

## Series 56

*Intuitive and reliable. Worldwide.*

<https://eao.com/56>



# 56 Information about the Series

## Key advantages

- Unique tactile feedback
- Conform to TSI PRM
- Exceptional long-term reliability
- Wide product range
- Simple integration through mounting options
- Individually customisable

## Typical application areas

Passenger access systems  
Passenger information systems  
Call for aid terminals  
Emergency and emergency call systems  
Toilet facilities on trains and buses  
Lifting and moving systems  
Access control systems

## Functions

- Indicator
- Door opening pushbutton
- Lever switch
- Warning tone module (Multi-Tone Sound Module)
- Flashing warning beacon

## Design

- Front mounting
- Rear mounting
- Glass mounting

## IP front pRedection

- IP67

## Raitings

- min. 5 VDC, 5 mA/max. 137 VDC/VAC, max. 200 mA
- min. 10  $\mu$ A/max. 250 mA (56 Access)

## Mounting cut-outs

- $\varnothing$  42 mm

## Terminal

- Cable with direct connection

## Lens Material

- Aluminium
- Plastic

## Markings

- Laser marking
- Milling

## Approvals

- CQC
- e1
- TSI PRM (EBC)

## Conformities

- CE
- 2014/30/EU (EMC)
- 1300/2014/EU (TSI PRM)
- 2011/65/EU (RoHS)
- 2014/35/EU (LVD)



**Overview****Front mounting**

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## Cable exit

 Cable exit right

 Cable exit left

## Cable length

 A = 200 mm

 A = 500 mm

 A = 1000 mm

 A = 1500 mm

 \_\_\_\_\_ mm

## Cable and Connector type

### Cable

 2 x 0.24 mm<sup>2</sup>

### Connector

 Core end-sleeves

 AMP connector Mate-N-Lok (Wiring diagram 2)

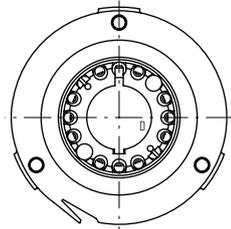
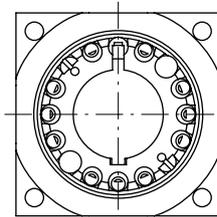
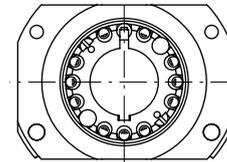
 DEUTSCH Connector (Wiring diagram 2)

 AMP connector 2.8 mm x 0.8 mm (Wiring diagram 1)

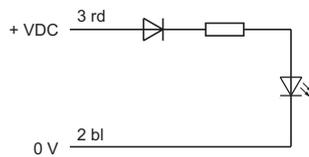
 AMP connector 6.3 mm x 0.8 mm (Wiring diagram 2)

 \_\_\_\_\_

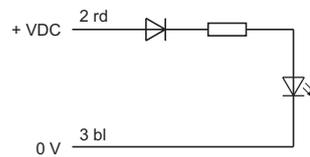
## Housing

 Housing D73 (standard)

 Housing reworked 50 mm x 50 mm

 Housing reworked 68.5 mm x 50 mm


## Wiring diagrams



Wiring diagram 1



Wiring diagram 2

## Component layouts



Plug-in terminal  
2.8 mm x 0.8 mm

Standard type

Component layout 1

# 56 Front mounting

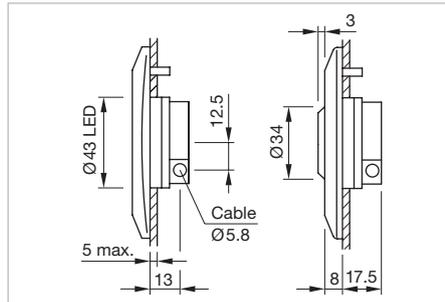
## Single side pushbutton



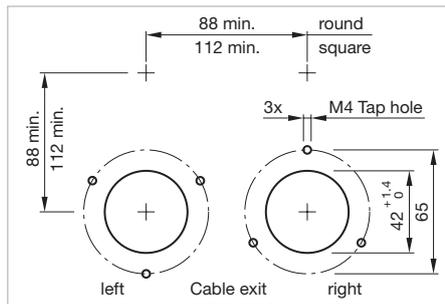
The preview is based on a sample product. This can differ from your current configuration.

### Additional Information

- Please fill in the form and forward it to your local EAO partner by e-mail or fax. The electronic form is available at [www.eao.com/downloads](http://www.eao.com/downloads)

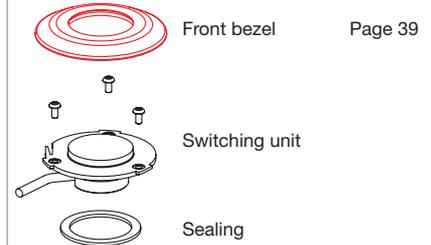


Dimensions [mm]



Mounting cut-outs [mm]

### Equipment consisting of



Each part listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the pages shown.

Lens		
<input type="checkbox"/> flush, plastic, colour similar RAL	<input type="checkbox"/> flush, aluminium	<input type="checkbox"/> raised, aluminium
<input type="checkbox"/> green RAL 6024	<input type="checkbox"/> naturel	<input type="checkbox"/> naturel
<input type="checkbox"/> red RAL 3020	<input type="checkbox"/> green	<input type="checkbox"/> green
<input type="checkbox"/> blue RAL 5017	<input type="checkbox"/> red	<input type="checkbox"/> red
<input type="checkbox"/> yellow RAL 1023	<input type="checkbox"/> blue	<input type="checkbox"/> blue
<input type="checkbox"/> grey RAL 7040	<input type="checkbox"/> yellow	<input type="checkbox"/> yellow
		<input type="checkbox"/> black

### Lens marking

- without symbol

<input type="checkbox"/> with symbol aluminium, raised (engraved)						
	<input type="checkbox"/> Symbol No. 00.835	<input type="checkbox"/> Symbol No. 00.836	<input type="checkbox"/> Symbol No. 00.868	<input type="checkbox"/> Symbol No. 00.869	<input type="checkbox"/> Symbol No. 40089	<input type="checkbox"/> Symbol No. 60523
<input type="checkbox"/> Symbol No. WC	<input type="checkbox"/> Symbol No. 60034	<input type="checkbox"/> Symbol No. 01.590	<input type="checkbox"/> Symbol No. Wasserhahn	<input type="checkbox"/> Symbol No. Behinderten		

<input type="checkbox"/> with symbol aluminium, flat (engraved/lasered)						
<input type="checkbox"/> with symbol plastic, flat (engraved/lasered)	<input type="checkbox"/> Symbol No. 00.835	<input type="checkbox"/> Symbol No. 00.836	<input type="checkbox"/> Symbol No. 00.868	<input type="checkbox"/> Symbol No. 00.869	<input type="checkbox"/> Symbol No. 40089	<input type="checkbox"/> Symbol No. 60523

Symbol colour	<input type="checkbox"/> black	<input type="checkbox"/> white
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Illumination						
<input type="checkbox"/> without illumination						
<input type="checkbox"/> with illumination	<input type="checkbox"/> 8 green	<input type="checkbox"/> 8 red	<input type="checkbox"/> 8 blue	<input type="checkbox"/> 8 yellow	<input type="checkbox"/> 8 green/2 red	<input type="checkbox"/> 8 red/2 green

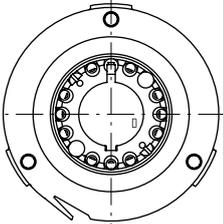
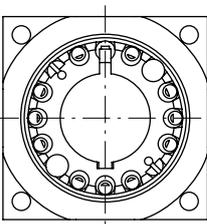
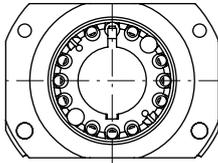
Supply voltage Illumination				
<input type="checkbox"/> 24 VDC	<input type="checkbox"/> 36 VDC	<input type="checkbox"/> 48 VDC	<input type="checkbox"/> 72 VDC	<input type="checkbox"/> 110 VDC

Tolerance -30 % ... +25 %

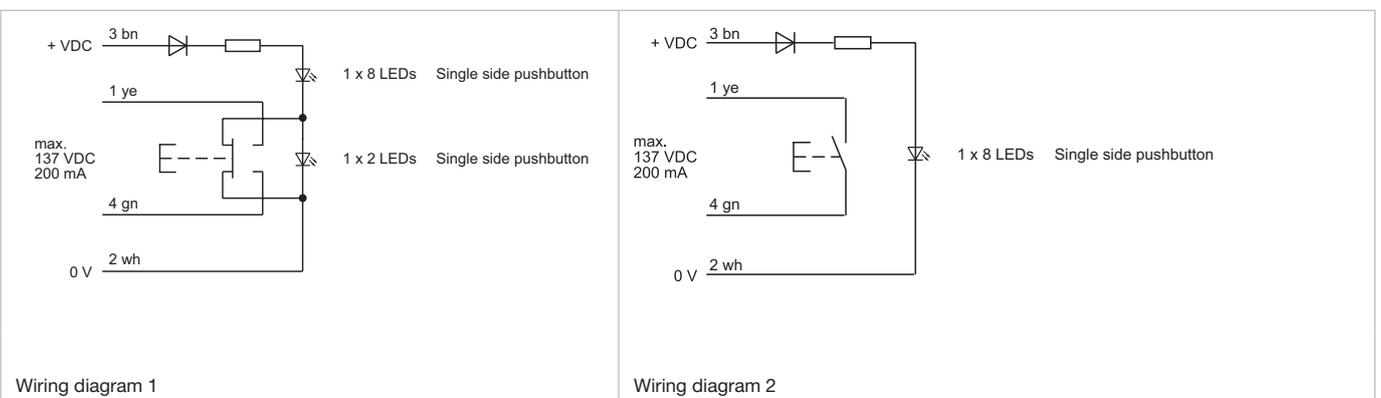
Cable exit	
<input type="checkbox"/> Cable exit right	<input type="checkbox"/> Cable exit left

Cable length				
<input type="checkbox"/> A = 200 mm	<input type="checkbox"/> A = 500 mm	<input type="checkbox"/> A = 1000 mm	<input type="checkbox"/> A = 1500 mm	<input type="checkbox"/> _____ mm

Cable and connector type	
<b>Cable</b>	<b>Connector</b>
<input type="checkbox"/> 2x0.5 mm <sup>2</sup> (Wiring diagram 5)	<input type="checkbox"/> Core end-sleeves
<input type="checkbox"/> 4x0.5 mm <sup>2</sup> (Wiring diagram 1, 2, 3, 4)	<input type="checkbox"/> AMP connector Mate-N-Lok (Wiring diagram 3, 4)
	<input type="checkbox"/> DEUTSCH connector (Wiring diagram 3, 4)
	<input type="checkbox"/> AMP connector 2.8 mm x 0.8 mm (Wiring diagram 1, 2))
	<input type="checkbox"/> AMP connector 6.3 mm x 0.8 mm (Wiring diagram 3, 4)
	<input type="checkbox"/> _____

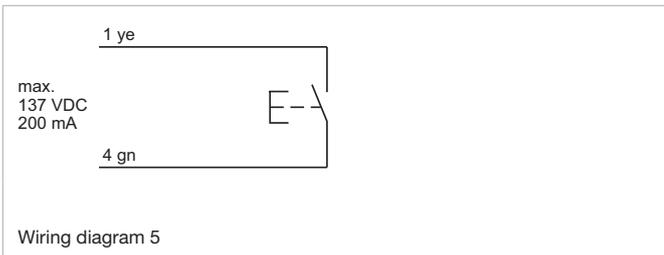
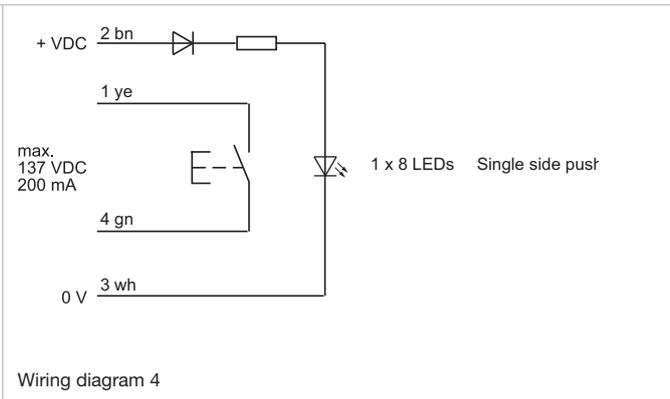
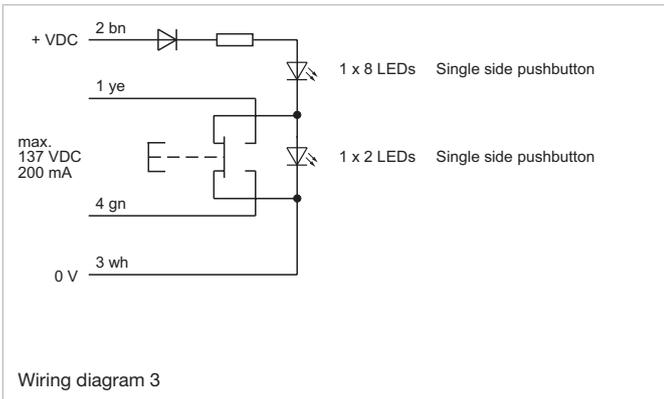
Housing		
<input type="checkbox"/> Housing D73 (standard)	<input type="checkbox"/> Housing reworked 50 mm x 50 mm	<input type="checkbox"/> Housing reworked 68.5 mm x 50 mm
		

## Wiring diagrams

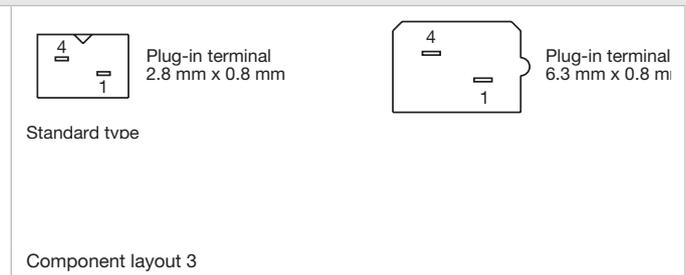
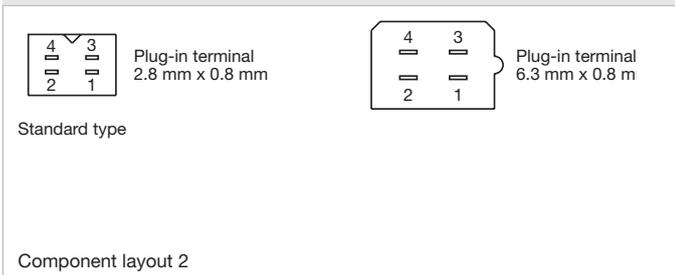


# 56 Front mounting

## Wiring diagrams

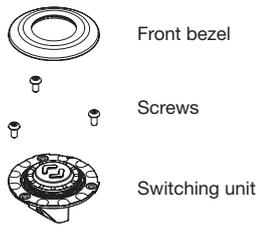


## Component layouts

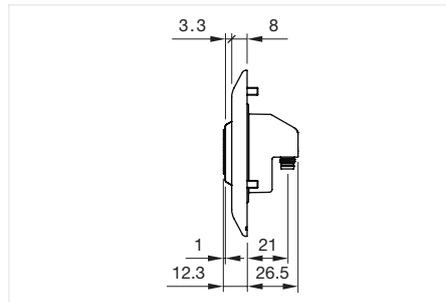


## Single side pushbutton, 56 Access

### Equipment consisting of (schematic overview)



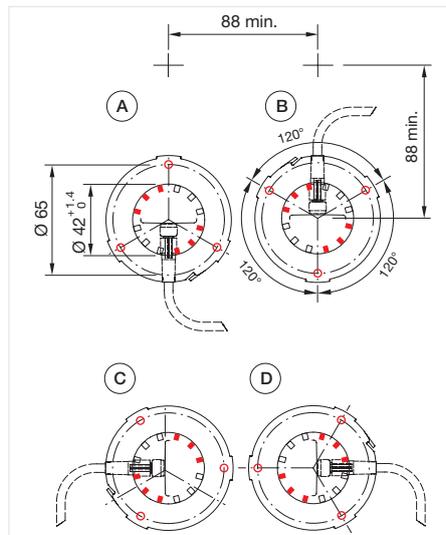
Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]



The preview is based on a sample product. This can differ from your current configuration.



Mounting cut-outs [mm]

- A = Cable exit bottom
- B = Cable exit top
- C = Cable exit left
- D = Cable exit right

Cable 6-pole with M8x1, socket straight female, according to EN 61076-2-104

### Additional information

- Standard device plug M8x1, 6-pole
- Raised symbols comply with TSI PRM
- User-friendly, large Ø 33 mm actuating surface
- Highly visible LED illumination green/red
- Operating voltage 10–30 VDC
- Scope of delivery without cable
- Please fill in the form and forward it to your local EAO partner by e-mail or fax. The electronic form is available at [www.eao.com/downloads](http://www.eao.com/downloads)



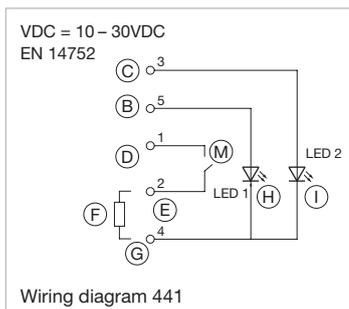
### Single side pushbutton, 56 Access, Frontdimension Ø 87 mm

Lens material	Lens shape	Symbol	Cable output	Front bezel colour	Colour similar RAL	Part No.	Wiring diagram	Component layout
<input type="checkbox"/> Aluminium	raised		bottom or top	Black	9017 RAL	56-1520.1501	441	106
<input type="checkbox"/> Aluminium	raised		bottom or top	Red	3020 RAL	56-1520.1502	441	106
<input type="checkbox"/> Aluminium	raised		bottom or top	Yellow	1023 RAL	56-1520.1503	441	106
<input type="checkbox"/> Aluminium	raised		bottom or top	Green	6024 RAL	56-1520.1504	441	106
<input type="checkbox"/> Aluminium	raised		bottom or top	Blue	5017 RAL	56-1520.1505	441	106
<input type="checkbox"/> Aluminium	raised		bottom or top	Light grey	7040 RAL	56-1520.1506	441	106
<input type="checkbox"/> Aluminium	raised		left or right	Black	9017 RAL	56-1520.1601	441	106
<input type="checkbox"/> Aluminium	raised		left or right	Red	3020 RAL	56-1520.1602	441	106
<input type="checkbox"/> Aluminium	raised		left or right	Yellow	1023 RAL	56-1520.1603	441	106
<input type="checkbox"/> Aluminium	raised		left or right	Green	6024 RAL	56-1520.1604	441	106
<input type="checkbox"/> Aluminium	raised		left or right	Blue	5017 RAL	56-1520.1605	441	106
<input type="checkbox"/> Aluminium	raised		left or right	Light grey	7040 RAL	56-1520.1606	441	106
<input type="checkbox"/> Aluminium	raised		bottom or top	Black	9017 RAL	56-1520.2501	441	106
<input type="checkbox"/> Aluminium	raised		bottom or top	Red	3020 RAL	56-1520.2502	441	106
<input type="checkbox"/> Aluminium	raised		bottom or top	Yellow	1023 RAL	56-1520.2503	441	106
<input type="checkbox"/> Aluminium	raised		bottom or top	Green	6024 RAL	56-1520.2504	441	106
<input type="checkbox"/> Aluminium	raised		bottom or top	Blue	5017 RAL	56-1520.2505	441	106

# 56 Front mounting

Lens material	Lens shape	Symbol	Cable output	Front bezel colour	Colour similar RAL	Part No.	Wiring diagram	Component layout
<input type="checkbox"/> Aluminium	raised		bottom or top	Light grey	7040 RAL	56-1520.2506	441	106
<input type="checkbox"/> Aluminium	raised		left or right	Black	9017 RAL	56-1520.2601	441	106
<input type="checkbox"/> Aluminium	raised		left or right	Red	3020 RAL	56-1520.2602	441	106
<input type="checkbox"/> Aluminium	raised		left or right	Yellow	1023 RAL	56-1520.2603	441	106
<input type="checkbox"/> Aluminium	raised		left or right	Green	6024 RAL	56-1520.2604	441	106
<input type="checkbox"/> Aluminium	raised		left or right	Blue	5017 RAL	56-1520.2605	441	106
<input type="checkbox"/> Aluminium	raised		left or right	Light grey	7040 RAL	56-1520.2606	441	106
<input type="checkbox"/> Aluminium	raised		bottom	Black	9017 RAL	56-1520.3101	441	106
<input type="checkbox"/> Aluminium	raised		bottom	Red	3020 RAL	56-1520.3102	441	106
<input type="checkbox"/> Aluminium	raised		bottom	Yellow	1023 RAL	56-1520.3103	441	106
<input type="checkbox"/> Aluminium	raised		bottom	Green	6024 RAL	56-1520.3104	441	106
<input type="checkbox"/> Aluminium	raised		bottom	Blue	5017 RAL	56-1520.3105	441	106
<input type="checkbox"/> Aluminium	raised		bottom	Light grey	7040 RAL	56-1520.3106	441	106
<input type="checkbox"/> Aluminium	raised		top	Black	9017 RAL	56-1520.3201	441	106
<input type="checkbox"/> Aluminium	raised		top	Red	3020 RAL	56-1520.3202	441	106
<input type="checkbox"/> Aluminium	raised		top	Yellow	1023 RAL	56-1520.3203	441	106
<input type="checkbox"/> Aluminium	raised		top	Green	6024 RAL	56-1520.3204	441	106
<input type="checkbox"/> Aluminium	raised		top	Blue	5017 RAL	56-1520.3205	441	106
<input type="checkbox"/> Aluminium	raised		top	Light grey	7040 RAL	56-1520.3206	441	106
<input type="checkbox"/> Aluminium	raised		left	Black	9017 RAL	56-1520.3301	441	106
<input type="checkbox"/> Aluminium	raised		left	Red	3020 RAL	56-1520.3302	441	106
<input type="checkbox"/> Aluminium	raised		left	Yellow	1023 RAL	56-1520.3303	441	106
<input type="checkbox"/> Aluminium	raised		left	Green	6024 RAL	56-1520.3304	441	106
<input type="checkbox"/> Aluminium	raised		left	Blue	5017 RAL	56-1520.3305	441	106
<input type="checkbox"/> Aluminium	raised		left	Light grey	7040 RAL	56-1520.3306	441	106
<input type="checkbox"/> Aluminium	raised		right	Black	9017 RAL	56-1520.3401	441	106
<input type="checkbox"/> Aluminium	raised		right	Red	3020 RAL	56-1520.3402	441	106
<input type="checkbox"/> Aluminium	raised		right	Yellow	1023 RAL	56-1520.3403	441	106
<input type="checkbox"/> Aluminium	raised		right	Green	6024 RAL	56-1520.3404	441	106
<input type="checkbox"/> Aluminium	raised		right	Blue	5017 RAL	56-1520.3405	441	106
<input type="checkbox"/> Aluminium	raised		right	Light grey	7040 RAL	56-1520.3406	441	106

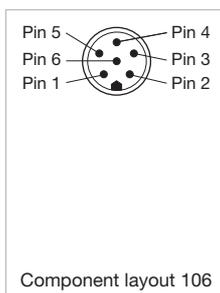
## Wiring diagrams



### Legend

- B = VDC illumination green
- C = VDC illumination red
- D = VDC
- E = Switch (not potential-free)
- F = Load (max. 250 mA)
- G = 0 V
- H = Illumination green
- I = Illumination red
- M = High Side Switch

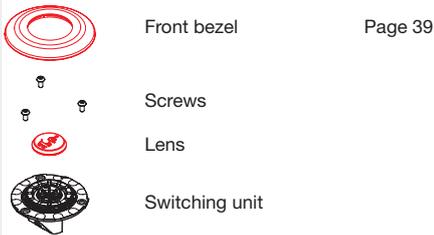
## Component layouts



Pin Assignment  
Front View  
M8 male A-Coding 6 Pin  
according to EN 61076-2-104

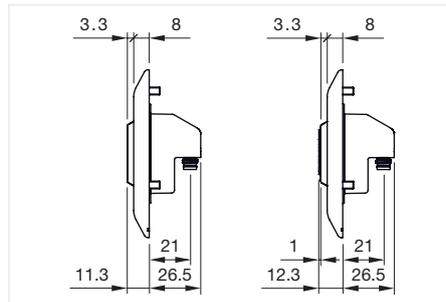
## Single side pushbutton 56 Universal

### Equipment consisting of (schematic overview)



Each Part Number listed below includes all the black components shown in the 3D-drawing.

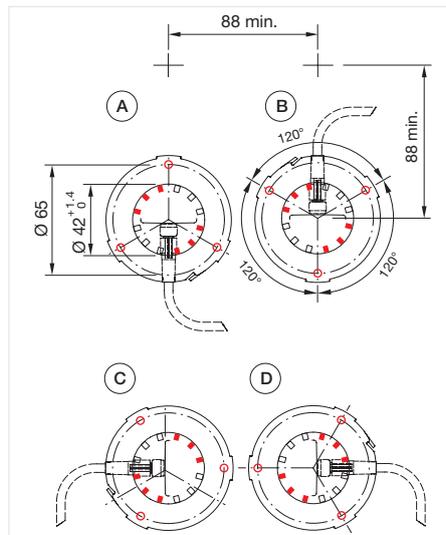
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



The preview is based on a sample product. This can differ from your current configuration.



Mounting cut-outs [mm]

- A = Cable exit bottom
- B = Cable exit top
- C = Cable exit left
- D = Cable exit right

### Additional information

- Laser engraving on lens possible
- 14 standard symbols
- ISO 7000 symbols on request
- Other symbols available on request (minimum order quantity 50 pcs.)
- Standard device plug M8×1, 6-pole
- User-friendly, large Ø 33 mm actuating surface
- Highly visible LED illumination green/red
- Operating voltage 10–30VDC
- Scope of delivery without cable
- Please fill in the form and forward it to your local EAO partner by e-mail or fax. The electronic form is available at [www.eao.com/downloads](http://www.eao.com/downloads)



Switching unit, without lens, without front bezel

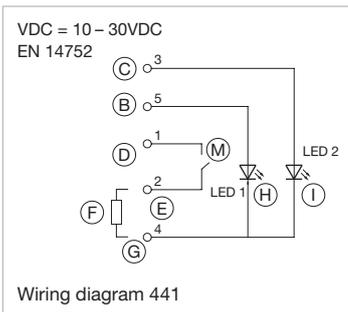
Housing colour	Housing material	Part No.	Wiring diagram	Component layout
<input type="checkbox"/> Black	Plastic	56-1520.0000	441	106

# 56 Front mounting

<b>Lens aluminium</b>	<b>Artikel-No.</b>
<input type="checkbox"/> without symbol	56-4.00001

<input type="checkbox"/> with symbol, black, laser engraved	 <input type="checkbox"/> Part No. 56-6.00001	 <input type="checkbox"/> Part No. 56-6.00002	 <input type="checkbox"/> Part No. 56-6.00003	 <input type="checkbox"/> Part No. 56-6.00004	 <input type="checkbox"/> Part No. 56-6.00005	 <input type="checkbox"/> Part No. 56-6.00006
	 <input type="checkbox"/> Part No. 56-6.00007	 <input type="checkbox"/> Part No. 56-6.00008	 <input type="checkbox"/> Part No. 56-6.00009	 <input type="checkbox"/> Part No. 56-6.00010	 <input type="checkbox"/> Part No. 56-6.00011	 <input type="checkbox"/> Part No. 56-6.00012
	 <input type="checkbox"/> Part No. 56-6.00013	 <input type="checkbox"/> Part No. 56-6.00014				
<input type="checkbox"/> with symbol plastic, black raised	 <input type="checkbox"/> Part No. 56-1.00001	 <input type="checkbox"/> Part No. 56-2.00001	 <input type="checkbox"/> Part No. 56-3.00001			

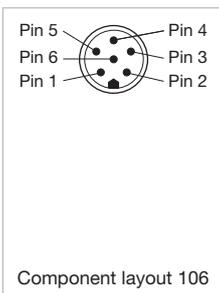
## Wiring diagrams



### Legend

- B = VDC illumination green
- C = VDC illumination red
- D = VDC
- E = Switch (not potential-free)
- F = Load (max. 250 mA)
- G = 0 V
- H = Illumination green
- I = Illumination red
- M = High Side Switch

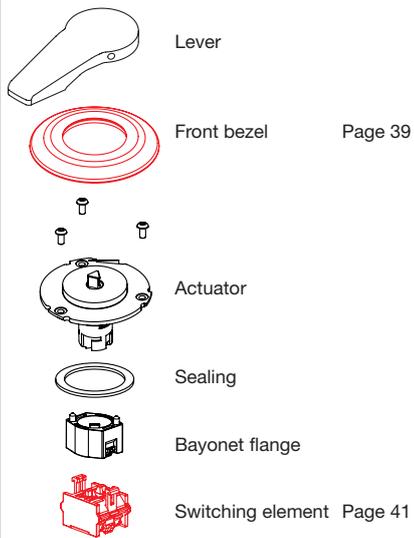
## Component layouts



Pin Assignment  
Front View  
M8 male A-Coding 6 Pin  
according to EN 61076-2-104

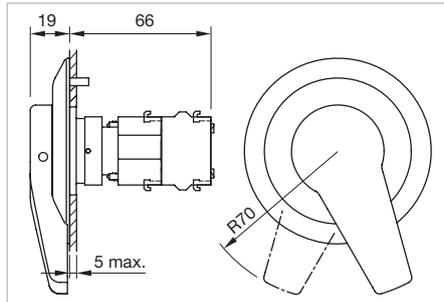
## Lever Switch

### Equipment consisting of

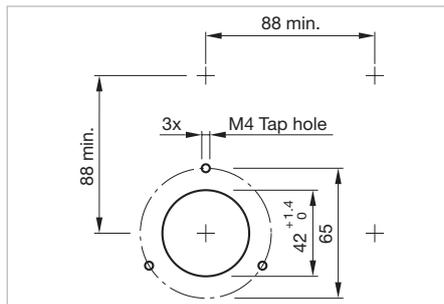


Each part listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Mounting cut-outs [mm]



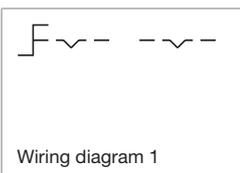
The preview is based on a sample product. This can differ from your current configuration.

### Additional Information

- Lever aluminium naturel anodized
- Two switching positions
- Switching action: 0-maintain

Switching angle	Part No.
45°	704.107.1

## Wiring diagrams



# 56 Front mounting

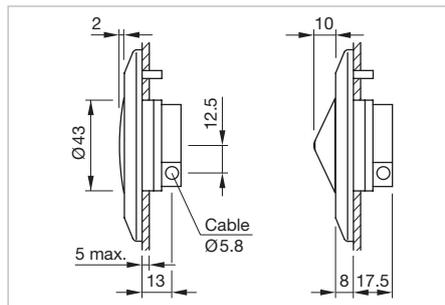
## Multi-Ton Sound Modul



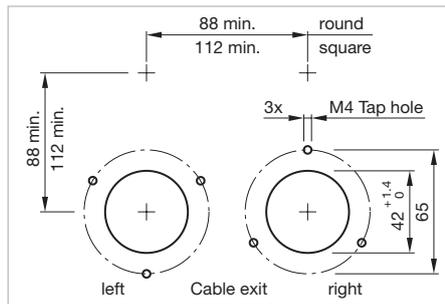
The preview is based on a sample product. This can differ from your current configuration.

### Additional Information

- The descriptions of the standard tone sequences see «Application guidelines»
- After completion of the interior work, we recommend performing acoustic measurements of the sound level inside or outside the car (TSI PRM)
- Please fill in the form and forward it to your local EAO partner by e-mail or fax. The electronic form is available at [www.eao.com/downloads](http://www.eao.com/downloads)

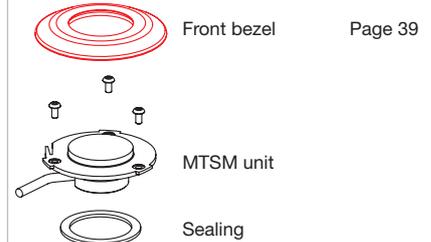


Dimensions [mm]



Mounting cut-outs [mm]

### Equipment consisting of



Each part listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the pages shown.

### Front cap

Plastic black flush

Plastic black raised

### Front cap marking

without symbol

with symbol

### Volume adjustment

Manually (3-/5-Tone Sequences Module)

Automatically (6-Tone Sequences Module)

### Tone sequence

3-tone

5-tone

6-tone

### Supply voltage

24 VDC (5-Tone Sequences Module)

16...63 VDC (3-/6-Tone Sequences Module)

50...143 VDC (3-/6-Tone Sequences Module)

Tolerance  $\pm 30\%$

### Cable exit

cable exit right

cable exit left

### Cable length

A = 200 mm

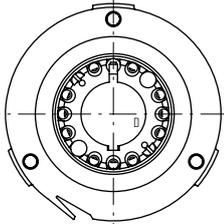
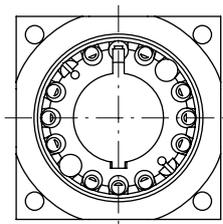
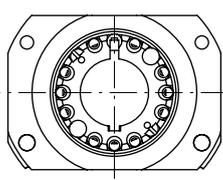
A = 500 mm

A = 1000 mm

A = 1500 mm

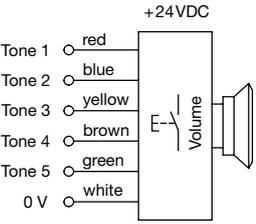
\_\_\_\_\_ mm

Cable and connector type	
Cable	Connector
<input type="checkbox"/> 4x0.25 mm <sup>2</sup>	<input type="checkbox"/> Core end-sleeves
<input type="checkbox"/> 4x0.5 mm <sup>2</sup>	<input type="checkbox"/> AMP connector Mate-N-Lok (Wiring diagram 3, 4)
<input type="checkbox"/> 6x0.5 mm <sup>2</sup>	<input type="checkbox"/> DEUTSCH connector (Wiring diagram 3, 4)
	<input type="checkbox"/> AMP connector 2.8 mm x 0.8 mm (Wiring diagram 1, 2))
	<input type="checkbox"/> AMP connector 6.3 mm x 0.8 mm (Wiring diagram 3, 4)
	<input type="checkbox"/> _____

Housing		
<input type="checkbox"/> Housing D73 (standard)	<input type="checkbox"/> Housing reworked 50 mm x 50 mm	<input type="checkbox"/> Housing reworked 68.5 mm x 50 mm
		

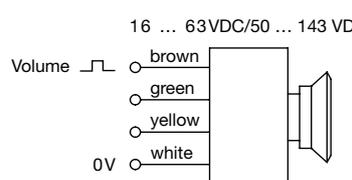
## Wiring diagrams

**5-Tone sequence**



Wiring diagram 1

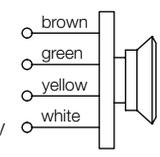
**3-Tone sequence**



Wiring diagram 2

Tone sequence			
Wire	1	2	3
green	VDC	0V	VDC
yellow	0V	VDC	VDC

**Tone sequence, self-adjusting**



16 ... 63 VDC			
Tone	green	yellow	brown
1	16 – 63 VDC	0V	0V
2	0 V	16 – 63 VDC	0V
3	16 – 63 VDC	16 – 63 VDC	0V
4	0 V	0 V	16 – 63 VDC
5	16 – 63 VDC	0 V	16 – 63 VDC
6	0 V	16 – 63 VDC	16 – 63 VDC

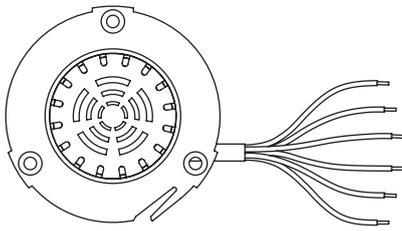
50 ... 143 VDC			
Tone	green	yellow	brown
1	50 – 143 VDC	0V	0V
2	0 V	50 – 143 VDC	0V
3	50 – 143 VDC	50 – 143 VDC	0V
4	0 V	0 V	50 – 143 VDC
5	50 – 143 VDC	0 V	50 – 143 VDC
6	0 V	50 – 143 VDC	50 – 143 VDC

Wiring diagram 3

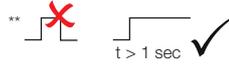
# 56 Front mounting

## Component layouts

### 5-Tone sequence

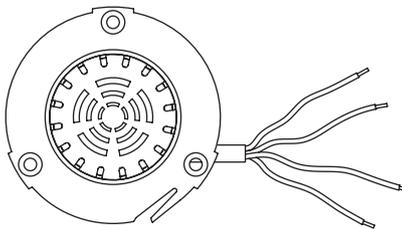


red (Tone sequence 1<sup>\*\*</sup>)  
 blue (Tone sequence 2<sup>\*\*</sup>)  
 yellow (Tone sequence 3<sup>\*\*</sup>)  
 brown (Tone sequence 4<sup>\*\*</sup>)  
 green (Tone sequence 5<sup>\*\*</sup>)  
 white (0V)



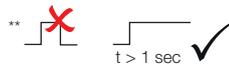
### Bauteilelayout 4

### 3-Tone sequence



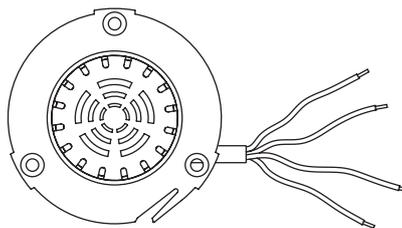
brown (Volume)  
 green (Tone sequence 1<sup>\*\*</sup>)  
 yellow (Tone sequence 2<sup>\*\*</sup>)  
 white (0V)

} (Tone sequence 3)



### Bauteilelayout 5

### 6-Tone sequence, self-adjusting



brown  
 green  
 yellow  
 white (0V)

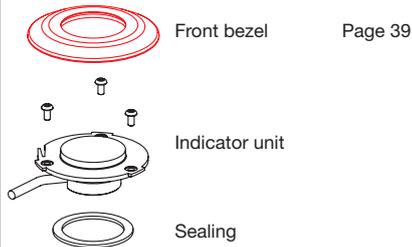
Tone sequence 1<sup>\*\*</sup>: green  
 Tone sequence 2<sup>\*\*</sup>: yellow  
 Tone sequence 3<sup>\*\*</sup>: green/yellow  
 Tone sequence 4<sup>\*\*</sup>: brown  
 Tone sequence 5<sup>\*\*</sup>: brown/green  
 Tone sequence 6<sup>\*\*</sup>: brown/yellow



### Bauteilelayout 6

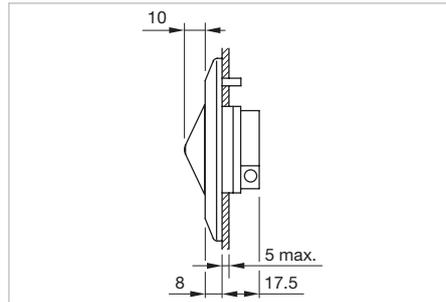
## Flashing warning beacon

### Equipment consisting of



Each part listed below includes all the black components shown in the 3D-drawing.

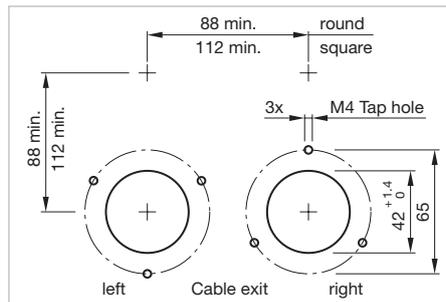
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



The preview is based on a sample product. This can differ from your current configuration.



Mounting cut-outs [mm]

### Additional Information

- Please fill in the form and forward it to your local EAO partner by e-mail or fax. The electronic form is available at [www.eao.com/downloads](http://www.eao.com/downloads)

### Front cap

Plastic colourless raised

### Illumination

LED white

### Supply voltage Illumination

24 VDC

Tolerance  $\pm 30\%$

### Cable exit

Cable exit right

Cable exit left

### Cable length

A = 200 mm

A = 500 mm

A = 1000 mm

A = 1500 mm

\_\_\_\_\_ mm

### Cable and connector type

#### Cable

2 x 0.24 mm<sup>2</sup>

#### Connector

Core end-sleeves

AMP connector Mate-N-Lok (Wiring diagram 2)

DEUTSCH connector (Wiring diagram 2)

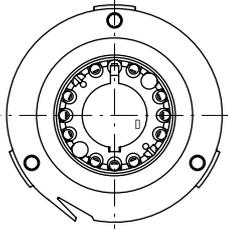
AMP connector 2.8 mm x 0.8 mm (Wiring diagram 1)

AMP connector 6.3 mm x 0.8 mm (Wiring diagram 2)

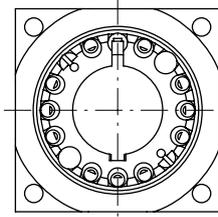
# 56 Front mounting

## Housing

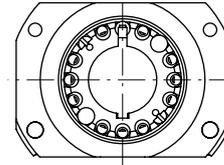
Housing D73 (standard)



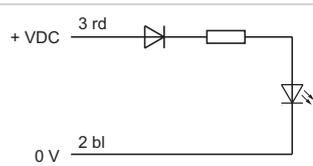
Housing reworked 50 mm x 50 mm



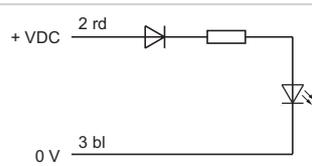
Housing reworked 68.5 mm x 50 mm



## Wiring diagrams



Wiring diagram 1



Wiring diagram 2

## Component layouts



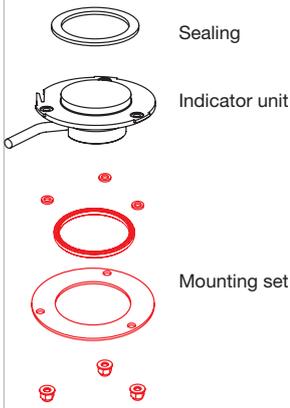
Plug-in terminal  
2.8 mm x 0.8 m

Standard type

Component layout 1

## Single side indicator

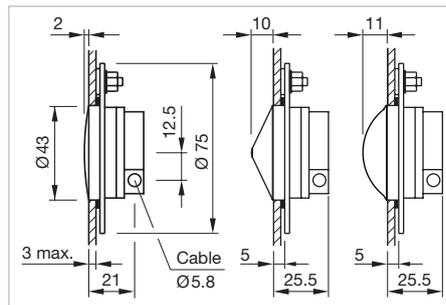
### Equipment consisting of



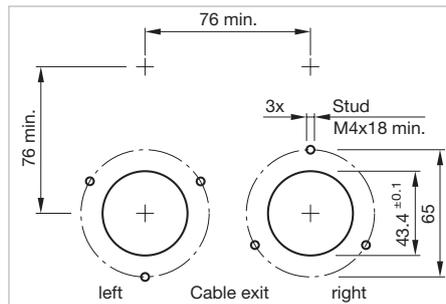
Page 40

Each part listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Mounting cut-outs [mm]



The preview is based on a sample product. This can differ from your current configuration.

### Additional Information

- Please fill in the form and forward it to your local EAO partner by e-mail or fax. The electronic form is available at [www.eao.com/downloads](http://www.eao.com/downloads)

### Front cap

- Plastic smoke black flush       Plastic colourless raised       Plastic colourless half round

### Marking (Text or symbol)

- without marking
- with marking       1 line       2 line       3 line       line

### Symbols

<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							

### Illumination

- LED green       LED red       LED yellow       LED white       LED blue

### Supply voltage

- 24 VDC       110 VDC

Tolerance -30 % ... +25 %

# 56 Rear mounting

## Cable exit

Cable exit right

Cable exit left

## Cable length

A = 200 mm

A = 500 mm

A = 1000 mm

A = 1500 mm

\_\_\_\_\_ mm

## Cable and connector type

### Cable

2x0.24 mm<sup>2</sup>

### Connector

Core end-sleeves

AMP connector Mate-N-Lok (Wiring diagram 2)

DEUTSCH connector (Wiring diagram 2)

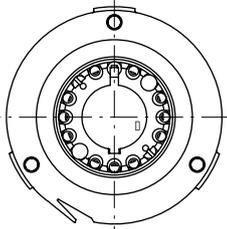
AMP connector 2.8 mm x 0.8 mm (Wiring diagram 1)

AMP connector 6.3 mm x 0.8 mm (Wiring diagram 2)

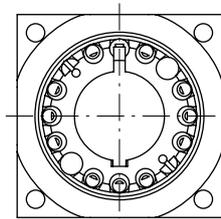
\_\_\_\_\_

## Housing

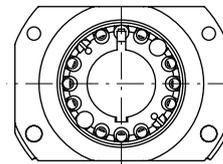
Housing D73 (standard)



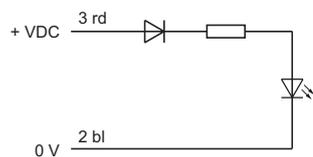
Housing reworked 50 mm x 50 mm



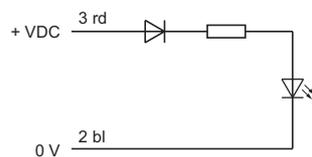
Housing reworked 68,5 mm x 50 mm



## Wiring diagrams

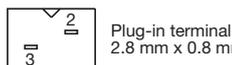


Wiring diagram 1



Wiring diagram 2

## Component layouts



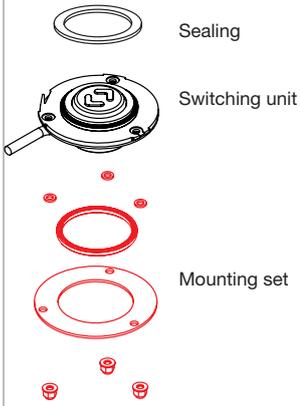
Plug-in terminal  
2.8 mm x 0.8 mm

Standard type

Component layout 1

## Single side pushbutton

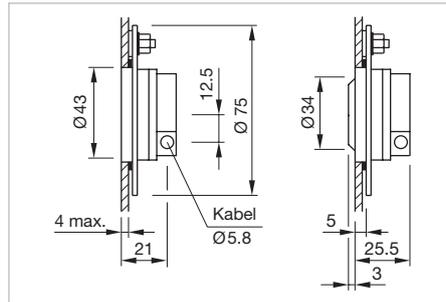
### Equipment consisting of



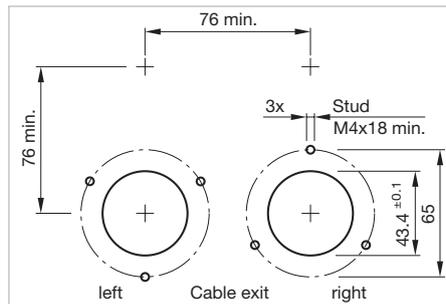
Page 40

Each part listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Mounting cut-outs [mm]



The preview is based on a sample product. This can differ from your current configuration.

### Additional Information

- Please fill in the form and forward it to your local EAO partner by e-mail or fax. The electronic form is available at [www.eao.com/downloads](http://www.eao.com/downloads)

### Lens

<input type="checkbox"/> flush, plastic, colour similar RAL	<input type="checkbox"/> flush, aluminium	<input type="checkbox"/> raised, aluminium
<input type="checkbox"/> green RAL 6024	<input type="checkbox"/> naturel	<input type="checkbox"/> naturel
<input type="checkbox"/> red RAL 3020	<input type="checkbox"/> green	<input type="checkbox"/> green
<input type="checkbox"/> blue RAL 5017	<input type="checkbox"/> red	<input type="checkbox"/> red
<input type="checkbox"/> yellow RAL 1023	<input type="checkbox"/> blue	<input type="checkbox"/> blue
<input type="checkbox"/> grey RAL 7040	<input type="checkbox"/> yellow	<input type="checkbox"/> yellow
		<input type="checkbox"/> black

### Lens marking

without symbol

with symbol aluminium, raised (engraved)

<input type="checkbox"/> Symbol No. 00.835	<input type="checkbox"/> Symbol No. 00.836	<input type="checkbox"/> Symbol No. 00.868	<input type="checkbox"/> Symbol No. 00.869	<input type="checkbox"/> Symbol No. 40089	<input type="checkbox"/> Symbol No. 60523
<input type="checkbox"/> Symbol No. WC	<input type="checkbox"/> Symbol No. 60034	<input type="checkbox"/> Symbol No. 01.590	<input type="checkbox"/> Symbol No. Wasserhahn	<input type="checkbox"/> Symbol No. Behinderten	

with symbol aluminium, flat (engraved/lasered)

with symbol plastic, flat (engraved/lasered)

<input type="checkbox"/> Symbol No. 00.835	<input type="checkbox"/> Symbol No. 00.836	<input type="checkbox"/> Symbol No. 00.868	<input type="checkbox"/> Symbol No. 00.869	<input type="checkbox"/> Symbol No. 40089	<input type="checkbox"/> Symbol No. 60523

Symbol colour

black

white

# 56 Rear mounting

## Illumination

- without illumination
- with illumination
- 8 green
- 8 red
- 8 blue
- 8 yellow
- 8 green/2 red
- 8 red/2 green

## Supply voltage Illumination

- 24 VDC
- 36 VDC
- 48 VDC
- 72 VDC
- 110 VDC

Tolerance -30 % ... +25 %

## Cable exit

- Cable exit right
- Cable exit left

## Cable length

- A = 200 mm
- A = 500 mm
- A = 1000 mm
- A = 1500 mm
- \_\_\_\_\_ mm

## Cable and connector type

### Cable

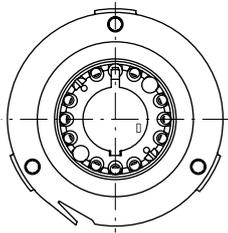
- 2x0.5mm<sup>2</sup> (Wiring diagram 5)
- 4x0.5mm<sup>2</sup> (Wiring diagram 1, 2, 3, 4)

### Connector

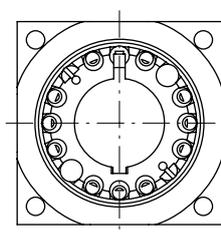
- Core end-sleeves
- AMP connector Mate-N-Lok (Wiring diagram 3, 4)
- DEUTSCH connector (Wiring diagram 3, 4)
- AMP connector 2.8 mm x 0.8 mm (Wiring diagram 1, 2))
- AMP connector 6.3 mm x 0.8 mm (Wiring diagram 3, 4)
- \_\_\_\_\_

## Housing

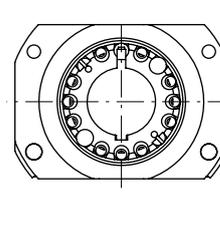
- Housing D73 (standard)



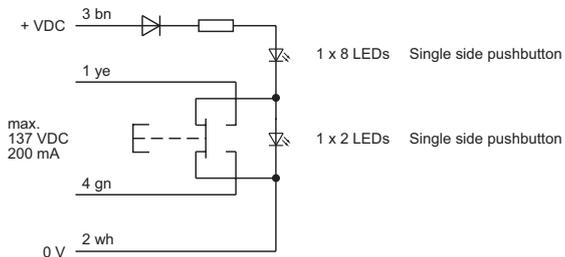
- Housing reworked 50 mm x 50 mm



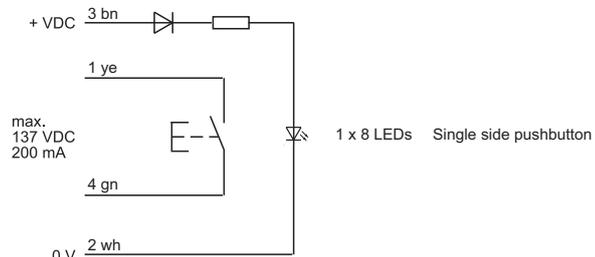
- Housing reworked 68.5 mm x 50 mm



## Wiring diagrams

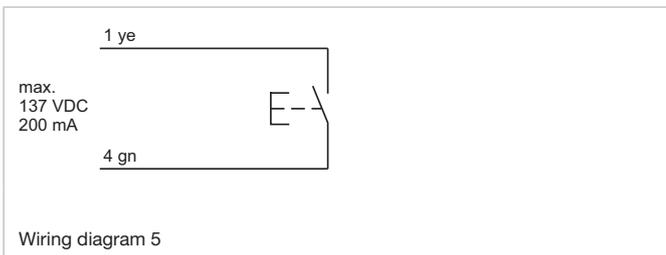
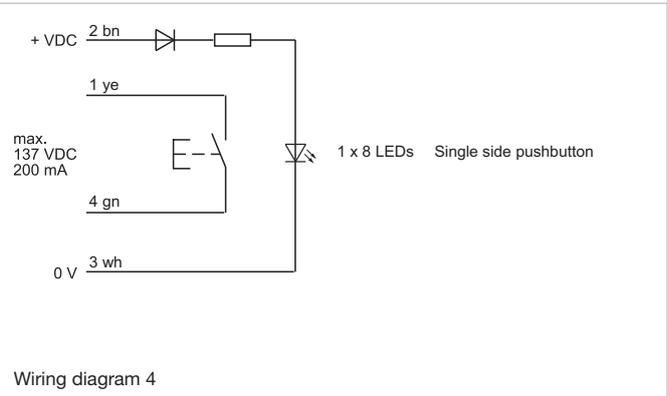
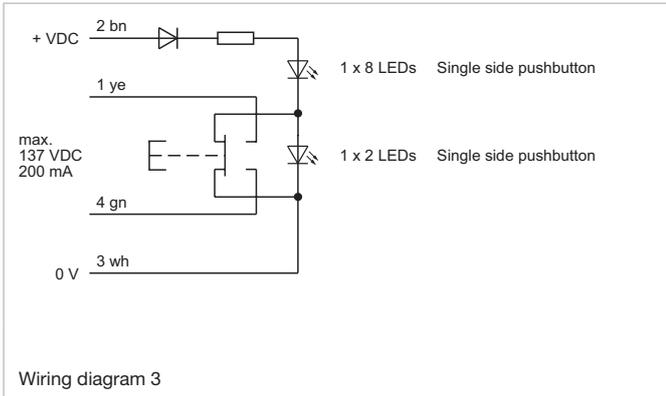


Wiring diagram 1

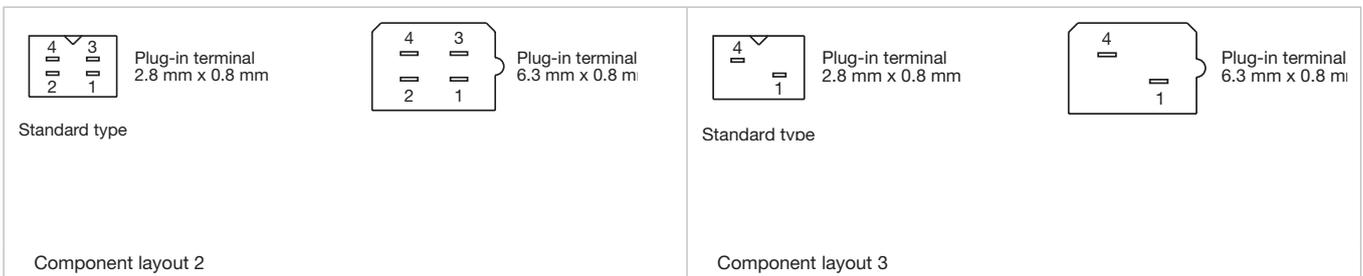


Wiring diagram 2

## Wiring diagrams

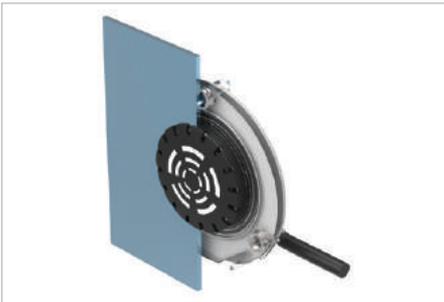


## Component layouts



# 56 Rear mounting

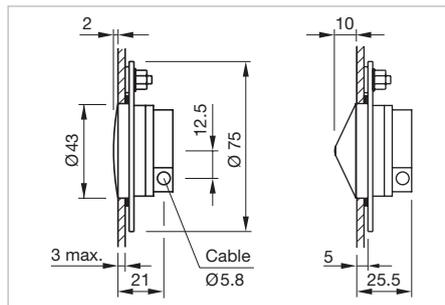
## Multi-Ton Sound Modul



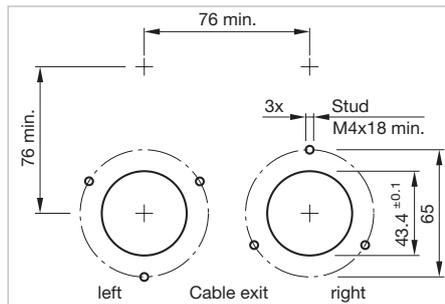
The preview is based on a sample product. This can differ from your current configuration.

### Additional Information

- The descriptions of the standard tone sequences see «Application guidelines»
- After completion of the interior work, we recommend performing acoustic measurements of the sound level inside or outside the car (TSI PRM)
- Please fill in the form and forward it to your local EAO partner by e-mail or fax. The electronic form is available at [www.eao.com/downloads](http://www.eao.com/downloads)

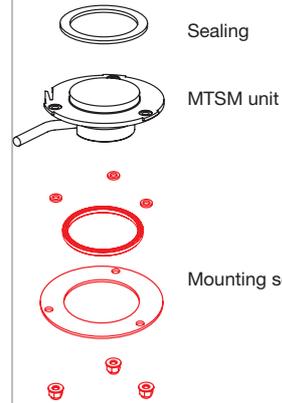


Dimensions [mm]



Mounting cut-outs [mm]

### Equipment consisting of



Page 40

Each part listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the pages shown.

### Front cap

Plastic black flush

Plastic black raised

### Front cap marking

without symbol

with symbol

### Volume adjustment

Manually (3-/5-Tone Sequences Module)

Automatically (6-Tone Sequences Module)

### Tone sequence

3-tone

5-tone

6-tone

### Supply voltage

24 VDC (5-Tone Sequences Module)

16...63 VDC (3-/6-Tone Sequences Module)

50...143 VDC (3-/6-Tone Sequences Module)

Tolerance  $\pm 30\%$

### Cable exit

cable exit right

cable exit left

### Cable length

A = 200 mm

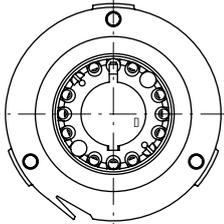
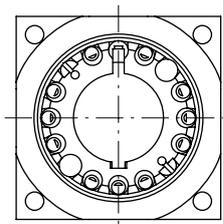
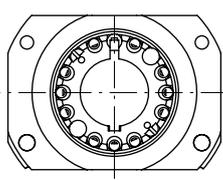
A = 500 mm

A = 1000 mm

A = 1500 mm

\_\_\_\_\_ mm

Cable and connector type	
Cable	Connector
<input type="checkbox"/> 4x0.25 mm <sup>2</sup>	<input type="checkbox"/> Core end-sleeves
<input type="checkbox"/> 4x0.5 mm <sup>2</sup>	<input type="checkbox"/> AMP connector Mate-N-Lok (Wiring diagram 3, 4)
<input type="checkbox"/> 6x0.5 mm <sup>2</sup>	<input type="checkbox"/> DEUTSCH connector (Wiring diagram 3, 4)
	<input type="checkbox"/> AMP connector 2.8 mm x 0.8 mm (Wiring diagram 1, 2))
	<input type="checkbox"/> AMP connector 6.3 mm x 0.8 mm (Wiring diagram 3, 4)
	<input type="checkbox"/> _____

Housing		
<input type="checkbox"/> Housing D73 (standard)	<input type="checkbox"/> Housing reworked 50 mm x 50 mm	<input type="checkbox"/> Housing reworked 68.5 mm x 50 mm
		

## Wiring diagrams

**5-Tone sequence**

Wiring diagram 1

**3-Tone sequence**

Wiring diagram 2

Tone sequence			
Wire	1	2	3
green	VDC	0V	VDC
yellow	0V	VDC	VDC

**Tone sequence, self-adjusting**

Wiring diagram 3

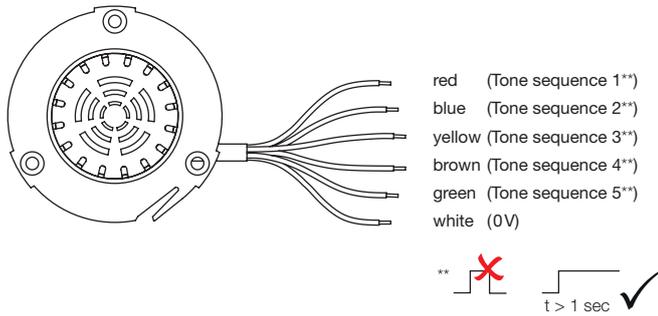
16 ... 63 VDC			
Tone	green	yellow	brown
1	16 – 63 VDC	0V	0V
2	0 V	16 – 63 VDC	0V
3	16 – 63 VDC	16 – 63 VDC	0V
4	0 V	0 V	16 – 63 VDC
5	16 – 63 VDC	0 V	16 – 63 VDC
6	0 V	16 – 63 VDC	16 – 63 VDC

50 ... 143 VDC			
Tone	green	yellow	brown
1	50 – 143 VDC	0V	0V
2	0 V	50 – 143 VDC	0V
3	50 – 143 VDC	50 – 143 VDC	0V
4	0 V	0 V	50 – 143 VDC
5	50 – 143 VDC	0 V	50 – 143 VDC
6	0 V	50 – 143 VDC	50 – 143 VDC

# 56 Rear mounting

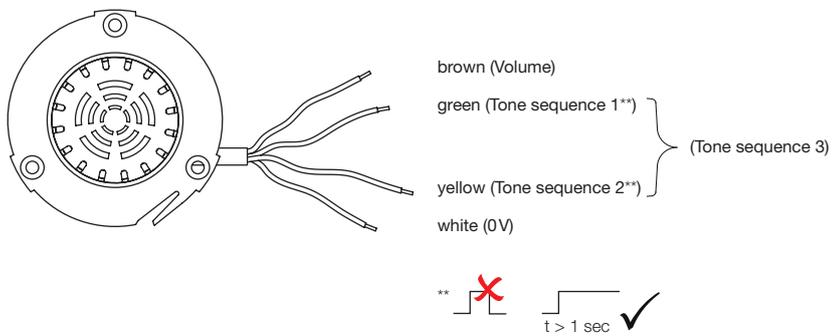
## Component layouts

### 5-Tone sequence



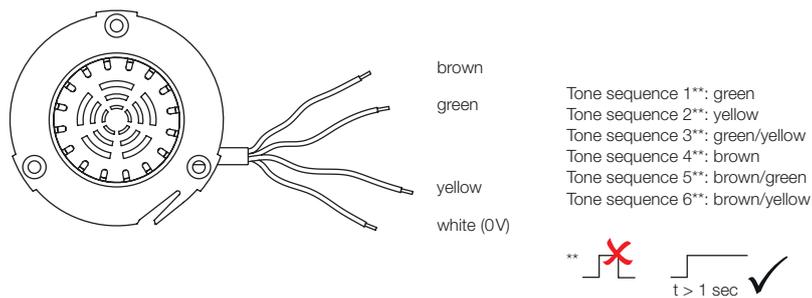
### Bauteilelayout 4

### 3-Tone sequence



### Bauteilelayout 5

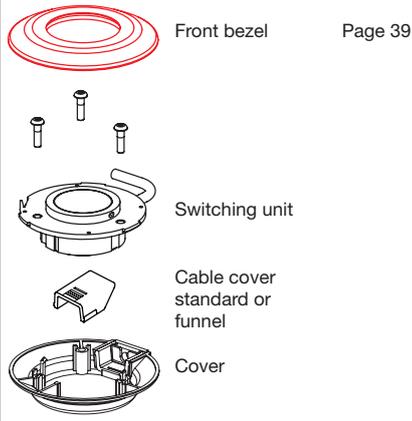
### 6-Tone sequence, self-adjusting



### Bauteilelayout 6

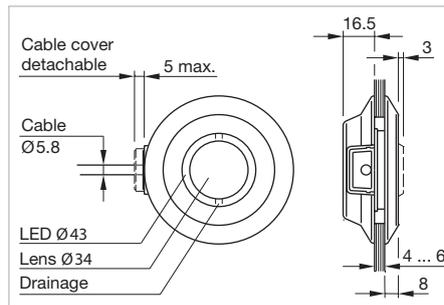
## Single side pushbutton

### Equipment consisting of

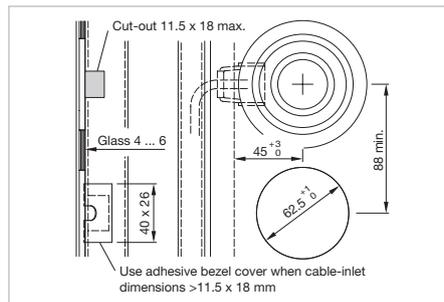


Each part listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Mounting cut-outs [mm]



The preview is based on a sample product. This can differ from your current configuration.

### Additional Information

- Front bezel Ø 87 mm
- Cable exit left
- Housing D73 (standard)
- Other cable cover are available
- Please fill in the form and forward it to your local EAO partner by e-mail or fax. The electronic form is available at [www.eao.com/downloads](http://www.eao.com/downloads)

### Lens

<input type="checkbox"/> flush, plastic, colour similar RAL	<input type="checkbox"/> flush, aluminium	<input type="checkbox"/> raised, aluminium
<input type="checkbox"/> green RAL 6024	<input type="checkbox"/> naturel	<input type="checkbox"/> naturel
<input type="checkbox"/> red RAL 3020	<input type="checkbox"/> green	<input type="checkbox"/> green
<input type="checkbox"/> blue RAL 5017	<input type="checkbox"/> red	<input type="checkbox"/> red
<input type="checkbox"/> yellow RAL 1023	<input type="checkbox"/> blue	<input type="checkbox"/> blue
<input type="checkbox"/> grey RAL 7040	<input type="checkbox"/> yellow	<input type="checkbox"/> yellow
		<input type="checkbox"/> black

### Lens marking

without symbol

<input type="checkbox"/> with symbol aluminium, black anodised, raised (engraved)						
	<input type="checkbox"/> Symbol No. 00.835	<input type="checkbox"/> Symbol No. 00.836	<input type="checkbox"/> Symbol No. 00.868	<input type="checkbox"/> Symbol No. 00.869	<input type="checkbox"/> Symbol No. 40089	<input type="checkbox"/> Symbol No. 60523
	<input type="checkbox"/> Symbol No. WC	<input type="checkbox"/> Symbol No. 60034	<input type="checkbox"/> Symbol No. 01.590	<input type="checkbox"/> Symbol No. Wasserhahn	<input type="checkbox"/> Symbol No. Behinderten	

<input type="checkbox"/> with symbol aluminium, flat (engraved/lasered)						
<input type="checkbox"/> with symbol plastic, flat (engraved/lasered)	<input type="checkbox"/> Symbol No. 00.835	<input type="checkbox"/> Symbol No. 00.836	<input type="checkbox"/> Symbol No. 00.868	<input type="checkbox"/> Symbol No. 00.869	<input type="checkbox"/> Symbol No. 40089	<input type="checkbox"/> Symbol No. 60523

Symbol colour	<input type="checkbox"/> black	<input type="checkbox"/> white
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# 56 Glass mounting

Illumination						
<input type="checkbox"/> without illumination						
<input type="checkbox"/> with illumination	<input type="checkbox"/> 8 green	<input type="checkbox"/> 8 red	<input type="checkbox"/> 8 blue	<input type="checkbox"/> 8 yellow	<input type="checkbox"/> 8 green/2 red	<input type="checkbox"/> 8 red/2 green

Supply voltage Illumination				
<input type="checkbox"/> 24 VDC	<input type="checkbox"/> 36 VDC	<input type="checkbox"/> 48 VDC	<input type="checkbox"/> 72 VDC	<input type="checkbox"/> 110 VDC

Tolerance -30 % ... +25 %

Cable length				
<input type="checkbox"/> A = 200 mm	<input type="checkbox"/> A = 500 mm	<input type="checkbox"/> A = 1000 mm	<input type="checkbox"/> A = 1500 mm	<input type="checkbox"/> _____ mm

Cable and connector type	
Cable	Connector
<input type="checkbox"/> 2x0.5mm <sup>2</sup> (Wiring diagram 5)	<input type="checkbox"/> Core end-sleeves
<input type="checkbox"/> 4x0.5mm <sup>2</sup> (Wiring diagram 1, 2, 3, 4)	<input type="checkbox"/> AMP connector Mate-N-Lok (Wiring diagram 3, 4)
	<input type="checkbox"/> DEUTSCH connector (Wiring diagram 3, 4)
	<input type="checkbox"/> AMP connector 2.8 mm x 0.8 mm (Wiring diagram 1, 2))
	<input type="checkbox"/> AMP connector 6.3 mm x 0.8 mm (Wiring diagram 3, 4)
	<input type="checkbox"/> _____



**Cable cover standard**

Product attribute	Cable cover	Part No.
<input type="checkbox"/> Included in standard delivery	standard 0°	56-992

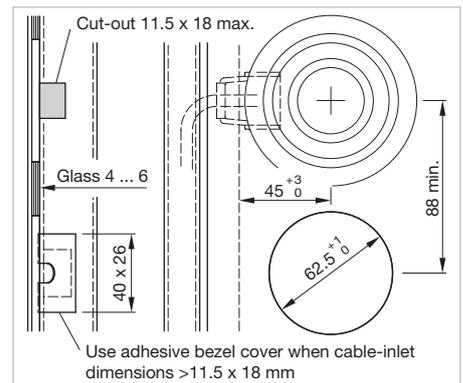


**Cable cover standard**

<input type="checkbox"/> Specify Part No. in purchase order	standard 45°	56-992A
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## Additional Information

- Additional cable covers are available on request.



Mounting cut-outs [mm]

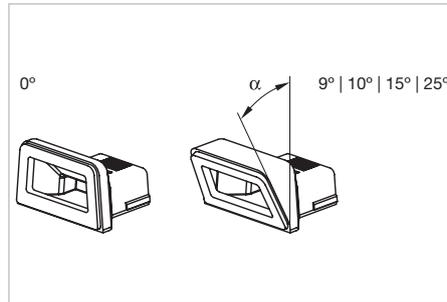


## Cable cover funnel

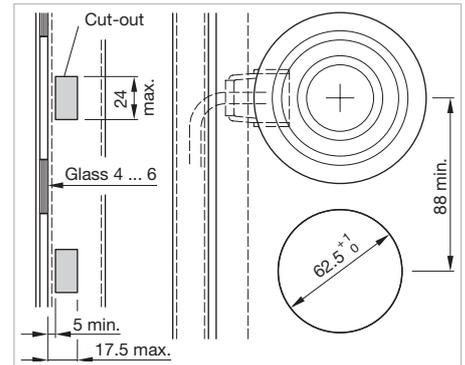
Cable cover	Part No.
<input type="checkbox"/> Funnel 0°	56-992B
<input type="checkbox"/> Funnel 10°	56-992C
<input type="checkbox"/> Funnel 15°	56-992D
<input type="checkbox"/> Funnel 25°	56-992E
<input type="checkbox"/> Funnel 9°	56-992F

### Additional Information

- Specify Part No. in purchase order
- **Caution:** Funnel shaped cable cover Part No. 56-992B, C, D, E, F are not replacable after first mounting

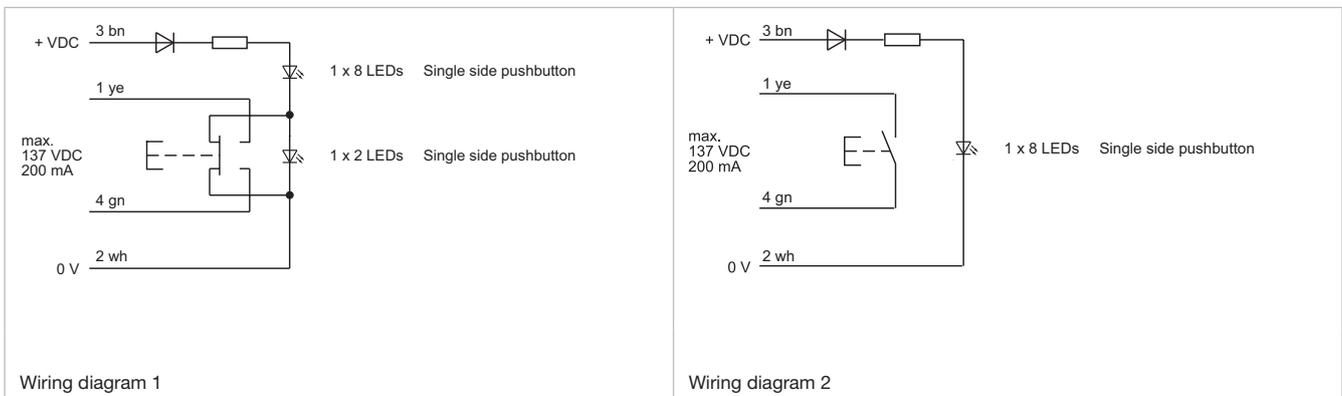


Dimensions [mm]



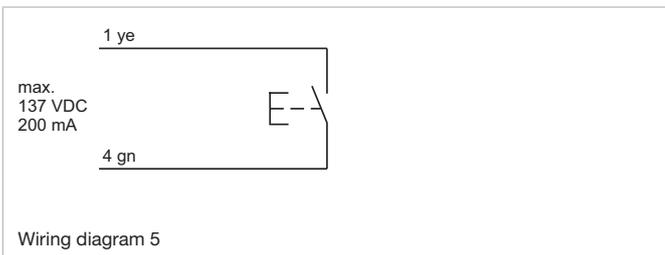
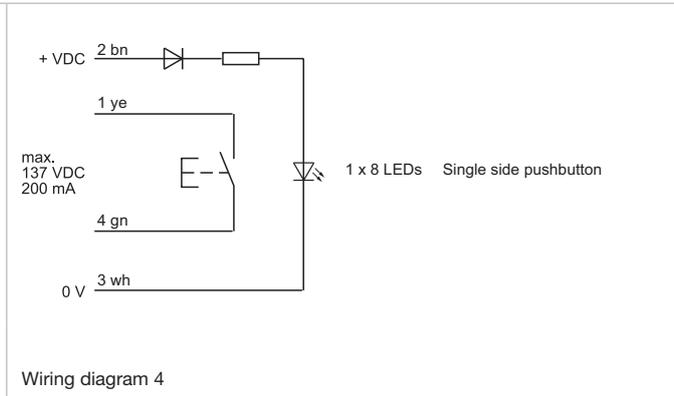
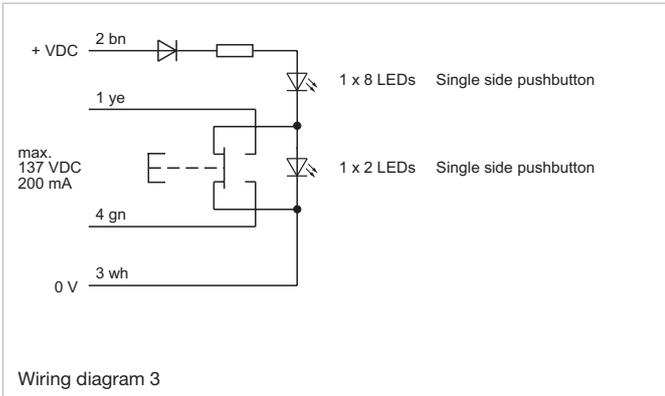
Mounting cut-outs [mm]

## Wiring diagrams

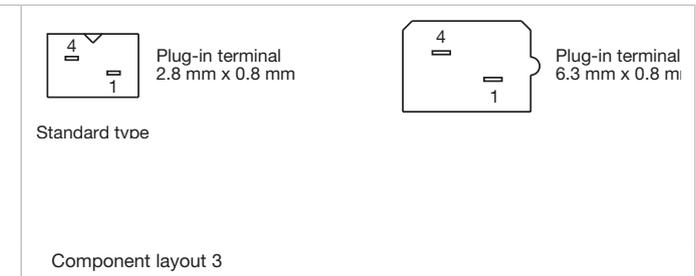
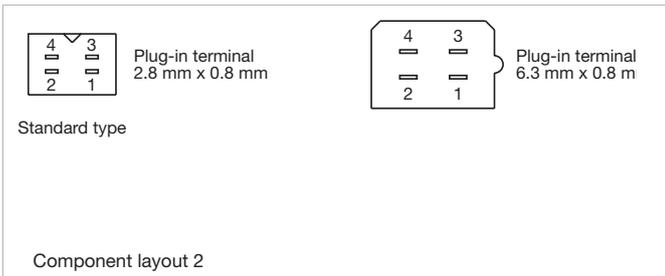


# 56 Glass mounting

## Wiring diagrams

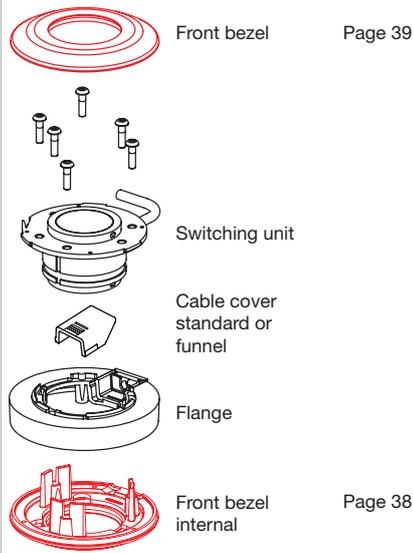


## Component layouts



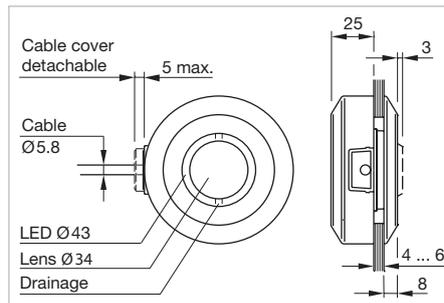
## Double side pushbutton

### Equipment consisting of

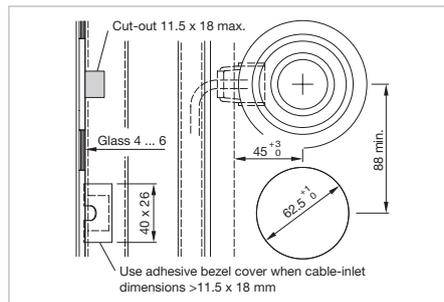


Each part listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Mounting cut-outs [mm]



The preview is based on a sample product. This can differ from your current configuration.

### Additional Information

- Front bezel Ø 87 mm
- Cable exit left
- Housing D73 (standard)
- Please fill in the form and forward it to your local EAO partner by e-mail or fax. The electronic form is available at [www.eao.com/downloads](http://www.eao.com/downloads)

Lens		
<input type="checkbox"/> flush, plastic, colour similar RAL	<input type="checkbox"/> flush, aluminium	<input type="checkbox"/> raised, aluminium
<input type="checkbox"/> green RAL 6024	<input type="checkbox"/> naturel	<input type="checkbox"/> naturel
<input type="checkbox"/> red RAL 3020	<input type="checkbox"/> green	<input type="checkbox"/> green
<input type="checkbox"/> blue RAL 5017	<input type="checkbox"/> red	<input type="checkbox"/> red
<input type="checkbox"/> yellow RAL 1023	<input type="checkbox"/> blue	<input type="checkbox"/> blue
<input type="checkbox"/> grey RAL 7040	<input type="checkbox"/> yellow	<input type="checkbox"/> yellow
		<input type="checkbox"/> black

Lens marking						
<input type="checkbox"/> without symbol						
<input type="checkbox"/> with symbol aluminium, black anodised, raised (engraved)						
	<input type="checkbox"/> Symbol No. 00.835	<input type="checkbox"/> Symbol No. 00.836	<input type="checkbox"/> Symbol No. 00.868	<input type="checkbox"/> Symbol No. 00.869	<input type="checkbox"/> Symbol No. 40089	<input type="checkbox"/> Symbol No. 60523
<input type="checkbox"/> Symbol No. WC	<input type="checkbox"/> Symbol No. 60034	<input type="checkbox"/> Symbol No. 01.590	<input type="checkbox"/> Symbol No. Wasserhahn	<input type="checkbox"/> Symbol No. Behinderten		
<input type="checkbox"/> with symbol aluminium, flat (engraved/lasered)						
<input type="checkbox"/> with symbol plastic, flat (engraved/lasered)	<input type="checkbox"/> Symbol No. 00.835	<input type="checkbox"/> Symbol No. 00.836	<input type="checkbox"/> Symbol No. 00.868	<input type="checkbox"/> Symbol No. 00.869	<input type="checkbox"/> Symbol No. 40089	<input type="checkbox"/> Symbol No. 60523
Symbol colour	<input type="checkbox"/> Black			<input type="checkbox"/> white		

# 56 Glass mounting

Illumination						
<input type="checkbox"/> without illumination						
<input type="checkbox"/> with illumination	<input type="checkbox"/> 8 green	<input type="checkbox"/> 8 red	<input type="checkbox"/> 8 blue	<input type="checkbox"/> 8 yellow	<input type="checkbox"/> 8 green/2 red	<input type="checkbox"/> 8 red/2 green

Supply voltage illumination				
<input type="checkbox"/> 24 VDC	<input type="checkbox"/> 36 VDC	<input type="checkbox"/> 48 VDC	<input type="checkbox"/> 72 VDC	<input type="checkbox"/> 110 VDC

Tolerance -30 % ... +25 %

Cable length				
<input type="checkbox"/> A = 200 mm	<input type="checkbox"/> A = 500 mm	<input type="checkbox"/> A = 1000 mm	<input type="checkbox"/> A = 1500 mm	<input type="checkbox"/> _____ mm

Cable and connector type	
Cable	Connector
<input type="checkbox"/> 2x0.5mm <sup>2</sup> (Wiring diagram 5)	<input type="checkbox"/> Core end-sleeves
<input type="checkbox"/> 4x0.5mm <sup>2</sup> (Wiring diagram 1, 2, 3, 4)	<input type="checkbox"/> AMP connector Mate-N-Lok (Wiring diagram 3, 4)
	<input type="checkbox"/> DEUTSCH connector (Wiring diagram 3, 4)
	<input type="checkbox"/> AMP connector 2.8 mm x 0.8 mm (Wiring diagram 1, 2))
	<input type="checkbox"/> AMP connector 6.3 mm x 0.8 mm (Wiring diagram 3, 4)
	<input type="checkbox"/> _____



## Cable cover standard

Product attribute	Cable cover	Part No.
<input type="checkbox"/> Included in standard delivery	standard 0°	56-992

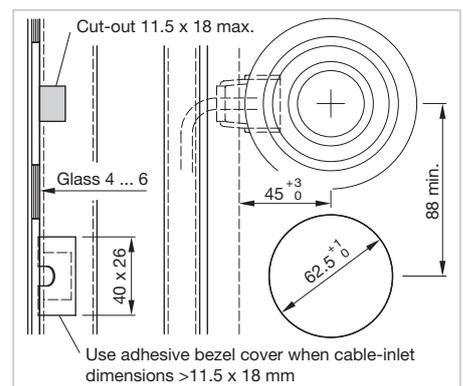


## Cable cover standard

<input type="checkbox"/> Specify Part No. in purchase order	standard 45°	56-992A
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### Additional Information

- Additional cable covers are available on request.



Mounting cut-outs [mm]

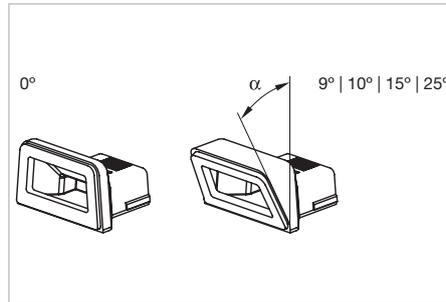


## Cable cover funnel

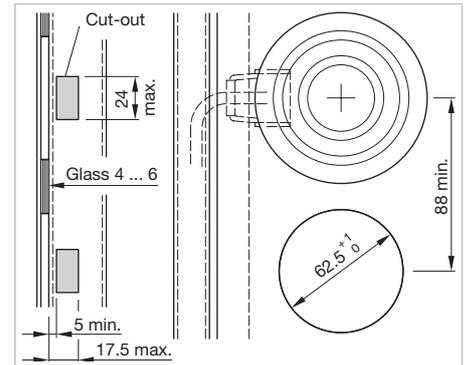
Cable cover	Part No.
<input type="checkbox"/> Funnel 0°	56-992B
<input type="checkbox"/> Funnel 10°	56-992C
<input type="checkbox"/> Funnel 15°	56-992D
<input type="checkbox"/> Funnel 25°	56-992E
<input type="checkbox"/> Funnel 9°	56-992F

### Additional Information

- Specify Part No. in purchase order
- **Caution:** Funnel shaped cable cover Part No. 56-992B, C, D, E, F are not replacable after first mounting

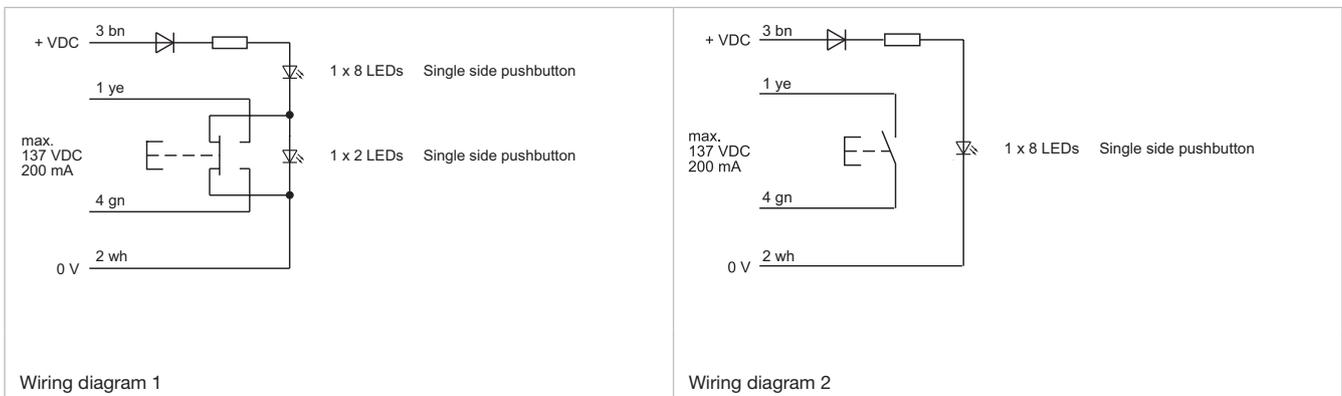


Dimensions [mm]



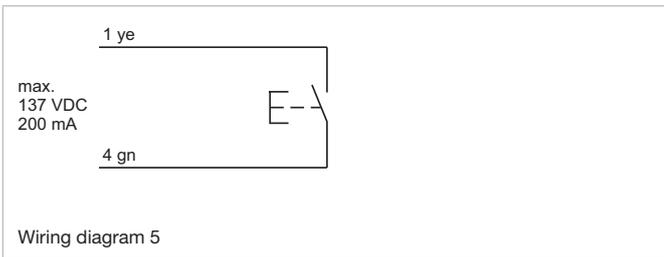
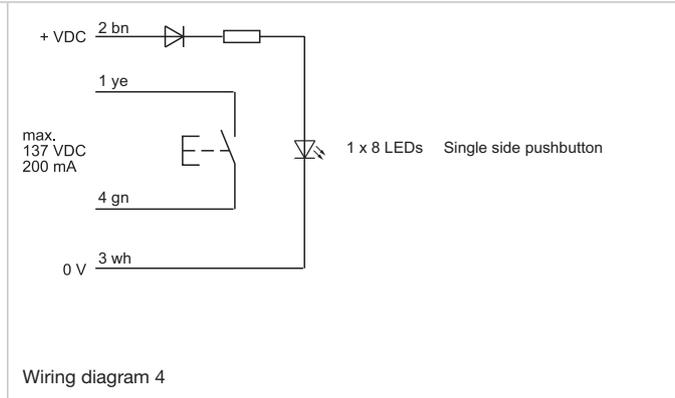
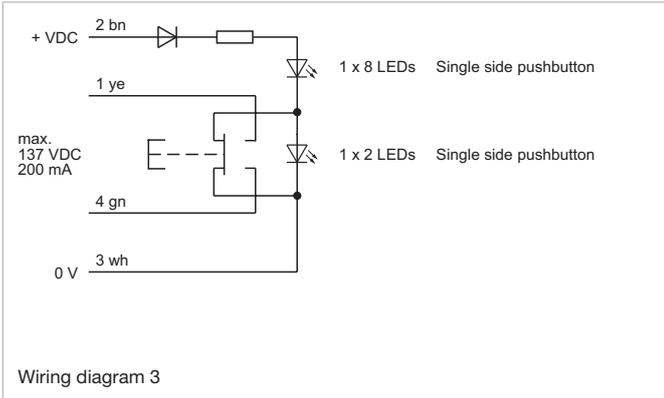
Mounting cut-outs [mm]

## Wiring diagrams

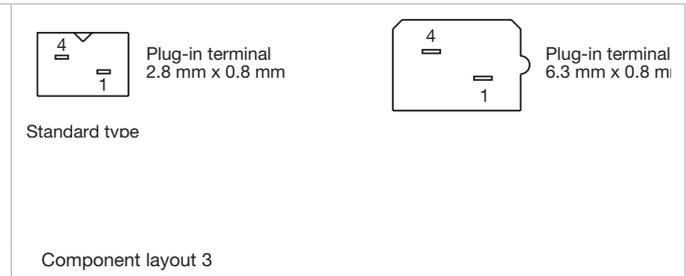
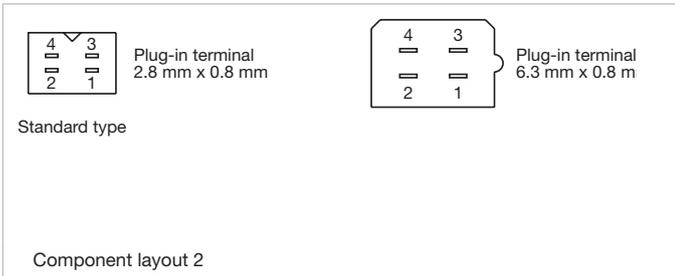


# 56 Glass mounting

## Wiring diagrams

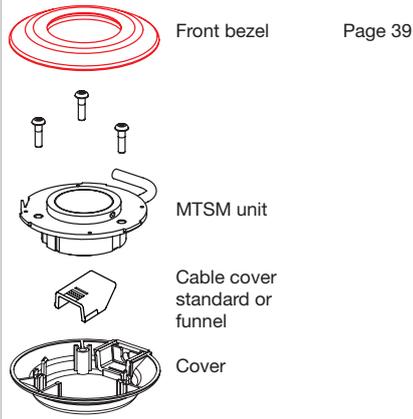


## Component layouts



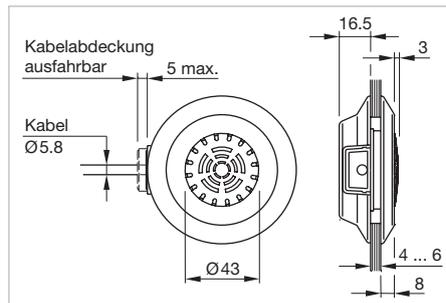
## Multi-Ton Sound Modul

### Equipment consisting of

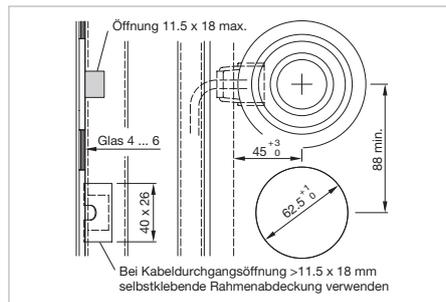


Each part listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Mounting cut-outs [mm]



The preview is based on a sample product. This can differ from your current configuration.

### Additional Information

- Front bezel Ø 87 mm
- Cable exit left
- Housing D73 (standard)
- Die Beschreibung der Standard-Töne finden Sie in den «Anwendungsrichtlinien»
- After completion of the interior work, we recommend performing acoustic measurements of the sound level inside or outside the car (TSI PRM)
- Please fill in the form and forward it to your local EAO partner by e-mail or fax. The electronic form is available at [www.eao.com/downloads](http://www.eao.com/downloads)

### Front cap

- Plastic black flush  Plastic black raised

### Front cap marking

- without symbol  with symbol

### Volume adjustment

- Manually (3-/5-Tone Sequences Module)  Automatically (6-Tone Sequences Module)

### Tone sequence

- 3-tone  5-tone  6-tone

### Supply voltage

- 24 VDC (5-Tone Sequences Module)  16 ... 63 VDC (3-/6-Tone Sequences Module)  50 ... 143 VDC (3-/6-Tone Sequences Module)

Tolerance ±30 %

### Cable exit

- cable exit right  cable exit left

### Cable length

- A = 200 mm  A = 500 mm  A = 1000 mm  A = 1500 mm  \_\_\_\_\_ mm

### Cable and connector type

Cable	Connector
<input type="checkbox"/> 4 x 0.5 mm <sup>2</sup>	<input type="checkbox"/> Core end-sleeves
	<input type="checkbox"/> AMP connector Mate-N-Lok
	<input type="checkbox"/> DEUTSCH connector
	<input type="checkbox"/> AMP connector 2.8 mm x 0.8 mm
	<input type="checkbox"/> AMP connector 6.3 mm x 0.8 mm
	<input type="checkbox"/> _____

# 56 Glass mounting



## Cable cover standard

Product attribute	Cable cover	Part No.
<input type="checkbox"/> Included in standard delivery	standard 0°	56-992

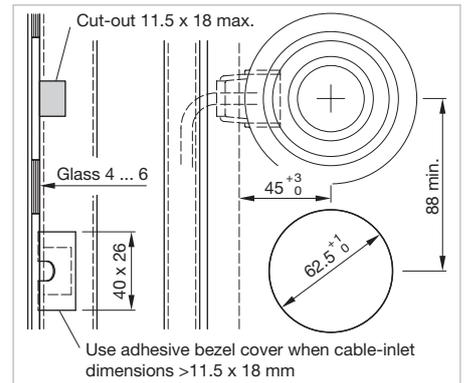


## Cable cover standard

<input type="checkbox"/> Specify Part No. in purchase order	standard 45°	56-992A
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### Additional Information

- Additional cable covers are available on request.



Mounting cut-outs [mm]

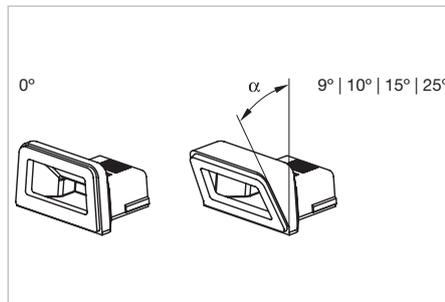


## Cable cover funnel

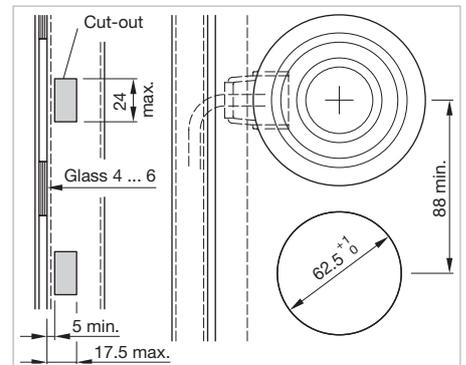
Cable cover	Part No.
<input type="checkbox"/> Funnel 0°	56-992B
<input type="checkbox"/> Funnel 10°	56-992C
<input type="checkbox"/> Funnel 15°	56-992D
<input type="checkbox"/> Funnel 25°	56-992E
<input type="checkbox"/> Funnel 9°	56-992F

### Additional Information

- Specify Part No. in purchase order
- **Caution:** Funnel shaped cable cover Part No. 56-992B, C, D, E, F are not replacable after first mounting



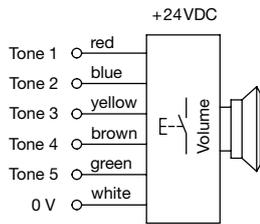
Dimensions [mm]



Mounting cut-outs [mm]

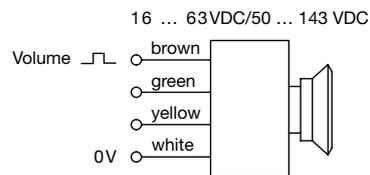
## Wiring diagrams

5-Tone sequence



Wiring diagram 1

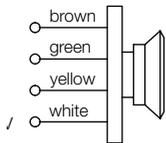
3-Tone sequence



Wiring diagram 2

Wire	Tone sequence		
	1	2	3
green	VDC	0V	VDC
yellow	0V	VDC	VDC

Tone sequence, self-adjusting



16 ... 63 VDC			
Tone	green	yellow	brown
1	16 – 63 VDC	0V	0V
2	0V	16 – 63 VDC	0V
3	16 – 63 VDC	16 – 63 VDC	0V
4	0V	0V	16 – 63 VDC
5	16 – 63 VDC	0V	16 – 63 VDC
6	0V	16 – 63 VDC	16 – 63 VDC

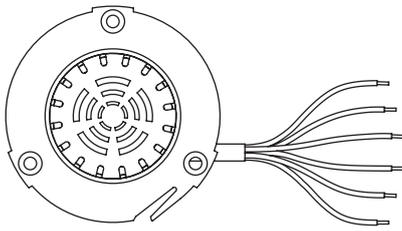
50 ... 143 VDC			
Tone	green	yellow	brown
1	50 – 143 VDC	0V	0V
2	0V	50 – 143 VDC	0V
3	50 – 143 VDC	50 – 143 VDC	0V
4	0V	0V	50 – 143 VDC
5	50 – 143 VDC	0V	50 – 143 VDC
6	0V	50 – 143 VDC	50 – 143 VDC

Wiring diagram 3

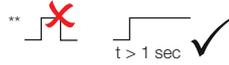
# 56 Glass mounting

## Component layouts

### 5-Tone sequence

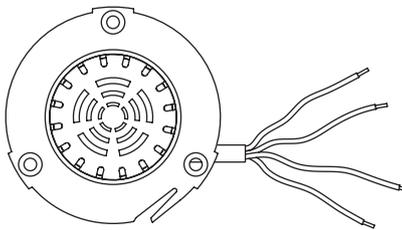


red (Tone sequence 1<sup>\*\*</sup>)  
 blue (Tone sequence 2<sup>\*\*</sup>)  
 yellow (Tone sequence 3<sup>\*\*</sup>)  
 brown (Tone sequence 4<sup>\*\*</sup>)  
 green (Tone sequence 5<sup>\*\*</sup>)  
 white (0V)



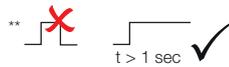
### Bauteilelayout 4

### 3-Tone sequence



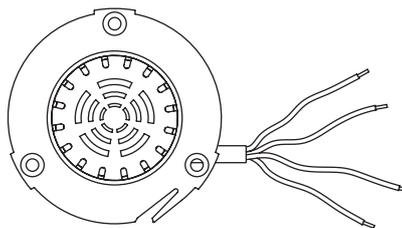
brown (Volume)  
 green (Tone sequence 1<sup>\*\*</sup>)  
 yellow (Tone sequence 2<sup>\*\*</sup>)  
 white (0V)

} (Tone sequence 3)



### Bauteilelayout 5

### 6-Tone sequence, self-adjusting



brown  
 green  
 yellow  
 white (0V)

Tone sequence 1<sup>\*\*</sup>: green  
 Tone sequence 2<sup>\*\*</sup>: yellow  
 Tone sequence 3<sup>\*\*</sup>: green/yellow  
 Tone sequence 4<sup>\*\*</sup>: brown  
 Tone sequence 5<sup>\*\*</sup>: brown/green  
 Tone sequence 6<sup>\*\*</sup>: brown/yellow



### Bauteilelayout 6



Front bezel, Front dimension 87 x 87 mm

Product attribute	Colour similar RAL	Front bezel colour	Front bezel material	Part No.
For single side indicator and single side pushbutton, front mounting	RAL 3020	Red	Plastic	56-2200
	RAL 1023	Yellow	Plastic	56-2400
	RAL 6024	Green	Plastic	56-2500
	RAL 5017	Blue	Plastic	56-2600
	-	Chrome	Metal matt	56-4600

#### Additional Information

- Special colours for front bezel on request



Front bezel, Front dimension Ø 87 mm

Product attribute	Colour similar RAL	Front bezel colour	Front bezel material	Part No.
For single side indicator and single side pushbutton; double side pushbutton external	RAL 9017	Black	Plastic	56-1000
	RAL 3020	Red	Plastic	56-1200
	RAL 1023	Yellow	Plastic	56-1400
	RAL 6024	Green	Plastic	56-1500
	RAL 5017	Blue	Plastic	56-1600
	RAL 7043	Dark grey	Plastic	56-1800
	RAL 7040	Light grey	Plastic	56-1800A
	-	Chrome	Metal matt	56-3600

#### Additional Information

- Special colours for front bezel on request



Front bezel raised, Front dimension Ø 87 mm

Product attribute	Colour similar RAL	Front bezel colour	Front bezel material	Part No.
For single side pushbutton, front mounting, height 13 mm	RAL 1023	Yellow	Plastic	56-1400.2714
	RAL 7040	Light grey	Plastic	56-1800.2715
	RAL 3020	Red	Plastic	56-1200.2713

#### Additional Information

- Special colours for front bezel on request

# 56 Components



Front bezel internal

Dimension	Colour similar RAL	Front bezel colour	Front bezel material	Part No.
Ø 87 mm	RAL 3020	Red	Plastic	56-5200
	RAL 1023	Yellow	Plastic	56-5400
	RAL 6024	Green	Plastic	56-5500
	RAL 5017	Blue	Plastic	56-5600
	RAL 7043	Dark grey	Plastic	56-5800
	RAL 7040	Light grey	Plastic	56-5800A
	-	Chrome	Metal matt	56-7600

#### Additional Information

- For double side pushbutton



Front bezel for blind and visually impaired persons round, Front dimension Ø 87 mm

Marking	Colour similar RAL	Front bezel Colour	Front bezel Material	Part No.
Braille + Open	RAL 3020	Red	Plastic	56-1291
	RAL 2003	Orange	Plastic	56-1391
Braille + Close	RAL 2003	Orange	Plastic	56-1392
Braille + Open	RAL 1023	Yellow	Plastic	56-1491
Braille + Close	RAL 1023	Yellow	Plastic	56-1492
Braille + Open	RAL 5017	Blue	Plastic	56-1691

#### Additional Information

- For single side pushbutton, double side pushbutton external
- Special colours for front bezel on request



Front bezel for blind and visually impaired persons triangular, Front dimension 106 x 101 mm

Marking	Colour similar RAL	Front bezel Colour	Front bezel Material	Part No.
Braille + SOS	RAL 1023	Yellow	Plastic	56-8000.A
	RAL 1028	Melone yellow	Plastic	56-8000.1A
	RAL 3020	Red	Plastic	56-8000.3A
	RAL 6024	Green	Plastic	56-8000.5A

#### Additional Information

- For single side pushbutton
- SOS character height 15 mm, black printed according TSI PRM and braille SOS as per DIN 32976
- Special colours for front bezel on request



Front bezel triangular, Front dimension 106 x 101 mm

Colour similar RAL	Front bezel colour	Material	Part No.
RAL 1023	Yellow	Plastic	56-8400
RAL 1028	Melone yellow	Plastic	56-8700
RAL 3020	Red	Plastic	56-8200
RAL 6024	Green	Plastic	56-8500

**Additional Information**

- For single side pushbutton
- Special colours for front bezel on request



Cable cover standard

Product attribute	Cablecover	Part No.
<input type="checkbox"/> Included in standard delivery	standard 0°	56-992

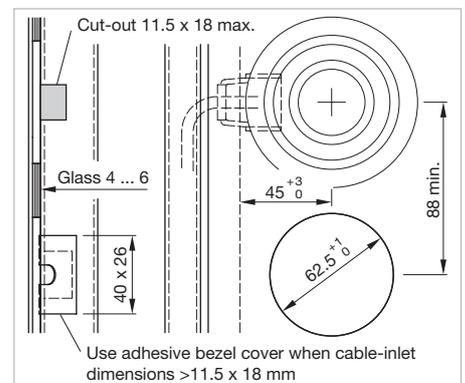


Cable cover standard

<input type="checkbox"/> Specify Part No. in purchase order	standard 45°	56-992A
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**Additional Information**

- Additional cable covers are available on request



Mounting cut-outs [mm]

# 56 Components

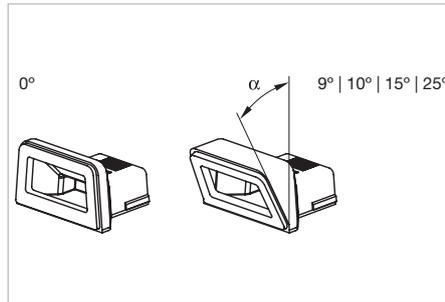


## Cable cover funnel

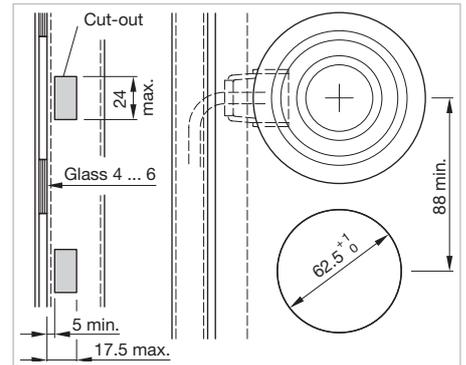
Cable cover	Part No.
<input type="checkbox"/> Funnel 0°	56-992B
<input type="checkbox"/> Funnel 10°	56-992C
<input type="checkbox"/> Funnel 15°	56-992D
<input type="checkbox"/> Funnel 25°	56-992E
<input type="checkbox"/> Funnel 9°	56-992F

### Additional Information

- Specify Part No. in purchase order
- **Caution:** Funnel shaped cable cover Part No. 56-992B, C, D, E, F are not replacable after first mounting



Dimensions [mm]



Mounting cut-outs [mm]



## Mounting set for rear mounting

Product attribute	Part No.
For front panel thickness 2 mm	56-991
For front panel thickness 3 mm	56-991D



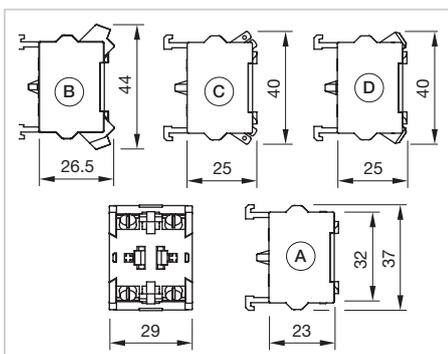
## Snap-action switching element with push-in terminal

Switching voltage	Switching current	Contacts	Contact material	Part No.	Wiring diagram
250 V	6 A	1 NO	Gold-plated silver	704.907.1	376
	6 A	1 NC	Gold-plated silver	704.907.2	377
	6 A	2 NO	Gold-plated silver	704.907.3	378
	6 A	2 NC	Gold-plated silver	704.907.4	379
	6 A	1 NC / 1 NO	Gold-plated silver	704.907.5	380
	6 A	1 NO	Silver	704.908.1	376
	6 A	1 NC	Silver	704.908.2	377
	6 A	2 NO	Silver	704.908.3	378
	6 A	2 NC	Silver	704.908.4	379
	6 A	1 NC / 1 NO	Silver	704.908.5	380

Contacts: NC = Normally closed, NO = Normally open

### Additional information

- For the third switching element the terminal marking insert is to be ordered separately
- The switching element is used for the lever switch



Dimensions [mm]

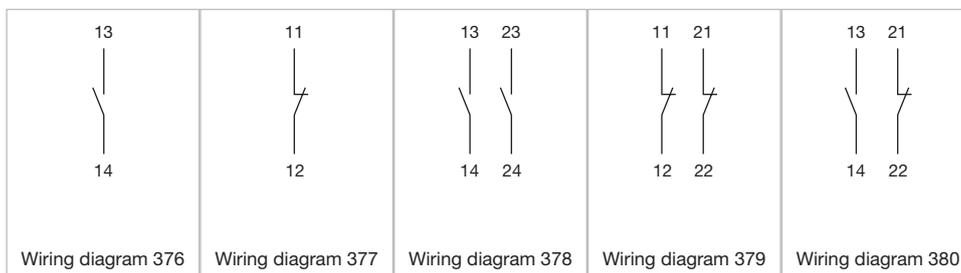
A = Screw terminal

B = Push-in terminal (PIT)

C = Plug-in terminal 6.3 mm x 0.8 mm

D = Double plug-in terminal 6.3 mm x 0.8 mm

### Wiring diagrams



# 56 Components



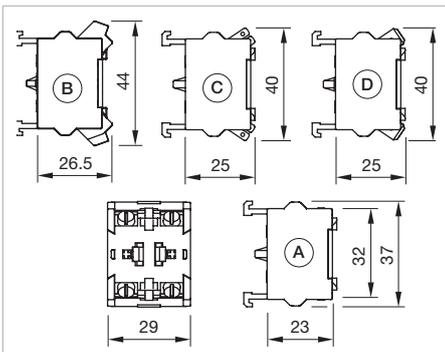
## Slow-make switching element with push-in terminal

Switching voltage	Switching current	Contacts	Contact material	Part No.	Wiring diagram
250 V	6 A	1 NO	Gold-plated silver	704.917.1	376
	6 A	1 NC	Gold-plated silver	704.917.2	377
	6 A	2 NO	Gold-plated silver	704.917.3	378
	6 A	2 NC	Gold-plated silver	704.917.4	379
	6 A	1 NC / 1 NO	Gold-plated silver	704.917.5	380
	6 A	1 NO	Silver	704.918.1	376
	6 A	1 NC	Silver	704.918.2	377
	6 A	2 NO	Silver	704.918.3	378
	6 A	2 NC	Silver	704.918.4	379
	6 A	1 NC / 1 NO	Silver	704.918.5	380

Contacts: NC = Normally closed, NO = Normally open

### Additional information

- For the third switching element the terminal marking insert is to be ordered separately
- The switching element is used for the lever switch



Dimensions [mm]

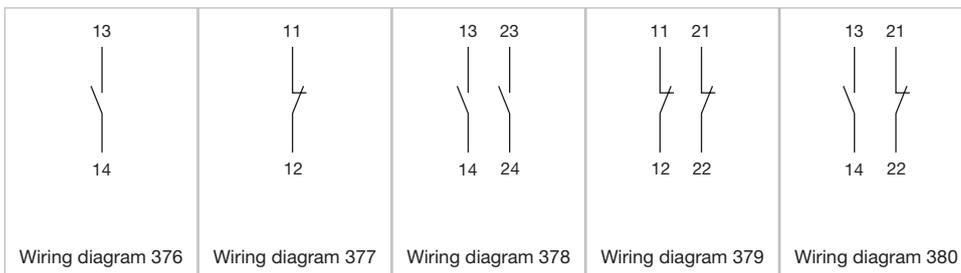
A = Screw terminal

B = Push-in terminal (PIT)

C = Plug-in terminal 6.3 mm x 0.8 mm

D = Double plug-in terminal 6.3 mm x 0.8 mm

## Wiring diagrams





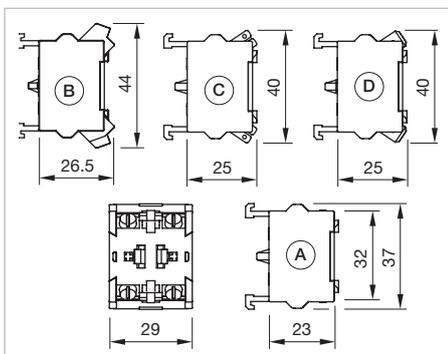
## Snap-action switching element with plug-in terminal

Switching voltage	Switching current	Contacts	Contact material	Part No.	Wiring diagram
500 V	6 A	1 NO	Silver	704.905.1	376
	6 A	1 NC	Silver	704.905.2	377
	6 A	2 NO	Silver	704.905.3	378
	6 A	2 NC	Silver	704.905.4	379
	6 A	1 NC / 1 NO	Silver	704.905.5	380

Contacts: NC = Normally closed, NO = Normally open

### Additional information

- For the third switching element the terminal marking insert is to be ordered separately
- The switching element is used for the lever switch



Dimensions [mm]

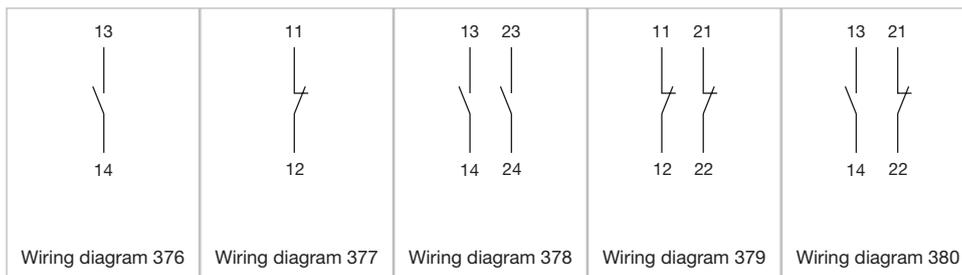
A = Screw terminal

B = Push-in terminal (PIT)

C = Plug-in terminal 6.3 mm x 0.8 mm

D = Double plug-in terminal 6.3 mm x 0.8 mm

### Wiring diagrams



# 56 Components



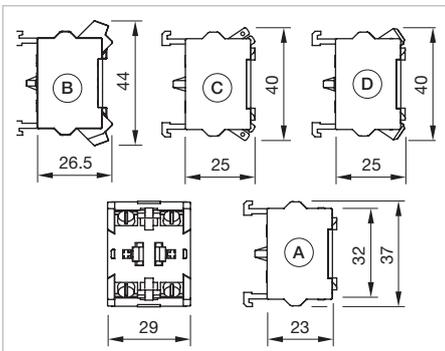
## Slow-make switching element with plug-in terminal

Switching voltage	Switching current	Contacts	Contact material	Part No.	Wiring diagram
500 V	6 A	1 NO	Silver	704.915.1	376
	6 A	1 NC	Silver	704.915.2	377
	6 A	2 NO	Silver	704.915.3	378
	6 A	2 NC	Silver	704.915.4	379
	6 A	1 NC / 1 NO	Silver	704.915.5	380

Contacts: NC = Normally closed, NO = Normally open

### Additional information

- For the third switching element the terminal marking insert is to be ordered separately
- The switching element is used for the lever switch



Dimensions [mm]

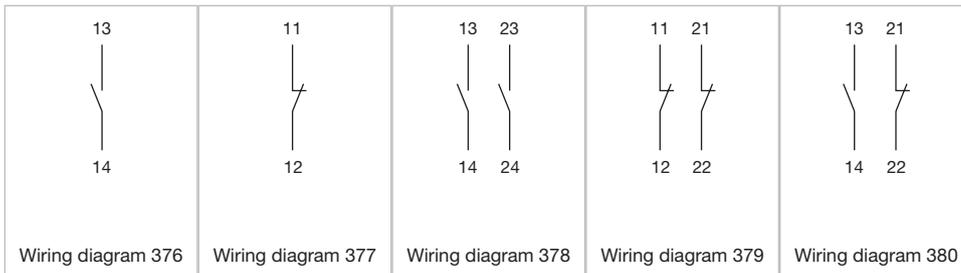
A = Screw terminal

B = Push-in terminal (PIT)

C = Plug-in terminal 6.3 mm x 0.8 mm

D = Double plug-in terminal 6.3 mm x 0.8 mm

## Wiring diagrams





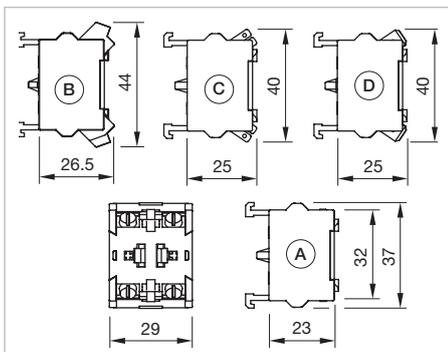
## Snap-action switching element with double plug-in terminal

Switching voltage	Switching current	Contacts	Contact material	Part No.	Wiring diagram
500 V	6 A	1 NO	Gold-plated silver	704.901.1/D	376
	6 A	1 NC	Gold-plated silver	704.901.2/D	377
	6 A	2 NO	Gold-plated silver	704.901.3/D	378
	6 A	2 NC	Gold-plated silver	704.901.4/D	379
	6 A	1 NC / 1 NO	Gold-plated silver	704.901.5/D	380
	6 A	1 NO	Silver	704.905.1/D	376
	6 A	1 NC	Silver	704.905.2/D	377
500 V	6 A	2 NC	Silver	704.905.4/D	379
	6 A	1 NC / 1 NO	Silver	704.905.5/D	380

Contacts: NC = Normally closed, NO = Normally open

### Additional information

- For the third switching element the terminal marking insert is to be ordered separately
- The switching element is used for the lever switch



Dimensions [mm]

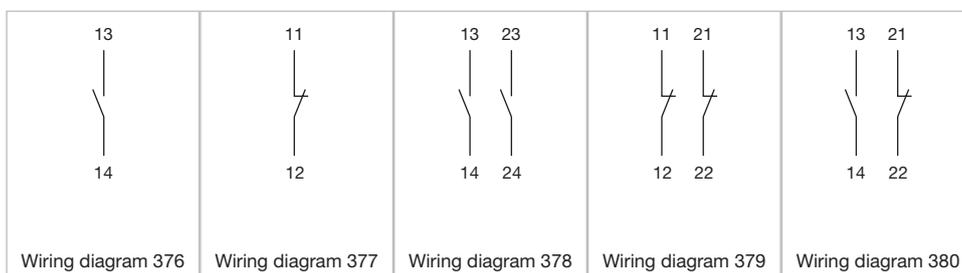
A = Screw terminal

B = Push-in terminal (PIT)

C = Plug-in terminal 6.3 mm x 0.8 mm

D = Double plug-in terminal 6.3 mm x 0.8 mm

## Wiring diagrams



# 56 Components



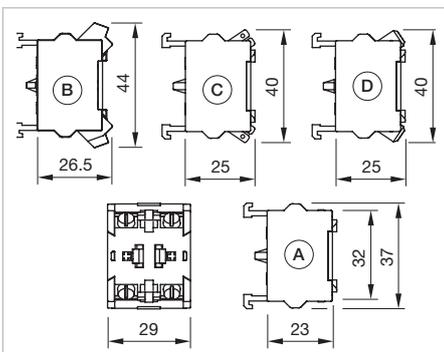
## Slow-make switching element with double plug-in terminal

Switching voltage	Switching current	Contacts	Contact material	Part No.	Wiring diagram
500 V	6 A	1 NO	Silver	704.915.1/D	376
	6 A	1 NC	Silver	704.915.2/D	377
	6 A	2 NO	Silver	704.915.3/D	378
	6 A	2 NC	Silver	704.915.4/D	379
	6 A	1 NC / 1 NO	Silver	704.915.5/D	380

Contacts: NC = Normally closed, NO = Normally open

### Additional information

- For the third switching element the terminal marking insert is to be ordered separately
- The switching element is used for the lever switch



Dimensions [mm]

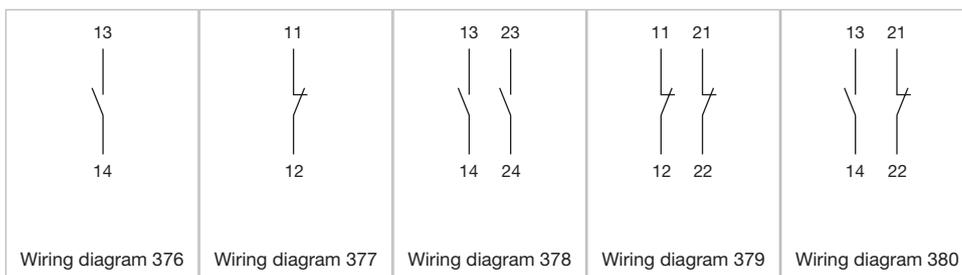
A = Screw terminal

B = Push-in terminal (PIT)

C = Plug-in terminal 6.3 mm x 0.8 mm

D = Double plug-in terminal 6.3 mm x 0.8 mm

### Wiring diagrams





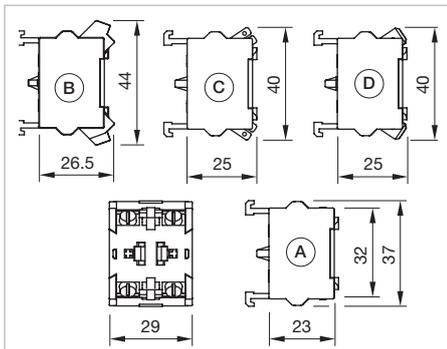
## Snap-action switching element with screw terminal

Switching voltage	Switching current	Contacts	Contact material	Part No.	Wiring diagram
500 V	10 A	1 NO	Silver	704.900.1	376
	10 A	1 NC	Silver	704.900.2	377
	10 A	2 NO	Silver	704.900.3	378
	10 A	2 NC	Silver	704.900.4	379
	10 A	1 NC / 1 NO	Silver	704.900.5	380
	10 A	1 NO	Gold-plated silver	704.901.1	376
	10 A	1 NC	Gold-plated silver	704.901.2	377
	10 A	2 NO	Gold-plated silver	704.901.3	378
	10 A	2 NC	Gold-plated silver	704.901.4	379
	10 A	1 NC / 1 NO	Gold-plated silver	704.901.5	380
	10 A	1 NO	Palladium	704.902.1	376
	10 A	1 NC	Palladium	704.902.2	377
	10 A	2 NO	Palladium	704.902.3	378
	10 A	2 NC	Palladium	704.902.4	379
	10 A	1 NC / 1 NO	Palladium	704.902.5	380

Contacts: NC = Normally closed, NO = Normally open

### Additional information

- For the third switching element the terminal marking insert is to be ordered separately
- The switching element is used for the lever switch



Dimensions [mm]

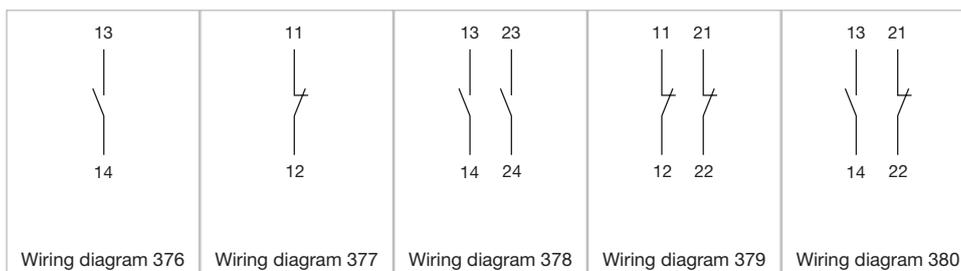
A = Screw terminal

B = Push-in terminal (PIT)

C = Plug-in terminal 6.3 mm x 0.8 mm

D = Double plug-in terminal 6.3 mm x 0.8 mm

### Wiring diagrams



# 56 Components



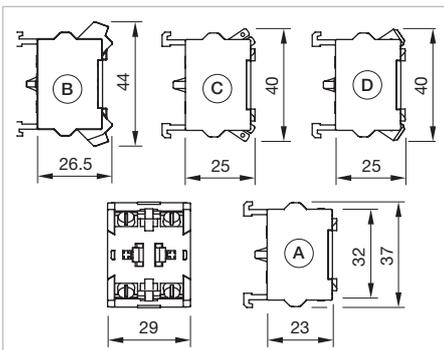
Slow-make switching element with screw terminal

Switching voltage	Switching current	Contacts	Contact material	Part No.	Wiring diagram
500 V	10 A	1 NO	Silver	704.910.1	376
	10 A	1 NC	Silver	704.910.2	377
	10 A	2 NO	Silver	704.910.3	378
	10 A	2 NC	Silver	704.910.4	379
	10 A	1 NC / 1 NO	Silver	704.910.5	380
	10 A	1 NO	Gold-plated silver	704.911.1	376
	10 A	1 NC	Gold-plated silver	704.911.2	377
	10 A	2 NO	Gold-plated silver	704.911.3	378
	10 A	2 NC	Gold-plated silver	704.911.4	379
	10 A	1 NC / 1 NO	Gold-plated silver	704.911.5	380
	10 A	1 NO	Palladium	704.912.1	376
	10 A	2 NO	Palladium	704.912.3	378
	10 A	2 NC	Palladium	704.912.4	379
	10 A	1 NC / 1 NO	Palladium	704.912.5	380

Contacts: NC = Normally closed, NO = Normally open

### Additional information

- For the third switching element the terminal marking insert is to be ordered separately
- The switching element is used for the lever switch



Dimensions [mm]

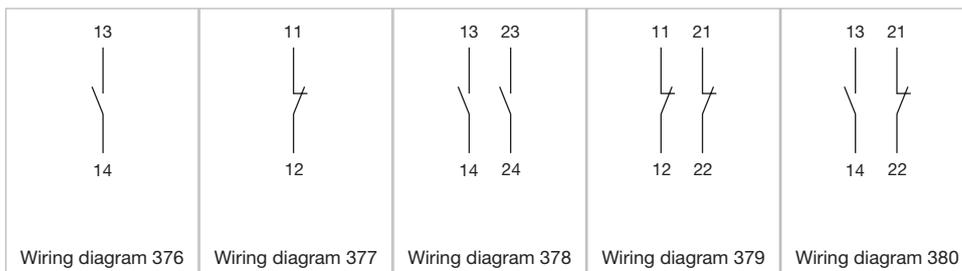
A = Screw terminal

B = Push-in terminal (PIT)

C = Plug-in terminal 6.3 mm x 0.8 mm

D = Double plug-in terminal 6.3 mm x 0.8 mm

### Wiring diagrams

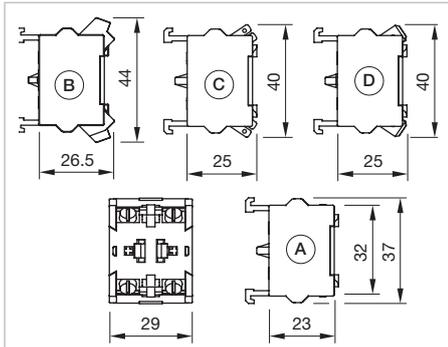




## Snap-action switching element for ring cable shoe with screw terminal

Switching voltage	Switching current	Contacts	Contact material	Part No.	Wiring diagram
500 V	10 A	1 NO	Silver	704.900.1B	376
	10 A	1 NC	Silver	704.900.2B	377
	10 A	2 NO	Silver	704.900.3B	378
	10 A	2 NC	Silver	704.900.4B	379
	10 A	1 NC / 1 NO	Silver	704.900.5B	380

Contacts: NC = Normally closed, NO = Normally open



Dimensions [mm]

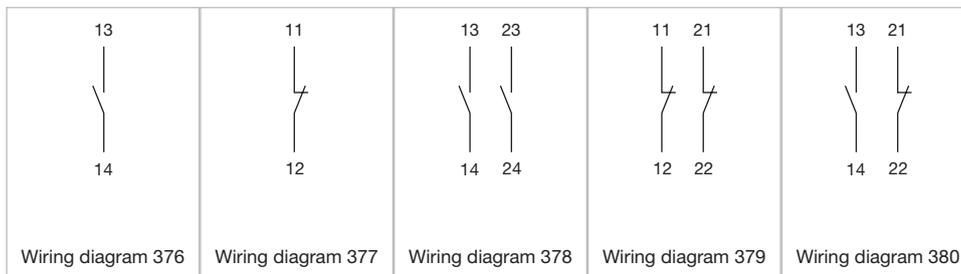
A = Screw terminal

B = Push-in terminal (PIT)

C = Plug-in terminal 6.3 mm x 0.8 mm

D = Double plug-in terminal 6.3 mm x 0.8 mm

## Wiring diagrams



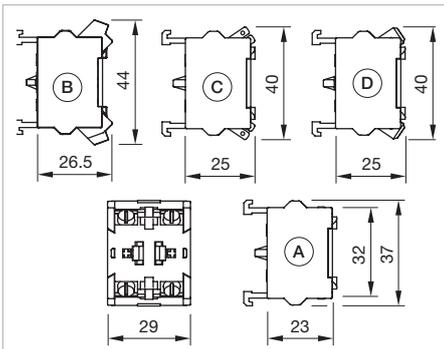
# 56 Components



Slow-make switching element for ring cable shoe with screw terminal

Switching voltage	Switching current	Contacts	Contact material	Part No.	Wiring diagram
500 V	10 A	1 NO	Silver	704.910.1B	376
	10 A	1 NC	Silver	704.910.2B	377
	10 A	2 NO	Silver	704.910.3B	378
	10 A	2 NC	Silver	704.910.4B	379
	10 A	2 NO	Gold-plated silver	704.911.3B	378
	10 A	2 NC	Gold-plated silver	704.911.4B	379
	10 A	1 NC / 1 NO	Gold-plated silver	704.911.5B	380

Contacts: NC = Normally closed, NO = Normally open



Dimensions [mm]

A = Screw terminal

B = Push-in terminal (PIT)

C = Plug-in terminal 6.3 mm x 0.8 mm

D = Double plug-in terminal 6.3 mm x 0.8 mm

## Wiring diagrams

Wiring diagram 376	Wiring diagram 377	Wiring diagram 378	Wiring diagram 379	Wiring diagram 380

**Mounting**



**Bezel cover**

Product attribute	Dimension	Material	Colour	Mounting type	Part No.
0.8 mm thick	40 x 26 mm	Aluminium	natur eloxiert	selbstklebend	56-993



**Dismantling tool**

Product attribute	Part No.
For front bezel	56-998



**Anti-slip mat**

Dimension	Colour	Part No.
100 x 100 mm	white	56-999

**Additional Information**

- For dismantling of front bezel
- 3 mm thick



**Counterpart set for plug-in housing 2.8 mm x 0.8 mm**

Material	Product attribute	Part No.
Metal/Plastic	Set of 10 pieces	56-994



**Counterpart set for plug-in housing 6.3 mm x 0.8 mm**

Material	Product attribute	Part No.
Metal/Plastic	Set of 10 pieces	56-945



**Sealing black, for glass mounting**

Material	Part No.
Rubber	56-990

# 56 Technical data

## Indicator

### Material

#### Connection cable

Halogene free plastic mixture

#### Cap

Plastic, as per UL94 V0

#### Frontrahmen

Zinc matt chromium plated or plastic, as per UL94 V0

#### Housing

Plastic, as per UL94 V0

### Mechanical characteristics

#### Terminals

Cable 2-poles with plug-in connection 2,8 mm x 0,8 mm  
Flat plug-in housing rectangular, AMP-Nr. 626 057-0

Counterpart to AMP Flat plug-in housing  
(not part of delivery)

Receptacle housing AMP No. 626 056-0

Receptacle socket AMP No. 160 655-2

#### Wire cross-section

0.24 mm<sup>2</sup>

#### Wire length

200 mm

#### Fixing screws

For front mounting M4 x 8 mm

#### Tightening torque

For screws for front mounting 0,8 Nm ... 1 Nm

Key (mounting and dismantling)

Hexagon socket wrench size 2.5 mm

### Electrical characteristics

#### Illumination

15 LED green, red, yellow, white or blue

Supply voltage 24, 110VDC

Tolerance -30 % ... +25 %

Current consumption < 50 mA

Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination

### Units compliant to

EN 61058-1

EN 50081-1

EN 50082-1

EN 50082-2

EN 50121-3-2

EN 50155

### Environmental conditions

#### Storage temperature

-45 °C ... +90 °C

#### Operating temperature

-40 °C ... +80 °C

#### Protection degree

Front side IP67

Rear side IP65

#### Climate resistance

Damp heat, cyclic

96 hours, +25 °C/97 %, +55 °C/93 % relative humidity, as per EN IEC 60068-2-30

Damp heat, state

56 days, +40 °C/93 % relative humidity, as per EN IEC 60068-2-78

Rapid change of temperature

100 cycles, -40 °C ... +80 °C, as per EN IEC 60068-2-14

#### Shock resistance

(semi-sinusoidal)

max. 250 m/s<sup>2</sup>, pulse width 11 ms, as per EN IEC 60068-2-27

#### Vibration resistance

(sinusoidal)

max. 100 m/s<sup>2</sup> at 10 Hz ... 2000 Hz, as per EN IEC 60068-2-6

### Approvals

#### Approbations

CQC

#### Conformities

CE

## Pushbutton

### Switching system

Self-cleaning, double-breaking snap-action switching system  
1 Normally Open contact, momentary function

### Material

#### Connection cable

Halogene free plastic mixture

#### Lens

Aluminium anodized or plastic, as per UL94 V0

#### Front bezel

Zinc matt chromium plated or plastic, as per UL94 V0

#### Actuator

Plastic, as per UL94 V0

#### Material of contact

Gold plated silver

### Mechanical characteristics

#### Terminals

Cable 4-poles with plug-in connection 2.8mm x 0.8mm  
Flat plug-in housing rectangular, AMP No. 626 057-0

Counterpart to AMP Flat plug-in housing  
(not part of delivery)

Receptacle housing AMP No. 626 056-0

Receptacle socket AMP No. 160 655-2

Other version :

Cable 4 poles with plug-in connection 6.3mm x 0.8mm

Flat plug-in housing rectangular, AMP No. 180 901-0

Counterpart to AMP Flat plug-in housing  
(not part of delivery)

Receptacle housing AMP No. 180 900-0

Receptacle socket AMP No. 160 860-2

#### Wire cross-section

0.5 mm<sup>2</sup>

#### Wire length

200 mm

#### Fixing screws

Single side pushbutton for front mounting M4 x 8mm

Double side pushbutton for glass mounting M4 x 25 mm

Single side pushbutton for glass mounting M4 x 20mm

(for glass ≥ 5 mm)

Single side pushbutton for glass mounting M4 x 16 (for 4 mm glass)

### Tightening torque

Screws for single side pushbutton for front mounting

0.80 Nm ... 1 Nm

Screws for single side- and double side pushbutton for glass mounting 0.5 Nm

### Key (mounting and dismantling)

Hexagon socket wrench size 2.5 mm

### Actuating force

6 N ... 12 N

### Actuating travel

~0.5 mm

### Mechanical lifetime

2 million cycles operation

### Electrical characteristics

#### Illumination

Ready status, 8 LED green, red or yellow

Optical switch on status, 2 LED green or red

(3 LED for special versions)

Supply voltage 24, 36, 48, 72, 110 VDC

Tolerance +25 % ... -30 %

Current consumption < 50 mA

Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination

#### Units compliant to

EN 14752

EN 50155

EN 61000-6-2

EN 61000-6-3

EN 61058-1

#### Switching voltage and switching current

min. 5 VDC, 5 mA

max. 137 VDC/VAC, max. 200 mA

#### Electric strength

4000 VAC, 50 Hz, 1 minute, between all terminals and mounting plate / front element

### Environmental conditions

#### Storage temperature

-45 °C ... +90 °C

#### Operating temperature

-40 °C ... +80 °C

# 56 Technical data

## Protection degree

Front side IP67  
Rear side IP65

## Climate resistance

Damp heat, cyclic  
96 hours, +25 °C/97 %, +55 °C/93 % relative humidity,  
as per EN IEC 60068-2-30

## Damp heat, state

56 days, +40 °C/93 % relative humidity, as per EN IEC 60068-2-78

## Rapid change of temperature

100 cycles, -40 °C ... +80 °C, as per EN IEC 60068-2-14

## Shock resistance

(semi-sinusoidal)  
max. 250 m/s<sup>2</sup>, pulse width 11 ms, as per EN IEC 60068-2-27

## Vibration resistance

(sinusoidal)  
max. 100 m/s<sup>2</sup> at 10 Hz ... 500 Hz, as per EN IEC 60068-2-6

## Approvals

### Approbations

CQC  
TSI PRM (EBC)

### Conformities

CE

## Pushbutton 56 Access

Single side pushbutton with M8×1 connector, 6-pin

### Switching system

The Series 56 Access pushbutton is equipped with an electronic high side switch, is short circuit proof and overload protected. In case of over current the switch opens automatically (protection against destruction). The pushbutton is not potential-free.

### Material

#### Lens

Aluminium, Symbol Plastic

#### Front bezel

Plastic

#### Switch housing

Plastic

### Mechanical characteristics

#### Terminals

Device plug M8×1, 6-pin (according to EN 61076-2-104)  
For locking the cable plug connection, the thread ring "hand-tight" (approx. 0.5Nm) tightened.  
Suitable for screw locking (cable side),  
Snap-in locking (cable side) with reduced IP protection class.

#### Cable recommendation

6-pole with coupling socket M8×1 straight, according to EN 61076-2-104 and EN 45545 for railway application.

#### Fixing screws

Single side pushbutton for front mounting M4 × 8 mm

#### Tightening torque

Screws for one-sided button for front mounting 0.8...1 Nm

#### Key (mounting and dismantling)

Inside 6-kt Width across flats 2.5 mm

#### Actuating force

max. 15 N

#### Actuating travel

~0.5 mm

#### Mechanical life

>5 million switching cycles

## Electrical characteristics

### Illumination

Standby, 6 lighting points green  
 6 lighting points red  
 Optical switching indicator (wiring diagram according to EN 14752)  
 Operating voltage 24 VDC  
 Tolerance range -30 % ... +25 %  
 Current consumption < 50 mA

Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination.

### Devices correspond

EN 50155  
 EN 14752  
 EN 45545  
 EN 61373

### EMV

EN 61000-6-2  
 EN 61000-6-3  
 EN 50121-3-2  
 ESD according to EN 61000-4-2 ±20 kV  
 Regulation No. EMV 06 (radio compatibility of Deutsche Bahn)

### Symbols

TSI PRM (EBC)

### Operating voltage

10–30 VDC

### Switching current

max. 250 mA  
 min. 10 µA

### Quiescent current

< 10 µA @ 24 VDC  
 Note: Only pin 1 (VDC) and pin 4 (0 V) connected

### Electric strength

4000 VAC, 50 Hz, 1 minute, between all terminals and mounting plate/front element

## Ambient conditions

### Storage temperature

-45 °C ... +90 °C

### Operating temperature

-45 °C ... +85 °C

### Protection degree

IP66, IP67 front side  
 IP65 rear side with device plug M8×1 straight, 6-pin with snap-in locking (cable side)  
 IP67 rear side with device plug M8×1 straight, 6-pin with screw locking (cable side)

### Impact resistance

IK07

### Climate resistance

Damp heat, cyclic  
 48 hours, +25 °C/97 %, +55 °C/93 % relative humidity, according to EN IEC 60068-2-30

### Damp heat, state

56 days, +40 °C/93 % relative humidity, according to EN IEC 60068-2-78

### Rapid change of temperature

5 cycles, -45 °C...+90 °C, according to EN IEC 60068-2-14

### Shock resistance

Semi-sinusoidal  
 500 m/s<sup>2</sup>, pulse width 11 ms, 6 shocks/axis, according to DIN EN 60068-2-27

### Vibration strength

(sinusoidal)  
 max. 100 m/s<sup>2</sup> from 10 Hz ... 500 Hz, according to EN IEC 60068-2-6

### Broad band noise according to EN 61373 class 1B

7.9 m/s<sup>2</sup> 5 h per axis, according to EN IEC 60068-2-6

## Approvals

### Approbations

TSI PRM (EBC)

### Conformities

CE  
 2014/30/EU (EMC)  
 1300/2014/EU (TSI PRM)  
 2011/65/EU (RoHS)

# 56 Technical data

## Pushbutton 56 Universal

Single side pushbutton with M8×1 connector, 6-pin

### Switching system

The Series 56 Universal pushbutton is equipped with an electronic high side switch, is short circuit proof and overload protected. In case of over current the switch opens automatically (protection against destruction). The pushbutton is not potential-free.

### Material

#### Lens

Aluminium, Symbol Plastic

#### Front bezel

Plastic

#### Switch housing

Plastic

### Mechanical characteristics

#### Terminals

Device plug M8×1, 6-pin (according to EN 61076-2-104)  
For locking the cable plug connection, the thread ring "hand-tight" (approx. 0.5Nm) tightened.  
Suitable for screw locking (cable side),  
Snap-in locking (cable side) with reduced IP protection class.

#### Cable recommendation

6-pole with coupling socket M8×1 straight  
(according to EN 61076-2-104)

#### Fixing screws

Single side pushbutton for front mounting M4 × 8mm

#### Tightening torque

Screws for one-sided button for front mounting 0.8...1 Nm

#### Key (mounting and dismantling)

Inside 6-kt Width across flats 2.5 mm

#### Actuating force

max. 15 N

#### Actuating travel

~0.5 mm

#### Mechanical life

>5 million switching cycles

### Electrical characteristics

#### Illumination

Standby, 6 lighting points green  
6 lighting points red  
Optical switching indicator (wiring diagram according to EN 14752)  
Operating voltage 24 VDC  
Tolerance range -30 % ... +25 %  
Current consumption <50 mA

Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination.

#### Devices correspond

EN 50155  
EN 14752  
EN 45545  
EN 61373

#### EMV

EN 61000-6-2  
EN 61000-6-3  
EN 50121-3-2  
ESD according to EN 61000-4-2 ±20 kV  
Regulation No. EMV 06 (radio compatibility of Deutsche Bahn)

#### Operating voltage

10–30 VDC

#### Switching current

max. 250 mA  
min. 10 µA

#### Quiescent current

<10 µA @ 24 VDC  
Note: Only pin 1 (VDC) and pin 4 (0 V) connected

#### Electric strength

4000 VAC, 50 Hz, 1 minute, between all terminals and mounting plate/front element

### Ambient conditions

#### Storage temperature

-45 °C ... +90 °C

#### Operating temperature

-45 °C ... +85 °C

#### Protection degree

IP66, IP67 front side  
IP65 rear side with device plug M8×1 straight, 6-pin with snap-in locking (cable side)  
IP67 rear side with device plug M8×1 straight, 6-pin with screw locking (cable side)

## Impact resistance

IK07

## Climate resistance

Damp heat, cyclic

48 hours, +25 °C/97 %, +55 °C/93 % relative humidity, according to EN IEC 60068-2-30

Damp heat, state

56 days, +40 °C/93 % relative humidity, according to EN IEC 60068-2-78

Rapid change of temperature

5 cycles, -45 °C...+90 °C, according to EN IEC 60068-2-14

## Shock resistance

Semi-sinusoidal

500 m/s<sup>2</sup>, pulse width 11 ms, 6 shocks/axis, according to DIN EN 60068-2-27

## Vibration strength

(sinusoidal)

max. 100 m/s<sup>2</sup> from 10 Hz ... 500 Hz, according to EN IEC 60068-2-6

Broad band noise according to EN 61373 class 1B

7.9 m/s<sup>2</sup> 5 h per axis, according to EN IEC 60068-2-6

## Approvals

### Conformities

CE

2014/30/EU (EMC)

2011/65/EU (RoHS)

## Multi-Tone Sound Module

### Material

#### Connection cable

Halogene free plastic mixture

Housing switching unit and speaker cap plastic, as per UL94 V0

#### Front bezel

Zinc matt chromium plated or plastic, as per UL94 V0

#### Housing

Plastic

### Mechanical characteristics

#### Terminals

200 mm with crimped metal sleeves

3-tone sequences module: 4 x 0.5 mm<sup>2</sup> or 4 x 0.25 mm<sup>2</sup>

5-tone sequences module: 6 x 0.5 mm<sup>2</sup>

6-tone sequences module: 6 x 0.5 mm<sup>2</sup>

#### Fixing screws

For front mounting M4 x 8 mm (3x)

#### Tightening torque

For screws for front mounting 0.80 Nm ... 1 Nm

Key (mounting and dismantling)

Hexagon socket wrench size 2.5 mm

### Electrical characteristics

#### Units compliant to

EN 61000-6-2

EN 61000-6-3

EN 50121-3-2

#### Operating voltage/-current

Operation voltage 24 VDC ±30 %, 5-tone sequences module

Operation voltage range 16 ... 63 / 50 ... 143 VDC, 3-tone sequences module/6-tone sequences module

Current rating < 50 mA depending on voltage and volume

#### Electric strength

4000 VAC, 50 Hz, 1 min, between all terminals and mounting plate/front element

### Acoustic characteristics

#### 5-tone sequences:

The volume of each tone sequence is configured in five steps by 6 dB, adjustable from the rear side. All sounds are controlled using a wire cable.

The tones can be played in any sequence at different volumes, durations and intervals.

# 56 Technical data

## 3-tone sequences:

The volume of each tone sequence can be changed in 17 steps of 1.5 dB each, by means of the tone-editing programme or “external” by wire. Tone sequence 1 and 2 are being activated by wire, whereby sequence 3 is being activated binarily. All sounds are controlled using a wire cable. In order to symplify the definition of the Multi-Tone Sound Module, a “volume control box” is at EAO customer’s disposal as an accessory.

The tones can be played in any sequence at different volumes, durations and intervals.

## 6-tone sequences:

The «MTSM self-adjusting» offers six individual tone sequences that can be emitted at different frequencies, number of repeats and durations. The volume can be pre-set so it is always a specified number of decibels above the ambient noise. The six tone sequences are controlled in a binary manner, via three wires.

## Frequency range

500 Hz ... 3000 Hz  $\pm$  1 %

480 Hz ... 3000 Hz  $\pm$  1 % (6-tone sequences module)

## Time range of tone sequence

0 ...  $\infty$  (endless)

## Acoustic pressure level

3-/5-tone sequences module:

90 dB (A) 10 cm @ 1 kHz

Level 17 for 3-tone sequences module

Level 5 for 5-tone sequences module

6-tone sequences module:

Max. 100 db @ 10 cm @ 1 kHz

Self-adjusting Modul:

Max. 72 dB (A) @ 1.5 m @ 1 kHz

Max. 95.52 dB (A) @ 0.1 m @ 1 kHz

## Environmental conditions

### Storage temperature

-45 °C ... +90 °C

### Operating temperature

-40 °C ... +85 °C

### Protection degree

Front side IP69K

Rear side IP65

### Climate resistance

Damp heat, cyclic

48 hours, +25 °C/97 %, +55 °C/93 % relative humidity, as per EN IEC 60068-2-30

Saline mist 96 hours, as per EN IEC 60068-2-11

### Shock resistance

(semi-sinusoidal)

max. 50 m/s<sup>2</sup>, pulse width 30 ms, as per EN 61373

### Vibration resistance

Max. 7.9 m/s<sup>2</sup> at 10 Hz ... 150 Hz, as per EN 61373

## Approvals

### Approbations

CQC

e1

TSI PRM

### Conformities

CE

## Flashing warning beacon

### Material

#### Connection cable

Halogene free plastic mixture

#### Lens

Plastic, as per UL94 V0

#### Front bezel

Zinc matt chromium plated or plastic, as per UL94 V0

#### Actuator

Plastic, as per UL94 V0

### Mechanical characteristics

#### Terminals

Cable 2-poles with plug-in connection 2.8 mm x 0.8 mm  
Flat plug-in housing rectangular, AMP No. 626 057-0

Counterpart to AMP Flat plug-in housing  
(not part of delivery)

Receptacle housing AMP No. 626 056-0  
Receptacle socket AMP No. 160 655-2

#### Wire cross-section

0.24 mm<sup>2</sup>

#### Wire length

200 mm

#### Fixing screws

For front mounting M4 x 8 mm

#### Tightening torque

For screws for front mounting 0.80 Nm ... 1 Nm  
Key (mounting and dismantling)  
Hexagon socket wrench size 2.5 mm

### Electrical characteristics

#### Illumination

3 LED white

Supply voltage 24 VDC ± 30 %

Current consumption < 500 mA

Blitzfrequenz 1 Hz

Impulsdauer 50 ms

Pausendauer 950 ms

Einschaltdauer 5 %

Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination

### Units compliant to

EN 61000-6-2

EN 61000-6-3

EN 50121-3-2

### Environmental conditions

#### Storage temperature

-45 °C ... +90 °C

#### Operating temperature

-40 °C ... +80 °C

#### Protection degree

Front side IP67

Rear side IP65

#### Climate resistance

Damp heat, cyclic

96 hours, +25 °C/97 %, +55 °C/93 % relative humidity, as per EN IEC 60068-2-30

Damp heat, state

56 days, +40 °C/93 % relative humidity, as per EN IEC 60068-2-78

Rapid change of temperature

100 cycles, -40 °C ... +80 °C, as per EN IEC 60068-2-14

#### Shock resistance

(semi-sinusoidal)

max. 250 m/s<sup>2</sup>, pulse width 11 ms, as per EN IEC 60068-2-27

#### Vibration resistance

(sinusoidal)

max. 100 m/s<sup>2</sup> at 10 Hz ... 2000 Hz, as per EN IEC 60068-2-6

### Approvals

#### Approbations

CQC

#### Conformities

CE

## Slow-make switching element

### Switching system

The double-break, slow-make switching element is equipped with one or two independent contact systems, acting as normally open or normally closed contact. The normally closed contact has forced opening.

Slow-makecontacts with forced action are ideal for high switch ratings.

Up to three switching elements can be snapped to each actuator.

For the emergency-stop pushbutton use the slow-make switching element (max. 2).

### Material

#### Material of contact

Hardsilver, gold-silver, silver-palladium (for aggressive atmospheres)

#### Switch housing

Plastic

### Mechanical characteristics

#### Terminals

Screw terminals

Plug-in terminals 6.3 mm x 0.8 mm

max. wire cross-section 2 x 2.5 mm<sup>2</sup>

max. wire cross-section of stranded cable 2 x 1.5 mm<sup>2</sup>

For switches with plug-in terminals it is necessary to provide insulation sleeves and to maintain a spacing of 65 mm between rows (mounting cut-outs)

#### Tightening torque

Screws at the mounting flange plastic max. 0.40 ... 0.50 Nm

Screws at the mounting flange metal max. 0.25 ... 0.30 Nm

Screws at switching element max. 0.50 Nm

#### Actuating force

1 Normally closed 2 N

1 Normally open 3.1 N

#### Actuating travel

Ca. 5.8 mm ± 0.2 mm

#### Mechanical lifetime

(with 1 switching element)

Pushbutton maintained action 1.5 million cycles of operation

Pushbutton momentary action 3 million cycles of operation

Selector switch maintained action 1.25 million cycles of operation

Selector switch momentary action 2.5 million cycles of operation

Emergency-stop switch 50 000 cycles of operation

Keylock switch maintained action 25 000 cycles of operation

Keylock switch momentary action 50 000 cycles of operation

### Electrical characteristics

#### Standards

The switches comply with the "Standards for low-voltage switching devices" DIN EN 60947-5-1

#### Rated Insulation Voltage U<sub>i</sub>

500 VAC/600 VDC, as per DIN EN 60947-5-1

#### Electrical life

50 000 cycles of operations

#### Thermal current I<sub>th</sub>

10 A

#### Switching voltage and switching current

as per EN IEC 60947-5-1

AC-15: 230 V, 7 A AC-15: 400 V, 5 A

AC-15: 500 V, 4 A DC-13: 24 V, 10 A

DC-13: 60 V, 5 A DC-13: 110 V, 2.5 A

#### Recommended minimum operational data

Gold-silver contacts:

Voltage 24 VDC 110 VDC

Current 5 mA 2 mA

Hardsilver contacts:

Voltage 24 VDC 110 VDC

Current 50 mA 10 mA

#### Protection class

Indicators and switches, fit for mounting into devices with protection class II

### Ambient conditions

#### Storage temperature

-40 °C ... +85 °C

#### Operating temperature

-25 °C ... +55 °C

#### Protection degree

IP00

#### Shock resistance

(single impacts, semi-sinusoidal)

300 m/s<sup>2</sup> puls width 11 ms, as per EN IEC 60068-2-27

#### Vibration resistance

(sinusoidal)

100 m/s<sup>2</sup> at 10 Hz ... 500 Hz, amplitude 0.75 mm, as per EN IEC 60068-2-6

## Approvals

### Approbations

CB (IEC 60947-5-1, IEC60947-5-5)  
 CCC  
 CSA  
 Germanischer Lloyd  
 EAC  
 UL  
 SEV (EN 60947-5-1, EN 60947-5-5)

### Conformities

CE  
 2014/35/EU (LVD)  
 2011/65/EC (RoHS)

## Snap-action switching element

### Switching system

The double-break, snap-action switching element is equipped with one or two independent contact systems, acting as normally open or normally closed contact. The snap-action switching element is fitted with self-cleaning contacts.

Up to three switching elements can be snapped to each actuator.

Snap-action switching elements are not permissible for emergency-stop pushbuttons!

### Actuating travel

Ca. 5.8 mm ± 0.2 mm

### Mechanical lifetime

(with 1 switching element)

Pushbutton maintained action	1.5 million cycles of operation
Pushbutton momentary action	3 million cycles of operation
Selector switch maintained action	1.25 million cycles of operation
Selector switch momentary action	2.5 million cycles of operation
Keylock switch maintained action	25 000 cycles of operation
Keylock switch momentary action	50 000 cycles of operation

### Material

#### Material of contact

Hardsilver, gold-silver, silver-palladium (for aggressive atmospheres)

#### Switch housing

Plastic

### Electrical characteristics

#### Standards

The switches comply with the "Standards for low-voltage switching devices" DIN EN 60947-5-1

#### Rated Insulation Voltage $U_i$

500 VAC/600 VDC, as per DIN EN 60947-5-1

#### Electrical life

50 000 cycles of operations

#### Thermal current $I_{th}$

10 A

#### Switching voltage and switching current

as per EN IEC 60947-5-1 ( $\cos\phi$  0.3)

AC-15: 230 V, 6 A	AC-15: 400 V, 4 A
AC-15: 500 V, 42,5 A	DC-13: 24 V, 10 A
DC-13: 60 V, 3 A	DC-13: 110 V, 1 A

#### Recommended minimum operational data

Gold-silver contacts:

Voltage	5 VDC	24 VDC	110 VDC
Current	15 mA	5 mA	2 mA

Hardsilver contacts:

Voltage	24 VDC	110 VDC
Current	50 mA	10 mA

### Mechanical characteristics

#### Terminals

Screw terminals

Plug-in terminals 6.3 mm x 0.8 mm

max. wire cross-section 2 x 2.5 mm<sup>2</sup>

max. wire cross-section of stranded cable 2 x 1.5 mm<sup>2</sup>

For switches with plug-in terminals it is necessary to provide insulation sleeves and to maintain a spacing of 65 mm between rows (mounting cut-outs)

#### Tightening torque

Screws at the mounting flange plastic max. 0.40 ... 0.50 Nm

Screws at the mounting flange metal max. 0.25 ... 0.30 Nm

Screws at switching element max. 0.50 Nm

#### Actuating force

1 Normally closed 1.9 N

1 Normally open 2 N

# 56 Technical data

## Protection class

Indicators and switches, fit for mounting into devices with protection class II

## Ambient conditions

### Storage temperature

-40 °C ... +85 °C

### Operating temperature

-25 °C ... +55 °C

(other temperatures on request)

## Protection degree

IP00

## Shock resistance

(single impacts, semi-sinusoidal)

300 m/s<sup>2</sup> puls width 11 ms, as per DIN EN 60068-2-27

## Vibration resistance

(sinusoidal)

100 m/s<sup>2</sup> at 10 Hz ... 500 Hz, amplitude 0.75 mm, as per DIN EN 60068-2-6

## Approvals

### Approbations

CB (IEC 60947-5-1)

CCC

CSA

Germanischer Lloyd

EAC

UL

SEV (EN 60947-5-1)

### Conformities

CE

2014/35/EU (LVD)

2011/65/EC (RoHS)

## Slow-make switching element PIT

### Switching system

The double-break, slow-make switching element is equipped with one or two independent contact systems, acting as normally open or normally closed contact. The normally closed contact has forced opening.

Slow-make contacts with forced action are ideal for high switch ratings.

Up to three switching elements can be snapped to each actuator.

For the emergency-stop pushbutton use the slow-make switching element (max. 2).

### Material

#### Material of contact

Hardsilver and gold-silver

#### Switch housing

Plastic

### Mechanical characteristics

#### Terminals

PIT push-in terminal

Skimming 8 mm

Wire cross-section:

Wire 0.2 to 1.0 mm<sup>2</sup>

Stranded wire 0.2 to 1.0 mm<sup>2</sup> without core and sleeve

Stranded wire 0.2 to 0.75 mm<sup>2</sup> with core and sleeve

#### Tightening torque

Screws at the mounting flange max. 0.25 Nm

#### Actuating force

1 Normally closed 2 N

1 Normally open 3.1 N

#### Actuating travel

5.8 mm ± 0.2 mm

## Mechanical lifetime

(with 1 switching element)

Pushbutton maintained action	1.5 million cycles of operation
Pushbutton momentary action	3 million cycles of operation
Selector switch maintained action	1.25 million cycles of operation
Selector switch momentary action	2.5 million cycles of operation
Emergency-stop switch	50 000 cycles of operation
Keylock switch maintained action	25 000 cycles of operation
Keylock switch momentary action	50 000 cycles of operation

## Electrical characteristics

### Standards

The switches comply with DIN EN 60947-1/EN IEC 60947-5-1

### Rated Insulation Voltage $U_i$

500 VAC/600 VDC, as per DIN EN 60947-5-1

### Electrical life

50 000 cycles of operations

### Thermal current $I_{th}$

6 A

### Switching voltage and switching current

as per DIN EN 60947-5-1

AC-15: 230 V, 6 A

DC-13: 24 V, 6 A

DC-13: 60 V, 3 A

DC-13: 110 V, 1 A

### Recommended minimum operational data

Gold-silver contacts:

Voltage 24 VDC

Current 5 mA

Hardsilver contacts:

Voltage 24 VDC

Current 50 mA

### Protection class

Indicators and switches, fit for mounting into devices with protection class II

## Ambient conditions

### Storage temperature

-40 °C ... +85 °C

### Operating temperature

-25 °C ... +55 °C

### Protection degree

IP20

### Shock resistance

(single impacts, semi-sinusoidal)

300 m/s<sup>2</sup> puls width 11 ms, as per DIN EN 60068-2-27

## Approvals

### Approbations

CB (IEC 60947-5-1, IEC 60947-5-5)

CCC

CSA

Germanischer Lloyd

EAC

UL

SEV (EN 60947-5-1, EN 60947-5-5)

### Conformities

CE

2014/35/EU (LVD)

2011/65/EC (RoHS)

# 56 Technical data

## Snap-action switching element PIT

### Switching system

The double-break, snap-action switching element is equipped with one or two independent contact systems, acting as normally open or normally closed contact. The snap-action switching element is fitted with self-cleaning contacts.

Up to three switching elements can be snapped to each actuator.

Snap-action switching elements are not permissible for emergency stop pushbuttons!

### Material

#### Material of contact

Hardsilver and gold-silver

#### Switch housing

Plastic

### Mechanical characteristics

#### Terminals

PIT push-in terminal

Skinning 8 mm

Wire cross-section:

Wire 0.2 to 1.0 mm<sup>2</sup>

Stranded wire 0.2 to 1.0 mm<sup>2</sup> without core and sleeve

Stranded wire 0.2 to 0.75 mm<sup>2</sup> with core and sleeve

#### Tightening torque

Screws at the mounting flange max. 25 Ncm

#### Actuating force

1 Normally closed 1.9 N

1 Normally open 2 N

#### Actuating travel

5.8 mm ± 0.2 mm

#### Mechanical lifetime

(with 1 switching element)

Pushbutton maintained action 1.5 million cycles of operation

Pushbutton momentary action 3 million cycles of operation

Selector switch maintained action 1.25 million cycles of operation

Selector switch momentary action 2.5 million cycles of operation

Keylock switch maintained action 25 000 cycles of operation

Keylock switch momentary action 50 000 cycles of operation

### Electrical characteristics

#### Standards

The switches comply with DIN EN 60947-1/DIN EN 60947-5-1

#### Rated Insulation Voltage U<sub>i</sub>

500 VAC / 600 VDC, as per DIN EN 60947-5-1

#### Electrical life

50 000 cycles of operations

#### Thermal current I<sub>th</sub>

6 A

#### Switching voltage and switching current

as per DIN EN 60947-5-1

AC-15: 230 V, 6 A

DC-13: 24 V, 6 A

DC-13: 60 V, 3 A

DC-13: 110 V, 1 A

#### Recommended minimum operational data

Gold-silver contacts:

Voltage 24 VDC

Current 5 mA

Hardsilver contacts:

Voltage 24 VDC

Current 50 mA

#### Protection class

Indicators and switches, fit for mounting into devices with protection class II

#### Ambient conditions

##### Storage temperature

-40 °C ... +85 °C

##### Operating temperature

-25 °C ... +55 °C

(other temperatures on request)

##### Protection degree

IP20

##### Shock resistance

(single impacts, semi-sinusoidal)

300 m/s<sup>2</sup> puls width 11 ms, as per DIN EN 60068-2-27

##### Vibration resistance

(sinusoidal)

100 m/s<sup>2</sup> at 10 Hz ... 500 Hz, as per DIN EN 60068-2-6 and

EN 61373 Increased broad band noise, class 1B

## Approvals

### Approbations

CB (IEC 60947-5-1)  
CSA  
Germanischer Lloyd  
EAC  
UL  
SEV (EN 60947-5-1)

## Conformities

CE  
2014/35/EU (LVD)  
2011/65/EC (RoHS)

EAO reserves the right to alter specifications without further notice.

# 56 Application guidelines

## Suppressor circuits

When switching inductive loads such as relays, DC motors, and DC solenoids, it is always important to absorb surges (e.g. with a diode) to protect the contacts. When these inductive loads are switched off, a counter emf can severely damage switch contacts and greatly shorten lifetime.

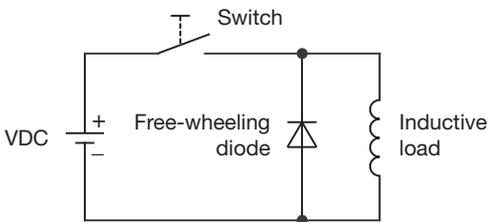
Fig. 1 shows an inductive load with a free-wheeling diode connected in parallel. This free-wheeling diode provides a path for the inductor current to flow when the current is interrupted by the switch. Without this free-wheeling diode, the voltage across the coil will be limited only by dielectric breakdown voltages of the circuit or parasitic elements of the coil. This voltage can be kilo-

volts in amplitude even when nominal circuit voltages are low (e.g. 12VDC) see Fig. 2.

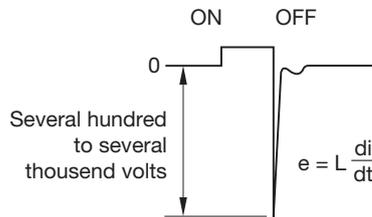
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage ( $V_R$ ) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum current flowing through the load.

**To get an efficient protection, the free-wheeling diode must be connected as close as possible to the inductive load!**

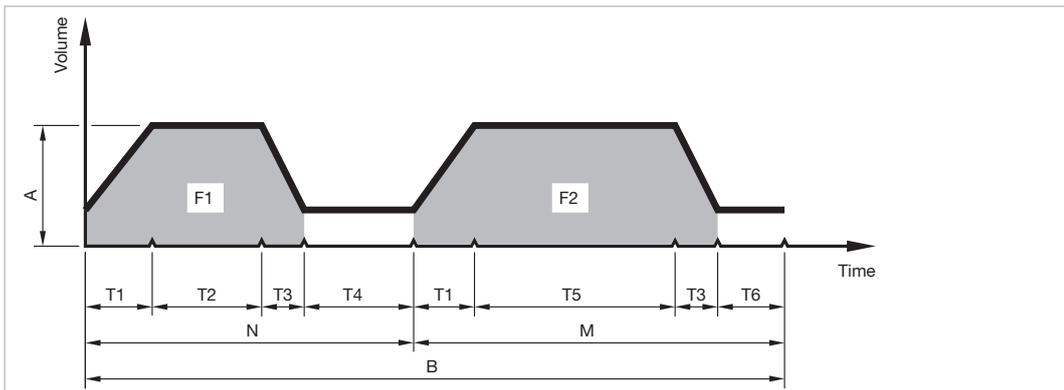
Switching with inductive load  
Fig. 1



Counter EMF  
over load without free-wheeling diode  
Fig. 2



## Multi-Tone Sound Module, standard tone sequence (3-Tone/5-Tone)



Diagram

F1	Frequency 1 of a tone sequence
T2	Playing time tone 1
T4	Break
N	Number of repetitions of tone 1
F2	Frequency 2 of a tone sequence
T5	Playing time tone 2
T6	Break
M	Number of repetitions of tone 2
A	Volume level ( $\pm 8$ dB) @ 10 cm
B	Number of repetitions of the complete tone sequence, or blockage of the tone sequence
T1	Fade-in tone 1 and 2
T3	Fade-out tone 1 and 2

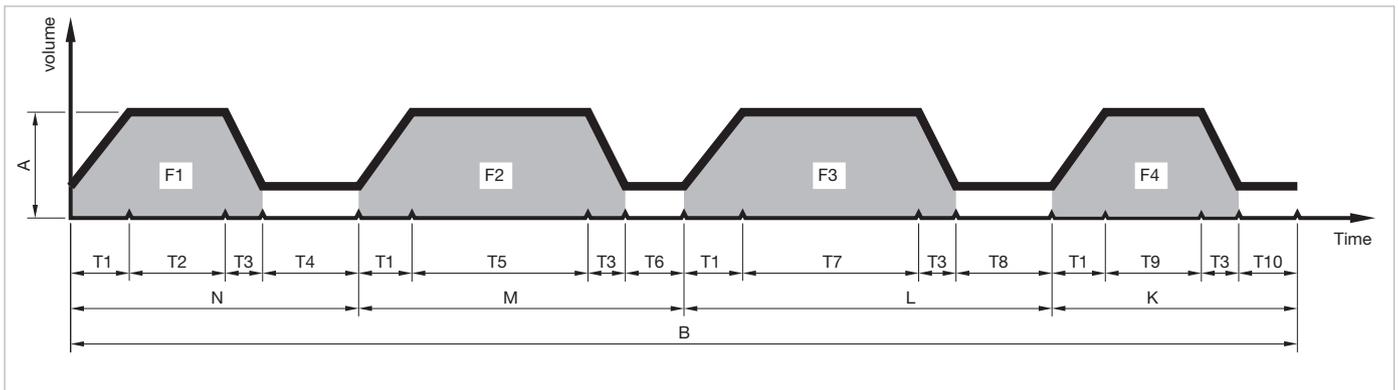
Tone sequences 1-3 Transportation (T1)				
	Parameter	Sequence 1 Door enabled	Sequence 2 Door closing	Sequence 3 Signal for visual impaired people
Tone 1	F1	1500 Hz	1900 Hz	600 Hz
	T2	$\infty$	50 ms	50 ms
	T4	250 ms	50 ms	20 ms
	N	$\infty$	$\infty$	2
Tone 2	F2	deactivated	deactivated	500 Hz
	T5	deactivated	deactivated	1000 ms
	T6	deactivated	deactivated	900 ms
	M	deactivated	deactivated	1
General	A	17 / 90 db (A)	17 / 90 dB (A)	9 / 78 dB (A)
	B	$\infty$	$\infty$	$\infty$
	T1	0 ms	0 ms	0 ms
	T3	0 ms	0 ms	0 ms

# 56 Application guidelines

Tone sequences 1-5 Transportation (T)						
	Parameter	Sequence 1 Door orientation signal	Sequence 2 Door opening signal	Sequence 3 Warning signal for door closing	Sequence 4 Door out of order signal	Sequence 5 Hussle Alarm
Tone 1	F1	500 Hz	800 Hz	2000 Hz	1400 Hz	875 Hz
	T2	500 ms	300 ms	500 ms	50 ms	1000 ms
	T4	900 ms	700 ms	200 ms	100 ms	250 ms
	N	$\infty$	1	$\infty$	3	3
Tone 2	F2	deactivated	830 Hz	deactivated	deactivated	deactivated
	T5	deactivated	500 ms	deactivated	deactivated	deactivated
	T6	deactivated	0 ms	deactivated	deactivated	deactivated
	M	deactivated	1	deactivated	deactivated	deactivated
General	A	3 / 78 dB (A)	3 / 78 dB (A)	5 / 90 dB (A)	3 / 78 dB (A)	3 / 78 dB (A)
	B	$\infty$	$\infty$	1	1	1
	T1	0 ms	0 ms	0 ms	0 ms	0 ms
	T3	0 ms	0 ms	0 ms	0 ms	0 ms

Tone sequences 6-10 Machinery (M)						
	Parameter	Sequence 6	Sequence 7	Sequence 8	Sequence 9	Sequence 10
Tone 1	F1	750 Hz	2500 Hz	2000 Hz	2500 Hz	1000 Hz
	T2	100 ms	300 ms	250 ms	100 ms	500 ms
	T4	200 ms	500 ms	200 ms	100 ms	100 ms
	N	1	1	1	2	1
Tone 2	F2	500 Hz	2000 Hz	1000 Hz	2000 Hz	1500 Hz
	T5	450 ms	500 ms	250 ms	100 ms	500 ms
	T6	100 ms	400 ms	200 ms	100 ms	100 ms
	M	1	1	1	2	1
General	A	4 / 84 dB (A)	4 / 84 dB (A)	5 / 90 dB (A)	5 / 90 dB (A)	4 / 84 dB (A)
	B	$\infty$	$\infty$	$\infty$	$\infty$	$\infty$
	T1	0 ms				
	T3	200 ms	0 ms	500 ms	0 ms	0 ms

## Multi-Tone Sound Modul, self adjusting, standard Tone sequence (6-Tone)



Diagram

F1	Frequency 1 of a tone sequence
T2	Playing time tone 1
T4	Break
N	Number of repetitions of tone 1
F2	Frequency 2 of a tone sequence
T5	Playing time tone 2
T6	Break
M	Number of repetitions of tone 2
F3	Frequency 3 of a tone sequence
T7	Playing time tone 3
T8	Break

L	Number of repetitions of tone 3
F4	Frequency 4 of a tone sequence
T9	Playing time tone 4
T10	Break
K	Number of repetitions of tone 4
A	Basic volume level
D	Acoustic pressure difference
B	Number of repetitions of the complete tone sequence, or blockage of the tone sequence
T1	Fade-in tone 1 to 4
T3	Fade-out tone 1 to 4

### Note

We recommend taking acoustic measurements of the sounder volume from the outside and inside of the coach after the installation of the interior has been completed (TSI PRM).

Tone sequences 6 1-6							
	Parameter	Sequence 1 Door enabled	Sequence 2 Door closing	Sequence 3 Customer specific	Sequence 4 Customer specific	Sequence 5 Customer specific	Sequence 6 Customer specific
Tone 1	F1	1500 Hz	1900 Hz	-	-	-	-
	T2	250 ms	100 ms	-	-	-	-
	T4	250 ms	50 ms	-	-	-	-
	N	∞	1	-	-	-	-
Tone 2	F2	deactivated	deactivated	-	-	-	-
	T5	deactivated	deactivated	-	-	-	-
	T6	deactivated	deactivated	-	-	-	-
Tone 3	F3	deactivated	deactivated	-	-	-	-
	T7	deactivated	deactivated	-	-	-	-
	T8	deactivated	deactivated	-	-	-	-
Tone 4	F4	deactivated	deactivated	-	-	-	-
	T9	deactivated	deactivated	-	-	-	-
	T10	deactivated	deactivated	-	-	-	-
	K	deactivated	deactivated	-	-	-	-
General	A	48 dB (A) @ 1.5m	48 dB (A) @ 1.5m	-	-	-	-
	D	+5 db	+5 db	-	-	-	-
	B	∞	∞	-	-	-	-
	T1	0 ms	0 ms	-	-	-	-
	T3	0 ms	0 ms	-	-	-	-

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