17- 7-12	UCK-P 27	15.5
	UCK-P 42	10.5 5.5
UC 20- 5-14	UCK-P 13	19.5
	UCK-P 17	15.5
	UCK-P 27	10.5 5.5
UC 20- 8-14	UCK-P 27	20.5
	UCK-P 42	15.5 10.5
UC 20-12-16	UCK-P 57	20 15 10
UC 26- 5-18	UCK-P 13	19
	UCK-P 17	15
	UCK-P 27	10

Product no.	Bracket no.	A
UC 26-10-18	UCK-P 42	20 15
	UCK-P 57	10
UC 26- 7-20	UCK-P 27	15
	UCK-P 42	10
UC 18-10-24	UCK-P 42	20 15
	UCK-P 57	10
UC 22-12-26	UCK-P 57	20 15 10
UC 32- 5-22	UCK-P 13	19
	UCK-P 17	15
	UCK-P 27	10
UC 32-12-22	UCK-P 57	20 15 10
UC 32- 8-24	UCK-P 42	15 10 5
UC 35-13-26	UCK-P 57	25 20 15
	UCK-P 72	10 5
UC 43- 5-28	UCK-P 13	19
	UCK-P 17	15
	UCK-P 27	10
UC 43-14-28	UCK-P 57	20
	UCK-P 72	15 10
UC 7- 8-14	UCK-P 42	18 13 8
UC 10-11-18	UCK-P 57	15 10 5
UC 12-14-22	UCK-P 72	15 10 5
UC 15-18-28	UCK-P 87	20 15 10
UC 18-21-34	UCK-P102	19.8 14.8 9.8

## UCF-26

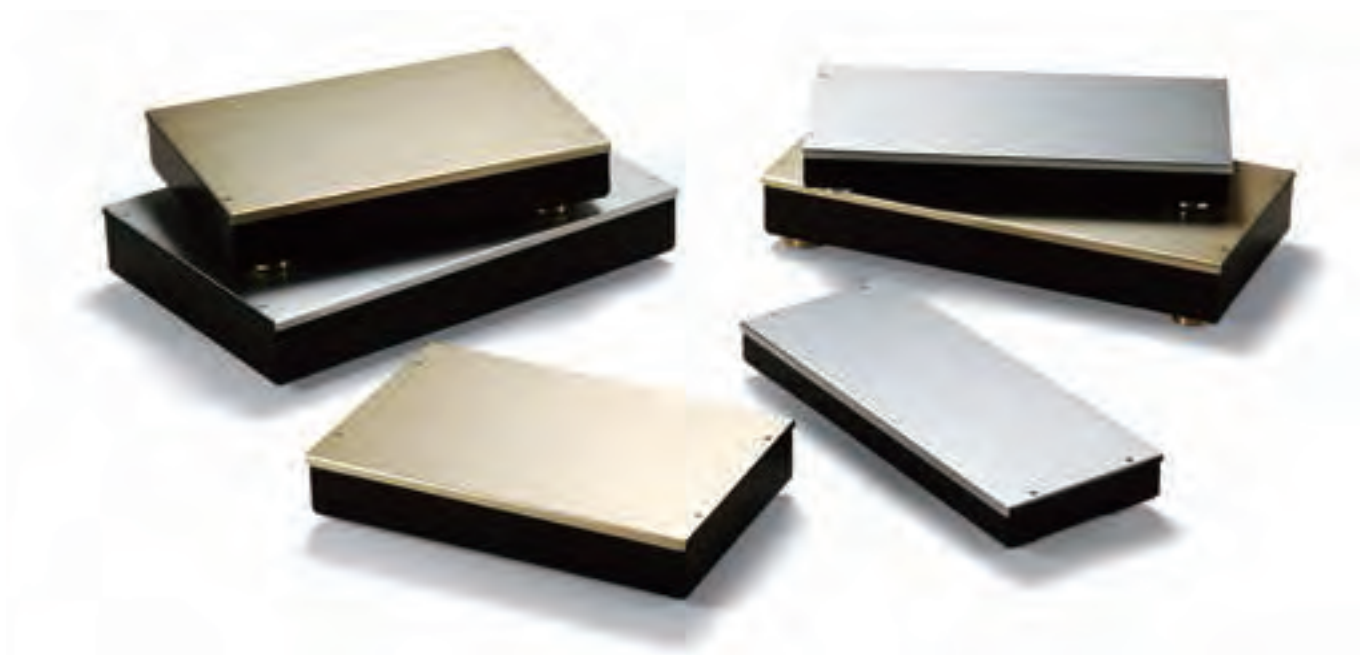
## PANEL RETAINER for UC



## Product no.

Product no.	Material	Finish	Pack of
UCF-26	Stainless steel t=0.3	Unfinished	2

■ Not applicable for use on 60, 80, 100 and 120 "D" dimension cases.

**SRDSL** SERIES**ALUMINIUM DESKTOP CHASSIS**

- Designed with an elegant and stylish hairline brushed top cover.
- Champagne gold and silver top covers available.
- Recommended for audio amplifier use.

**APPLICATION EXAMPLE****VACUUM TUBE POWER AMPLIFIER**

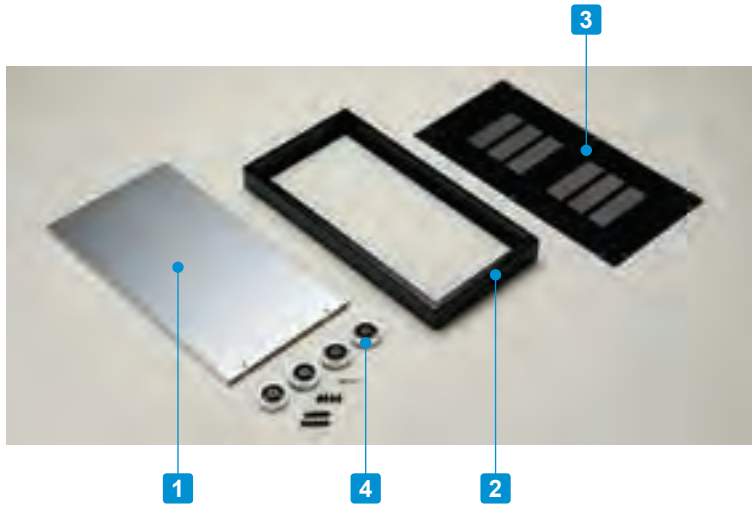
Product by MJ Musen to Jikken (Japan)  
Website: [seibundo-shinkosha.net](http://seibundo-shinkosha.net)

**DIGITAL MULTI-CHANNEL ANALYZER**

Product by Project Integration LLC (Armenia)  
Website: [profinst.net](http://profinst.net)

**Accessories (Optional parts)**

Aluminium isolation feet  
AFS • AFM series  
See page 265 ~ 266

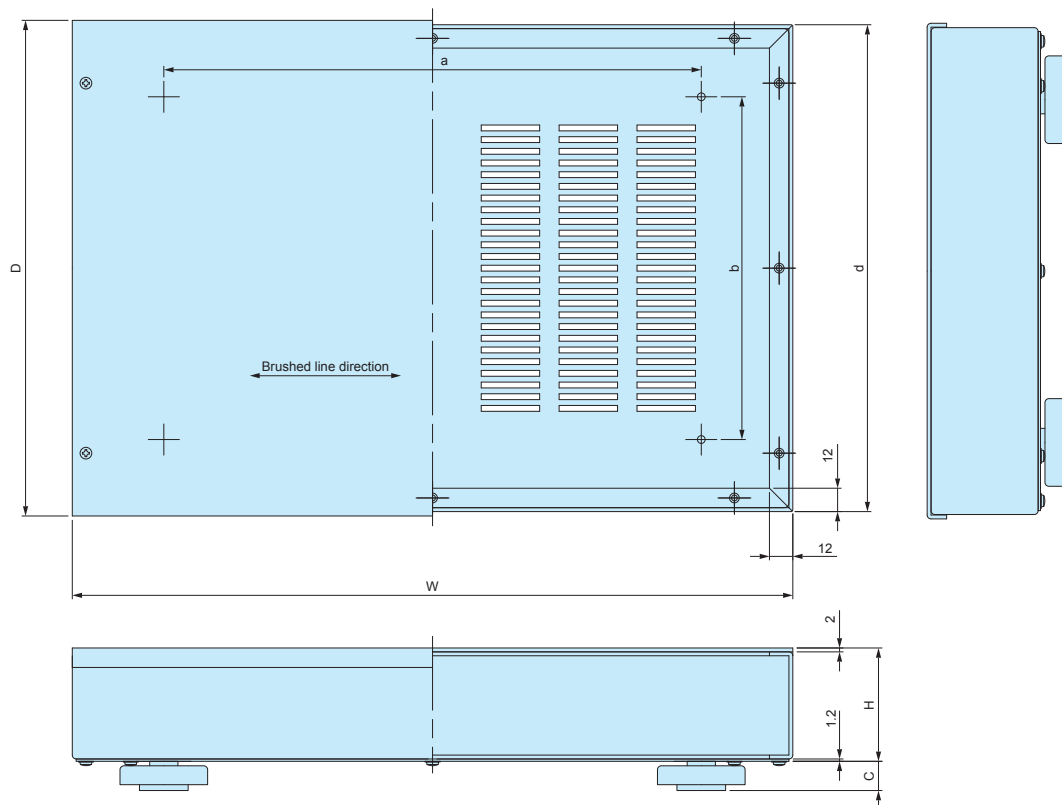


### Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Aluminium A1050P t=2.0	Champagne gold • Silver / Hairline brushed & Anodized
2	Body frame	1	Aluminium A1050P t=2.0	Black / Painted (leather tone)
3	Bottom cover	1	Steel SECC t=1.2	Black / Painted
4	Aluminium feet	4	ABS UL94HB : Aluminium	Black : Gold • Black : Silver

### SRDSL dimensions

■ DXF/DWG/PDF drawings available on our website.



### Product no. / Dimensions

Product no.		W	H	D	a	b	c	d	Weight (kg)
● Champagne gold	● Silver								
SRDSL- 7HG	SRDSL- 7HS	400	43.2	164.5	336	96	12	160	1.29
SRDSL- 8HG	SRDSL- 8HS	350	58.2	224.5	246	142	12	220	1.56
SRDSL- 9HG	SRDSL- 9HS	400	43.2	204.5	336	136	12	200	1.53
SRDSL-10HG	SRDSL-10HS	370	58.2	254.5	276	176	15	250	1.77
SRDSL-15HG	SRDSL-15HS	460	63.2	224.5	396	156	15	220	1.91
SRDSL-20HG	SRDSL-20HS	450	68.2	305	336	208	15	300	2.49

**AFS•AFM SERIES****ALUMINIUM ISOLATION FEET**

- The surface treatment and finish allows the feet to exhibit a polished and luxurious feel.
- Non-slip NBR O-ring is present on the underside of the feet.
- Suitable for use in audio devices.

**Available in both internal and external screw installation type.****External type / Shot blast finish (AFS series)**

The external type is secured via screws from the underside / base of the feet to the enclosure. A thread hole is required for direct securing, while a circular hole is required for lock nut securing.

The shot blast finish provides a high quality surface finish look, and pairing well with various types of enclosure surfaces.

Available in both silver and black.

**Internal type / Reflective finish (AFM series)**

The internal type is secured via screws from the inside of the enclosure. A circular hole is required for securing into the pre-made threads in the top-side of the feet.

The reflective surface finish adds a high quality touch to the unit, allow it to have a luxurious look.

Available only in Silver.

## Accessories (Optional parts)

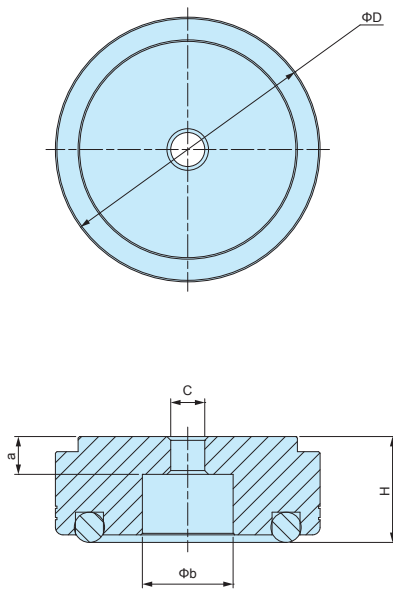
### Product no. / Dimensions

Product no.		D	H	Installation type	C	a	b	Pack of
● Silver	● Black							
AFS20- 8S	AFS20- 8B	20	8	Internal	Φ3.4	3	9	4
AFS25-10S	AFS25-10B	25	10	Internal	Φ4.5	4	12	4
AFS30-12S	AFS30-12B	30	12	Internal	Φ4.5	5	12	4
AFS35-14S	AFS35-14B	35	14	Internal	Φ4.5	5	12	4
AFS39-16S	AFS39-16B	39	16	Internal	Φ4.5	5	15	4
AFS44-18S	AFS44-18B	44	18	Internal	Φ4.5	5	20	4
AFS55-20S	AFS55-20B	55	20	Internal	Φ5.5	5	20	4
AFM15- 7S	-	15	7	External	M3	4	-	4
AFM20- 9S	-	20	9	External	M3	5	-	4
AFM25-12S	-	25	12	External	M4	7	-	4
AFM30-14S	-	30	14	External	M4	8	-	4
AFM35-16S	-	35	16	External	M4	10	-	4
AFM39-18S	-	39	18	External	M4	10	-	4
AFM44-20S	-	44	20	External	M4	10	-	4
AFM55-22S	-	55	22	External	M5	15	-	4

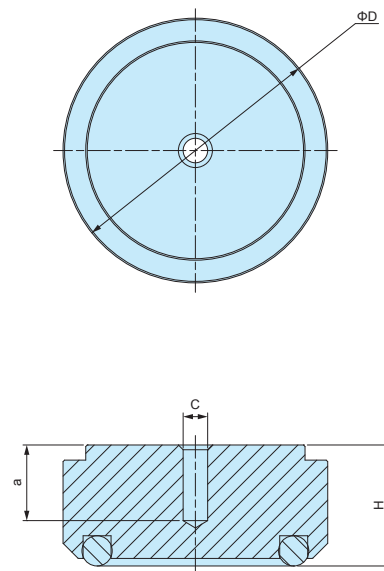
### AFS • AFM dimensions

■ DXF/DWG/PDF drawings available on our website.

AFS SERIES



AFM SERIES



### APPLICATION EXAMPLE





RS SERIES

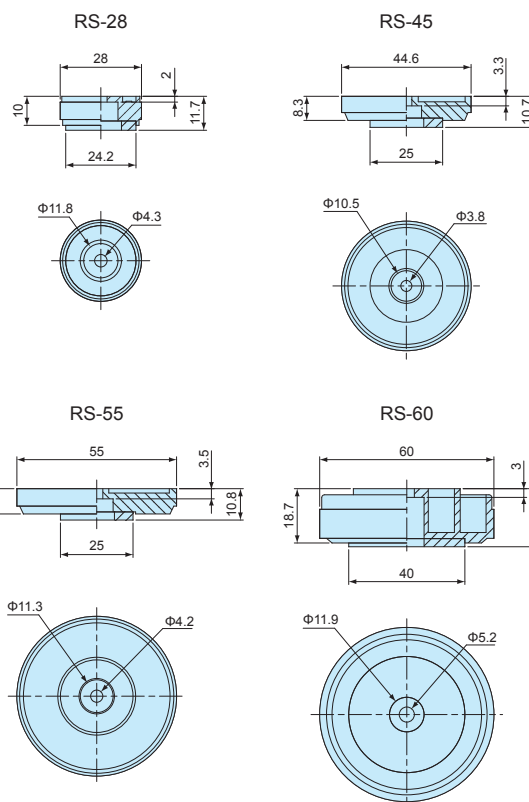
PLATED PLASTIC FEET



- Suitable for audio equipment use.
- Elastomeric foam pad can be found at the underside of the feet.

Product no. / Dimensions

Product no.		Material	Pack of
● Silver	● Gold		
RS-28S	RS-28G	ABS UL94HB / Polyester / EVA	4
RS-45S	RS-45G	ABS UL94HB / Polyester / EVA	4
RS-55S	RS-55G	ABS UL94HB / Polyester / EVA	4
RS-60S	RS-60G	ABS UL94HB / Polyester / EVA	4

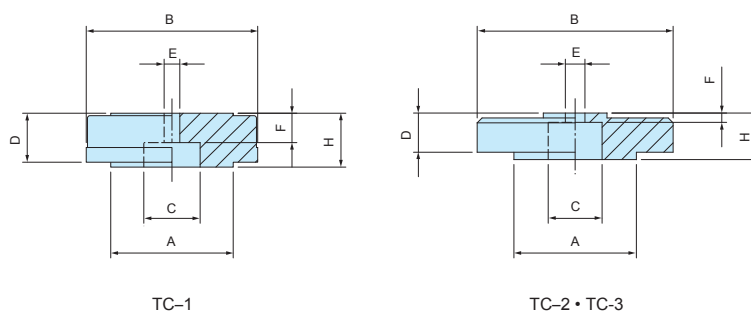


TC SERIES

ALUMINIUM FEET



- Aluminium material gives it a refined and elegant look.
- Suitable for audio equipment use.
- Elastomeric foam pad can be found on the underside of the feet.

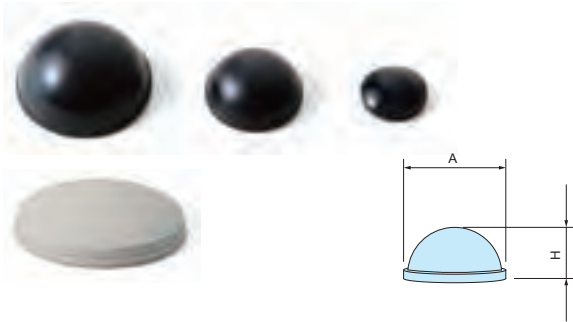


Product no. / Dimensions

Product no.		A	B	C	D	E	F	H	Material	Pack of
● Silver	● Gold									
TC-1S	TC-1G	25	35	11.5	9.7	3.4	5.6	11.5	ABS UL94HB / Aluminium / EVA	4
TC-2S	TC-2G	25	40	11	10.2	4.1	2.1	12	ABS UL94HB / Aluminium / EVA	4
TC-3S	TC-3G	25	45	11.7	12	4.2	7.5	15	ABS UL94HB / Aluminium / EVA	4

## TB SERIES

## ADHESIVE RUBBER FEET



■ Adhesive is present on the underside.

## Product no. / Dimensions

■ Material : Rubber

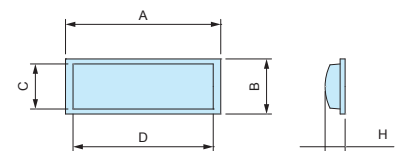
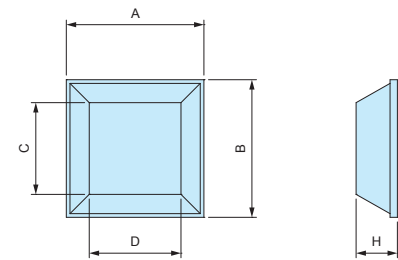
Product no.		A	H	Pack of
● Black	● White gray			
NEW TB- 7	–	6.7	4.2	10
TB- 8	–	8	2.6	10
NEW TB-10	–	10	2.8	10
TB-12	–	11.3	5.6	10
NEW TB-14	–	14	8	10
TB-16	–	15.9	8	10
NEW TB-21	–	21.6	8.5	10
NEW TB-27	NEW TB-27G	27.8	7.4	10

## SJ-P SERIES

## POLYURETHANE RUBBER FEET



■ Adhesive is present on the underside.



SJ-P1011

## Product no. / Dimensions

■ Material / Color : Polyurethane / Black

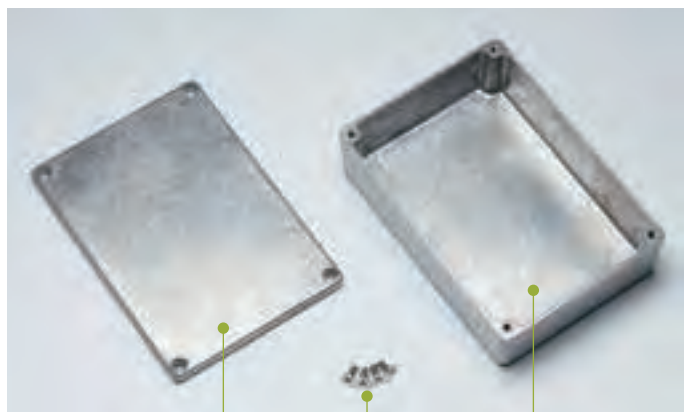
Product no.	A	B	H	C	D	Pack of
SJ-P5007	10.4	10.4	2.5	7.2	7.2	10
SJ-P5008	12.7	12.7	3	9.5	9.5	10
SJ-P5018	12.7	12.7	5.8	7	7	10
SJ-P1004	15	15	4.5	10	10	10
SJ-P5023	20.6	20.6	7.6	12.7	12.7	10
NEW SJ-P1011	15.5	5.5	2	4.5	14.5	10

# TD SERIES

# DIECAST ALUMINIUM BOX



Conductive



1

3

2

- Tough diecast aluminium box.
- Available in 13 sizes and 2 color types.
- Black painted and unfinished boxes are available.
- Conductivity can be achieved by utilization of the contact between the unfinished inner surfaces (only applicable to "N" type).
- Recommended for electric guitar effect pedals.

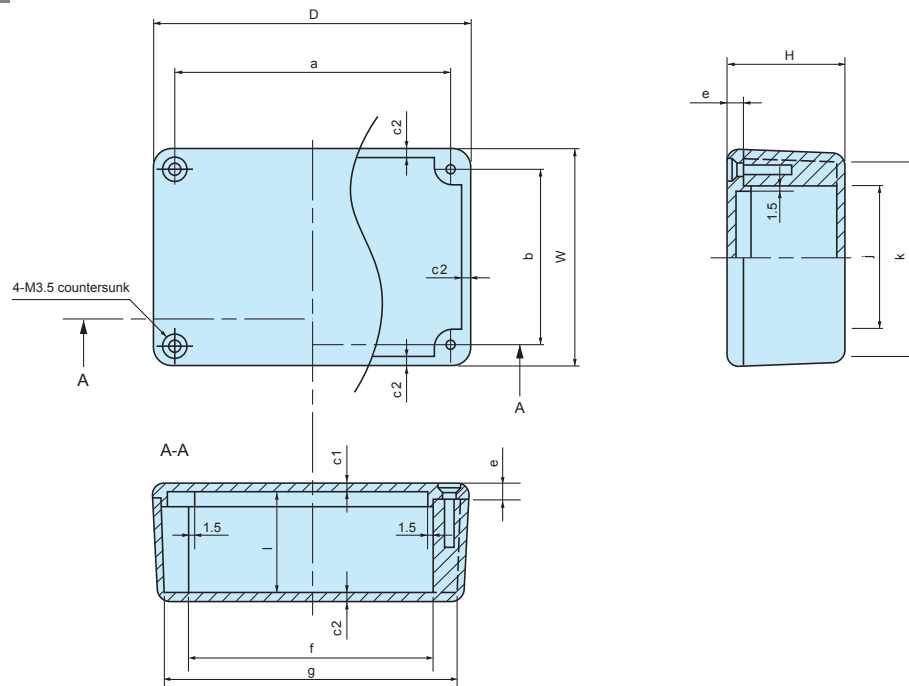
## Components

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	Diecast aluminium ADC12	Black • Silver / Painted • Unfinished
2	Base	1	Diecast aluminium ADC12	Black • Silver / Painted • Unfinished
3	Screw	4	Steel M3.5	Nickel plated • Black trivalent chromate

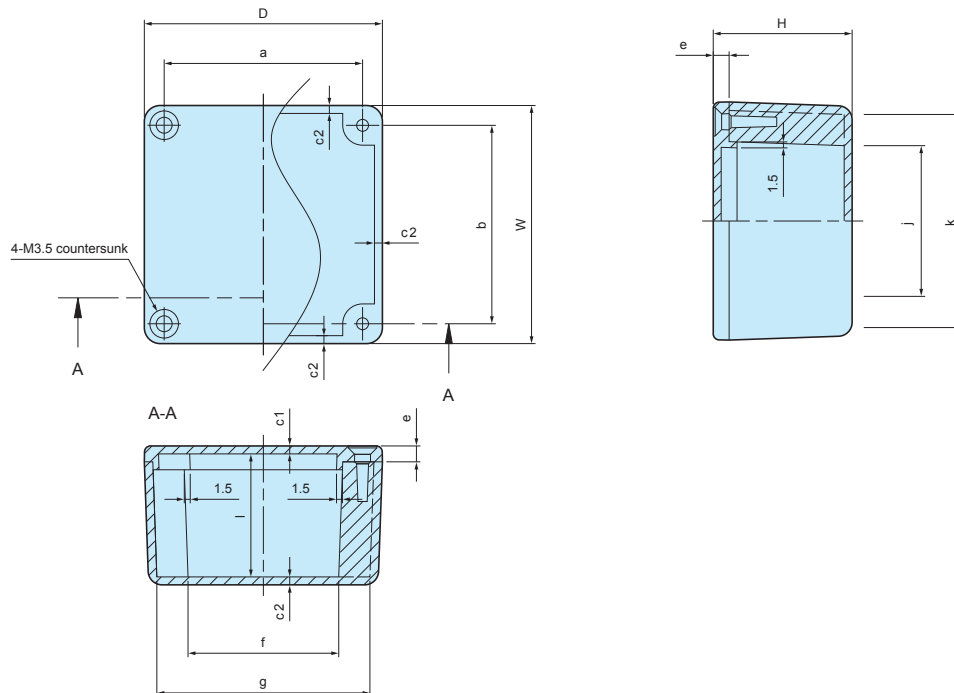
## TD dimensions

■ DXF/DWG/PDF drawings available on our website.

TD 4- 6-3  
 4- 9-3  
 5- 8-3  
 6-11-3  
 7-10-3  
 8-11-5  
 9-12-4  
 10-13-4  
 10-15-4  
 12-18-5



TD 6- 6-4  
 8- 8-4  
 11-11-5

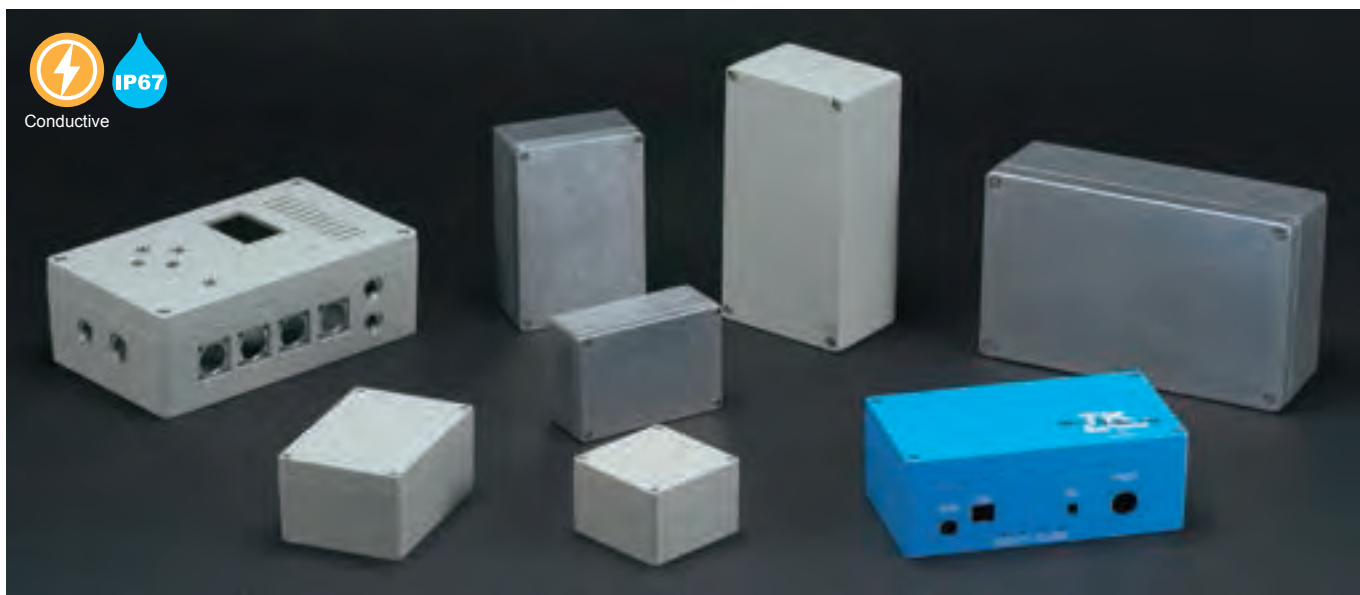


## Product no. / Dimensions

Product no.		W	H	D	a	b	c1	c2	e	f	g	j	k	l	Weight (g)
● Black	● Unfinished Conductive														
TD 4- 6-3B	TD 4- 6-3N	40	27	60	50	30	2	2	4	39.5	53.5	20	33.5	23	56
TD 4- 9-3B	TD 4- 9-3N	40.5	32	94.5	84.5	30.5	2.25	2.25	4	74.5	87	20.5	33	27.5	97
TD 5- 8-3B	TD 5- 8-3N	55	30.5	80	70	45	2	2	4.5	58.5	72.5	33.5	47.5	26	95
TD 6- 6-4B	TD 6- 6-4N	60	35	60	50	50	2	2	4	37	51	37	51	31	90
TD 6-11-3B	TD 6-11-3N	64.5	31.8	115.5	105	54	2.25	2.25	4.25	92.5	106.5	42	55.5	27	164.5
TD 7-10-3B	TD 7-10-3N	70	32.5	100	90	60	2.5	2	4.5	78	92	48	62	28	135
TD 8- 8-4B	TD 8- 8-4N	80	40	80	70	70	2	2	4	56.5	70.5	56.5	70.5	36	145
TD 8-11-5B	TD 8-11-5N	86	47.5	113.5	103	75.5	2.25	2.25	4.25	89.5	103	62	75.5	43	226
TD 9-12-4B	TD 9-12-4N	85	35	120	110	75	2	2	4	98.5	112	63.5	77	31	185
TD10-13-4B	TD10-13-4N	95.5	37.8	130.5	120	85	2.25	2.25	4.25	107.5	121	72.5	86	33	263
TD10-15-4B	TD10-15-4N	100	40	150	140	90	2.5	2.5	4	128.5	142	78	92	35	320
TD11-11-5B	TD11-11-5N	110	45	110	100	100	2.5	2.5	4	86	99	86	99	41	280
TD12-18-5B	TD12-18-5N	120	50	180	170	110	2.5	2.5	4	156	171	97.5	110	45	455

## BDN SERIES

## IP67 DIECAST ALUMINIUM BOX



## Technical Data

Protection class: IP67  
 Operating temperature: -40°C ~ +105°C  
 Recommended torque: 1.0N • m (10kgf • cm)



- 8 different sizes available for both light gray powder coated and unfinished models.
- O-ring gasket is good for maintaining both waterproof and dustproof functionality.
- Shock resistant diecast aluminium box.
- Conductivity can be achieved by utilization of the contact between the unfinished inner surfaces (only applicable to "N" type).

## Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Diecast aluminium ADC12	Light gray • Silver / Powder coated • Unfinished
2	Base	1	Diecast aluminium ADC12	Light gray • Silver / Powder coated • Unfinished
3	O-ring gasket	1	Silicone	Black
4	Screw	4	Stainless steel	Unfinished
5	Earthing screw	2	Steel M4-5	Copper plated

## Accessories (Optional parts)



Wall mounting bracket  
CK series  
See page 296



Mounting plate  
FTB series  
See page 273



DIN-Rail  
FDR series  
See page 203

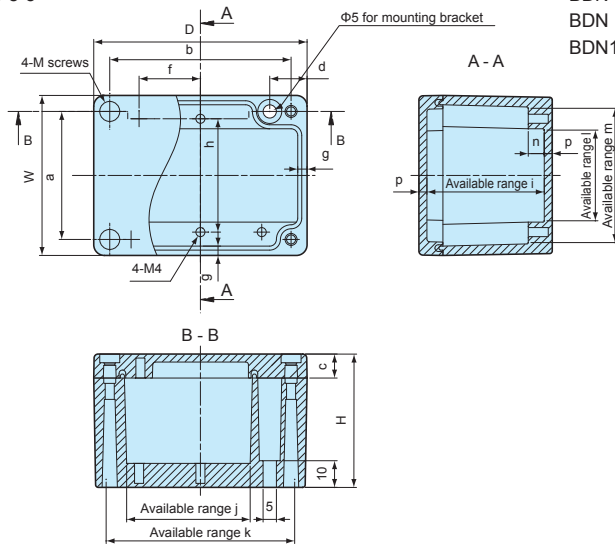


Cable gland  
See page 308 ~ 314

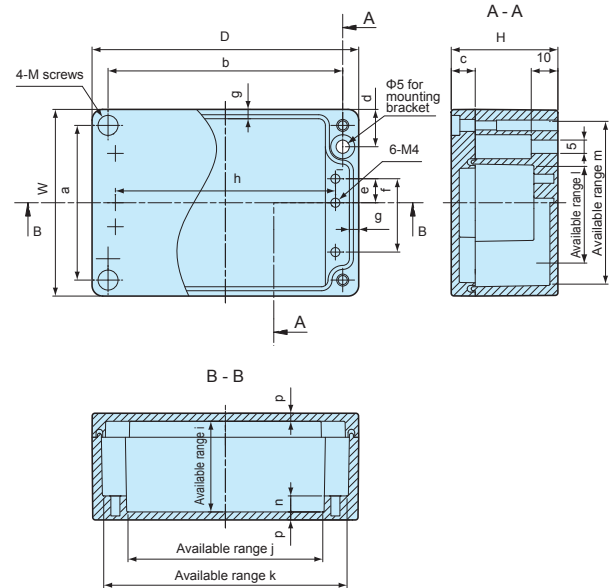
## BDN dimensions

■ DXF/DWG/PDF drawings available on our website.

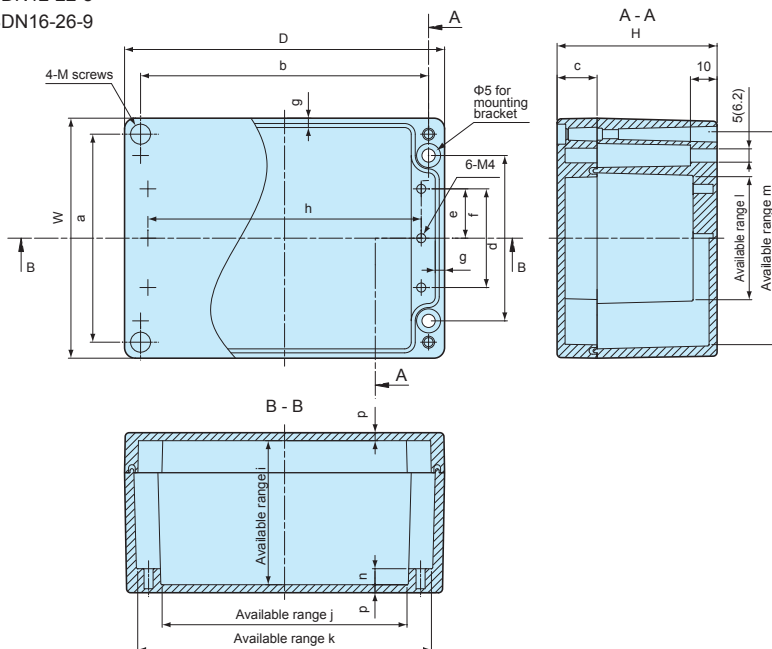
### BDN 6-8-5



### BDN 7-10-4 BDN 9-13-5 BDN11-16-6



### BDN 9- 9-6 BDN10-14-7 BDN12-22-8 BDN16-26-9



Dimension in ( ) = BDN12-22-8  
BDN16-26-9

### Product no. / Dimensions

Product no.		Dimensions						Weight (g)
● Light gray	● Unfinished Conductive	W	D	H	a	b	c	
BDN 6- 8-5G	BDN 6- 8-5N	60	80	50	48	68	9	240
BDN 7-10-4G	BDN 7-10-4N	70	100	40	58	88	9	250
BDN 9- 9-6G	BDN 9- 9-6N	90	90	60	78	78	15	395
BDN 9-13-5G	BDN 9-13-5N	90	130	50	78	118	9	420
BDN10-14-7G	BDN10-14-7N	100	140	70	88	128	15	635
BDN11-16-6G	BDN11-16-6N	110	160	60	98	148	15	640
BDN12-22-8G	BDN12-22-8N	120	220	80	105	205	20	1,155
BDN16-26-9G	BDN16-26-9N	160	260	90	140	240	20	2,145

Product no.		Dimensions												
● Light gray	● Unfinished Conductive	d	e	f	g	h	i	j	k	ℓ	m	n	p	M
BDN 6- 8-5G	BDN 6- 8-5N	14	—	23	3.5	42.5	44	45	71	33	51	6	3	M4
BDN 7-10-4G	BDN 7-10-4N	14	11	31	3	85	34	75	92.5	38	62.5	6	3	M4
BDN 9- 9-6G	BDN 9- 9-6N	62	18.5	37	3.5	72	54	62	80	45	80	6	3	M4
BDN 9-13-5G	BDN 9-13-5N	14	19	47.5	3.5	112.5	44	104	121	56	81	6	3	M4
BDN10-14-7G	BDN10-14-7N	72	24	48	3.5	121	64	111	130	56	90	6	3	M4
BDN11-16-6G	BDN11-16-6N	14	29	67.5	3.5	142.5	54	134	151	76	101	6	3	M4
BDN12-22-8G	BDN12-22-8N	84.6	28	56	3.9	196	74	183	206	62	105	6	3	M5
BDN16-26-9G	BDN16-26-9N	110	36	72	4.8	230	82	216	247	87	146	9	4	M6

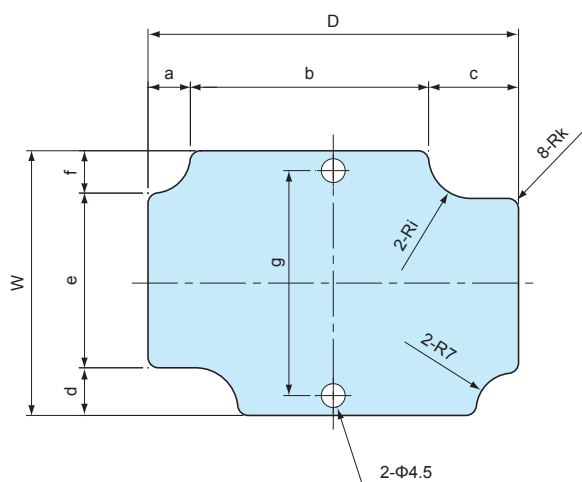


## FTB SERIES

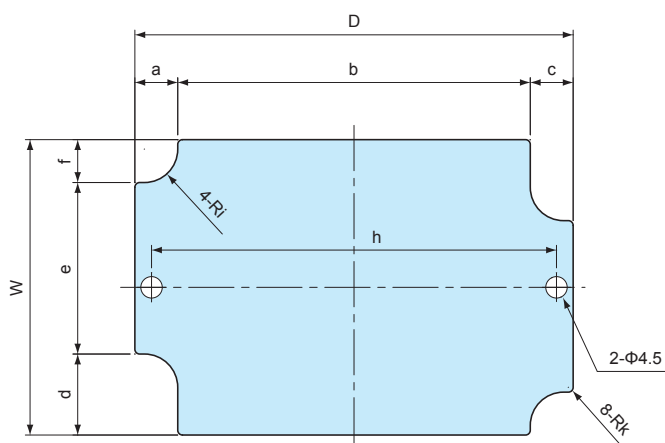
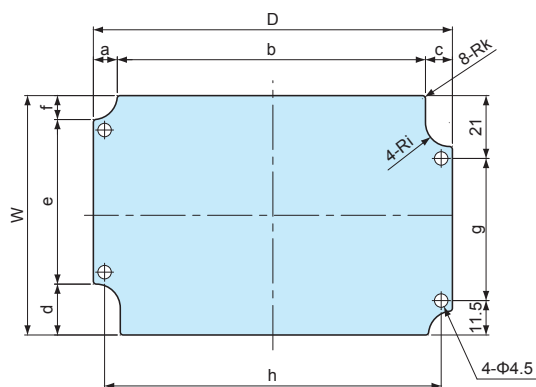
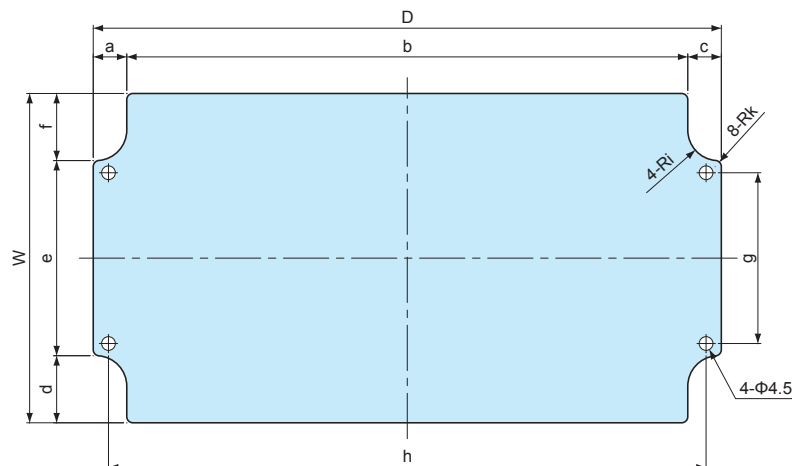
## MOUNTING PLATE for BDN



FTB 5-7



FTB 6-9

FTB 8-12  
FTB10-15FTB 8- 8 FTB10-20  
FTB 9-13 FTB14-24

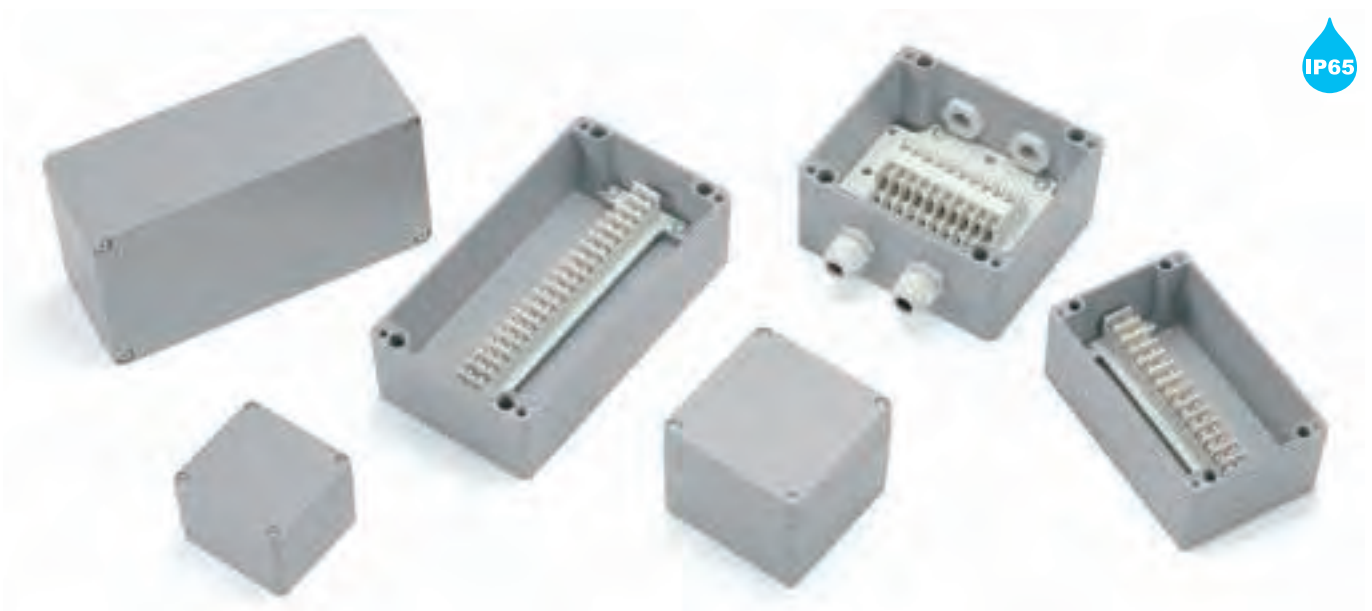
Material	Color / Finish
Aluminium A1050P t=1.5	Silver / Anodized

## Product no. / Dimensions

Product no.	Suitable box	W	D	a	b	c	d	e	f	g	h	i	k
FTB 5- 7	BDN 6- 8-5	50	70	8	45	17	9	33	8	42.5	-	8	2
FTB 6- 9	BDN 7-10-4	62	92	9	74	9	17	36	9	-	85	7	1
FTB 8- 8	BDN 9- 9-6	80	80	9	62	9	17	46	17	37	72.5	8	2
FTB 8-12	BDN 9-13-5	80	120	8	103	9	17	55	8	47.5	112.5	8	1
FTB 9-13	BDN10-14-7	89	129	9	111	9	17	55	17	48	121	8.5	2
FTB10-15	BDN11-16-6	100	150	8	133	9	17	75	8	67.5	142.5	8	1
FTB10-20	BDN12-22-8	108	206	11	184	11	22	64	22	56	196	10	2
FTB14-24	BDN16-26-9	144	244	15	214	15	30	84	30	72	230	12	3

## TMA SERIES

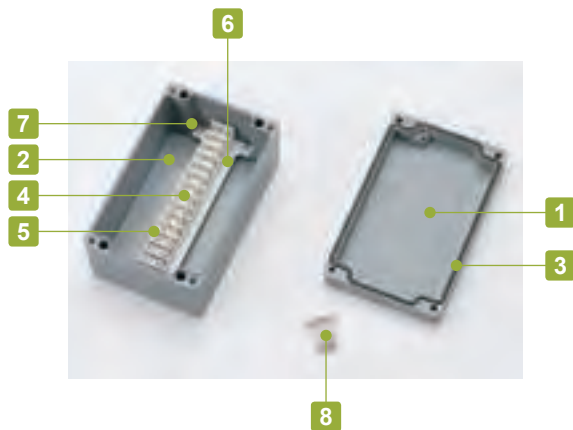
## IP65 DIECAST ALUMINIUM JUNCTION BOX



- Impact resistant IP65 enclosure built from diecast aluminium.
- Diecast aluminium has superior heat dissipation and resistance compared to plastic.
- Selectable in 6 different sizes with 6 to 30 poles available.

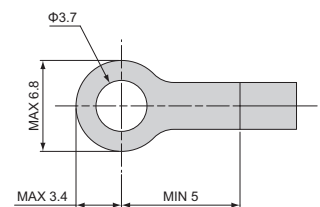
## Technical Data

Protection class: IP65  
 Operating temperature: -40°C ~ +80°C  
 Recommended torque: 1N • m  
 (10kgf • cm)



## Terminal Block Specifications

Rated voltage	400V
Rated current	17.5A
Applicable wire	1.5mm <sup>2</sup>
Standard tightening torque	0.8N • m

Applicable crimp terminal  
R1.25-3.5

## Components

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	Diecast aluminium	Gray / Powder coated
2	Base	1	Diecast aluminium	Gray / Powder coated
3	Gasket	1	Polyurethane	Black
4	Conductive plate	6~30	Brass	Nickel plated
5	Terminal screw	12~60	Steel M3.5	Nickel plated
6	Terminal block	1	PBT UL94V-0	Light gray
7	Terminal block mounting screw	2~4	Steel M4, M6	Trivalent chromate
8	Cover screw	4	Stainless steel	Unfinished

## Accessories (Optional parts)



Shorting bar  
 SBR series  
 See page 307



Cable gland  
 See page 308 ~ 314

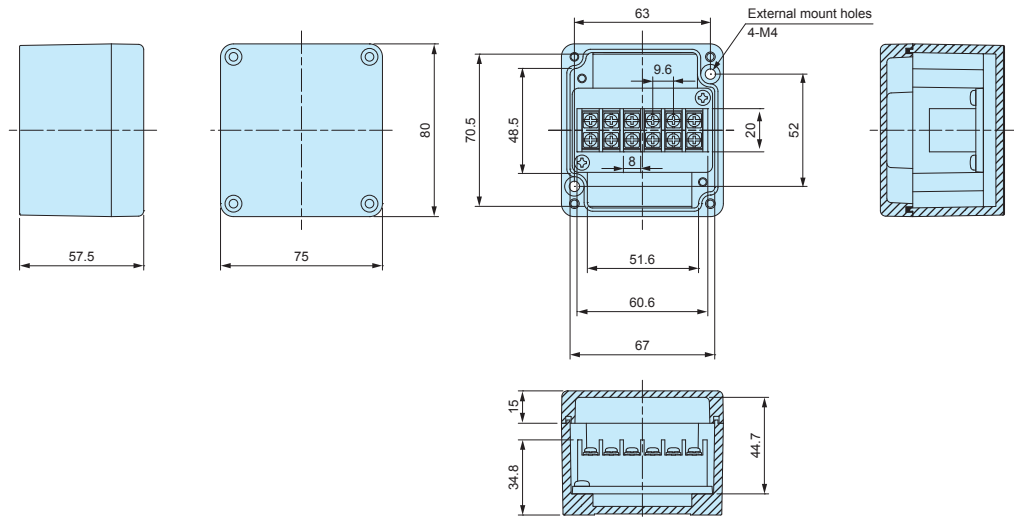
**Product no. / Dimensions**

Product no.	L	W	H	Number of poles	Weight (g)
TMA- 6P	80	75	57.5	6P	341
TMA- 9P	100	100	80	9P	642
TMA-15P	100	160	80	15P	867
TMA-20P-AS	132	150	90	10P × 2 rows	1,394
TMA-20P	120	220	80	20P	1,426
TMA-30P-AS	120	220	80	15P × 2 rows	1,529

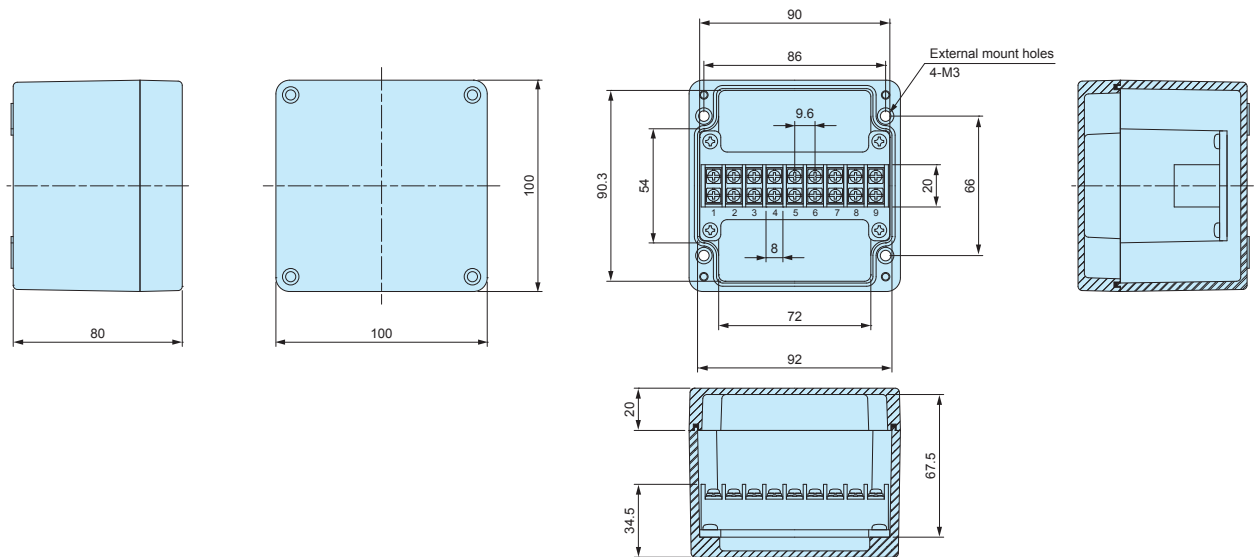
**TMA dimensions**

■ DXF/DWG/PDF drawings available on our website.

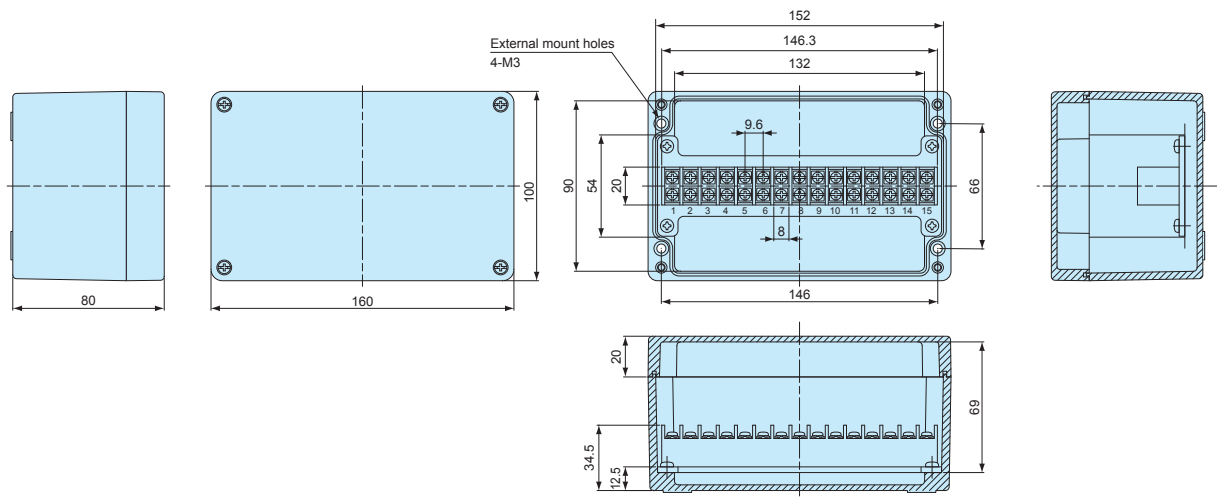
**TMA-6P**

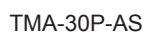
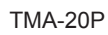


**TMA-9P**



**TMA-15P**





# IP65 LATCH-HINGED PLASTIC BOX



Stainless steel and plastic mounting brackets are available.  
See page 298



BCAR • BCPR series comes with an attachable BRF series outdoor roof.  
See page 283 ~ 284, 293 ~ 294



Pole mounting bracket for pole installation  
See page 299



Dust protection cap (for lock/key type)  
See page 294



Cable gland  
For waterproofing enclosure openings for cables and wires  
See page 308 ~ 314



Mounting plate  
3 types of mounting plates are available (plastic / steel / wood)  
See page 295 ~ 297



Ventilation cover  
For heat dissipation and prevention of condensation build-up  
See page 304



# APPLICATION EXAMPLE

Universal plastic enclosure series suitable for a wide range of applications such as FA/control, electrical switchboard, network communication and so on.

**DATA COMMUNICATION DEVICE**



**POWER SWITCHBOARD BOX**



**Wi-Fi ACCESS POINT**



**SOLAR POWER JUNCTION BOX**



**MONITORING CAMERA**



**VALVE CONTROLLER**



**RADIATION MONITOR**



**SMART METER**



**ANEMOMETER**



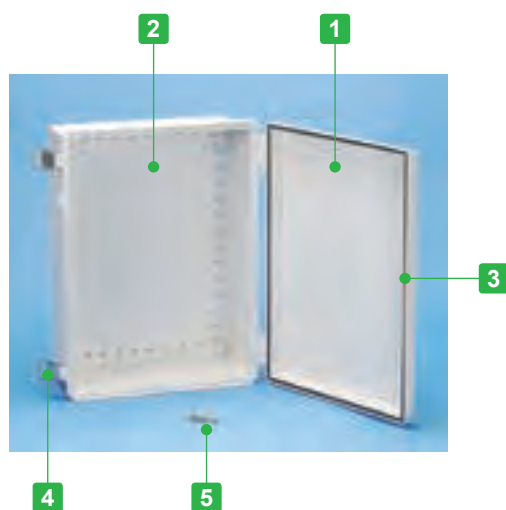
**WATER GAUGE**



**AGRICULTURE SOLAR SENSOR**





**BCAP** SERIES**IP65 LATCH-HINGED ABS PLASTIC BOX****BCPC** SERIES**IP65 LATCH-HINGED POLYCARBONATE PLASTIC BOX**

■ UL mark is only applicable for BCPC series

- 50 different sizes available.
- BCAP series is made of white gray ABS with 2 different cover types (white gray ABS and transparent polycarbonate) available.
- BCPC series is made of light gray UL94V-0 polycarbonate, which has good heat resistance properties.
- Applicable for various uses in fields such as FA, network communication, power switchbox controls and so on.

**Technical Data**

Protection class: IP65  
 Operating temperature:  
     BCAP   -10°C ~ +60°C  
     BCPC   -20°C ~ +75°C

**Components: BCAP series**

■ Box UL class = UL94HB

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS • Polycarbonate	White gray • Transparent
2	Base	1	ABS	White gray
3	Gasket	1	Polyurethane	Black
4	Latch	1 ~ 3	Stainless steel	Unfinished
5	Screw	2 ~ 8	Steel	Trivalent chromate

■ Stainless steel mounting brackets are included together with the following models: 506018, 506025, 507018, 507025, 608018, and 608028.

**Components: BCPC series**

■ Box UL class = UL94V-0

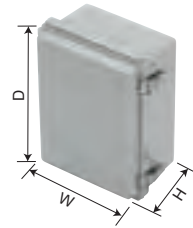
No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Polycarbonate	Light gray
2	Base	1	Glass fiber filled polycarbonate	Light gray
3	Gasket	1	Polyurethane	Black
4	Latch	1 ~ 3	Stainless steel	Unfinished
5	Screw	2 ~ 8	Steel	Trivalent chromate

■ Stainless steel mounting brackets are included together with the following models: 506018, 506025, 507018, 507025, 608018, and 608028.

## Color Type

Color code	Cover color / Material	Base color / Material
BCAP <sup>G</sup>	White gray / ABS	White gray / ABS
BCAP <sup>T</sup>	Transparent / Polycarbonate	White gray / ABS
BCPC <sup>S</sup>	Light gray / Polycarbonate	Light gray / Glass fiber filled polycarbonate

■ Please suffix color code at the end of the product number.



## BCAP Product no. / Dimensions

Product no.	W	D	H	Weight (g)	
				G	T
BCAP091207□	90	120	70	196	204
BCAP091208□	90	120	85	212	221
BCAP101507□	100	150	70	272	281
BCAP101508□	100	150	85	291	300
BCAP112107□	110	210	75	359	378
BCAP112110□	110	210	100	422	420
BCAP112607□	110	260	75	431	446
BCAP112610□	110	260	100.5	484	500
BCAP131508□	135	155	85	356	357
BCAP131808□	135	185	85.5	381	410
BCAP131810□	135	185	100.5	396	402
BCAP151509□	150	150	90	343	353
BCAP151512□	150	150	120.5	411	425
BCAP162110□	160	210	100	468	486
BCAP162113□	160	210	130	517	537
BCAP162610□	160	260	100	577	601
BCAP162613□	160	260	130	673	701
BCAP172211□	170	220	110.5	530	556
BCAP172711□	170	270	110.5	670	680
BCAP192810□	190	280	100.5	722	746
BCAP192814□	190	280	141	877	901
BCAP203013□	200	300	131.5	920	951
BCAP203015□	200	300	151.5	958	984
BCAP203018□	200	300	180.5	1,066	1,084
BCAP212110□	210	210	100	630	656
BCAP212113□	210	210	130	704	726
BCAP253515□	250	350	151	1,261	1,332
BCAP253518□	250	350	181.5	1,397	1,464
BCAP282813□	280	280	130.5	1,167	1,200
BCAP283813□	280	380	130	1,455	1,512
BCAP303015□	300	300	151	1,339	1,418
BCAP303018□	300	300	181	1,495	1,576
BCAP304012□	300	400	121	1,508	1,575
BCAP304015□	300	400	150	1,563	1,675
BCAP304018□	300	400	181	1,719	1,853
BCAP353515□	350	350	150	1,693	1,764
BCAP353518□	350	350	181	1,845	1,906
BCAP354512□	350	450	120	2,068	2,167
BCAP354516□	350	450	160	2,382	2,514
BCAP354520□	350	450	201	2,646	2,794
BCAP405016□	400	500	160	2,660	2,839
BCAP405020□	400	500	201	3,119	3,232
BCAP406018□	400	600	181	3,542	3,652
BCAP406023□	400	600	231	3,870	4,044
BCAP506018□	530	630	185	5,438	5,611
BCAP506025□	530	630	255	6,078	6,273
BCAP507018G	530	730	188	6,241	-
BCAP507025G	530	730	255	6,911	-
BCAP608018G	630	830	188	8,131	-
BCAP608028G	630	830	288	9,570	-

■ BCAP507018, 507025, 608018, 608028 models are only available as G color type.

## BCPC Product no. / Dimensions

Product no.	W	D	H	Weight (g)
BCPC091207S	90	120	70	226
BCPC091208S	90	120	85	247
BCPC101507S	100	150	70	312
BCPC101508S	100	150	85	336
BCPC112107S	110	210	75	420
BCPC112110S	110	210	100	473
BCPC112607S	110	260	75	493
BCPC112610S	110	260	100.5	569
BCPC131508S	135	155	85	406
BCPC131808S	135	185	85.5	452
BCPC131810S	135	185	100.5	448
BCPC151509S	150	150	90	395
BCPC151512S	150	150	120.5	482
BCPC162110S	160	210	100	556
BCPC162113S	160	210	130	611
BCPC162610S	160	260	100	671
BCPC162613S	160	260	130	779
BCPC172211S	170	220	110.5	649
BCPC172711S	170	270	110.5	775
BCPC192810S	190	280	100.5	858
BCPC192814S	190	280	141	1,028
BCPC203013S	200	300	131.5	1,053
BCPC203015S	200	300	151.5	1,127
BCPC203018S	200	300	180.5	1,258
BCPC212110S	210	210	100	742
BCPC212113S	210	210	130	827
BCPC253515S	250	350	151	1,491
BCPC253518S	250	350	181.5	1,676
BCPC282813S	280	280	130.5	1,371
BCPC283813S	280	380	130	1,695
BCPC303015S	300	300	151	1,610
BCPC303018S	300	300	181	1,760
BCPC304012S	300	400	121	1,846
BCPC304015S	300	400	150	1,862
BCPC304018S	300	400	181	2,030
BCPC353515S	350	350	150	2,045
BCPC353518S	350	350	181	2,142
BCPC354512S	350	450	120	2,397
BCPC354516S	350	450	160	2,826
BCPC354520S	350	450	201	3,151
BCPC405016S	400	500	160	3,188
BCPC405020S	400	500	201	3,811
BCPC406018S	400	600	181	4,153
BCPC406023S	400	600	231	4,637
BCPC506018S	530	630	185	6,305
BCPC506025S	530	630	255	7,213
NEW BCPC507018S	530	730	188	7,410
NEW BCPC507025S	530	730	255	8,200
NEW BCPC608018S	630	830	188	9,820
NEW BCPC608028S	630	830	288	11,550

■ Refer to page 285 ~ 292 for detailed dimensions.

## Accessories (Optional parts)



Mounting plate  
BMP series  
See page 295 ~ 297



Mounting bracket  
CK • BFL series  
See page 298



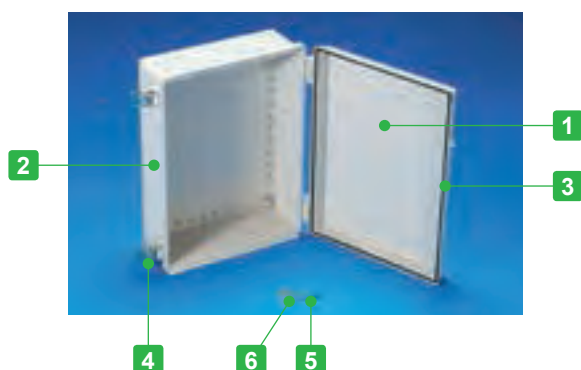
Pole mounting bracket  
SSK series  
See page 299



Cable gland  
See page 308 ~ 314



Ventilation part  
See page 301 ~ 304

**BCAK** SERIES**IP65 ABS PLASTIC BOX with LOCK****BCPK** SERIES**IP65 POLYCARBONATE PLASTIC BOX with LOCK**

■ UL mark is only applicable for BCPK series

**Technical Data**

Protection class: IP65  
 Operating temperature:  
 BCAK -10°C ~ +60°C  
 BCPK -20°C ~ +75°C

※ Lock type varies according to box size.



Box size  
 BCAK091207~172711  
 BCAK212110~212113  
 BCPK091207~172711  
 BCPK212110~212113



Box size  
 BCAK192810~203018  
 BCAK253515~608028  
 BCPK192810~203018  
 BCPK253515~608028

■ Lockable enclosure best used for tamper prevention in FA, control box, and network communication fields.

■ BCPK polycarbonate box is resistant against heat and flames.

■ Transparent type is not available for BCAK507018, 507025, 608018, and 608028 models.

**Components: BCAK series**

■ Box UL class = UL94HB

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS • Polycarbonate	White gray • Transparent
2	Base	1	ABS	White gray
3	Gasket	1	Polyurethane	Black
4	Latch	1~3	Stainless steel	Unfinished
5	Screw	2~8	Steel	Trivalent chromate
6	Key	2	Diecast zinc • Brass	Chrome plated • Nickel plated

■ Stainless steel mounting brackets are included together with the following models: 506018, 506025, 507018, 507025, 608018, and 608028.

**Components: BCPK series**

■ Box UL class = UL94V-0

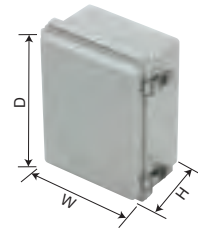
No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Polycarbonate	Light gray
2	Base	1	Glass fiber filled polycarbonate	Light gray
3	Gasket	1	Polyurethane	Black
4	Latch	1~3	Stainless steel	Unfinished
5	Screw	2~6	Steel	Trivalent chromate
6	Key	2	Diecast zinc • Brass	Chrome plated • Nickel plated

■ Stainless steel mounting brackets are included together with the following models: 506018, 506025, 507018, 507025, 608018, and 608028.

## Color Type

Color code	Cover color / Material	Base color / Material
BACK[G]	White gray / ABS	White gray / ABS
BACK[T]	Transparent / Polycarbonate	White gray / ABS
BCPK[S]	Light gray / Polycarbonate	Light gray / Glass fiber filled polycarbonate

■ Please suffix color code at the end of the product number.



## BCAK Product no. / Dimensions

Product no.	W	D	H	Weight (g)	
				G	T
BCAK091207□	90	120	70	210	220
BCAK091208□	90	120	85	227	238
BCAK101507□	100	150	70	289	304
BCAK101508□	100	150	85	309	326
BCAK112107□	110	210	75	384	398
BCAK112110□	110	210	100	433	456
BCAK112607□	110	260	75	448	476
BCAK112610□	110	260	100.5	513	531
BCAK131508□	135	155	85	380	381
BCAK131808□	135	185	85.5	410	427
BCAK131810□	135	185	100.5	412	422
BCAK151509□	150	150	90	367	381
BCAK151512□	150	150	120.5	433	448
BCAK162110□	160	210	100	488	509
BCAK162113□	160	210	130	548	564
BCAK162610□	160	260	100	617	640
BCAK162613□	160	260	130	701	727
BCAK172211□	170	220	110.5	567	570
BCAK172711□	170	270	110.5	674	752
BCAK192810□	190	280	100.5	757	775
BCAK192814□	190	280	141	913	937
BCAK203013□	200	300	131.5	933	985
BCAK203015□	200	300	151.5	983	1,018
BCAK203018□	200	300	180.5	1,095	1,141
BCAK212110□	210	210	100	668	689
BCAK212113□	210	210	130	725	754
BCAK253515□	250	350	151	1,360	1,403
BCAK253518□	250	350	181.5	1,441	1,479
BCAK282813□	280	280	130.5	1,227	1,283
BCAK283813□	280	380	130	1,493	1,544
BCAK303015□	300	300	151	1,421	1,455
BCAK303018□	300	300	181	1,530	1,558
BCAK304012□	300	400	121	1,565	1,614
BCAK304015□	300	400	150	1,578	1,735
BCAK304018□	300	400	181	1,833	1,818
BCAK353515□	350	350	150	1,752	1,845
BCAK353518□	350	350	181	1,838	1,900
BCAK354512□	350	450	120	2,107	2,190
BCAK354516□	350	450	160	2,438	2,535
BCAK354520□	350	450	201	2,682	2,786
BCAK405016□	400	500	160	2,705	2,811
BCAK405020□	400	500	201	3,168	3,296
BCAK406018□	400	600	181	3,613	3,832
BCAK406023□	400	600	231	3,886	4,121
BCAK506018□	530	630	185	5,413	5,603
BCAK506025□	530	630	255	6,148	6,379
BCAK507018G	530	730	188	6,382	—
BCAK507025G	530	730	255	6,883	—
BCAK608018G	630	830	188	8,154	—
BCAK608028G	630	830	288	9,750	—

■ BCAK507018, 507025, 608018, 608028 models are only available as G color type.

## BCPK Product no. / Dimensions

Product no.	W	D	H	Weight (g)
BCPK091207S	90	120	70	242
BCPK091208S	90	120	85	264
BCPK101507S	100	150	70	339
BCPK101508S	100	150	85	360
BCPK112107S	110	210	75	437
BCPK112110S	110	210	100	501
BCPK112607S	110	260	75	520
BCPK112610S	110	260	100.5	585
BCPK131508S	135	155	85	430
BCPK131808S	135	185	85.5	474
BCPK131810S	135	185	100.5	471
BCPK151509S	150	150	90	419
BCPK151512S	150	150	120.5	507
BCPK162110S	160	210	100	563
BCPK162113S	160	210	130	630
BCPK162610S	160	260	100	728
BCPK162613S	160	260	130	805
BCPK172211S	170	220	110.5	664
BCPK172711S	170	270	110.5	771
BCPK192810S	190	280	100.5	875
BCPK192814S	190	280	141	1,065
BCPK203013S	200	300	131.5	1,090
BCPK203015S	200	300	151.5	1,182
BCPK203018S	200	300	180.5	1,295
BCPK212110S	210	210	100	743
BCPK212113S	210	210	130	822
BCPK253515S	250	350	151	1,559
BCPK253518S	250	350	181.5	1,670
BCPK282813S	280	280	130.5	1,391
BCPK283813S	280	380	130	1,811
BCPK303015S	300	300	151	1,670
BCPK303018S	300	300	181	1,782
BCPK304012S	300	400	121	1,858
BCPK304015S	300	400	150	1,912
BCPK304018S	300	400	181	2,083
BCPK353515S	350	350	150	2,067
BCPK353518S	350	350	181	2,175
BCPK354512S	350	450	120	2,442
BCPK354516S	350	450	160	2,863
BCPK354520S	350	450	201	3,156
BCPK405016S	400	500	160	3,149
BCPK405020S	400	500	201	3,725
BCPK406018S	400	600	181	4,159
BCPK406023S	400	600	231	4,639
BCPK506018S	530	630	185	5,339
BCPK506025S	530	630	255	7,136
NEW BCPK507018S	530	730	188	7,470
NEW BCPK507025S	530	730	255	8,260
NEW BCPK608018S	630	830	188	9,880
NEW BCPK608028S	630	830	288	11,610

■ Refer to page 285 ~ 292 for detailed dimensions.

## Accessories (Optional parts)



Dust protection cap  
BCC series  
See page 294



Mounting plate  
BMP series  
See page 295 ~ 297



Mounting bracket  
CK • BFL series  
See page 298

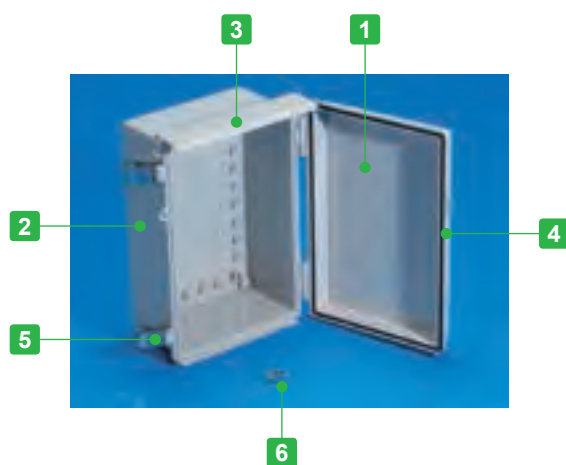


Cable gland  
See page 308 ~ 314



Ventilation part  
See page 301 ~ 304



**BCAR** SERIES**IP65 ABS PLASTIC BOX with OUTDOOR ROOF****BCPR** SERIES**IP65 POLYCARBONATE PLASTIC BOX with OUTDOOR ROOF****Technical Data**

Protection class: IP65  
 Operating temperature:  
     BCAR   -10°C ~ +60°C  
     BCPR   -20°C ~ +75°C

- Suitable for outdoor use by equipping easy snap-on roof attachment.
- 45 different sizes available.
- BCAR series is made of white gray ABS with 2 different cover type (white gray ABS and transparent polycarbonate).
- BCPR series is made of light gray UL94V-0 polycarbonate, which has good heat resistance properties.
- Transparent cover type is not available for BCAR507018, 507025, 608018, and 608028 models.

**Components: BCAR series**

■ Box UL class = UL94HB

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS • Polycarbonate	White gray • Transparent
2	Base	1	ABS	White gray
3	Roof	1	PVC	White gray
4	Gasket	1	Polyurethane	Black
5	Latch	1~3	Stainless steel	Unfinished
6	Screw	2~8	Steel	Trivalent chromate

■ Stainless steel mounting brackets are included together with the following models: 506018, 506025, 507018, 507025, 608018, and 608028.

**Components: BCPR series**

■ Box UL class = UL94V-0

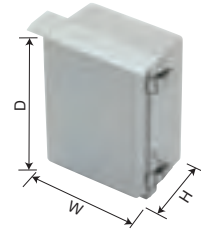
No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Polycarbonate	Light gray
2	Base	1	Glass fiber filled polycarbonate	Light gray
3	Roof	1	PVC	Light gray
4	Gasket	1	Polyurethane	Black
5	Latch	1~3	Stainless steel	Unfinished
6	Screw	2~8	Steel	Trivalent chromate

■ Stainless steel mounting brackets are included together with the following models: 506018, 506025, 507018, 507025, 608018, and 608028.

## Color Type

Code	Cover color / Material	Base color / Material
BCAR[G]	White gray / ABS	White gray / ABS
BCAR[T]	Transparent / Polycarbonate	White gray / ABS
BCPR[S]	Light gray / Polycarbonate	Light gray / Glass fiber filled polycarbonate

■ Please suffix color code at the end of the product number.



## BCAR Product no. / Dimensions

Product no.	W	D	H	Weight (g)	
				G	T
BCAR091207□	90	120	70	213	220
BCAR091208□	90	120	85	228	237
BCAR101507□	100	150	70	291	300
BCAR101508□	100	150	85	309	318
BCAR112107□	110	210	75	379	398
BCAR112110□	110	210	100	442	440
BCAR112607□	110	260	75	451	466
BCAR112610□	110	260	100.5	504	519
BCAR131508□	135	155	85	379	381
BCAR131808□	135	185	85.5	404	434
BCAR131810□	135	185	100.5	420	426
BCAR162110□	160	210	100	495	513
BCAR162113□	160	210	130	544	564
BCAR162610□	160	260	100	605	629
BCAR162613□	160	260	130	701	729
BCAR172211□	170	220	110.5	560	586
BCAR172711□	170	270	110.5	700	710
BCAR192810□	190	280	100.5	755	778
BCAR192814□	190	280	141	909	933
BCAR203013□	200	300	131.5	957	989
BCAR203015□	200	300	151.5	995	1,022
BCAR203018□	200	300	180.5	1,104	1,122
BCAR212110□	210	210	100	666	692
BCAR212113□	210	210	130	740	762
BCAR253515□	250	350	151	1,307	1,378
BCAR253518□	250	350	181.5	1,443	1,510
BCAR282813□	280	280	130.5	1,218	1,251
BCAR283813□	280	380	130	1,506	1,563
BCAR303015□	300	300	151	1,393	1,472
BCAR303018□	300	300	181	1,549	1,630
BCAR304012□	300	400	121	1,562	1,629
BCAR304015□	300	400	150	1,617	1,729
BCAR304018□	300	400	181	1,773	1,907
BCAR353515□	350	350	150	1,757	1,827
BCAR353518□	350	350	181	1,908	1,970
BCAR354512□	350	450	120	2,140	2,239
BCAR354516□	350	450	160	2,454	2,586
BCAR354520□	350	450	201	2,718	2,866
BCAR405016□	400	500	160	2,742	2,921
BCAR506018□	530	630	185	5,564	5,737
BCAR506025□	530	630	255	6,203	6,399
BCAR507018G	530	730	188	6,366	—
BCAR507025G	530	730	255	7,037	—
BCAR608018G	630	830	188	8,279	—
BCAR608028G	630	830	288	9,719	—

■ BCAR507018, 507025, 608018, 608028 models are only available as G color type.

## BCPR Product no. / Dimensions

Product no.	W	D	H	Weight (g)
BCPR091207S	90	120	70	242
BCPR091208S	90	120	85	264
BCPR101507S	100	150	70	330
BCPR101508S	100	150	85	354
BCPR112107S	110	210	75	439
BCPR112110S	110	210	100	493
BCPR112607S	110	260	75	513
BCPR112610S	110	260	100.5	589
BCPR131508S	135	155	85	429
BCPR131808S	135	185	85.5	475
BCPR131810S	135	185	100.5	471
BCPR162110S	160	210	100	583
BCPR162113S	160	210	130	638
BCPR162610S	160	260	100	699
BCPR162613S	160	260	130	806
BCPR172211S	170	220	110.5	677
BCPR172711S	170	270	110.5	803
BCPR192810S	190	280	100.5	889
BCPR192814S	190	280	141	1,060
BCPR203013S	200	300	131.5	1,091
BCPR203015S	200	300	151.5	1,165
BCPR203018S	200	300	180.5	1,296
BCPR212110S	210	210	100	777
BCPR212113S	210	210	130	862
BCPR253515S	250	350	151	1,537
BCPR253518S	250	350	181.5	1,722
BCPR282813S	280	280	130.5	1,422
BCPR283813S	280	380	130	1,747
BCPR303015S	300	300	151	1,665
BCPR303018S	300	300	181	1,814
BCPR304012S	300	400	121	1,901
BCPR304015S	300	400	150	1,917
BCPR304018S	300	400	181	2,084
BCPR353515S	350	350	150	2,109
BCPR353518S	350	350	181	2,206
BCPR354512S	350	450	120	2,471
BCPR354516S	350	450	160	2,899
BCPR354520S	350	450	201	3,224
BCPR405016S	400	500	160	3,269
BCPR506018S	530	630	185	6,431
BCPR506025S	530	630	255	7,339
NEW BCPR507018S	530	730	188	7,630
NEW BCPR507025S	530	730	255	8,420
NEW BCPR608018S	630	830	188	10,040
NEW BCPR608028S	630	830	288	11,770

■ Refer to page 285 ~ 292 for detailed dimensions.

## Accessories (Optional parts)



Mounting plate  
BMP series  
See page 295 ~ 297



Mounting bracket  
CK • BFL series  
See page 298



Pole mounting bracket  
SSK series  
See page 299 ~ 300



Cable gland  
See page 308 ~ 314



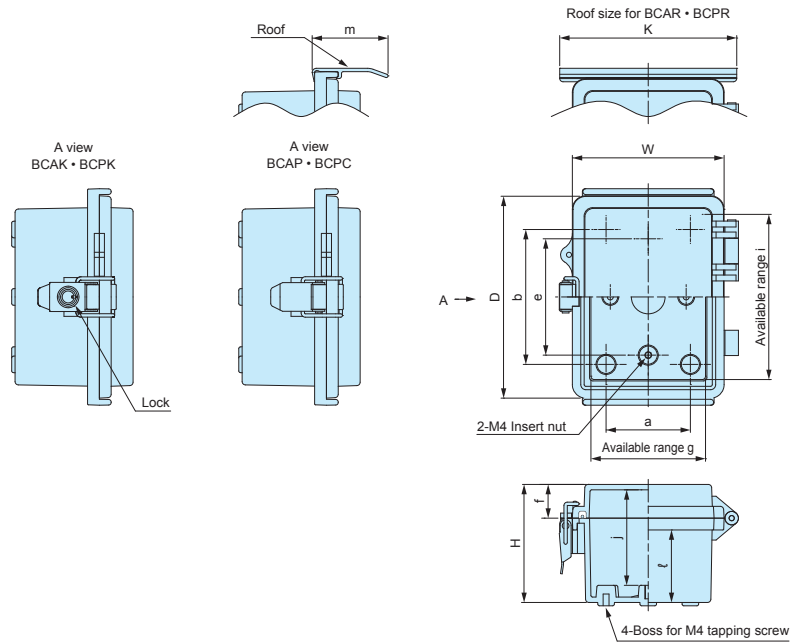
Ventilation part  
See page 301 ~ 304



**BCAP • BCAF • BCAR • BCPC • BCPK • BCPR dimensions**

■ DXF/DWG/PDF drawings available on our website.

091207, 091208

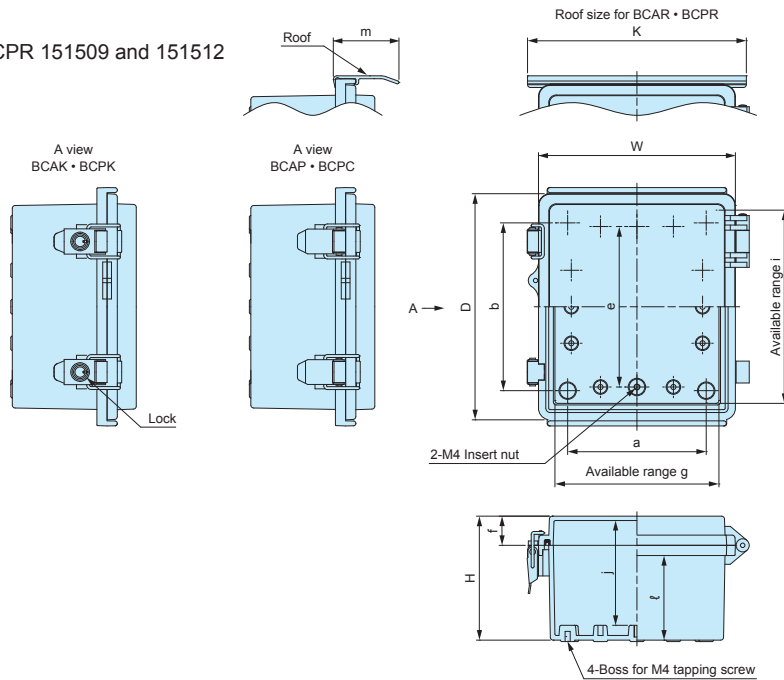


※ Dimension "k" and "m" are only applicable for BCAR • BCPR series.

Product no.	W	D	H	a	b	c	e	f	g	i	j	k	ℓ	m
BCAP • K • R, BCPC • K • R091207	90	120	70	50	80	—	69	20	66	96	56.5	105	43	45
BCAP • K • R, BCPC • K • R091208	90	120	85	50	80	—	69	20	66	96	71.5	105	58	45

101507 ~ 151512

※ Not available for BCAR • BCPR 151509 and 151512 models.



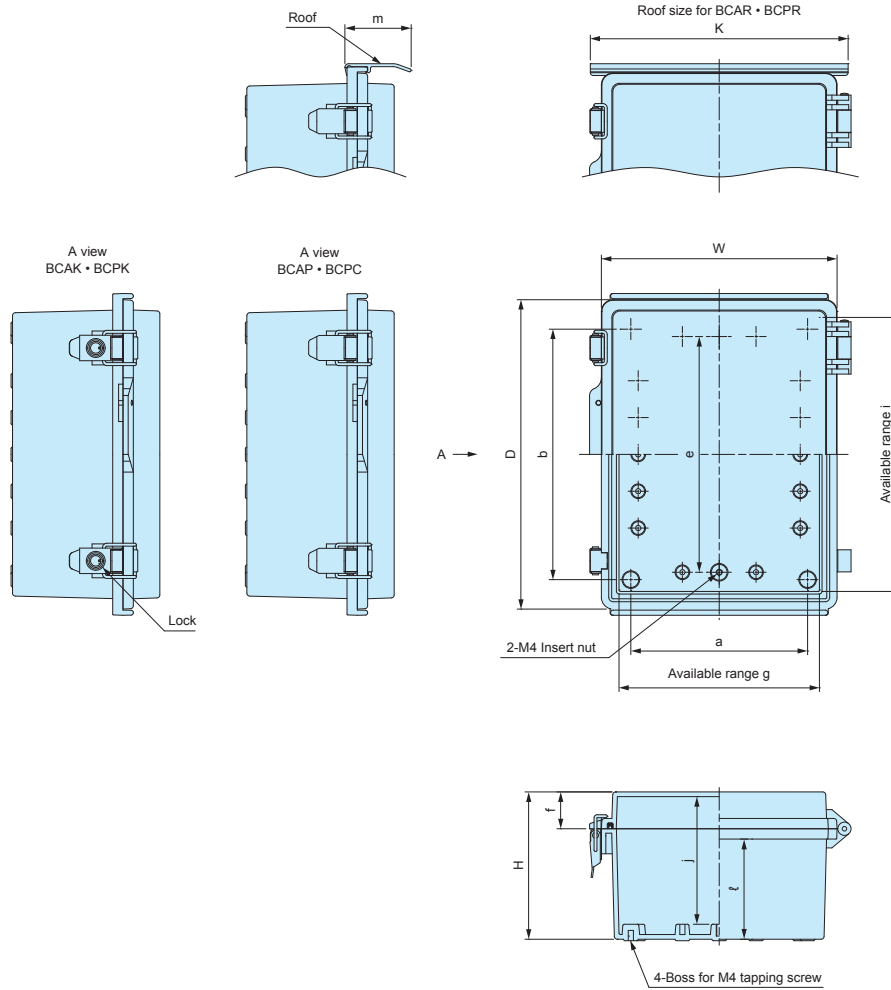
※ Dimension "k" and "m" are only applicable for BCAR • BCPR series.

Product no.	W	D	H	a	b	c	e	f	g	i	j	k	ℓ	m
BCAP • K • R, BCPC • K • R101507	100	150	70	60	110	—	99	20	76	126	56.5	115	43	45
BCAP • K • R, BCPC • K • R101508	100	150	85	60	110	—	99	20	75.5	125.5	71.5	115	58	45
BCAP • K • R, BCPC • K • R112107	110	210	75	70	170	—	158	20	85.8	185.8	61.5	125	48	45
BCAP • K • R, BCPC • K • R112110	110	210	100	70	170	—	158	20	84.9	184.9	86.5	125	73	45
BCAP • K • R, BCPC • K • R112607	110	260	75	70	220	—	208	20	85.8	235.8	61.5	125	48	45
BCAP • K • R, BCPC • K • R112610	110	260	100.5	70	220	—	208	20	85.8	235.8	86.5	125	73.5	45
BCAP • K • R, BCPC • K • R131508	135	155	85	95	115	—	110	20	110.4	130.4	71.5	150	58	45
BCAP • K • R, BCPC • K • R131808	135	185	85.5	95	145	—	140	20	110.4	160.4	71.5	150	58.5	45
BCAP • K • R, BCPC • K • R131810	135	185	100.5	95	145	—	140	20	110.4	160.4	86.5	150	73.5	45
BCAP • K BCPC • K 151509	150	150	90	120	120	—	110	20	125.7	125.7	75.5	—	63.5	—
BCAP • K BCPC • K 151512	150	150	120.5	117	117	—	110	20	126	126	106	—	94.5	—

162110 ~ 172711



■ Inner bosses vary according to box size.  
Refer to DXF/DWG/PDF drawings for more details.



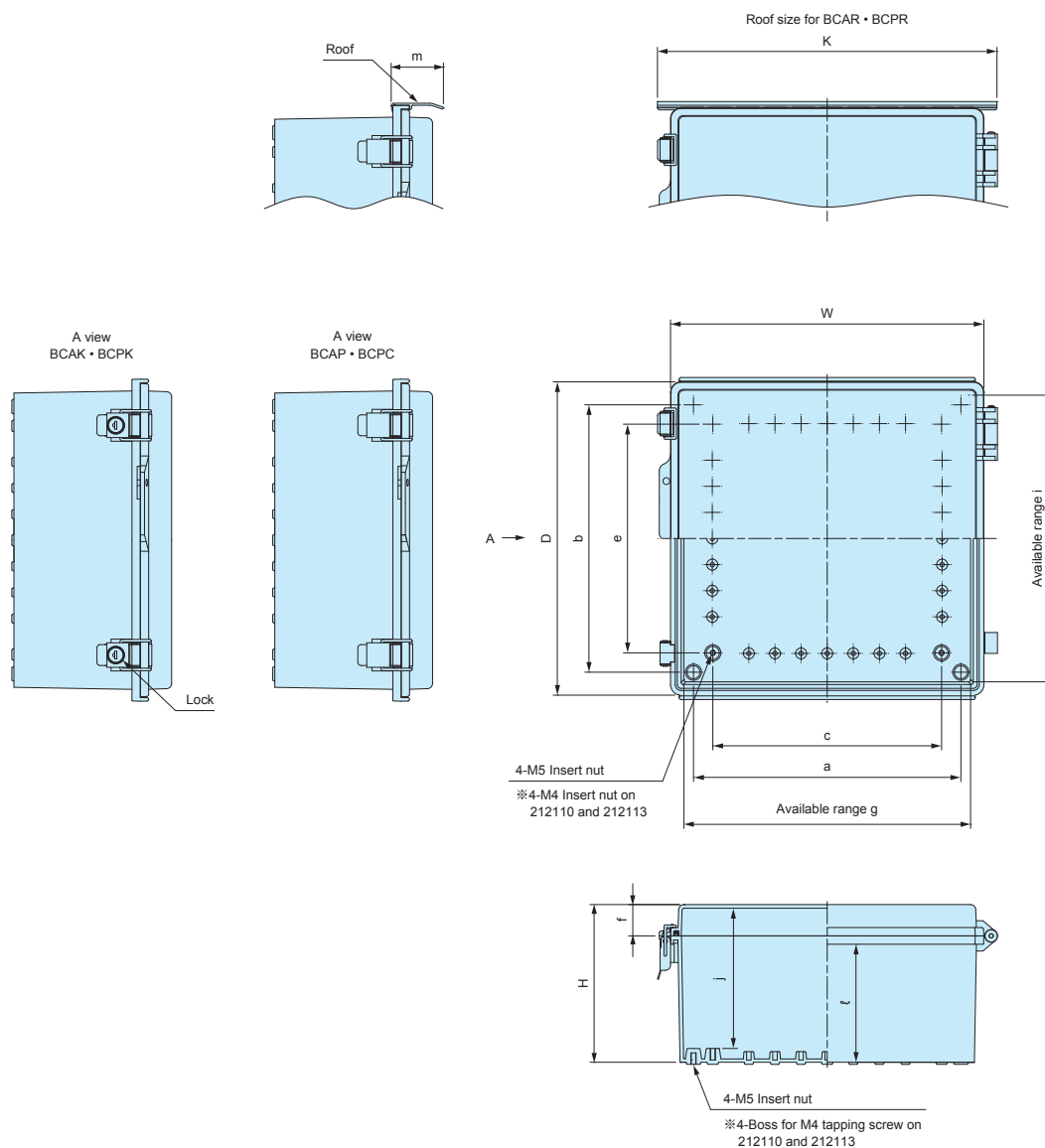
※ Dimension "k" and "m" are only applicable for BCAR • BCPR series.

Product no.	W	D	H	a	b	c	e	f	g	i	j	k	ℓ	m
BCAP • K • R, BCPC • K • R162110	160	210	100	120	170	—	160	25	134	184	86.5	175	68	45
BCAP • K • R, BCPC • K • R162113	160	210	130	120	170	—	160	25	134	184	116.5	175	98	45
BCAP • K • R, BCPC • K • R162610	160	260	100	120	220	—	210	25	134	234	86.5	175	68	45
BCAP • K • R, BCPC • K • R162613	160	260	130	120	220	—	210	25	134	234	116.5	175	98	45
BCAP • K • R, BCPC • K • R172211	170	220	110.5	132	182	—	160	30	144.9	194.9	95.5	185	73.5	45
BCAP • K • R, BCPC • K • R172711	170	270	110.5	132	232	—	210	30	144.9	244.9	95.5	185	73.5	45

## BCAP • BCAF • BCAR • BCPC • BCPK • BCPR dimensions

■ DXF/DWG/PDF drawings available on our website.

192810 ~ 353518



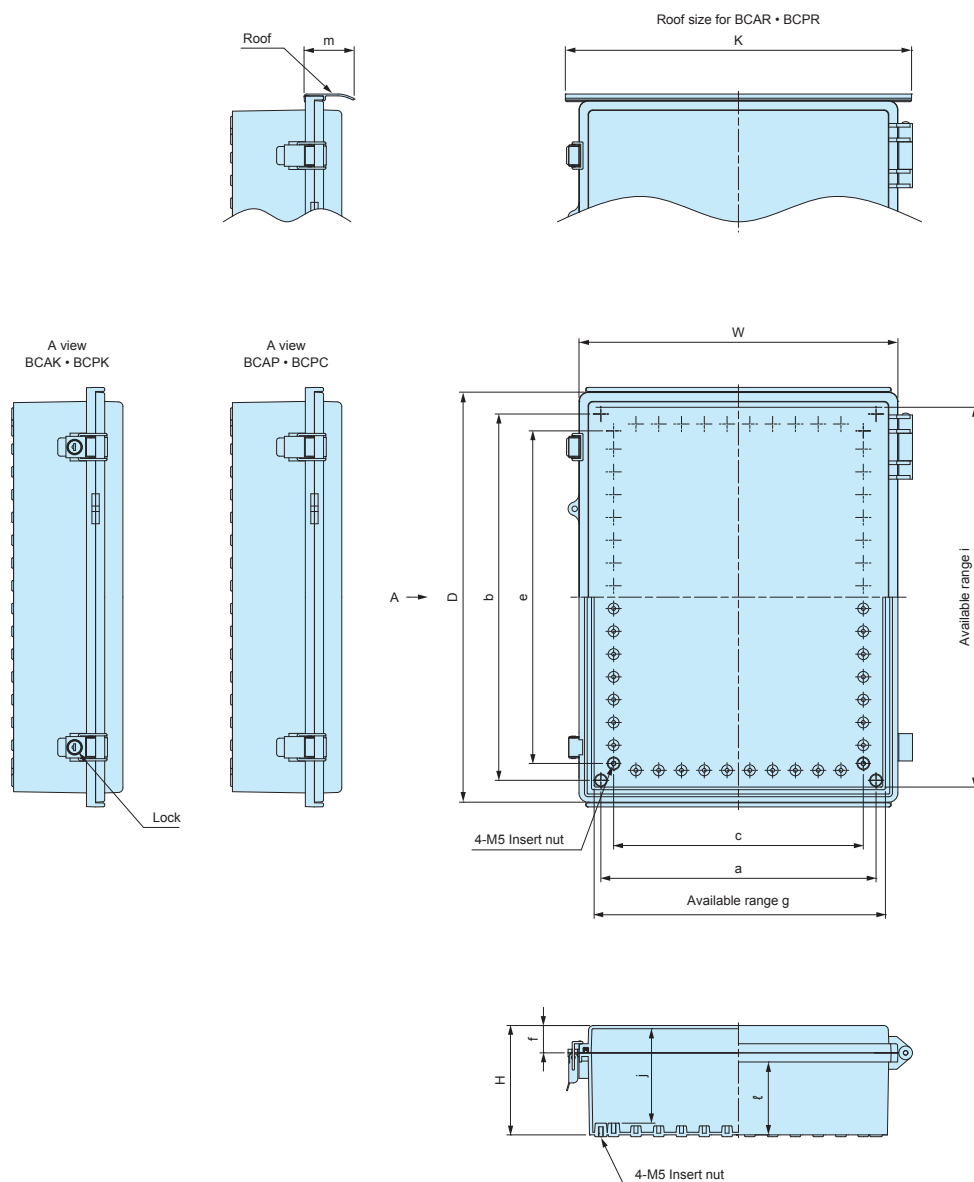
※ Dimension "k" and "m" are only applicable for BCAR • BCPR series.

Product no.	W	D	H	a	b	c	e	f	g	i	j	k	ℓ	m
BCAP • K • R, BCPC • K • R192810	190	280	100.5	148	238	120	210	30	165	255	83.5	205	63.5	45
BCAP • K • R, BCPC • K • R192814	190	280	141	148	238	120	210	30	165	255	123.5	205	104	45
BCAP • K • R, BCPC • K • R203013	200	300	131.5	152	252	129	226	30	173.5	273.5	113.5	225	93.5	50
BCAP • K • R, BCPC • K • R203015	200	300	151.5	152	252	129	226	30	173.5	273.5	133.5	225	113.5	50
BCAP • K • R, BCPC • K • R203018	200	300	180.5	152	252	129	226	30	173.5	273.5	163.5	225	142.5	50
BCAP • K • R, BCPC • K • R212110	210	210	100	170	170	120	150	25	185	185	86.5	225	68	45
BCAP • K • R, BCPC • K • R212113	210	210	130	170	170	120	150	25	184	184	116.5	225	98	45
BCAP • K • R, BCPC • K • R253515	250	350	151	206	306	180	270	30	222.5	322.5	134	275	113	50
BCAP • K • R, BCPC • K • R253518	250	350	181.5	206	306	180	270	30	222.5	322.5	164	275	143.5	50
BCAP • K • R, BCPC • K • R282813	280	280	130.5	238	238	210	210	30	254	254	113.5	305	92	50
BCAP • K • R, BCPC • K • R283813	280	380	130	238	338	210	310	30	254	354	113.5	305	92	50
BCAP • K • R, BCPC • K • R303015	300	300	151	256	256	219	219	30	273	273	133.5	325	113	50
BCAP • K • R, BCPC • K • R303018	300	300	181	256	256	219	219	30	272.5	272.5	163.5	325	143	50
BCAP • K • R, BCPC • K • R304012	300	400	121	252	352	228	323	30	273.5	373.5	103.5	325	83	50
BCAP • K • R, BCPC • K • R304015	300	400	150	252	352	228	325	30	273.5	373.5	133.5	325	112	50
BCAP • K • R, BCPC • K • R304018	300	400	181	252	352	228	325	30	272.5	372.5	163.5	325	143	50
BCAP • K • R, BCPC • K • R353515	350	350	150	302	302	270	270	30	323.6	323.6	133.5	375	112	50
BCAP • K • R, BCPC • K • R353518	350	350	181	302	302	270	270	30	322.5	322.5	163.5	375	143	50

354512



■ Inner bosses vary according to box size.  
Refer to DXF/DWG/PDF drawings for more details.



※ Dimension "k" and "m" are only applicable for BCAR • BCPR series.

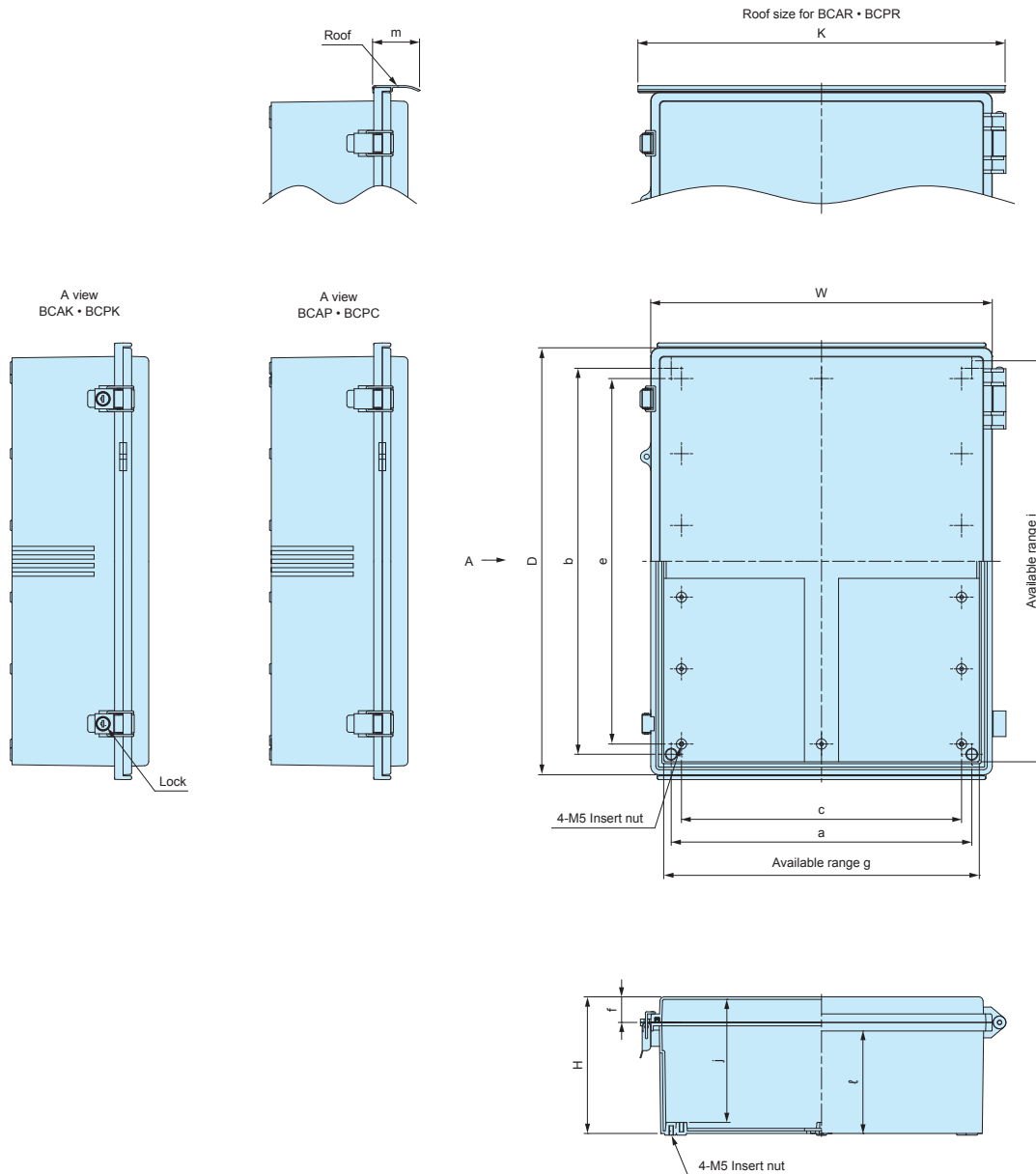
Product no.	W	D	H	a	b	c	e	f	g	i	j	k	ℓ	m
BCAP • K • R, BCPC • K • R354512	350	450	120	302	402	274	365	30	316.5	416.5	103.5	380	80	55

**BCAP • BCAF • BCAR • BCPC • BCPK • BCPR dimensions**

■ DXF/DWG/PDF drawings available on our website.

354516 ~ 405020

※Not available for BCAR • BCPR 405020 model.



※ Dimension "k" and "m" are only applicable for BCAR • BCPR series.

Product no.	W	D	H	a	b	c	e	f	g	i	j	k	ℓ	m
BCAP • K • R, BCPC • K • R354516	350	450	160	302	402	274	365	30	308.5	414.5	142.5	380	120	55
BCAP • K • R, BCPC • K • R354520	350	450	201	302	402	274	365	30	309.5	414.5	182.5	380	161	55
BCAP • K • R, BCPC • K • R405016	400	500	160	352	452	328	428	30	363.5	469.5	144	430	120	55
BCAP • K BCPC • K 405020	400	500	201	352.5	452.5	328	428	30	363	468	182.5	—	159	—

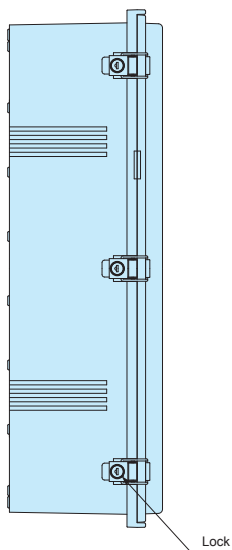
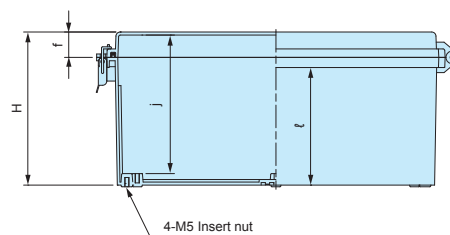
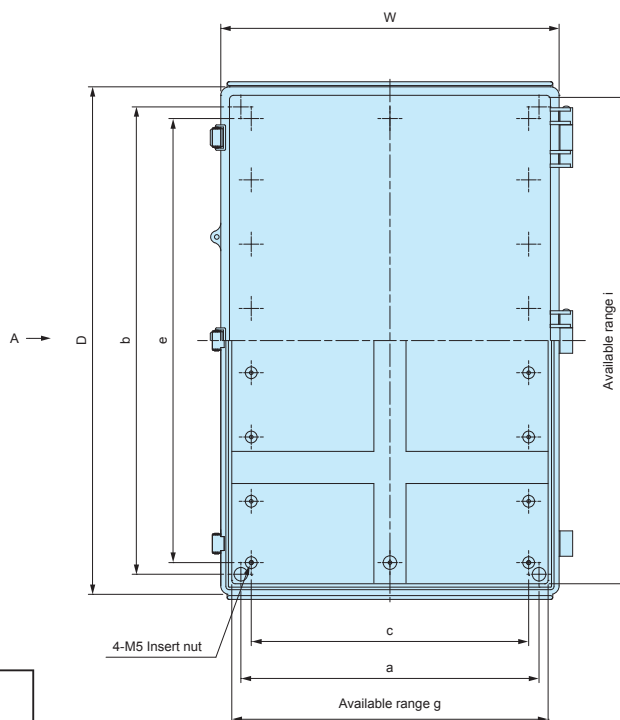
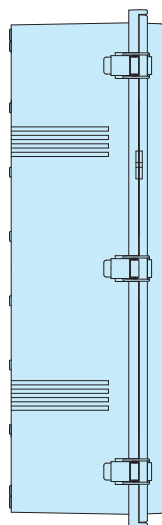
406018, 406023

※Not available for BCAR • BCPR 406018 and 406023 models.



■ Inner bosses vary according to box size.

Refer to DXF/DWG/PDF drawings for more details.

A view  
BCAK • BCPKA view  
BCAP • BCPC**Attention when locking the latch**

1. Close latches on both ends first.

2. Close center latch next.

※ Closing the center latch first may create a non-watertight seal.

Center latch must be closed last!



Product no.			W	D	H	a	b	c	e	f	g	i	j	k	ℓ	m
BCAP • K	BCPC • K	406018	400	600	181	352.5	552.5	328	525	30	364	570	163.5	—	139	—
BCAP • K	BCPC • K	406023	400	600	231	352	552.5	328	525	30	362	568	213.5	—	189	—



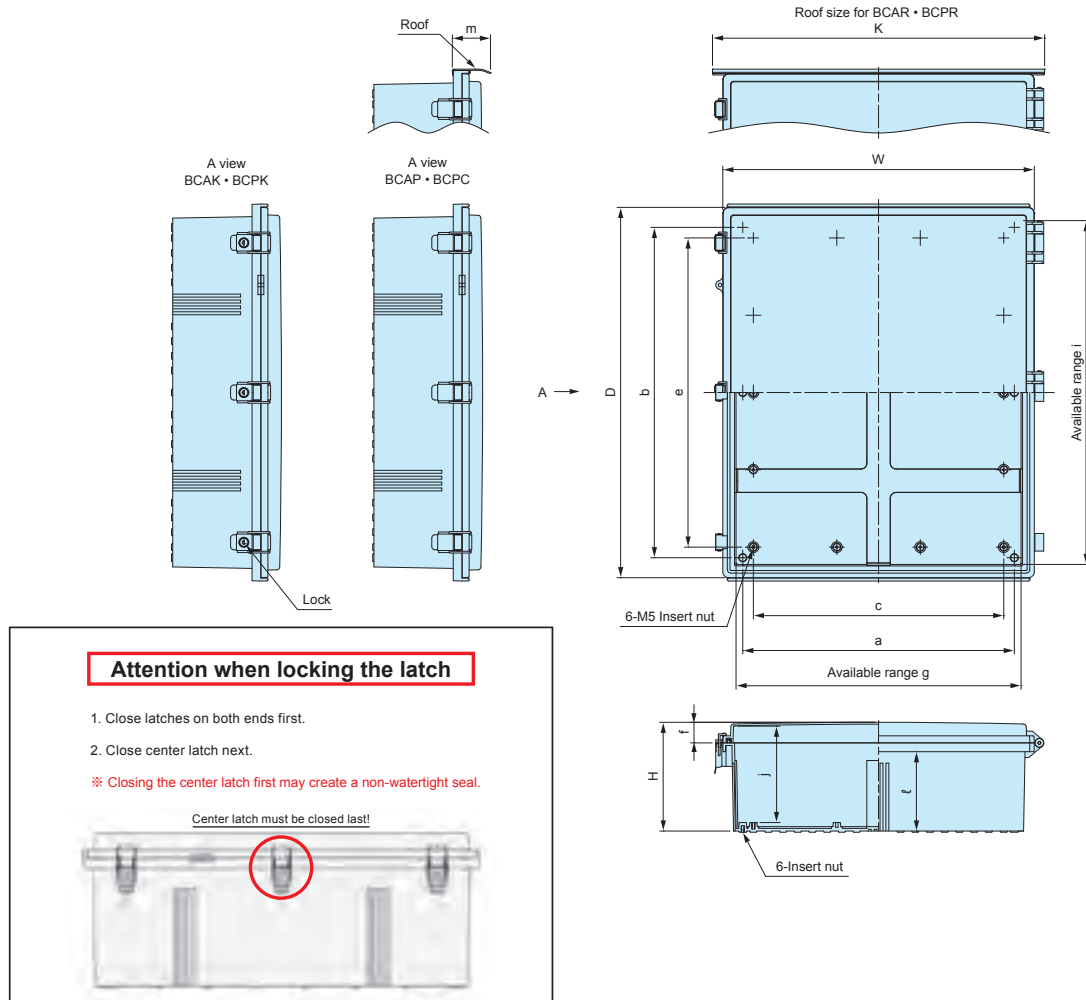
**BCAP • BCAF • BCAR • BCPC • BCPK • BCPR dimensions**

■ DXF/DWG/PDF drawings available on our website.

506018 ~ 507025



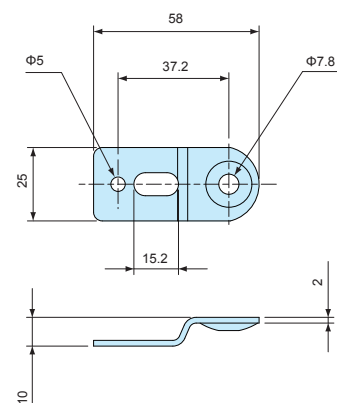
■ Inner bosses vary according to box size.  
Refer to DXF/DWG/PDF drawings for more details.



※ Dimension "k" and "m" are only applicable for BCAR • BCPR series.

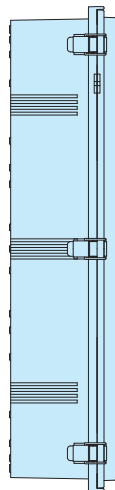
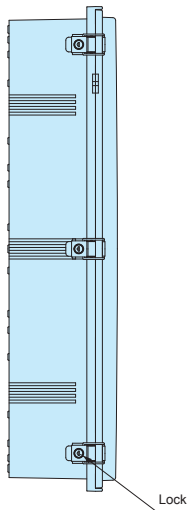
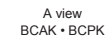
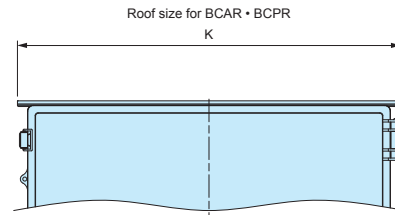
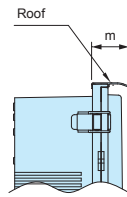
Product no.	W	D	H	a	b	c	e	f	g	i	j	k	l	m
BCAP • K • R, BCPC • K • R506018	530	630	185	462	562	426	526	35	474.5	574.5	164	565	135	65
BCAP • K • R, BCPC • K • R506025	530	630	255	462	562	426	526	35	475	575	234.5	565	205	65
BCAP • K • R, BCPC • K • R507018	530	730	188	462	662	426	626	35	475	675	164	565	135	65
BCAP • K • R, BCPC • K • R507025	530	730	255	462	662	426	626	35	475	675	232.5	565	205	65

**Included stainless steel mounting brackets for 506018, 506025, 507018, 507025**



Part name	Pcs	Material	Color / Finish
Mounting bracket	6	Stainless steel	Unfinished
Screw	6	Steel	Trivalent chromate

608018, 608028



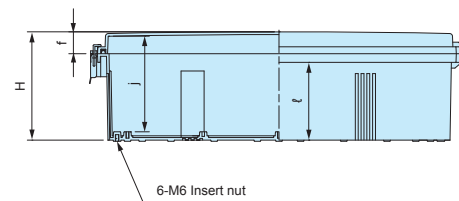
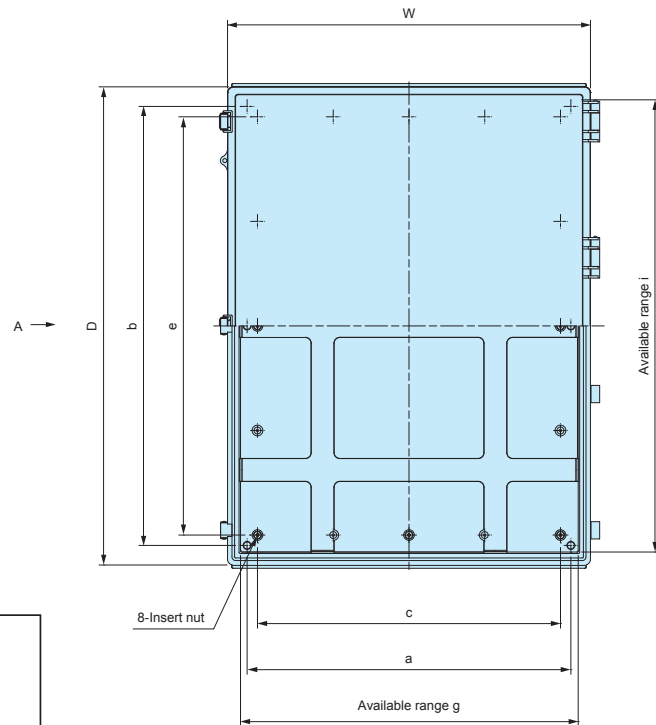
Lock

### Attention when locking the latch

1. Close latches on both ends first.
2. Close center latch next.

※ Closing the center latch first may create a non-watertight seal.

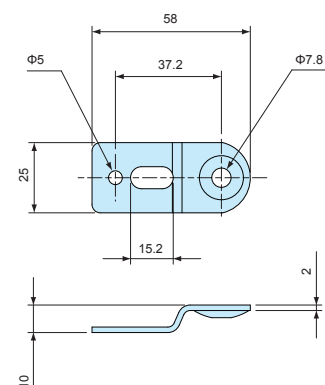
Center latch must be closed last!



※ Dimension "k" and "m" are only applicable for BCAR • BCPR.

Product no.	W	D	H	a	b	c	e	f	g	i	j	k	ℓ	m
BCAP • K • R, BCPC • K • R608018	630	830	188	562	762	526	726	38	575	775	166	665	135	65
BCAP • K • R, BCPC • K • R608028	630	830	288	562	762	526	726	38	573	773	266	665	235	65

**Included stainless steel mounting brackets for 608018, 608028**



Part name	Pcs	Material	Color / Finish
Mounting bracket	6	Stainless steel	Unfinished
Screw	6	Steel M6-10	Trivalent chromate

## BRF SERIES

## OUTDOOR ROOF



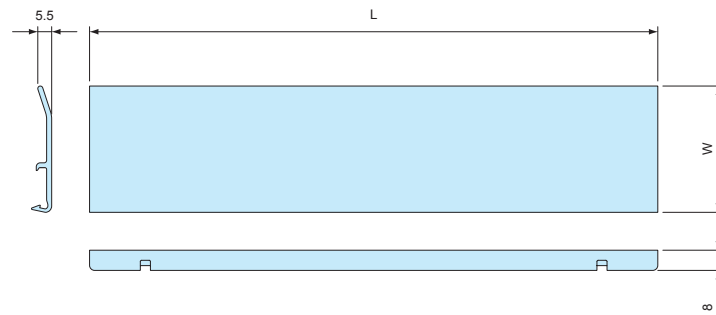
- Recommended to be used for outdoor environments for protection against rain etc.
- Snap-in easy installation.
- Available for BCAP • BCAK and BCPC • BCPK series except 151509, 151512, 405020, 406018, and 406023 models.

## Color Type

Color code	Material	Color / Finish	Suitable series
G	PVC	White gray / Unpainted	BCAP • BCAK
S	PVC	Light gray / Painted	BCPC • BCPK

## BRF dimensions

Roof for 091209 ~ 353518

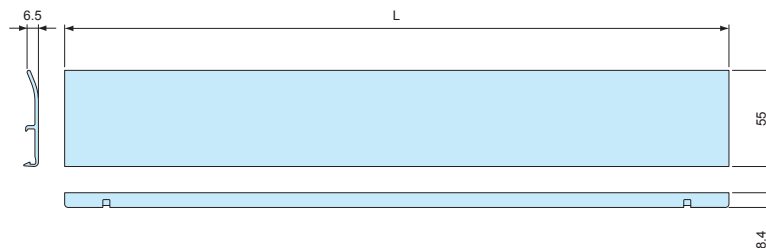


## Product no. / Dimensions

■ Please suffix color code at the end of the product number.

Product no.	Suitable box	L	W
BRF- 90□	BCAP • BCAK • BCPC • BCPK 091207 091208	105	45
BRF-100□	BCAP • BCAK • BCPC • BCPK 101507 101508	115	45
BRF-110□	BCAP • BCAK • BCPC • BCPK 112107 112110 112607 112610	125	45
BRF-135□	BCAP • BCAK • BCPC • BCPK 131508 131808 131810	150	45
BRF-160□	BCAP • BCAK • BCPC • BCPK 162110 162113 162610 162613	175	45
BRF-170□	BCAP • BCAK • BCPC • BCPK 172211 172711	185	45
BRF-190□	BCAP • BCAK • BCPC • BCPK 192810 192814	205	45
BRF-210□	BCAP • BCAK • BCPC • BCPK 212110 212113	225	45
BRF-200□	BCAP • BCAK • BCPC • BCPK 203013 203015 203018	225	50
BRF-250□	BCAP • BCAK • BCPC • BCPK 253515 253518	275	50
BRF-280□	BCAP • BCAK • BCPC • BCPK 282813 283813	305	50
BRF-300□	BCAP • BCAK • BCPC • BCPK 303015 303018 304012 304015 304018	325	50
BRF-350□	BCAP • BCAK • BCPC • BCPK 353515 353518	375	50

Roof for 354512 ~ 405016



## Product no. / Dimensions

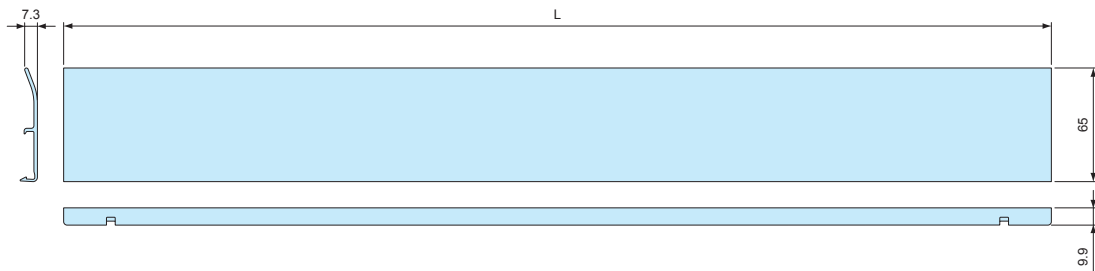
■ Please suffix color code at the end of the product number.

Product no.	Suitable box	L
BRF-350L□	BCAP • BCAK • BCPC • BCPK 354512 354516 354520	380
BRF-400□	BCAP • BCAK • BCPC • BCPK 405016	430

■ S color type is light gray painted.

Roof for 506018 ~ 608028

## Accessories (Optional parts)



## Product no. / Dimensions

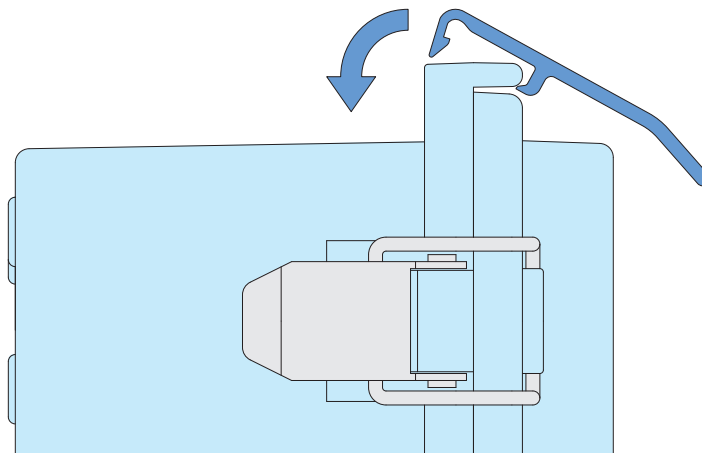
■ Please suffix color code at the end of the product number.

Product no.	Suitable box	L
BRF-530□	BCAP • BCAK • BCPC • BCPK 506018 506025 507018 507025	565
BRF-630□	BCAP • BCAK • BCPC • BCPK 608018 608028	665

■ S color type is light gray painted.

## ■ How to install BRF outdoor roof.

Refer to illustration.



## BCC-1

## DUST PROTECTION CAP



- Prevent dust and other foreign material entry.
- Protection against corrosion on key hole part in environments such as coastal areas.
- When ordering, please ensure that the quantity required corresponds to the number of latches on your selected enclosure.

## Product no. / Dimensions

Product no.	Material	Color	Sales unit
BCC-1	Silicone	Black	1 pc

## Suitable Box

Suitable box	Required
BCAK • BCPK192810 ~ 203018, 253515 ~ 405020	2 pcs
BCAK • BCPK406018 ~ 608028	3 pcs

■ Not suitable for BCAK-BCPK 212110, 212113, 172711, and smaller models.

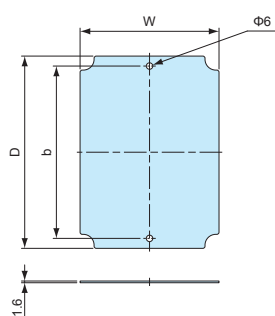
**BMP-Z SERIES****STEEL MOUNTING PLATE**

- Tough but easily customizable.
- Large sized (BMP5060Z, 5070Z and 6080Z) plates have a 90° bent edge.

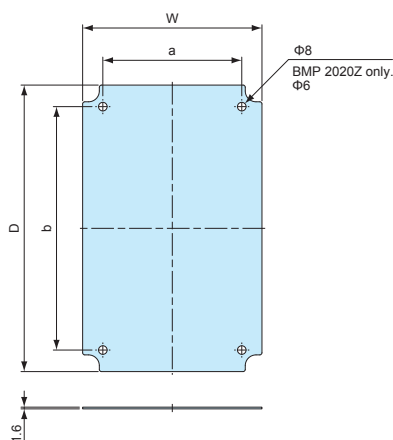
- Customization services (machining, punch press or clinching nut insertion) are available. See website for more details.



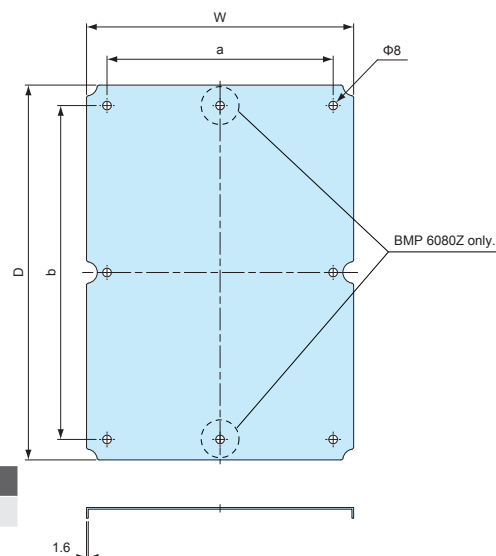
BMP0912Z ~ 1727Z



BMP1928Z ~ 4060Z



BMP5060Z ~ 6080Z



- DXF/DWG/PDF drawings available on our website.

**Components**

Part name	Material	Finish
Mounting plate	Steel t=1.6	Zinc coated

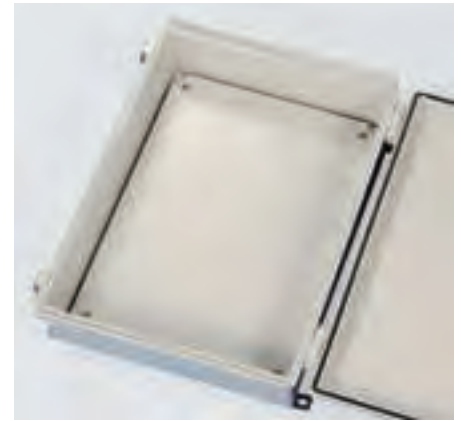
**Product no. / Dimensions**

Product no.	W	D	a	b	Suitable box	Weight (g)
BMP0912Z	58	88	—	69	BCAP • K • R, BCPC • K • R 091207, 091208	53
BMP0813Z	68	118	—	99	BCAP • K • R, BCPC • K • R 101507, 101508	87
BMP1121Z	77	177	—	158	BCAP • K • R, BCPC • K • R 112107, 112110	159
BMP1126Z	77	227	—	208	BCAP • K • R, BCPC • K • R 112607, 112610	210
BMP1315Z	102	122	—	110	BCAP • K • R, BCPC • K • R 131508	141
BMP1217Z	102	152	—	140	BCAP • K • R, BCPC • K • R 131808, 131810	180
BMP1515Z	121	121	—	110	BCAP • K BCPC • K 151509, 151512	172
BMP1520Z	126	176	—	160	BCAP • K • R, BCPC • K • R 162110, 162113	262
BMP1525Z	127	227	—	210	BCAP • K • R, BCPC • K • R 162610, 162613	346
BMP1722Z	137	187	—	160	BCAP • K • R, BCPC • K • R 172211	308
BMP1727Z	137	237	—	210	BCAP • K • R, BCPC • K • R 172711	391
BMP1928Z	157	247	120	210	BCAP • K • R, BCPC • K • R 192810, 192814	462.5
BMP2020Z	176	176	120	150	BCAP • K • R, BCPC • K • R 212110, 212113	371
BMP2030Z	165	265	129	226	BCAP • K • R, BCPC • K • R 203013, 203015, 203018	519
BMP2535Z	215	315	180	270	BCAP • K • R, BCPC • K • R 253515, 253518	816
BMP2828Z	246	246	210	210	BCAP • K • R, BCPC • K • R 282813	727.5
BMP2838Z	246	346	210	310	BCAP • K • R, BCPC • K • R 283813	1,018
BMP3030Z	264	264	219	219	BCAP • K • R, BCPC • K • R 303015, 303018	826.5
BMP3040Z	265	365	228	325	BCAP • K • R, BCPC • K • R 304012, 304015, 304018	1,154
BMP3535Z	315	315	270	270	BCAP • K • R, BCPC • K • R 353515, 353518	1,196.5
BMP3545Z	301	401	274	365	BCAP • K • R, BCPC • K • R 354512, 354516, 354520	1,443
BMP4050Z	354	454	328	428	BCAP • K • R, BCPC • K • R 405016, 405020	1,998
BMP4060Z	354	551	328	525	BCAP • K BCPC • K 406018, 406023	2,328
BMP5060Z	474	574	426	526	BCAP • K • R, BCPC • K • R 506018, 506025	3,286
BMP5070Z	472	672	426	626	BCAP • K • R, BCPC • K • R 507018, 507025	3,864
BMP6080Z	565	765	526	726	BCAP • K • R, BCPC • K • R 608018, 608028	5,288.5

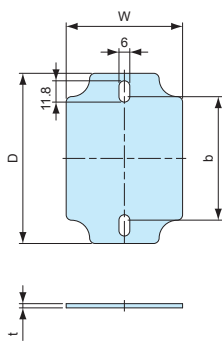
■ K = BCAP • BCPC series / R = BCAR • BCPR series

**BMP-P SERIES****PLASTIC MOUNTING PLATE**

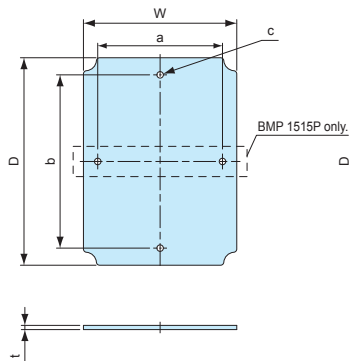
- Lightweight ABS plastic mounting plate.
- Flat plate: BMP0811P ~ BMP1515P  
Ribbed plate: BMP1520P ~ BMP4050P
- DXF/DWG/PDF drawings available on our website.



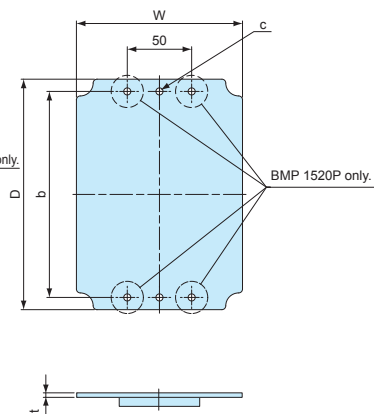
BMP0811P (Flat)



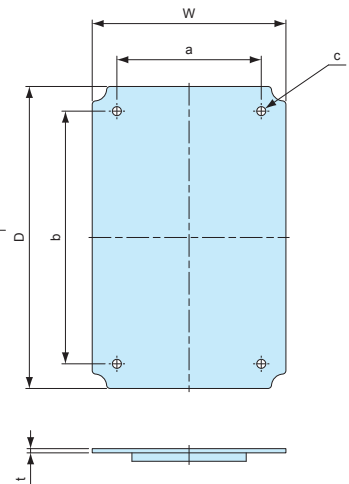
BMP0813P, 1515P (Flat)



BMP1520P, 1525P (Ribbed)



BMP1928P ~ 4050P (Ribbed)

**Components**

Part name	Material	Color
Mounting plate	ABS	White gray

**Product no. / Dimensions**

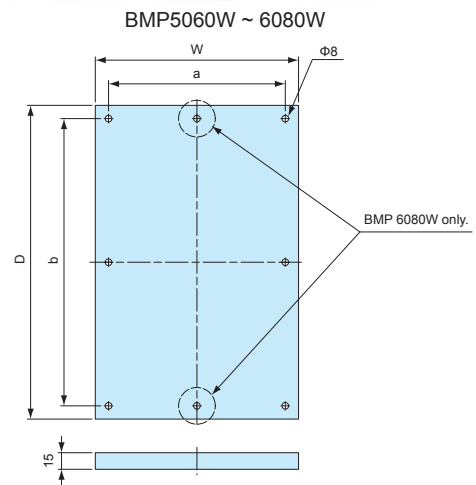
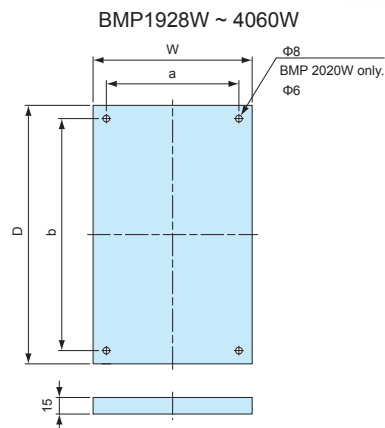
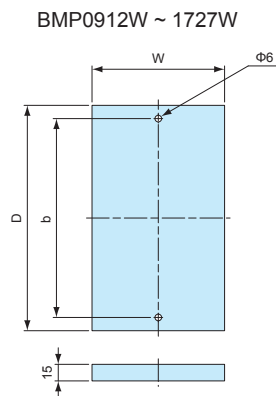
Product no.	W	D	a	b	t	c (Φ)	Suitable box	Weight (g)
BMP0811P	64.5	94.3	—	68.4	3.5	—	BCAP • K • R, BCPC • K • R 091207, 091208	21
BMP0813P	64.5	114.5	—	99	3	Φ6	BCAP • K • R, BCPC • K • R 101507, 101508	24
BMP1121P	76.5	176	—	158	3	Φ6	BCAP • K • R, BCPC • K • R 112107, 112110	40
BMP1126P	76.5	226	—	208	3	Φ6	BCAP • K • R, BCPC • K • R 112607, 112610	53
BMP1315P	101.5	121.5	—	110	3.5	Φ5.5	BCAP • K • R, BCPC • K • R 131508	36
BMP1217P	109.5	160	—	140	4	Φ6	BCAP • K • R, BCPC • K • R 131808, 131810	62
BMP1515P	123	123	110	110	3.5	Φ6	BCAP • K BCPC • K 151509, 151512	52
BMP1520P	129	179	—	160	3.5	Φ5.5	BCAP • K • R, BCPC • K • R 162110, 162113, 172211	92
BMP1525P	129	228.5	—	210	3.5	Φ6	BCAP • K • R, BCPC • K • R 162610, 162613, 172711	112
BMP1928P	158.5	248	120	210	3.5	Φ8	BCAP • K • R, BCPC • K • R 192810, 192814	162
BMP2020P	178.5	178.5	120	150	3.5	Φ5.5	BCAP • K • R, BCPC • K • R 212110, 212113	125
BMP2030P	166.5	266	128	225.5	4	Φ8	BCAP • K • R, BCPC • K • R 203013, 203015, 203018	188
BMP2535P	215.5	315	180	268.5	4	Φ8	BCAP • K • R, BCPC • K • R 253515, 253518	292
BMP2828P	248.5	248.5	210	210	4	Φ8	BCAP • K • R, BCPC • K • R 282813	237
BMP2838P	248	347.5	209	309.5	4	Φ8	BCAP • K • R, BCPC • K • R 283813	368
BMP3030P	262.5	262.5	219	219	4	Φ7.5	BCAP • K • R, BCPC • K • R 303015, 303018	281
BMP3040P	264.5	364	227	323	4	Φ8	BCAP • K • R, BCPC • K • R 304012, 304015, 304018	437
BMP3535P	313.5	313.5	269.5	269.5	4	Φ8	BCAP • K • R, BCPC • K • R 353515, 353518	424.5
BMP3545P	305	405.5	273	364	4	Φ8	BCAP • K • R, BCPC • K • R 354512, 354516, 354520	539
BMP4050P	357	457	328	428	4	Φ8.5	BCAP • K • R, BCPC • K • R 405016, 405020	725.5

■ K = BCAF • BCPK series / R = BCAR • BCPR series



**BMP-W SERIES****WOODEN MOUNTING PLATE**

- Easy installation with tapping screws.
- Easily customizable hard wooden plate.
- Plate comes with scales printed on for easy references.
- DXF/DWG/PDF drawings available on our website.

**Components**

Part name	Pcs	Material	Color / Finish
Mounting plate	1	Wood board t=15	Scaled sheet
Screw	2 ~ 8	Steel	Trivalent chromate

**Product no. / Dimensions**

Product no.	W	D	a	b	Suitable box	Screw	Weight (g)
BMP0912W	58	92	-	69	BCAP • K • R, BCPC • K • R 091207, 091208	M4-20 × 2 pcs	62
BMP0813W	68	122	-	99	BCAP • K • R, BCPC • K • R 101507, 101508	M4-20 × 2 pcs	94
BMP1121W	77	181	-	158	BCAP • K • R, BCPC • K • R 112107, 112110	M4-20 × 2 pcs	166
BMP1126W	77	231	-	208	BCAP • K • R, BCPC • K • R 112607, 112610	M4-20 × 2 pcs	191
BMP1315W	102	126	-	110	BCAP • K • R, BCPC • K • R 131508	M4-20 × 2 pcs	127
BMP1217W	102	156	-	140	BCAP • K • R, BCPC • K • R 131808, 131810	M4-20 × 2 pcs	190
BMP1515W	118	125	-	110	BCAP • K BCPC • K 151509, 151512	M4-20 × 2 pcs	172
BMP1520W	126	180	-	160	BCAP • K • R, BCPC • K • R 162110, 162113	M4-20 × 2 pcs	243
BMP1525W	127	231	-	210	BCAP • K • R, BCPC • K • R 162610, 162613	M4-20 × 2 pcs	352
BMP1722W	137	191	-	160	BCAP • K • R, BCPC • K • R 172211	M4-20 × 2 pcs	286
BMP1727W	137	241	-	210	BCAP • K • R, BCPC • K • R 172711	M4-20 × 2 pcs	212
BMP1928W	150	240	120	210	BCAP • K • R, BCPC • K • R 192810, 192814	M5-20 × 4 pcs	350
BMP2020W	170	174	120	150	BCAP • K • R, BCPC • K • R 212110, 212113	M4-20 × 4 pcs	336
BMP2030W	159	256	129	226	BCAP • K • R, BCPC • K • R 203013, 203015, 203018	M5-20 × 4 pcs	482
BMP2535W	210	300	180	270	BCAP • K • R, BCPC • K • R 253515, 253518	M5-20 × 4 pcs	688
BMP2828W	240	240	210	210	BCAP • K • R, BCPC • K • R 282813	M5-20 × 4 pcs	565
BMP2838W	240	340	210	310	BCAP • K • R, BCPC • K • R 283813	M5-20 × 4 pcs	893
BMP3030W	249	249	219	219	BCAP • K • R, BCPC • K • R 303015, 303018	M5-20 × 4 pcs	659
BMP3040W	258	355	228	324	BCAP • K • R, BCPC • K • R 304012, 304015, 304018	M5-20 × 4 pcs	965
BMP3535W	300	300	270	270	BCAP • K • R, BCPC • K • R 353515, 353518	M5-20 × 4 pcs	964
BMP3545W	301	395	274	365	BCAP • K • R, BCPC • K • R 354512, 354516, 354520	M5-20 × 4 pcs	1,314
BMP4050W	355	455	328	428	BCAP • K • R, BCPC • K • R 405016, 405020	M5-20 × 4 pcs	1,754
BMP4060W	355	552	328	525	BCAP • K BCPC • K 406018, 406023	M5-20 × 4 pcs	2,015.5
BMP5060W	456	556	426	526	BCAP • K • R, BCPC • K • R 506018, 506025	M5-20 × 6 pcs	2,650
BMP5070W	456	656	426	626	BCAP • K • R, BCPC • K • R 507018, 507025	M5-20 × 6 pcs	3,152.5
BMP6080W	556	756	526	726	BCAP • K • R, BCPC • K • R 608018, 608028	M5/M6-20 × 8 pcs	4,434

■ K = BCAP • BCPK series / R = BCAR • BCPR series

**BFL SERIES****PLASTIC MOUNTING BRACKET**

Color G      Color S

- 2 different colored type to match box colors.
- Tough and strong glass fiber filled polycarbonate.

**Color Type**

Color code	Color	Suitable series
G	White gray	BCAP • BCAF • BCAR
S	Light gray	BCPC • BCPK • BCPR

**Components**

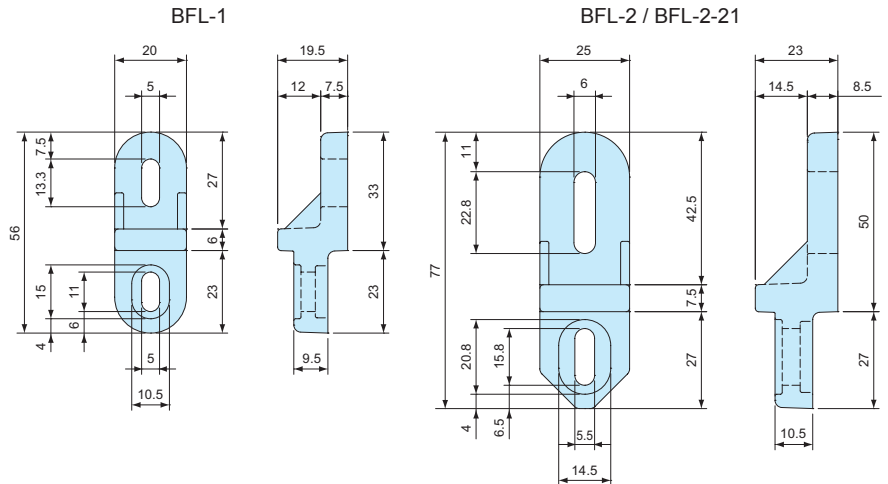
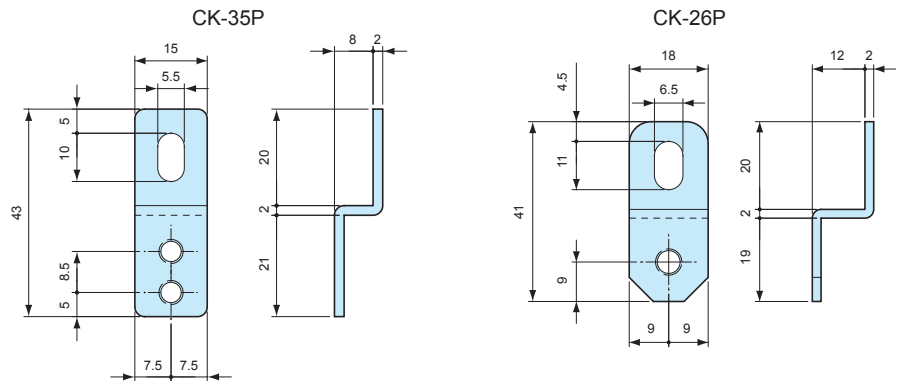
Part name	Pcs	Material / Finish
Mounting bracket	4	Glass fiber filled polycarbonate
Screw	4	Stainless steel / Unfinished

**Product no. / Dimensions**

Product no.	Suitable box	Screw
BFL-1□	BCAP • K • R, BCPC • K • R 0912, 1015, 1121, 1126, 1315, 1318, 1621, 1626, 1722, 1727, 212113	M4-12
BFL-2□	BCAP • K • R, BCPC • K • R 1928, 2030, 2535, 2828, 2838, 3030, 3040, 3535, 3545, 4050, 4060, 5060	M5-12
BFL-2-21□	BCAP • K • R, BCPC • K • R 212110	M4-12

■ Please suffix color code at the end of the product number.

※Not suitable for BCAP1515 model. Use CK-35P (Stainless steel) instead.

**CK SERIES****STAINLESS STEEL MOUNTING BRACKET****Components**

Part name	Pcs	Material	Finish
Mounting bracket	4	Stainless steel	Barrel finish
Screw	4	Stainless steel	Unfinished

**Product no. / Dimensions**

Product no.	Suitable box	Screw
CK-35P	BCAP • K • R, BCPC • K • R 0912, 1015, 1121, 1126, 1315, 1318, 1515, 1621, 1626, 1722, 1727, 2121	M4-10
CK-26P	BCAP • K • R, BCPC • K • R 1928, 2030, 2535, 2828, 2838, 3030, 3040, 3535, 3545, 4050, 4060	M5-10

**MT SERIES****PCB MOUNTING SCREW**

- PCB mounting screws for inner bosses of BCAP • BCAF • BCAR • BCPC • BCPK • BCPR series.

**Product no. / Dimensions**

Product no.	Material	Finish	Pack of
MT4-8T	Steel M4	Trivalent chromate	20
MT5-8T	Steel M5	Trivalent chromate	20

**Suitable Box**

Product no.	Suitable box	Recommended torque
MT4-8T	BCAP • K • R, BCPC • K • R 0912, 1015, 1121, 1126, 1315, 1318, 1515, 1621, 1626, 1722, 1727, 1928, 2121	7kgf·cm
MT5-8T	BCAP • K • R, BCPC • K • R 2030, 2535, 2828, 2838, 3030, 3040, 3535, 3545, 4050, 4060, 5060, 5070, 6080	14kgf·cm



## SSK SERIES

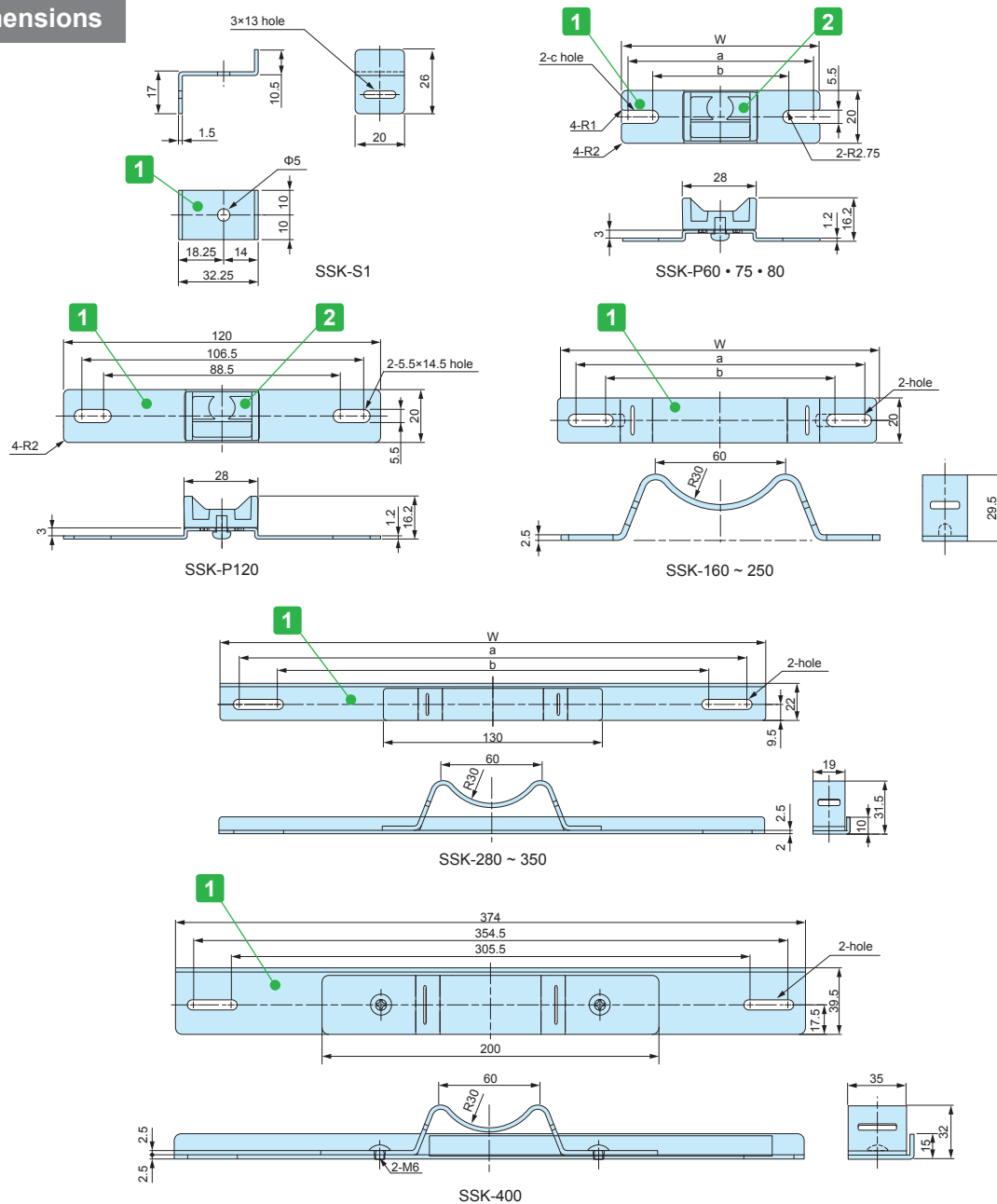
## POLE MOUNTING BRACKET

 **NEW SIZE**

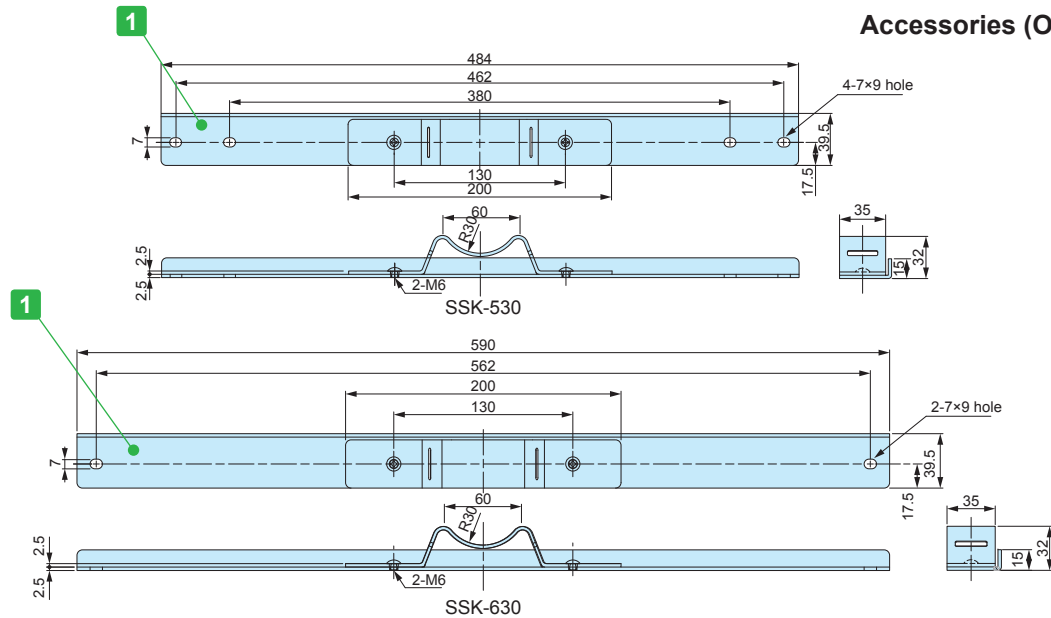


- Stainless steel pole mounting bracket for BCAP • BCAF • BCAR and BCPC • BCPK • BCPR series.
- No hole milling is required for maintaining the IP rating of the enclosure.
- Use PKB mounting belt to install onto a pole (See page 300 for PKB series).
- DXF/DWG/PDF drawings available on our website.

## SSK dimensions



## Accessories (Optional parts)



## Components

No.	Part name	Pcs	Material	Color / Finish
1	Bracket	2 / 4	Stainless Steel SUS304	Barrel finish
2	Plastic bracket (SSK-P type only)	2	ASA UL94HB	White gray (RAL7035)
-	Screw	4	Stainless Steel SUS304	Unfinished

## Product no. / Dimensions

Product no.	W	a	b	c	Box size	Belt to use with	Pack of
SSK-S1	32.25	18.25	14	-	0912, 1015, 1121, 1126, 1315, 1318, 1621, 1626, 1722, 1727, 2121	PKB-10P, PKB-10S	4
<b>NEW</b> SSK-P60	60	54.5	46.5	5.5×9	0912	PKB-10P, PKB-10S	2
<b>NEW</b> SSK-P75	75	69.5	53.5	5.5×12.5	1015	PKB-10P, PKB-10S	2
<b>NEW</b> SSK-P80	80	74.5	64.5	5.5×10.5	1121, 1126	PKB-10P, PKB-10S	2
<b>NEW</b> SSK-P120	120	106.5	88.5	5.5×14.5	1315, 1318	PKB-10P, PKB-10S	2
SSK-160	142	129.5	101	-	1515, 1621, 1626	PKB-10P, PKB-10S	2
SSK-170	152	142.3	101	-	1722, 1727	PKB-10P, PKB-10S	2
SSK-200	174	161.5	112.5	-	1928, 2030	PKB-10P, PKB-10S	2
SSK-210	192	180.5	131.5	-	2121	PKB-10P, PKB-10S	2
SSK-250	230	215.5	166.5	-	2535	PKB-10P, PKB-10S	2
SSK-280	260	244.5	195.5	-	2828, 2838	PKB-10P, PKB-10S	2
SSK-300	280	264.5	215.5	-	3030, 3040	PKB-10P, PKB-10S	2
SSK-350	324	302.5	253.5	-	3535, 3545	PKB-10P, PKB-10S	2
SSK-400	374	354.5	305.5	-	4050, 4060	PKB-20S	2
SSK-530	484	462	380	7×9	5060, 5070	PKB-20S	2
SSK-630	590	562	-	7×9	6080	PKB-20S	2

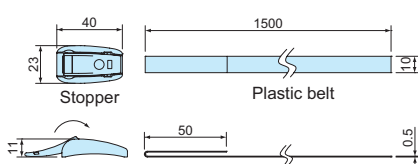
## PKB SERIES

## POLE MOUNTING BELT

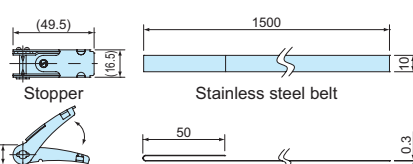


- Universal pole mounting belt for various types of enclosures / box.
- Strong clamping stainless steel type and easy installation plastic type are available.
- Use SSK mounting bracket to install onto a pole.
- Designed for one time use only (not reusable).
- DXF/DWG/PDF drawings available on our website.

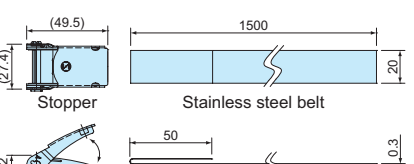
PKB-10P



PKB-10S



PKB-20S



## Components

Part name	Pcs	Material	Color / Finish
Stopper	2	POM • Stainless steel SUS304	Black • Barrel finish
Belt	2	PET • Stainless steel SUS430	Gray • Bright annealed finish

## Product no. / Dimensions

Product no.	Tensile strength (horizontal)	Belt material	Belt length	Weight (g)	Pack of
PKB-10P	1.3kN	PET	1,500mm	31.8	2
PKB-10S	1.4kN	Stainless steel	1,500mm	101.6	2
PKB-20S	2.9kN	Stainless steel	1,500mm	182.2	2

## PMF-12 SERIES

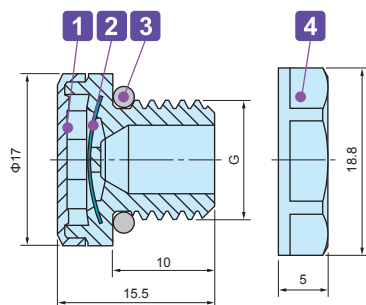
## PROTECTIVE VENT



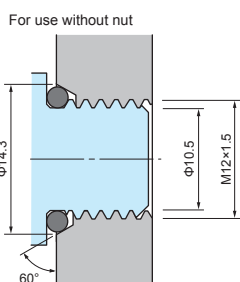
Application example

- Protective vents prevents the ingress of a variety of contaminants, such as water, dust and other particles while allowing water vapor molecules to diffuse through the microporous membrane.
- Equalize pressure and reduce condensation by allowing airflow into and out of sealed enclosures.
- With an IP68 protection class (water depth 2 meters / 60 mins) and -40°C ~ +125°C operating temperature range, it can be used in harsh environmental conditions.
- For outdoor use, installation on the side of the enclosure unit is recommended.

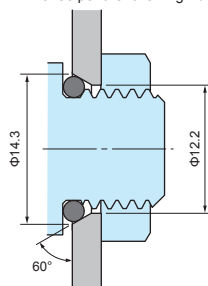
## PMF-12 dimensions



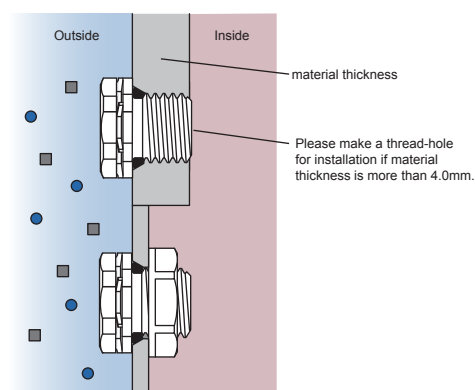
## Hole milling drawings



For use with nut  
 ■ Mill either a Φ12.2 circular hole, or as per the following illustration.



## Installation drawings



- If used with a lock nut, material thickness should not exceed 4.0mm.

## Technical Data

Product no.	PMF-12	PMF-12HA
Airflow	450ml / min (dp = 70 mbar)	2000ml / min (dp = 70 mbar)
Water pressure	0.6 bar / 30 sec	0.3 bar / 30 sec
Recommended torque	0.6 ~ 0.8 N · m	
Certifications (without nut)	IEC529, 2nd (Protection class test): IP66 • IP67 • IP68 • IP69K IEC60068-2-1, 2, 14 (Heat resistance test): - 40°C ~ +125°C IEC600-2-78 (Humidity test): 85°C • 85% humidity • 1000 hours UL94-V0 f1 (Flame-resistant)	

## Product no. / Dimensions

Product no.		Material				G		Nut SW
● Light gray	● Black	1 Housing	2 Filter	3 O-ring	4 Lock nut	Thread size	Mount hole	
PMF-12S	PMF-12B	PA6 GF10% UL94V-0	PTFE	Silicone	PA6 UL94V-2	M12×1.5	Φ12.2	17
PMF-12HAS	PMF-12HAB	PA6 GF10% UL94V-0	PTFE	Silicone	PA6 UL94V-2	M12×1.5	Φ12.2	17

## PMF-32 SERIES

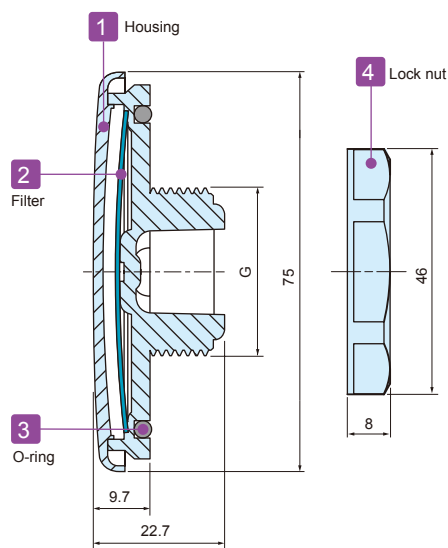
## LARGE PROTECTIVE VENT



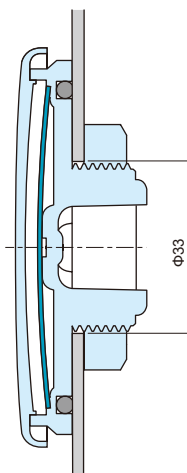
Application example

- Maintaining high airflow for large enclosures in an outdoor environment.
- Equalize pressure and reduce condensation by allowing airflow into and out of sealed enclosures.
- Simple and flat design allows it to be used on a wide variety of enclosure types.
- IP68 protection class rated with an operating temperature range of  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$  allows it to be used in harsh environments.
- Compliant with Solar industry testing IEC62108 standards.
- For superior performance, installation on the side of the enclosure is recommended.

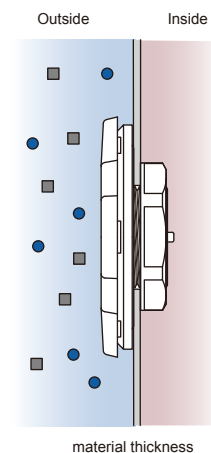
## PMF-32 Dimensions



## Hole milling drawings



## Installation drawings



- If used with a lock nut, material thickness should not exceed 5.0mm.

## Technical Data

Airflow	16 ℓ / min (dp = 12 mbar)
Water pressure	0.3 bar / 30 sec
Recommended torque	5 N · m
Certifications (without nut)	IEC529, 2nd (Protection class test): IP66 • IP67 • IP68 • IP69K IEC60068-2-1, 2, 14 (Heat resistance test): $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$ IEC600-2-78 (Humidity test): $85^{\circ}\text{C} \cdot 85\%$ humidity • 1000 hours IEC62108.10.8 • 9 (Solar industry test): Freezing - high temperature test • Hail impact test UL94-V0 f1 (Flame-resistant)

## Product no. / Dimensions

Product no.	Material				G		Nut SW
	1 Housing	2 Filter	3 O-ring	4 Lock nut	Thread size	Mount hole	
PMF-32S	PC	PTFE	Silicone	PA6	M32×1.5	Φ33	41.5



## VSC SERIES

## ADHESIVE PROTECTIVE VENT FILTER

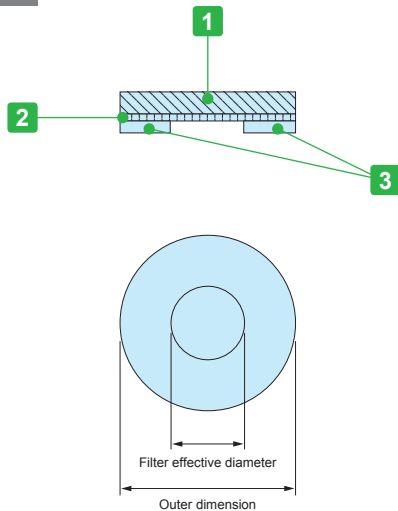


## Technical Data

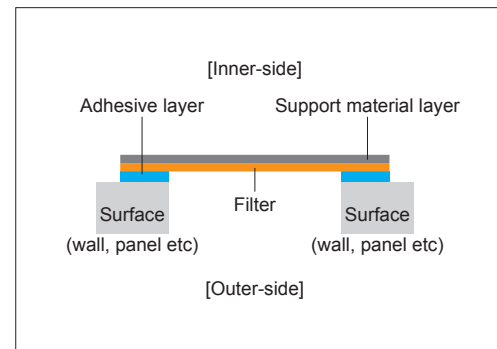
Water Entry Pressure (WEP):  $\geq 20.0\text{kPa}$   
 Airflow:  $450\text{cc}/\text{cm}^2 \cdot \text{min}$  at  $1.29\text{Kpa}$

- Prevents ingress of a variety of contaminants, such as water, dust and other particles.
- Allows water vapor molecules to diffuse through the microporous membrane.
- Recommended to be adhered onto flat plastic or metallic surfaces.
- Surface must be wiped dry before adhering.
- An initial period of a few hours is required for the adhesive to properly bond to the surface.
- Please do not adhere onto the top-side of enclosures. Rain water etc will collect on the filter, which will weaken the adhesive seal and prevent ventilation.

## Drawing



## Installation drawing



## Components

No.	Part name	Material	Color
1	Adhesive	Acrylic adhesive	Transparent
2	Filter	PTFE	White
3	Support material	Polyester fabric	White

## Product no. / Dimensions

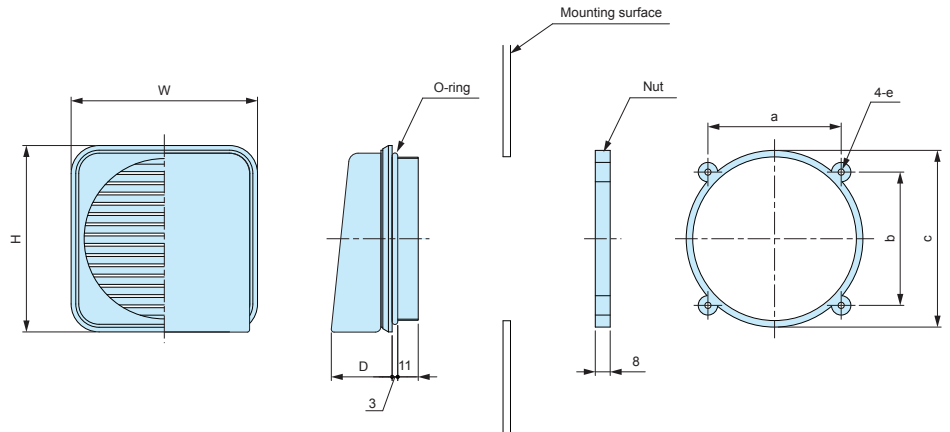
Product no.	Outer dimension (Φ)	Filter effective diameter (Φ)	Thickness (t)	Sales unit
VSC075	7.5	4.0	0.35	5 pcs (per pack)
VSC130	13.0	8.0	0.35	4 pcs (per pack)
VSC240	24.0	16.0	0.35	4 pcs (per pack)
VSC075-S	7.5	4.0	0.35	100 pcs (per sheet)
VSC130-S	13.0	8.0	0.35	56 pcs (per sheet)
VSC240-S	24.0	16.0	0.35	20 pcs (per sheet)

## V SERIES

## VENTILATION LOUVER



- Recommended for condensation prevention and heat dissipation.
- 2 models available: ABS V60, V80 for BCAP and BCAF series, and PC V60S, V80S for BCPC and BCPK series.
- Suitable to be used on a variety of enclosure types, series and models.



## Product no. / Dimensions

Product no.	Material	Color	Installation hole	W	H	D	a	b	c	e
V60	ABS	White gray	Φ63	74.5	74.5	30.8	50.5	50.5	70	Φ3.8
V80	ABS	White gray	Φ88	100	100	36	71.5	71.5	94.8	Φ3.3
V60S	Polycarbonate	Light gray	Φ63	74.5	74.5	30.8	50.5	50.5	70	Φ3.8
V80S	Polycarbonate	Light gray	Φ88	100	100	36	71.5	71.5	94.8	Φ3.3

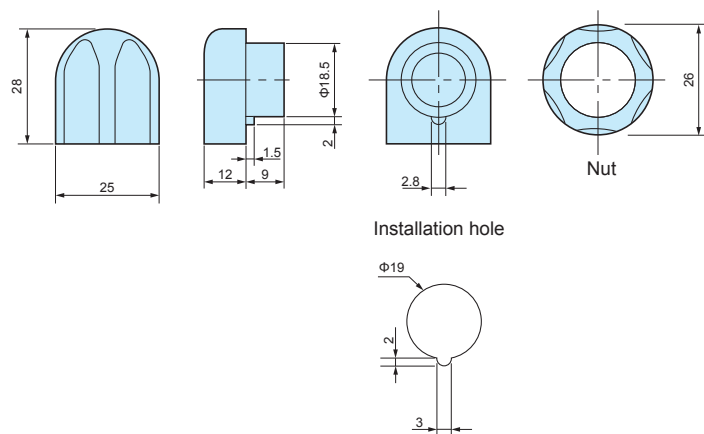
■ O-ring material: NBR Black

## VF SERIES

## VENTILATION PARTS



VF-1



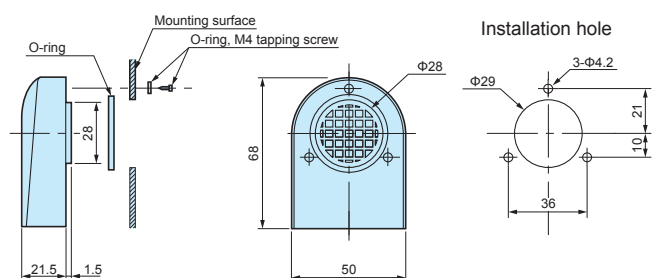
## Technical Data

Protection class:	VF-1	IP33
	VF-2	IP24

## Product no.

Product no.	Material / Color
VF-1	Polyamide / White gray
VF-2	Polyamide / White gray

VF-2



## TMC SERIES

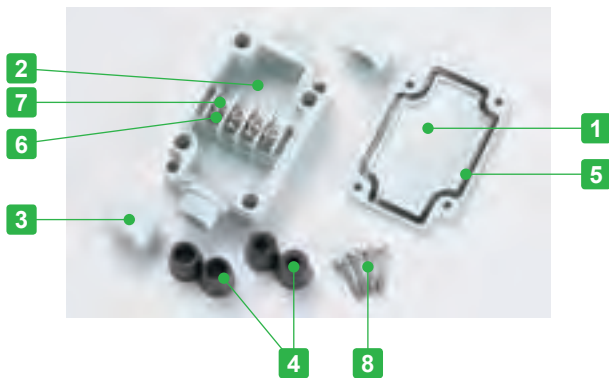
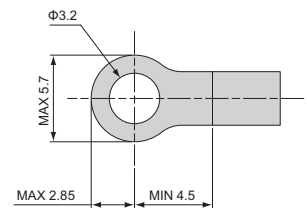
## TERMINAL JUNCTION BOX

IP65

- Integrated junction box consisting of cable glands and a terminal block.
- Suitable for industrial facilities, power cable joint, relay between motors and/or sensors.
- IP65 protection class with high oil resistant PBT material.
- 3, 4, and 6 pole types are available.
- $\Phi 5.0$  and  $\Phi 7.4$  rubber cable bushes (2 pcs each) are included.

## Technical Data

Protection class: IP65  
Operating temperature: -20°C ~ +75°C

Applicable crimp terminal  
R1.25-3

## Terminal Block Specification

Rated voltage	250V
Rated current	15A
Applicable wire	1.25mm <sup>2</sup>
Standard tightening torque	0.5N · m

## Components

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	PBT UL94V-0	Light gray • Black
2	Base	1	PBT UL94V-0	Light gray • Black
3	Cable cap	2	PBT UL94V-0	Light gray • Black
4	Rubber bush	2 pairs	EPDM	Black
5	Gasket	1	Polyurethane	Black
6	Conductive plate	3~6	Brass	Nickel plated
7	Terminal screw	3~6	Steel M3	Nickel plated
8	Cover screw	4	Stainless steel M3	Unfinished

## Accessories (Optional parts)



Shorting Bar  
SBR series  
See page 307



Rubber Bush  
RB series  
See page 307

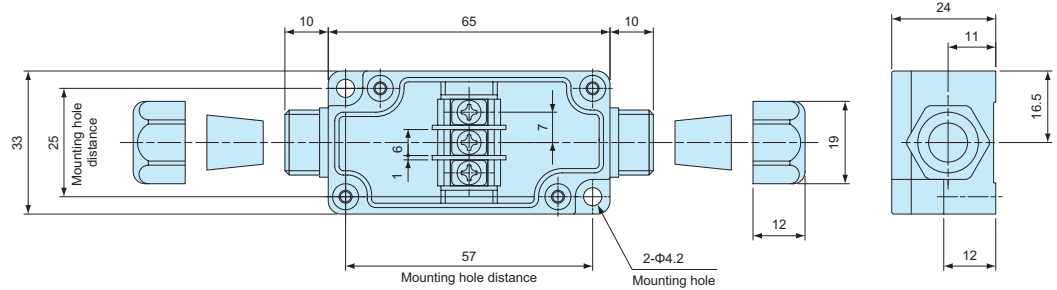
Product no. / Dimensions

Product no.		L	W	H	Number of poles	Weight (g)
● Light gray	● Black					
TMC-3PG	TMC-3PB	65	33	24	3P	52
TMC-4PG	TMC-4PB	60	40	24	4P	58
TMC-6PG	TMC-6PB	70	50	24	6P	73

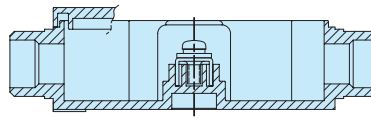
TMC dimensions

■ DXF/DWG/PDF drawings available on our website.

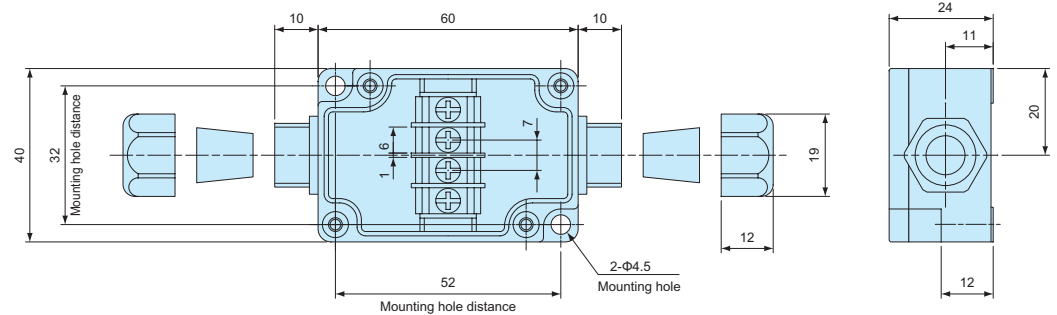
TMC-3P



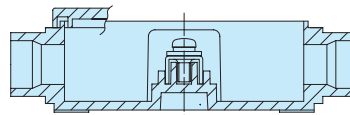
Inner diameter of rubber bush	Cable range
Φ5.0	Φ4 ~ Φ5
Φ7.4	Φ6 ~ Φ7



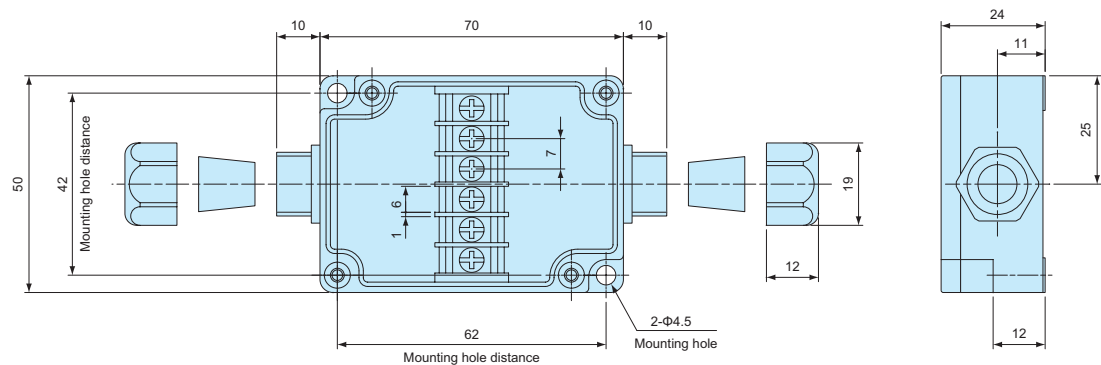
TMC-4P



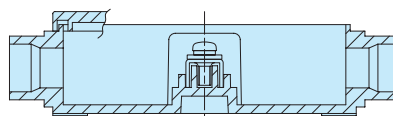
Inner diameter of rubber bush	Cable range
Φ5.0	Φ4 ~ Φ5
Φ7.4	Φ6 ~ Φ7



TMC-6P



Inner diameter of rubber bush	Cable range
Φ5.0	Φ4 ~ Φ5
Φ7.4	Φ6 ~ Φ7



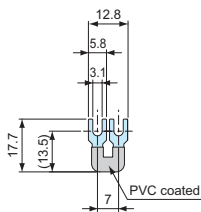
**SBR SERIES**

**SHORTING BAR**

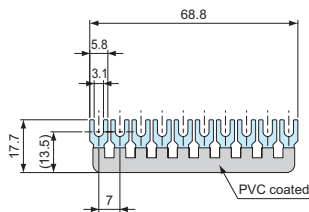


- Convenient for common-wiring.
- SBR70-10P can be cut accordingly into required poles.
- PVC coated.

SBR70-2P



SBR70-10P

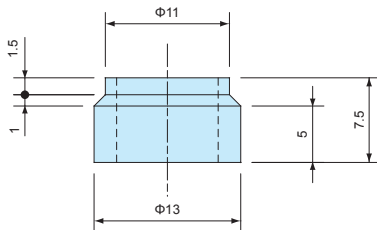
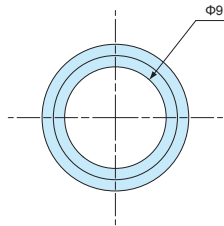


**Product no. / Details**

Product no.	Poles	Pole distance	Material	Finish	Pack of
SBR70-2P	2P	7.0mm	Brass	Nickel plated	10
SBR70-10P	10P	7.0mm	Brass	Nickel plated	1

**RB-9**

**RUBBER BUSH**



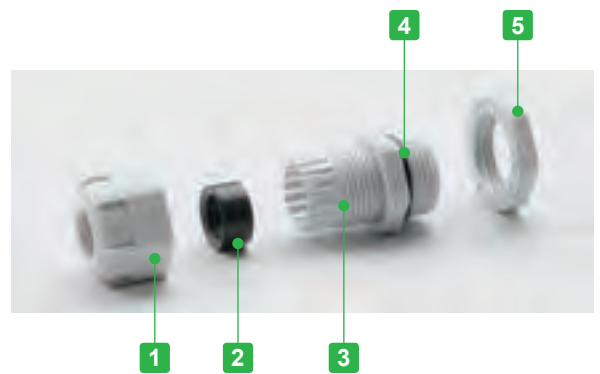
- Rubber bush for TMC series.
- For cable diameter from Φ8.0mm to Φ9.0mm.

**Product no. / Details**

Product no.	Material	Color	Cable range	Pack of
RB-9	EPDM	Black	Φ8.0mm ~ 9.0mm	2

## RM SERIES

## POLYAMIDE CABLE GLAND



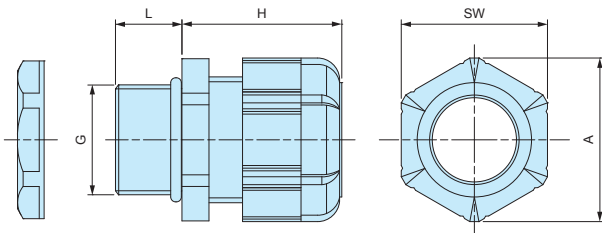
- Low cost cable glands made from polyamide material.
- Wide selection, for M8 ~ M63, suitable for  $\Phi 1\text{mm}$  ~  $\Phi 44\text{ mm}$  cable.
- High oil resistant NBR rubber sealing and O-ring.
- IP67 protection class.

## Components

■ PA = Polyamide

No.	Part name	Material
1	Cap	PA66 UL94V-2
2	Sealing insert	NBR
3	Connector	PA66 UL94V-2
4	O-ring	NBR
5	Lock nut	PA66 UL94V-2

## RM dimensions



## Technical Data

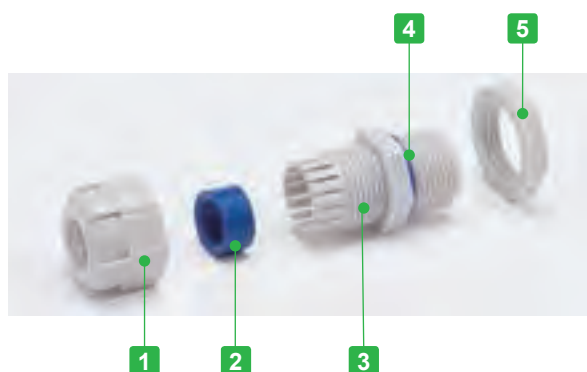
Protection class: IP67  
Operating temperature:  $-20^{\circ}\text{C}$  ~  $+80^{\circ}\text{C}$

- DXF/DWG/PDF drawings available on our website.
  - Lock nut is not included for RM8S-2.5, 8S-4, and 10S-6 models.
- Please drill a proper thread hole into the enclosure for installation.

## Product no. / Dimensions

Product no.		G		Cable range		L	H Max	SW	A	Pack of
● Black	● Light gray	Thread size	Mounting hole	Min	Max					
RM8S-2.5B	RM8S-2.5S	M8×1.25	—	1	2.5	7.5	19.5	11.8	13.5	1
RM8L-2.5B	RM8L-2.5S	M8×1.25	$\Phi 8.2$	1	2.5	13	19.5	11.8	13.5	1
RM8S-4B	RM8S-4S	M8×1.25	—	2.5	4	7.5	19.5	11.8	13.5	1
RM8L-4B	RM8L-4S	M8×1.25	$\Phi 8.2$	2.5	4	13	19.5	11.8	13.5	1
RM10S-6B	RM10S-6S	M10×1.5	—	3	6	8	20.5	13	14.4	1
RM10L-6B	RM10L-6S	M10×1.5	$\Phi 10.2$	3	6	13	20.5	13	14.4	1
RM12S-7B	RM12S-7S	M12×1.5	$\Phi 12.2$	3.5	7	9	20.5	16	17.6	1
RM12L-7B	RM12L-7S	M12×1.5	$\Phi 12.2$	3.5	7	14.5	20.5	16	17.7	1
RM16S-8B	RM16S-8S	M16×1.5	$\Phi 16.2$	4	8	9	23.5	19	21	1
RM16L-8B	RM16L-8S	M16×1.5	$\Phi 16.2$	4	8	15	24	19	21	1
RM20S-12B	RM20S-12S	M20×1.5	$\Phi 20.2$	6	12	10	29	24	26.2	1
RM20L-12B	RM20L-12S	M20×1.5	$\Phi 20.2$	6	12	15	28.5	24	26.2	1
RM25L-17B	RM25L-17S	M25×1.5	$\Phi 25.2$	11	17	15	35	33	36.2	1
RM32L-21B	RM32L-21S	M32×1.5	$\Phi 32.3$	13	21	15	38	36	39.5	1
RM40L-27B	RM40L-27S	M40×1.5	$\Phi 40.3$	18	27	18	43.5	45.7	50.5	1
RM50L-38B	RM50L-38S	M50×1.5	$\Phi 50.4$	27	38	20	50.5	60	66.5	1
RM63L-44B	RM63L-44S	M63×1.5	$\Phi 63.4$	37	44	20	53	68	75.5	1
RM8L-2.5B-P	RM8L-2.5S-P	M8×1.25	$\Phi 8.2$	1	2.5	13	19.5	11.8	13.5	100
RM8L-4B-P	RM8L-4S-P	M8×1.25	$\Phi 8.2$	2.5	4	13	19.5	11.8	13.5	100
RM10L-6B-P	RM10L-6S-P	M10×1.5	$\Phi 10.2$	3	6	13	20.5	13	14.4	100
RM12S-7B-P	RM12S-7S-P	M12×1.5	$\Phi 12.2$	3.5	7	9	20.5	16	17.6	100
RM12L-7B-P	RM12L-7S-P	M12×1.5	$\Phi 12.2$	3.5	7	14.5	20.5	16	17.7	100
RM16S-8B-P	RM16S-8S-P	M16×1.5	$\Phi 16.2$	4	8	9	23.5	19	21	100
RM16L-8B-P	RM16L-8S-P	M16×1.5	$\Phi 16.2$	4	8	15	24	19	21	100
RM20S-12B-P	RM20S-12S-P	M20×1.5	$\Phi 20.2$	6	12	10	29	24	26.2	100
RM20L-12B-P	RM20L-12S-P	M20×1.5	$\Phi 20.2$	6	12	15	28.5	24	26.2	100
RM25L-17B-P	RM25L-17S-P	M25×1.5	$\Phi 25.2$	11	17	15	35	33	36.2	100





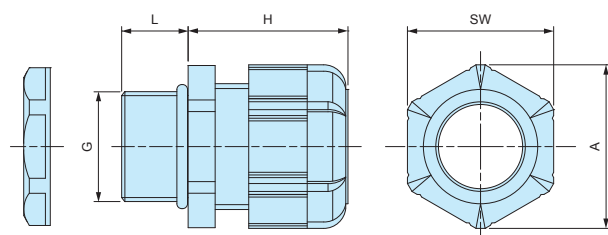
- Weatherproof cable gland equipped with high ultraviolet and degradation resistant silicone sealing insert and O-ring.
- Recommended to use outdoors where waterproofing is critical.

## Components

■ PA = Polyamide

No.	Part name	Material
1	Cap	PA66 UL94V-2
2	Sealing insert	Silicone
3	Connector	PA66 UL94V-2
4	O-ring	Silicone
5	Nut	PA66 UL94V-2

## RMW dimensions



## Technical Data

Protection class: IP67  
Operating temperature: -20°C ~ +80°C

- DXF/DWG/PDF drawings available on our website.
- Lock nut is not included for RMW10S-6.  
Please drill a proper thread hole into the enclosure for installation.

## Product no. / Dimensions

Product no.		G		Cable range		L	H Max	SW	A	Pack of
● Black	● Light gray	Thread size	Mounting hole	Min	Max					
RMW8L-2.5B	RMW8L-2.5S	M8×1.25	Φ8.2	1	2.5	13	19.5	11.8	13.5	1
RMW8L-4B	RMW8L-4S	M8×1.25	Φ8.2	2.5	4	13	19.5	11.8	13.5	1
RMW10S-6B	RMW10S-6S	M10×1.5	—	3	6	8	20.5	13	14.4	1
RMW10L-6B	RMW10L-6S	M10×1.5	Φ10.2	3	6	13	20.5	13	14.4	1
RMW12S-7B	RMW12S-7S	M12×1.5	Φ12.2	3.5	7	9	20.5	16	17.6	1
RMW12L-7B	RMW12L-7S	M12×1.5	Φ12.2	3.5	7	14.5	20.5	16	17.7	1
RMW16S-8B	RMW16S-8S	M16×1.5	Φ16.2	4	8	9	23.5	19	21	1
RMW16L-8B	RMW16L-8S	M16×1.5	Φ16.2	4	8	15	24	19	21	1
RMW20S-12B	RMW20S-12S	M20×1.5	Φ20.2	6	12	10	29	24	26.2	1
RMW20L-12B	RMW20L-12S	M20×1.5	Φ20.2	6	12	15	28.5	24	26.2	1
RMW25L-17B	RMW25L-17S	M25×1.5	Φ25.2	11	17	15	35	33	36.2	1
RMW32L-21B	RMW32L-21S	M32×1.5	Φ32.3	13	21	15	38	36	39.5	1
RMW40L-27B	RMW40L-27S	M40×1.5	Φ40.3	18	27	18	43.5	45.7	50.5	1
RMW50L-38B	RMW50L-38S	M50×1.5	Φ50.4	27	38	20	50.5	60	66.5	1
RMW8L-2.5B-P	RMW8L-2.5S-P	M8×1.25	Φ 8.2	1	2.5	13	19.5	11.8	13.5	100
RMW8L-4B-P	RMW8L-4S-P	M8×1.25	Φ 8.2	2.5	4	13	19.5	11.8	13.5	100
RMW10L-6B-P	RMW10L-6S-P	M10×1.5	Φ10.2	3	6	13	20.5	13	14.4	100
RMW12S-7B-P	RMW12S-7S-P	M12×1.5	Φ12.2	3.5	7	9	20.5	16	17.6	100
RMW12L-7B-P	RMW12L-7S-P	M12×1.5	Φ12.2	3.5	7	14.5	20.5	16	17.7	100
RMW16S-8B-P	RMW16S-8S-P	M16×1.5	Φ16.2	4	8	9	23.5	19	21	100
RMW16L-8B-P	RMW16L-8S-P	M16×1.5	Φ16.2	4	8	15	24	19	21	100
RMW20S-12B-P	RMW20S-12S-P	M20×1.5	Φ20.2	6	12	10	29	24	26.2	100
RMW20L-12B-P	RMW20L-12S-P	M20×1.5	Φ20.2	6	12	15	28.5	24	26.2	100
RMW25L-17B-P	RMW25L-17S-P	M25×1.5	Φ25.2	11	17	15	35	33	36.2	100

# RMW series silicone sealing insert weatherproof test report

Object: Cut into a piece of the silicone sealing insert from RMW series and attach it onto an aluminium plate.  
For comparison, NBR sealing insert from our RM and EPDM sealing insert from another manufacturer is also attached for comparison purposes.



Before



After

## Testing conditions

**Equipment :** 7.5kW Super Xenon Weather Meter SX75 (Suga Test Instruments Co., Ltd.- <http://www.sugatest.co.jp/english/>)  
**Conditions :** JIS B7754 : 1991

Testing with an authorized Xenon arc lamp weathering test equipment under the conditions denoted below.

Irradiance :  $180\text{W/m}^2$  at 300-400nm

Black Panel Temperature :  $63\pm 3^\circ\text{C}$  Humidity Range :  $50\pm 10\%$

Cycle Conditions : 120 minutes cycle (18 minutes irradiation + water spray - 102 minutes irradiation)

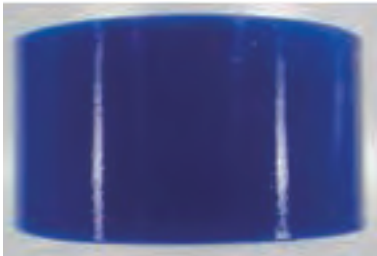
**Time period :** 2,000 hours (equivalent to a period of 4 years under natural conditions)

**Total radiant exposure :**  $1296\text{MJ/m}^2$

## Test result (visual / touch inspection)

**Silicone sealing insert material :** No cracks, no gloss transition, no powder - no appearance change at all. Flexibility remains unchanged.

Before



After

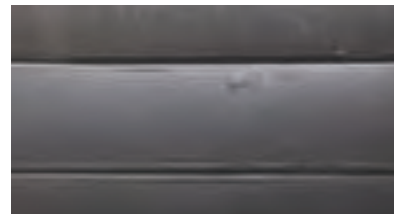


**NBR material from our RM series :** Lost glossiness on the surface and material is stiffened.

Before



After

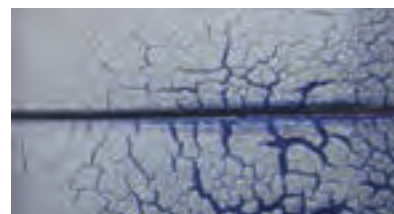


**EPDM material from weatherproof cable gland of another manufacturer :** Cracked, color drastically faded and powder appeared on the surface.

Before



After



## AG SERIES

## HIGH WATER PROTECTION CABLE GLAND

IP68



- High water protection IP68 (1bar / 30min) polyamide cable gland.
- Wide selection, for M8 ~ M50, suitable for  $\Phi 2.5\text{mm}$  ~  $\Phi 42\text{ mm}$  cable.
- Super tough and superior heat resistant PA6GF (glass fiber filled PA6) material on cap and connector.
- Safer halogen free, eco-friendly product.

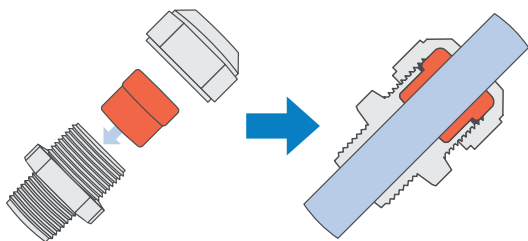
## Technical Data

Protection class: IP68 1bar / 30min  
 Operating temperature:  $-20^{\circ}\text{C}$  ~  $+100^{\circ}\text{C}$   
 Compliant with EN50262 Ver. A

## AG Series

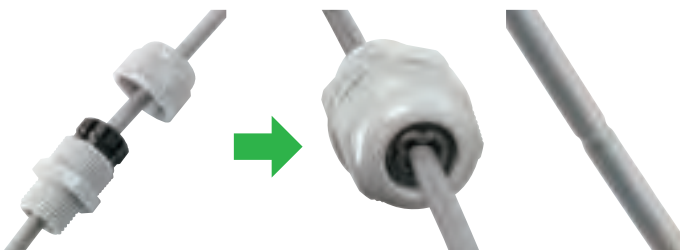
Thicker sealing insert evenly hold a cable by having a larger holding area.

Remains durable even after repeated tightening / loosening.



## Lamellar insert type

If over-tightened, it can cause the rubber bush or cable to deform, which can allow water to seep in.



1

2

3

4

## Components

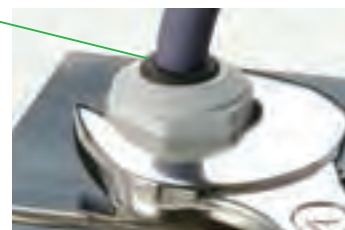
■ PA = Polyamide

No.	Part name	Material
1	Cap	PA6GF
2	Sealing insert	TPE
3	Connector	PA6GF
4	Lock nut	PA6

■ Lock nut is not included for M8 and M10 sizes.

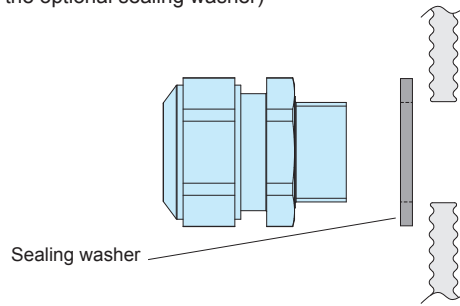
Please drill a proper thread hole into the enclosure for installation.

- Proper tightening torque varies by each cable diameter. Tighten the cap until top of the sealing insert forms a small bead between the cap and the cable.



- No optional sealing washer is required when installing on an even surface because of the built-in waterproof rib.

- An optional sealing washer is required when installing on an uneven surface. (See website for more information on the optional sealing washer)

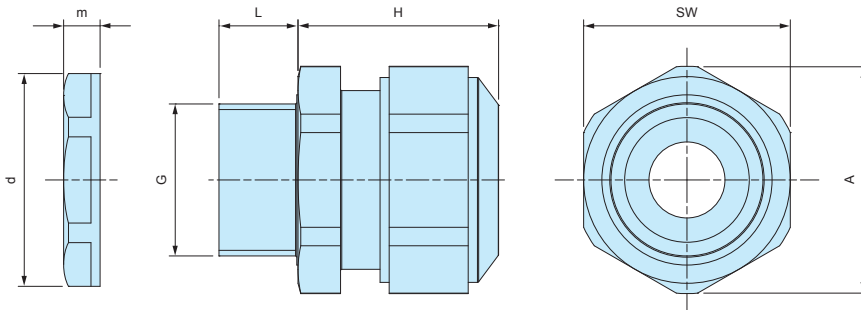


Waterproof rib



## AG dimensions

- DXF/DWG/PDF drawings available on our website.



- Lock nut is not included for M8 and M10 sizes. Please drill a proper thread hole into the enclosure for installation.

## Product no. / Dimensions

Product no.		G		Cable range		L	H Max	SW	A	d	m	Pack of
● Black	● Light gray	Thread size	Mounting hole	Min	Max							
AG8-3.5B	AG8-3.5S	M8×1.0	—	2.5	3.5	10	17	12	13.2	—	—	1
AG8-5B	AG8-5S	M8×1.0	—	3.5	4.7	10	17	12	13.2	—	—	1
AG10-6B	AG10-6S	M10×1.0	—	4	6	10	19	15	16.5	—	—	1
AG12-5B	AG12-5S	M12×1.5	Φ12.2	3.5	4.7	12	23.5	17	18.7	18.8	5	1
AG12-6.5B	AG12-6.5S	M12×1.5	Φ12.2	5	6.5	12	23	17	18.7	18.8	5	1
AG12-8B	AG12-8S	M12×1.5	Φ12.2	6.5	7.8	12	23	17	18.7	18.8	5	1
AG16-10B	AG16-10S	M16×1.5	Φ16.2	8	10	12	26	21	23.1	24.3	5	1
AG20-15B	AG20-15S	M20×1.5	Φ20.2	11	15	13	27	27	29.7	29	6	1
AG25-16B	AG25-16S	M25×1.5	Φ25.2	12.5	16	13	34	34	37.4	36	6.7	1
AG25-20B	AG25-20S	M25×1.5	Φ25.2	16	20	13	34	34	37.4	36	6.7	1
AG32-25.5B	AG32-25.5S	M32×1.5	Φ32.3	21	25.5	15	36	41	45.6	46	8	1
AG40-28.5B	AG40-28.5S	M40×1.5	Φ40.3	24	28.5	15	41	50	55.4	53.5	9	1
AG40-33B	AG40-33S	M40×1.5	Φ40.3	28.5	33	15	41	50	55.4	53.5	9	1
AG50-37B	AG50-37S	M50×1.5	Φ50.4	33	37	16	45	60	65.5	66	9.6	1
AG50-42B	AG50-42S	M50×1.5	Φ50.4	37	42	16	45	60	65.5	66	9.6	1
AG8-3.5B-P	AG8-3.5S-P	M8×1.0	—	2.5	3.5	10	17	12	13.2	—	—	50
AG8-5B-P	AG8-5S-P	M8×1.0	—	3.5	4.7	10	17	12	13.2	—	—	50
AG10-6B-P	AG10-6S-P	M10×1.0	—	4	6	10	19	15	16.5	—	—	50
AG12-5B-P	AG12-5S-P	M12×1.5	Φ12.2	3.5	4.7	12	23.5	17	18.7	18.8	5	50
AG12-6.5B-P	AG12-6.5S-P	M12×1.5	Φ12.2	5	6.5	12	23	17	18.7	18.8	5	50
AG12-8B-P	AG12-8S-P	M12×1.5	Φ12.2	6.5	7.8	12	23	17	18.7	18.8	5	50
AG16-10B-P	AG16-10S-P	M16×1.5	Φ16.2	8	10	12	26	21	23.1	24.3	5	50
AG20-15B-P	AG20-15S-P	M20×1.5	Φ20.2	11	15	13	27	27	29.7	29	6	50
AG25-16B-P	AG25-16S-P	M25×1.5	Φ25.2	12.5	16	13	34	34	37.4	36	6.7	25
AG25-20B-P	AG25-20S-P	M25×1.5	Φ25.2	16	20	13	34	34	37.4	36	6.7	25

## AGM SERIES

## METAL CABLE GLAND



- High water protection IP68 (1bar / 30min) metal cable gland.
- Wide selection, for M6 ~ M50 and PG7 ~ PG16.  
Suitable for  $\Phi 2$  mm ~  $\Phi 42$  mm cable.

## Technical Data

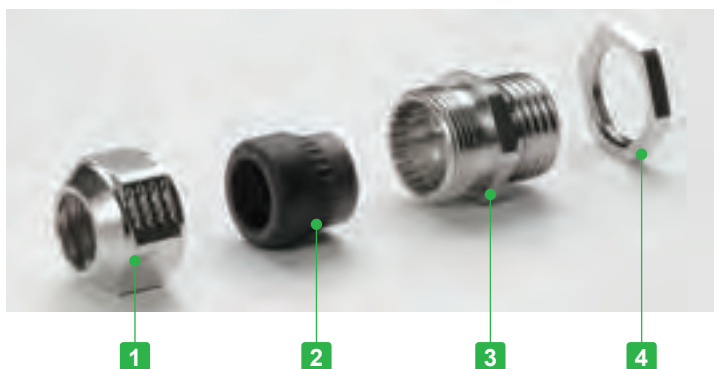
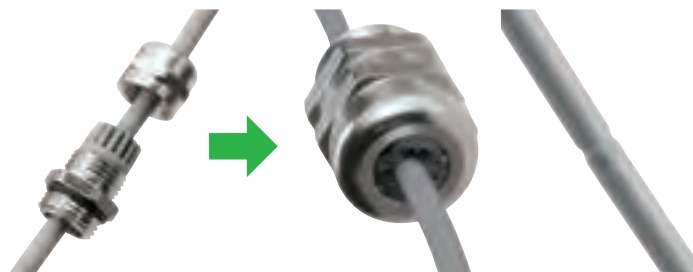
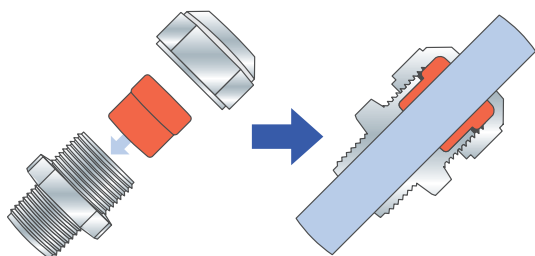
Protection class: IP68 1bar / 30min  
 Operating temperature: -40°C ~ +100°C  
 Compliant with EN50262 Ver. A

## AGM Series

Thicker sealing insert evenly hold a cable by having a larger holding area.  
 Remains durable even after repeated tightening / loosening.

## Lamellar insert type

If over-tightened, it can cause the rubber bush or cable to deform,  
 which can allow water to seep in.



- Proper tightening torque varies by each cable diameter.

Tighten the cap until top of the sealing insert forms a small bead between the cap and the cable.

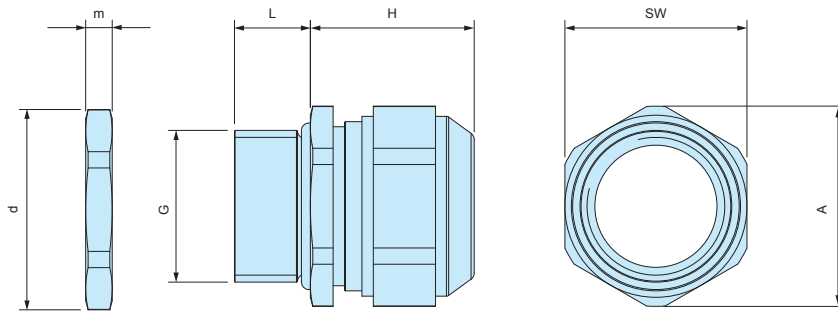


## Components

No.	Part name	Material	Color / Finish
1	Cap	Brass	Nickel plated
2	Sealing insert	TPE	Black
3	Connector	Brass	Nickel plated
-	O-ring	NBR	Black
4	Lock nut	Brass	Nickel plated

## AGM dimensions

■ DXF/DWG/PDF drawings available on our website.



## Product no. / Dimensions

Product no.	G			Cable range		L	H Max	SW	A	d	m	Pack of
	Thread size	Thread outer dia.	Mounting hole	Min	Max							
AGM6-2.5	M6×1.0	—	Φ6.2	2	2.5	8	12	8	9	10	2.8	1
AGM6-3	M6×1.0	—	Φ6.2	2.5	3.0	8	12	8	9	10	2.8	1
AGM6-3.5	M6×1.0	—	Φ6.2	3.0	3.5	8	12	8	9	10	2.8	1
AGM8-5	M8×1.25	—	Φ8.2	3.5	4.7	10	14	11	12	12	3	1
AGM10-6	M10×1.5	—	Φ10.2	4.0	6.0	10	15	13	14.3	14	2.8	1
AGM12-8	M12×1.5	—	Φ12.2	6.5	8.0	10	17	15	16.5	16.5	2.8	1
AGM16-10.5	M16×1.5	—	Φ16.2	8.0	10.5	10	21	18	20	21	3	1
AGM20-15	M20×1.5	—	Φ20.2	11.0	15.0	10	23	24	26.5	26.5	3.5	1
AGM25-20	M25×1.5	—	Φ25.2	16.0	20.0	11	28	30	33	33	4	1
AGM32-25.5	M32×1.5	—	Φ32.3	21.0	25.5	13	29.5	36	39.5	39.5	4	1
AGM40-28.5	M40×1.5	—	Φ40.3	24.0	28.5	13	32	46	50.7	51	5	1
AGM40-33	M40×1.5	—	Φ40.3	28.5	33.0	13	32	46	50.7	51	5	1
AGM50-37	M50×1.5	—	Φ50.4	33.0	37.0	14	34	55	59.7	60	5.5	1
AGM50-42	M50×1.5	—	Φ50.4	37.0	42.0	14	34	55	59.7	60	5.5	1
AGM7PG-5	PG7	12.5	Φ12.7	3.5	5.0	6	17	15	16.5	16.5	3	1
AGM9PG-6	PG9	15.2	Φ15.4	4.5	6.0	6	20	18	20	20	3	1
AGM11PG-8.5	PG11	18.6	Φ18.8	5.5	8.5	6	21	21	23	23.5	3	1
AGM13PG-11	PG13	20.4	Φ20.6	8.0	11.0	6	21	24	26.5	25.5	3	1
AGM16PG-14.5	PG16	22.5	Φ22.7	11	14.5	6	23	24	26.5	29	3	1



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## COMPANY PROFILE

COMPANY NAME TAKACHI ELECTRONICS ENCLOSURE CO., LTD.  
 ADDRESS 3-21-16 Higashi-ryoke, Kawaguchi, Saitama, JAPAN, 332-0003  
 ESTABLISHED JULY 1, 1979



## TAKACHI website available

Our range of products are available in categorized webpages and PDF format for easy viewing.

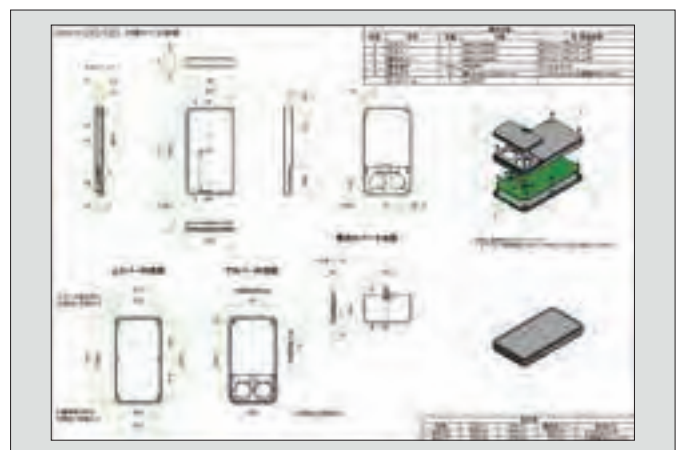
DXF, DWG and PDF drawings are available for download.

Download them to help with your design or customization requirements.



**CAD drawing download**

Part no.	H	W	D	DXF	DWG	PDF
CSS75N-CL	15.5	38.6	78.6	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSS75N-OP	15.5	38.6	78.6	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSS75-CL	15.5	38.6	78.6	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSS75-OP	15.5	38.6	78.6	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSS90N-CL	15.5	48.6	93.6	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSS90N-OP	15.5	48.6	93.6	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSS90-CL	15.5	48.6	93.6	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSS90-OP	15.5	48.6	93.6	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSS115N-CL	16	67	119	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSS115N-OP	16	67	119	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSS115-CL	16	67	119	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSS115-OP	16	67	119	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSPB-79	0	0	0	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSPB-90	0	0	0	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>
CSPB-115	0	0	0	<a href="#">DL</a>	<a href="#">DL</a>	<a href="#">DL</a>





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