

CMC Connectors – sealed, high-density, modular and cost-effective connection system for heavy-duty applications

The CMC connector family from Molex is a sealed, high-density connection system developed for the transportation industry. It is a cost-effective, modular, hybrid system that fits with various headers. Standard version CMC hybrid connectors hold two different CP terminal sizes; 0.635mm (.025") and 1.50mm (.059"). Power version CMC connectors hold three different CP terminal sizes, 0.635mm (.025"), 1.50mm (.059") and 2.80mm (.110"), with the largest rated up to 26.0A at operating temperatures between -40 and +125°C. Robust CP terminals are specially designed to perform in high-conductivity applications and in harsh environments.

The CMC modular system offers various color codings associated with mechanical keying for easy mating with CMC headers. With an audible click, the integrated locking lever locks the connector and the header together. A wire cap guides the wires away from the connector either to the right or to the left.

The CMC connection system can be used in vehicles including cars, trucks, buses, agricultural equipment, motorcycles and marine. CMC is used in powertrain applications including engine-control units, compartment applications, gear boxes, electronic-park breaks and suspension controllers.

As part of a continuous improvement plan for the CMC connector family, and to meet increased sealing requirements from the market, Molex has developed the next generation high-performance matte-seal for the 32- and 48-circuit standard female connectors, series 64319 and 64320. The new design has three sealing lips instead of two which strengthens the water-tight characteristics of the matte-seal and achieves increased air-pressure sealing from 0.30 to 0.50 bar. As a result both the 32- and 48-circuit standard connectors with the new matte-seal have been qualified to the IPX9K standard for high-pressure water-jet testing. For traceability of this running-change, the new rear seal cover for the 64319 and 64320 series will be grey instead of blue.

For more information on CMC products, visit: www.molex.com/product/cmc.html.

FEATURES AND BENEFITS

Standard and Power Connector

- Color coding provides easy visual installation
- Mechanical polarization avoids mis-mating
- Audible click during locking secures locking with the header
- Tie wrap as additional fixing feature provides added security of the wire output
- Multiple terminal sizes available support low, medium and high-current data requirements
- Various backplate configurations and plug seals offer flexibility and high reliability when cavities are not used

Molex High Performing Sealing Function Wire Side

- Matte seal technology used for CP 0.635mm (.025") and CP 1.50mm (.059") terminals provides high-performance sealing up to 0.50 bar due to advanced seal cavity design
- Single wire-seal technology used for CP 2.80mm (.110") terminals provides secure and reliable sealing
- Multiple choices of backplate configurations allow customer to reduce the number of circuits used with a closed-cavity backplate configuration
- Blind plugs for unused circuits secure sealing system when flexibility is required for unused cavities with a standard backplate

Molex High Performing Sealing Function Mating Side

- Perimeter seal secures seal between the connector and mating header

CMC Hybrid Connectors Standard and Power Versions

Standard Receptacles

2.54mm (.100") Pitch

3.70mm (.146") Pitch

64319 32-Circuit Receptacle and Wire Cap

64320 48-Circuit Receptacle and Wire Cap

64325 Plug

Power Receptacles

2.54mm (.100") Pitch

3.70mm (.146") Pitch

7.00mm (.276") Pitch

64318 28-Circuit Receptacle

64321 53-Circuit Receptacle and Wire Cap

64325 Plug

2.50mm (.098") Pitch

4.20mm (.165") Pitch

8.40mm (.330") Pitch

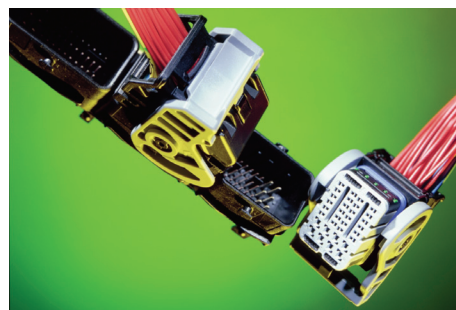
64326 22-Circuit Receptacle

CMC CP Terminals

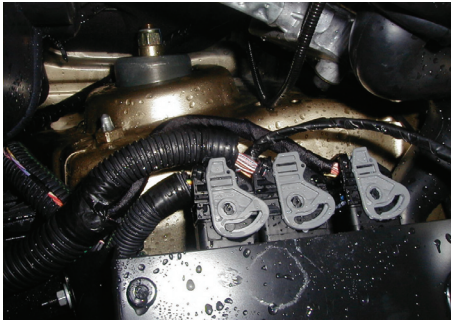
64322 CP 0.635mm (.025")

64323 CP 1.50mm (.059")

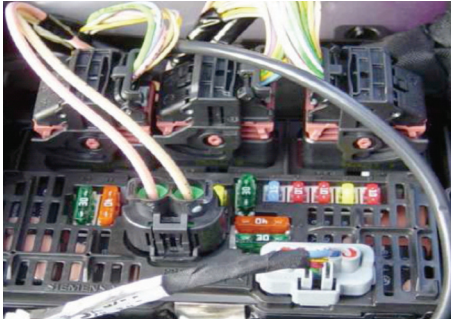
64324 CP 2.80mm (.110")



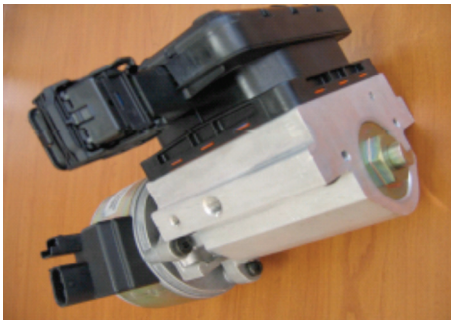
32- and 48-Circuit CMC Connector Harness



Engine Control Box



Fuse Box



Hydraulic and Electronic Suspension Controller

- Markets
 - Cars
 - Trucks
 - Buses
 - Agricultural equipment
 - Motorcycle
 - Marine
- Applications: Wire-to-Board
- Power Train
 - Engine control unit
 - Gear box
 - Suspension controller
- Body Electronics
 - Junction box
 - Lighting control system
 - Electric doors

CMC Hybrid Connectors Standard and Power Versions

Standard Receptacles

2.54mm (.100") Pitch

3.70mm (.146") Pitch

64319 32-Circuit Receptacle
and Wire Cap

64320 48-Circuit Receptacle
and Wire Cap

64325 Plug

Power Receptacles

2.54mm (.100") Pitch

3.70mm (.146") Pitch

7.00mm (.276") Pitch

64318 28-Circuit Receptacle

64321 53-Circuit Receptacle
and Wire Cap

64325 Plug

2.50mm (.098") Pitch

4.20mm (.165") Pitch

8.40mm (.330") Pitch

64326 22-Circuit Receptacle

SPECIFICATIONS

Reference Information

Packaging: Box with Carton Interleaf
Mates with:
32-Way: Single 32-Circuit CMC headers 64334-0100 and 64334-0300. Please contact the Product manager for details
48-Way: 48 circuit CMC header series 36638 and 500762-0481
Use with:
Terminals:
Series 64322 CP 0.635mm (.025")
Series 64323 CP 1.50mm (.059")
Plugs:
64325-1010 for CP 0.635mm (.025") cavity
64325-1023 for CP 1.50mm (.059") cavity
Wire Caps:
32-Way: 64319-1201
48-Way: 64320-1301
Designed in: Millimeters

Electrical

Voltage: 250V AC
Current:
CP 0.635mm (.025") terminals - max 6.0A (0.75mm² wire)*
CP 1.50mm (.059") terminals - max 12.0A (2.00mm² wire)*
Contact Resistance:
0.635mm (.025") terminals: 8 milliohms max.
1.50mm (.059") terminals: 4 milliohms max.
Dielectric Withstanding Voltage: 1000V AC for 1 minute
Insulation Resistance: 100 Megohms min.

Mechanical

Contact Insertion Force:
0.635mm (.025") terminal: 12.00N max
1.50mm (.059") terminal: 20.00N max
Contact Retention to Housing:
0.635mm (.025") terminal: 60.00N min.
1.50mm (.059") terminal: 100.00N min
Wire Pull-Out Force: min 100.00N
Mating Force: 70.00N max.
Unmating Force: 70.00N max.
Durability: 20 mating cycles

Physical

Housing: PBT, Glass-filled
Lead-Free: Yes
Operating Temperature: -40 to +125°C

*Current tested on a 5 terminals loaded connector; current for temperature increase of 40°C

For more details please refer to PS-64319-001 and AS-64319-001

CMC Hybrid Connectors Standard and Power Versions

Standard Receptacles

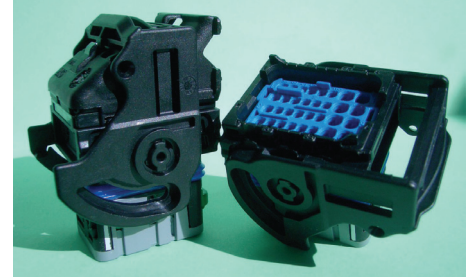
2.54mm (.100") Pitch

3.70mm (.146") Pitch

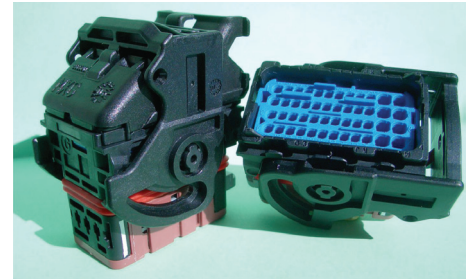
64319 32-Circuit Receptacle and Wire Cap

64320 48-Circuit Receptacle and Wire Cap

64325 Plug



32-Circuit CMC Receptacle



48-Circuit CMC Receptacle

ORDERING INFORMATION

Receptacles

Order No.	Circuits	Coding Key Color	Wire Output
64319-3211	32	Black	Right
64319-3216		Blue	
64319-3218		Grey	
64319-3219		Brown	
64319-1211		Black	Left
64319-1216		Blue	
64319-1218		Grey	
64319-1219		Brown	
64320-3311	48	Black	Right
64320-3315		Green	
64320-3318		Grey	
64320-3319		Brown	
64320-1311		Black	Left
64320-1315		Green	
64320-1318		Grey	
64320-1319		Brown	
64319-2211	24	Black – Row 1 closed	Left
64319-2218		Grey – Row 4 closed	Left
64319-4211		Black – Row 1 closed	Right
64319-4218		Grey – Row 4 closed	Right
64320-2311	36	Black – Row 1 closed	Left
64320-2319		Brown – Row 1 closed	Left
64320-4311		Black – Row 1 closed	Right
64320-4319		Brown – Row 1 closed	Right

Wire Caps

Order No.	Circuits	Housing Color
64319-1201	32	Black
64320-1301	48	

32- and 48-Circuit Plugs

Order No.	Terminal Path	Housing Color
64325-1010	0.635mm (.025")	White
64325-1023	1.50mm (.059")	Orange

SPECIFICATIONS

Reference Information

Packaging: Box with Carton Interleaf
Mates with:
28-Way: 28 circuit CMC header
coming soon please contact Product
Manager for details
53-Way: 98997-1002
Use with:
Terminals:
Series 64322 CP 0.635mm (.025")
Series 64323 CP 1.50mm (.059")
Series 64324 CP 2.80mm (.110")
Plugs:
64325-1010 for CP
0.635mm (.025") cavity
64325-1023 for CP
1.50mm (.059") cavity
64325-1091 Seal Plug for CP
2.80mm (.110") cavity
Wire Caps:
28-Way: 64320-1301
53-Way: 64321-1101
Designed in: Millimeters

Electrical

Voltage: 250V AC
Current:
CP 0.635mm (.025") terminals -
max 2.5A (0.75mm² wire)*
CP 1.50mm (.059") terminals -
max 12.0A (2.00mm² wire)*
CP 2.80mm (.110") terminals -
max 21.0A (5.00mm² wire)*
Contact Resistance:
0.635mm (.025") terminal:
8 milliohms max.
1.50mm (.059") terminal:
4 milliohms max.
2.80mm (.110") terminal:
3 milliohms max.
Dielectric Withstanding Voltage: 1000V
AC for 1 minute
Insulation Resistance:
100 Megohms min.

Mechanical

Contact Insertion Force:
0.635mm (.025") terminal:
12.00N max.
1.50mm (.059") terminal:
20.00N max.
2.80mm (.110") terminal:
25.00N max.
Contact Retention to Housing:
0.635mm (.025") terminal:
60.00N min.
1.50mm (.059") terminal:
100.00N min.
2.80mm (.110") terminal :
100.00N min.
Wire Pull-Out Force: min. 100.00N
28-circuit: 64320
Mating Force: 70.00N max.
Unmating Force : 70.00N max.
53-circuit: 64321
Mating Force: 80.00N max.
Unmating Force: 80.00N max.
Durability: 20 mating cycles

Physical

Housing: PBT Polyester, Glass-filled
Lead-Free: Yes
Operating Temperature: -40 to +125°C

*Current tested on a fully loaded connector;
current for temperature increase of 40°C

For more details please refer to PS-64318-001 /
AS-64318-001 and PS-64321-001 / AS-64321-001

CMC Hybrid Connectors Standard and Power Versions

Power Receptacles

2.54mm (.100") Pitch

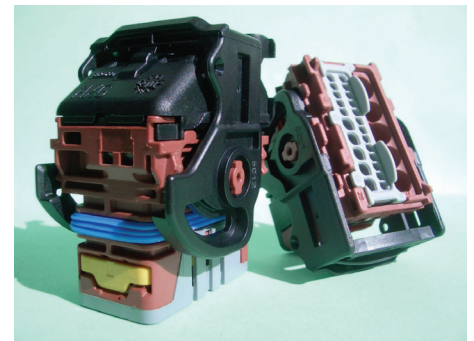
3.70mm (.146") Pitch

7.00mm (.276") Pitch

64318 28-Circuit Receptacle

64321 53-Circuit Receptacle
and Wire Cap

64325 Plug



28-Circuit CMC Receptacle



53-Circuit CMC Receptacle

ORDERING INFORMATION

Receptacles

Order No.	Circuits	Coding Key Color	Wire Output
64318-3011	28	Black	Right
64318-3018		Grey	
64318-3019		Brown	
64318-1011		Black	Left
64318-1018		Grey	
64318-1019		Brown	
64321-2011	53	Black	Right
64321-2018		Grey	
64321-2019		Brown	
64321-1011		Black	Left
64321-1018		Grey	
64321-1019		Brown	

Wire Caps

Order No.	Circuits	Housing Color
64320-1301	28	Black
64321-1101	53	

28- and 53-Circuit Plugs

Order No.	Terminal Path	Housing Color
64325-1010	0.635mm (.025")	White
64325-1023	1.50mm (.059")	Orange
64325-1091	2.80mm (.110")	Black

SPECIFICATIONS

Reference Information

Packaging: Connector: Carton box with interleaves

Wire Cap: Bulk pack in carton box

Mates with:

Please contact Global
Product Manager for details

Use With:

Terminals:

Series 64322 CP 0.635mm (.025")

Series 64324 CP 2.80mm (.110")

Blind Plugs:

64325-1010 for CP

0.635mm (.025") cavity

64325-1091 for CP

2.80mm (.110") cavity

Wire Cap: 64319-1201

Electrical

Voltage (max.): 250V AC

Current (max.):

CP 0.635mm (.025") terminals -
max 4.5A (0.75mm² wire)*

CP 2.80mm (.110") terminals -
max 26.0A (5.00mm² wire)*

*Current tested on a fully loaded connector,
current for temperature increase of 40°C

Contact Resistance (low level):

0.635mm (.025") terminal:
8 milliohms max

2.80mm (.110") terminal:
3 milliohms maximum

Dielectric Withstanding Voltage:

No breakdown

Insulation Resistance:

100 Megohms min

Mechanical

Contact Insertion Force:

0.635mm (.025") terminal:

12.00N max

2.80mm (.110") terminal:

25.00N max

Contact Retention to Housing:

0.635mm (.025") terminal:

60.00N min

2.80mm (.110") 100.00N min

Wire Pull-Out Force: 100.00N min

Mating Force: 80.00N max

Unmating Force: 80.00N max

Durability (min.): 20 mating cycles

Connector

Designed In: Millimeters

RoHS: Yes

Halogen Free: Yes

Glow Wire Compliant: N/A

Physical

Housing: PBT Polyester,
Class UL-V0, Glass-filled

Contact:

See details in SD-64322-001

SD-64324-001

Operating temperature:

-40 up to +125°C

CMC 22-Circuit Power Connector

2.50mm (.098") Pitch

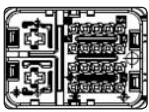
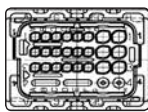
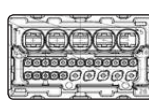
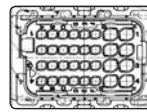
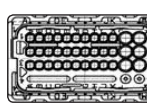
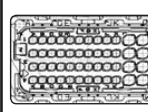
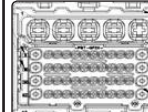
4.20mm (.165") Pitch

8.40mm (.330") Pitch

64326 22-Circuit Receptacle



CONNECTOR INTERFACE COMPARISON

	22-Circuit	24-Circuit	28-Circuit	32-Circuit	36-Circuit	48-Circuit	53-Circuit
0.635mm (.025") CP terminal count	20	18	18	24	30	40	40
1.50mm (.059") CP terminal count	-	6	5	8	6	8	8
2.80mm (.110") CP terminal count	2	-	5	-	-	-	5
Connector interface							

Connector

Order No.	Colour Key Coding	Wire Output	Plant No. for Samples
64326-1001	Black	Right	5102
64326-1005	Brown		
64326-1009	Blue		
64326-1002	Black	Left	
64326-1006	Brown		
64326-1010	Blue		

Wire Cap

Order No.	Colour	Plant No. for Samples
64319-1201	Black	5102

Blind Plugs

Order No.	Terminal Width	Housing Colour	Plant No. for Samples
64325-1010	0.635mm (.025")	White	5102
64319-1291	2.80mm (.110")	Black	

CMC 22-Circuit Power Connector

- 2.50mm (.098") Pitch
- 4.20mm (.165") Pitch
- 8.40mm (.330") Pitch
- 64326 22-Circuit Receptacle
- 64319 Wire Cap
- 64325 Blind Plugs
- 64322 0.635mm (.025") CP Terminals
- 64324 2.80mm (.110") CP Terminals
- 64325 Wire Seals

SPECIFICATIONS

CP terminals are used for the CMC Hybrid Connector system. Three different CP terminal sizes are available: 0.635mm (.025"), 1.50mm (.059"), and 2.80mm (.110"). They support low, medium and high current data requirements.

The robust shape of CP terminals is specially designed to perform in high-conductivity applications and in harsh environments. It is a 2-piece design in which the terminal body is made out of high-conductivity copper alloy and the terminal box is made out of stainless steel.

CP terminals are available in tin and gold plating, and allow crimping of individual wire sizes as shown in the table below.

The HP (high-performance) 0.635 (.025") CP terminal designed to withstand up to 50 mating cycles is available in gold plating only.

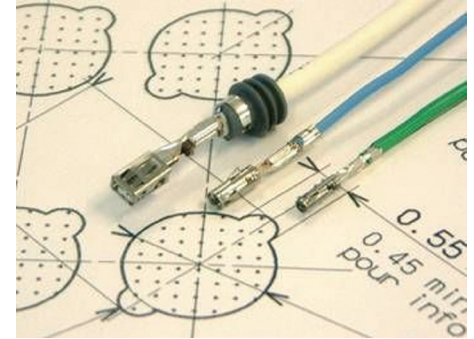
CMC Hybrid Connectors Standard and Power Versions

CMC CP Terminals

64322 CP 0.635mm (.025")

64323 CP 1.50mm (.059")

64324 CP 2.80mm (.110")



CMC CP Terminals

ORDERING INFORMATION

CMC CP Terminals

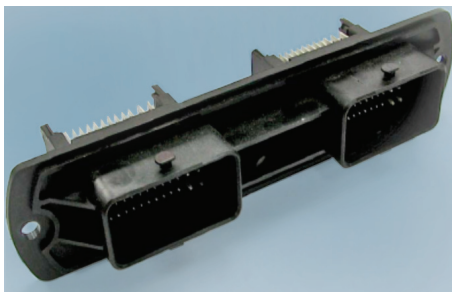
Order No.	Width	Plating	Wire Size in mm²*	Wire Insulation Diameter in mm*	Wire Size in AWG*
64322-1019	0.635mm (.025")	Tin (Sn)	0.35	1.25 – 1.40	22, 24
64322-1029			0.75	1.60 – 1.90	N/A
64322-1039			0.5	1.40 – 1.70	N/A
64322-1219		1.27µm Gold (Au)	0.75	1.60 – 1.90	N/A
64322-1229			0.35	1.25 – 1.40	22, 24
64322-1239			0.5	1.40 – 1.70	N/A
64322-1339	0.635mm (.025") HP		0.75	1.60 – 1.90	N/A
64322-1349		0.35	1.25 – 1.40	22, 24	
64322-1359		0.5	1.40 – 1.70	N/A	
64323-1029	1.50mm (.059")	Tin (Sn)	0.5 to 1.0	1.40 – 2.15	18, 20
64323-1039			> 1.0 to 2.0	2.10 – 2.80	14, 16
64323-1219		1.27µm Gold (Au)	0.5 to 1.0	1.40 – 2.15	18, 20
64323-1319					
64324-1019	2.80mm (.110")	Tin (Sn)	> 3.0 to 5.0	3.40 – 4.00	N/A
64324-1029			> 2.0 to 3.0	2.65 – 3.45	N/A
64324-1039			> 1.0 to 2.0	2.10 – 2.80	N/A
64324-1049			0.5 to 1.0	1.40 – 2.15	N/A
64324-1119		1.27µm Gold (Au)	> 3.0 to 5.0	3.40 – 4.00	N/A
64324-1129			> 2.0 to 3.0	2.65 – 3.45	N/A
64324-1139			> 1.0 to 2.0	2.10 – 2.80	N/A
64322-1149			0.5 to 1.0	1.40 – 2.15	N/A

*For more details please refer to CS 64322-001/CS64323-001/CS64324-001

ORDERING INFORMATION



80-Circuit Header Series 502225



96-Circuit Header Series 36638

CMC Hybrid Connectors Standard and Power Versions

Right-Angle CMC Headers

36638 48- and 96-Circuit

Panel Mount

500762 48-Circuit

Clamshell Mount

502225 80-Circuit

Clamshell Mount

98997 53-Circuit

Clamshell Mount



48-Circuit Header Series 500762



53-Circuit Header 98997-1002

Right-Angle, Lead-Free CMC Headers

Order No.	Circuits	Mounting Style	Soldering Process	Mates with Connector Coding
36638-0001 36638-0012	96	Panel mount with optional snap-in PCB pegs	Wave	48-circuit black coding: Left: 64320-1311 receptacle Right: 64320-3311 receptacle OR 48-circuit brown coding: Left: 64320-1319 receptacle Right: 64320-3319 receptacle
36638-0002 up to 36638-0009	48			
500762-0481	48	Clamshell with snap-in PCB pegs	Wave	48-circuit black coding: Left: 64320-1311 receptacle Right: 64320-3311 receptacle
502225-0801	80		Wave	32-circuit black coding: Right: 64319-3211 AND 48-circuit brown coding: Left: 64320-1319
98997-1002	53		Wave	53-circuit black coding: Right: 64321-2011 OR 53-circuit black coding: Left: 64321-1011