



# PRODUCT SPECIFICATION

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### 32 AND 48CKT CMC CONNECTORS, 64319 & 64320 SERIES



REVISION: <b>E</b>	ECR/ECN INFORMATION: EC No: <b>G 2014-0094</b> DATE: <b>2013/11/27</b>	TITLE: <b>PRODUCT SPECIFICATION CMC 32 AND 48 WAY MAT SEAL VERSION</b>	SHEET No. <b>1 of 8</b>
DOCUMENT NUMBER: <b>PS-64319-001</b>	CREATED / REVISED BY: <b>A.HERBELIN</b>	CHECKED BY: <b>C.BOUCHAN</b>	APPROVED BY: <b>P.BEUGNOT</b>



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## 1.0 SCOPE

This Product Specification covers the hybrid & sealed 32 and 48 way CMC Connectors Series.

## 2.0 PRODUCT DESCRIPTION

### 2.1 PRODUCT NAME AND SERIES NUMBER(S)

- **64319**: CMC Connector 32 circuits.
- **64320**: CMC Connector 48 circuits.
- **64322**: CP 0.6 Female Terminal.
- **64323**: CP 1.5 Female Terminal.
- **64325**: Blind Plug.

### 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

All dimensions, housing materials, terminal materials and plating can be found on sales drawings.

### 2.3 SAFETY AGENCY APPROVALS

All molded components are flammability rated UL94 HB.

### 2.4 MAIN TECHNICAL CHARACTERISTICS

- Operating Voltage: 14 Volts DC.
- Dielectric Withstanding Voltage: 1000 Volts AC for 1 minute.
- Insulation Resistance: 100 MΩ minimum.
- Vibration: 10g (tin).
- Sealing: IP6K7, IP6K8, IP6K9K.
- Operating temperature: -40°C to + 125°C.
- Available wire sizes:
  - CP 0.6mm<sup>2</sup>: 0.35mm<sup>2</sup> to 0.75mm<sup>2</sup> and 18 TXL AWG and 20 TXL AWG
  - CP 1.5mm<sup>2</sup>: 0.50mm<sup>2</sup> to 2.00mm<sup>2</sup> and 14 TXL AWG and 16 TXL AWG
- Available plating options: tin and gold

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## 2.5 VALIDATION DONE ACCORDING THE FOLLOWING STANDARDS

ISO 8092-2 standard, and some items from:

PSA B217050

AK LV 214 Standard

JD 53.3

Please contact Molex for more information.

## 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Description	Document Number
Application specification	AS-64319-001
Sales drawing CMC 32 way	SD-64319-001
Sales drawing CMC 48 way	SD-64320-001
Sales drawing CP 0.6 female terminal	SD-64322-001
Sales drawing CP 1.5 female terminal	SD-64323-001
Interface drawing CMC 32 and 48 way	SD-98644-006
Application Specification CP0.6 female terminal	AS-64322-001
Application Specification CP1.5 female terminal	AS-64323-001

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## 4.0 RATINGS

### 4.1 VOLTAGE

Operating Voltage: 14 Volts DC

Dielectric Withstanding Voltage: 1000 Volts AC during 1 minute

### 4.2 CURRENT AND APPLICABLE WIRES

#### Applicable wires:

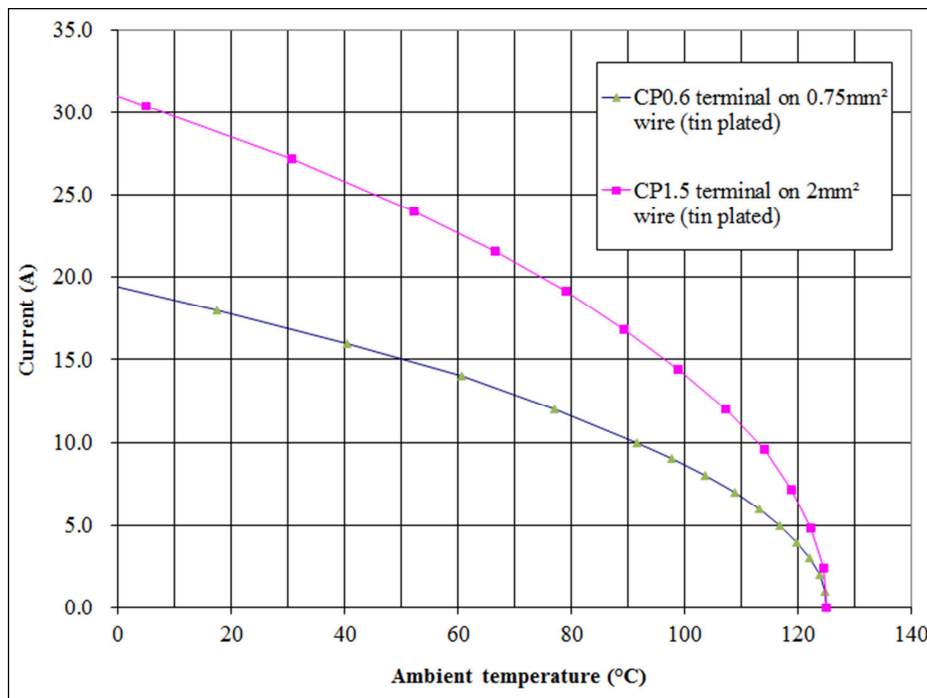
Terminal size	ISO	Outside Insulation Diameter
0.63	0.75 mm <sup>2</sup>	1.90 mm Max.
1.5	2.0 mm <sup>2</sup>	2.80 mm Max.

Max applicable continuous current (in housing, with 40°C temperature rising):

	32/48Ckt
CP0.6 on 0,75mm <sup>2</sup>	2,5A
CP1.5 on 2mm <sup>2</sup>	12A

Check mating header temperature class and environmental conditions for potential limitations.

#### Terminals derating curves (on air, for information only):



The derating curves are presented as a guideline. The end user must evaluate the performance of the connector pair in actual application to determine the suitability and actual performance.

For any further information, please contact Molex.

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## 4.3 TEMPERATURE

Maximum system in use temperature range: - 40°C to +125°C.  
Split operating temperature between female and header  
Check mating header temperature class for potential limitations.

## 5.0 PERFORMANCE

### 5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	ISO STANDARD (BY EQUIVALENCE)	REQUIREMENT
1	<b>Contact Resistance (Low Level)</b>	Mate connectors : apply a maximum voltage of 20 mV and a current of 100 mA	ISO 8092-2 § 4.8.1	Terminal 0.63: 8 mΩ max. Terminal 1.5: 4 mΩ max.
2	<b>Insulation Resistance</b>	Unmated connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	ISO 8092-2 § 4.12	100 MΩ min.
3	<b>Dielectric Withstanding Voltage</b>	Unmated connectors: apply a voltage of 1000 volts 50 Hz VAC for 1 minute between adjacent terminals and between terminals to ground.	ISO 8092-2 § 4.13	No Breakdown

### 5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	ISO STANDARD (BY EQUIVALENCE)	REQUIREMENT
4	<b>Terminal Insertion Forces</b>	Insert terminal into the housing at a rate of 25 mm per minute	ISO 8092-2 § 4.6	Terminal 0.63 : 12 N max. Terminal 1.5 : 25 N max.
5	<b>Terminal Retention Force (in housing with TPA)</b>	Axial pullout force on the terminal in the housing at a rate of 25 mm per minute	ISO 8092-2 § 4.7	Terminal 0.63 : 60 N min. Terminal 1.5 : 100 N min.
6	<b>Connector Mate and Unmate Forces</b>	Mate and unmate connector (male to female) at a rate of 25 mm per minute	ISO 8092-2 § 4.3	32w Connector: 70 N max. 48w Connector: 70 N max.

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ITEM	DESCRIPTION	TEST CONDITION	ISO STANDARD (BY EQUIVALENCE)	REQUIREMENT
7	<b>Durability</b>	Mate connectors up to 20 cycles	ISO 8092-2 § 4.3	No mechanical damage and no sealing leakage.
8	<b>Vibration (Sine) <u>Tin plated Terminals</u></b>	<p>- Mate connectors and vibrate from 10 to 2000Hz :</p> <p>Vibration profile :</p> <ul style="list-style-type: none"> <li>- 10 Hz - 0.3g</li> <li>- 25 Hz – 3g</li> <li>- 200 Hz – 3g</li> <li>- 200 Hz – 1 g</li> <li>- 2000 Hz – 1g</li> </ul> <p>Duration 48 hours in each of three mutually perpendicular axes (X, Y, Z) coupled with a temperature cycling from -40°C to 95°C.</p> <p>- Mate connectors and vibrate from 10 to 2000Hz :</p> <p>Vibration profile :</p> <ul style="list-style-type: none"> <li>- 10 Hz - 0.3g</li> <li>- 60 Hz – 10g</li> <li>- 2000 Hz – 10g</li> </ul> <p>Duration: 8 hours in each of three mutually perpendicular axes (X, Y, Z) coupled with a temperature cycling from -40°C to 125°C.</p>	N/A	No mechanical damage and no micro-break Contact resistance: $\Delta R_c$ (R final-R initial) $\leq 5m\Omega$
10	<b>Wire Pullout Force (axial)</b>	Apply an axial pullout force on the wire bundle	N/A	No damage under $F \leq 100N$
11	<b>Mechanical Shocks</b>	Assembled female connector shall be dropped onto concrete from a height of 1m	N/A	No damage on connectors

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## 5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	ISO STANDARD (BY EQUIVALENCE)	REQUIREMENT
12	<b>Thermal Shocks</b>	Mated connectors exposed to 100 cycles of: <u>Temperature C°</u> <u>Duration</u> <u>(minutes)</u> - 40° ±2                      60 +100° ±2                      60	N/A	No mechanical damage  Contact resistance in accordance with §1
13	<b>Endurance to temperature and humidity</b>	Mated connectors exposed to 5 cycles of 24 hours as defined below: - 4 Hrs @23°C with 75% of relative humidity. - 0.5 Hr of heat up to +55°C. - 10 Hrs @55°C with 99% of relative humidity. - 1.5 hrs of cool down to -40°C. - 2 hrs @ -40°C. - 2.5 Hrs of heat up to +125°C. - 2 Hrs @ +125°C. - 1.5 Hrs of cool down to 23°C.	ISO 8092-2 § 4.10	No mechanical damage  Contact resistance in accordance with §1
14	<b>Fluid resistance</b>	Submerge mated connectors in each of the following automotive fluids : - engine oil - manual gear box oil - automatic gear box oil - engine coolant - battery liquid - brake fluid - power steering fluid - diesel fuel - window washing liquid (methanol)	N/A	Insulation resistance in accordance with §2  Dielectric strength in accordance with §3
15	<b>Water tightness</b>	Submerge mated connector under water 100mm minimum for 30 seconds minimum duration under 500mbar air pressure.	ISO 20653	IP6K7, IP6K8
16	<b>High Pressure Spray Resistance</b>	Mated connectors are placed on a rotating table and submitted to high pressure water jet (100bars at 80°C)	ISO 20653	IP6K9K

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## 6.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage.

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For further information please visit Molex website: [www.molex.com/product/cmc.html](http://www.molex.com/product/cmc.html)

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