

UNSEALED INTERCONNECTION SYSTEM

FOR INDUSTRIAL & COMMERCIAL TRANSPORTATION

TERMINALS AND CONNECTORS





WE GO TO EXTREMES TO MAKE SURE EVERY CONNECTION COUNTS.

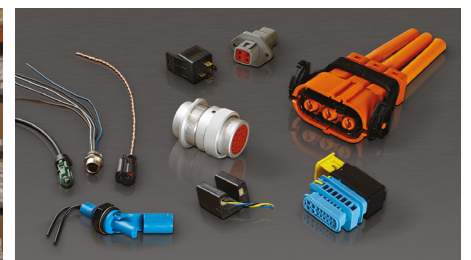
TE Connectivity (TE) Industrial & Commercial Transportation (ICT) is a reliable provider of solutions for even the harshest environment. With a focus on employee expertise and durable products, we deliver the solutions and support our customers can count on.



2,000+ Employees



10,000+ Customers



20,000+ Different Parts

Years ago, tractors, construction equipment, trucks, and boats had simple electrical systems that might have included electrical starting and a basic lighting package. Today, ECUs, joysticks, fuel-efficient engines, LED lights, and CAN systems are standard equipment. The need to protect these sensitive electrical systems from vibration, moisture, dust, dirt, salt, and airborne particles has never been greater. TE Industrial & Commercial Transportation is a leader in supporting today's increasingly complex and sophisticated equipment and applications.

Our comprehensive line of products includes an unparalleled portfolio of rugged sensors, terminals, connectors, relays, and hybrid electric mobility solutions. These solutions are designed to withstand harsh environmental conditions and to help vehicles operate safer, cleaner, and smarter.

Our solutions adapt to virtually any harsh environment application, including:



Motors and Gearboxes



ABS/EBS Brake Units



Telematics Units



Sensors



Wire-To-Wire Coupling at the Chassis



Infotainment Applications



UNSEALED INTERCONNECTION SYSTEM FOR INDUSTRIAL & COMMERCIAL TRANSPORTATION

TE Connectivity's Unsealed Interconnection System for Industrial & Commercial Transportation is an excellent solution for customers in search of unsealed, rugged and flexible connectors — specifically designed for inside-cabin, bulkhead and control-unit applications of on- and off-road vehicles. Adopting TE's field-proven AMP MCP 1.5K, 2.8, 6.3, 9.5, and PCON 12 terminals and — the newest addition — the MCON 1.2 terminals, this series provides complete flexibility with the option to choose between 1–48 position connectors. Featuring flame retardant UL94 V-0 material alternatives, wire sizes of up to 16 mm² and a reduced mating force less than 75N for the 18-position monoblock connector, these products can also be used for vibration at cabin level as well as high power applications — providing the ultimate safety and reliability, alongside overall cost-effectiveness.

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UNSEALED INTERCONNECTION SYSTEM

BENEFITS

- Enable design flexibility with a broad range of unsealed, rugged and flexible connectors and a product offering of between 1-48 positions
- Offer additional security with flame retardant V-0 material options (18P and 21P monoblock connector using AMP MCP 2.8 terminals, MCON 1.2 3P, 6P & 16P connector and 1P 90° unsealed connector using PCON 12 terminals)
- Facilitate contact alignment with integrated and separate secondary locking features
- Help prevent mismatch with up to 6-polarization and color key mating configurations available
- Reduce mating force below 75N with new design of the 18P monoblock connector including lever
- Provide high reliability for long term use with vibration resistance for cabin

KEY INDUSTRIES

The Unsealed Interconnection System can be utilized in trucks and buses, as well as construction, agriculture, and two-, three- and four-wheel ATV/UTV vehicles.



Truck



Bus



Construction



Agriculture



ATV/UTV



Automotive

APPLICATIONS

The Unsealed Interconnection System operates in wire-to-wire, wire-to-board, control unit, bulkhead, in-cabin and fuse & relay box applications.



Wire-To-Wire



Wire-To-Board



Control Unit



Bulkhead



In-Cabin



Fuse and Relay Boxes



Dashboard & Infotainment

PRODUCT DOCUMENTATION

Additional product documentation is available for assistance with the Unsealed Interconnection System. The following documentation may be helpful:

Category	Customer Drawings	Document
AMP MCP 2.8 6-21P	Group Drawing for 6-21P Receptacle Housings	1355073
	Group Drawing for 6-21P Tab Housings	1355072
	Group Drawing for 6-21P Tab Headers	966140
	Group Drawing for AMP MCP 2.8 Contacts Receptacle	1355036
	Group Drawing for AMP MCP 2.8 Contacts Tab	1355052
	Interface Drawing for 6-21P Connectors	114-18085-025
AMP MCP 1.5K+2.8 25P	Customer Drawing for 25P Receptacle Housings	1718484
	Customer Drawing for 25P Tab Housings	2112890
	Group Drawing for AMP MCP 2.8 Contacts Receptacle	1355036
	Group Drawing for AMP MCP 2.8 Contacts Tab	1355052
	Group Drawing for AMP MCP 1.5K Contacts Receptacle	1241436
	Group Drawing for AMP MCP 1.5K Contacts Tab	1355055
	Interface Drawing for 25P Connector	114-18721
AMP MCP 1.5K 36P	Customer Drawing for 36P Receptacle Housings	1718485
	Customer Drawing for 36P Tab Housings	2112891
	Customer Drawing for 36P Tab Headers	2236715
	Customer Drawing for 9P Inserts	1718490
	Customer Drawing for 18P Inserts	1718489
	Group Drawing for AMP MCP 1.5K Contacts Receptacle	1241436
	Group Drawing for AMP MCP 1.5K Contacts Tab	1355055
	Interface Drawing for 36P Connectors	114-18664
AMP MCP 9.5 2P	Customer Drawing for 2P AMP MCP 9.5 Receptacle Housings	1355289
	Customer Drawing for 2P AMP MCP 9.5 Tab Housings	1355290
	Group Drawing for AMP MCP 9.5 Contacts Receptacle	1355037
	Group Drawing for AMP MCP 9.5 Contacts Tab	2287475
	Interface Drawing for 2P 9.5 AMP MCP Connectors	114-18327-001
AMP MCP 2.8 18P Monoblock	Customer Drawing for 18P Monoblock Receptacle Housings	2322190
	Customer Drawing for 18P Monoblock Tab Housings	2322192
	Group Drawing for AMP MCP 2.8 Contacts Receptacle	1355036
	Group Drawing for AMP MCP 2.8 Contacts Tab	1355052
1P Using PCON 12 Terminals	Customer Drawing for 1P 90° Unsealed Connector Using PCON 12 Terminals Receptacle Housings	2308295
	Customer Drawing for 1P 90° Unsealed Connector Using PCON 12 Terminals Receptacle	2840573
	Interface Drawing for 1P 90° Unsealed Connector Using PCON 12 Terminals	208-18000

PRODUCT DOCUMENTATION

Additional product documentation is available for assistance with the Unsealed Interconnection System. The following documentation may be helpful:

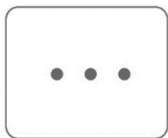
Category	Customer Drawings	Document
MCON 1.2 3 POS	MCON Interface Drawing, 3 pos	208-18182
	Customer Drawing for 3POS Receptacle Housing	2382877
	Customer Drawing for MCON 3POS Tab Housing	2382878
MCON 1.2 16 POS	Interface Drawing MCON 16 POS	208-18173
	Customer Drawing for MCON 16 POS Receptacle Housing	2382871
	Customer Drawing for MCON 16 POS Tab Housing	382874
MCON 1.2 48P Monoblock	Customer Drawing for MCON 16 POS Receptacle Housing	2484261
	Customer Drawing for MCON 48 POS Tab Housing	2484266
AMP MCP 9.5 2 POS	Interface Drawing FOR AMP MCP 9.5 2 POS Tab connector	114-18326-001
	Customer Drawing for AMP MCP 9.5 2 POS Receptacle Housing	1355289
	Customer Drawing for AMP MCP 9.5 2 POS Mating Tab	355290
AMP MCP 6.3 4 POS	Customer Drawing for AMP MCP 6.3 4 POS Receptacle Housing	2388170
	Customer Drawing for AMP MCP 6.3 4 POS Tab Housing	2388171
AMP MCP 2.8 21 pos MONOBLOCK	Customer Drawing for AMP MCP 2.8 21 pos MONOBLOCK Receptacle Housing	2379921
	Customer Drawing for AMP MCP 2.8 21 pos MONOBLOCK Tab Housing	2379922
AMP MCP 2.8 + MCON 1.2 33 POS MONOBLOCK	Customer Drawing for AMP MCP 2.8 & MCON 1.2/33 POS Receptacle Housing	2484261
	Customer Drawing for AMP MCP 2.8 & MCON 1.2/33 POS Tab Housing	2484266

Category	Specifications	Document
MCON 1.2 3P-16P	Application Specification for 3 POS	114-94736
	Product Specification for 3 POS	108-94833
	Product Specification for 16 POS	108-94834
	Application Specification for 16 POS	114-94735
AMP MCP 1.5K+2.8 25P & 36P	Application Specification for 25/36P	114-18663
	Product Specification for 25/36P	108-18957
AMP MCP 2.8 6P-21P	Application Specification for 6-21P Receptacle/Tab Housings	114-94624
	Product Specification for 6-21P Receptacle Housings	108-18619-3
	Product Specification for Potential Distribution (2x9,21)	108-18879
AMP MCP 6.34P	Product Specification for 4POS	108-94718
	Application Specification for 4POS	114-161062
AMP MCP 9.5 2P	Product Specification for 2POS	108-18630-0
	Application Specification for 2POS	114-18269
PCON121P 90°	Application Specification for 1P 90° Receptacle Housings	114-94414
	Product Specification for 1P 90° Receptacle Housings	108-94551
AMP MCP 2.818P Monoblock	Application Specification for 18P Monoblock	114-94610
	Product Specification for 18P Monoblock	108-94718
AMP MCP 2.8 21P Monoblock	Application Specification for 21P Monoblock	108-94718
	Product Specification for 21P Monoblock	114-9461
AMP MCP 1.5K + MCON 1.2 33P Monoblock	Application Specification for 33P Monoblock	114-161149
	Product Specification for 33P Monoblock	108-161335
MCON 1.2 48P Monoblock	Application Specification for 48P Monoblock	114-32365
	Product Specification for 48P Monoblock	108-32618

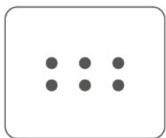
MCON 1.2 3 & 6 POSITION CONNECTORS

TECHNICAL INFORMATION

- **Contact System:** MCON 1.2
- **Housing Material:** PA6-GF15
- **Wire Size Range:** 0.22 mm² - 1.5 mm²
- **Temperature:** -40°C to +105°C
- **Protection:** IP 30
- **Flammability:** UL 94 V-0



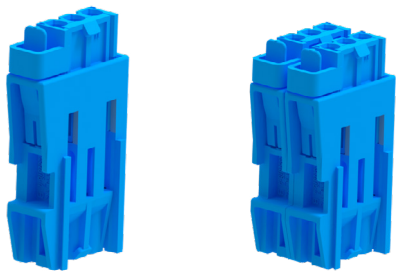
3 Position
3 * MCON 1.2



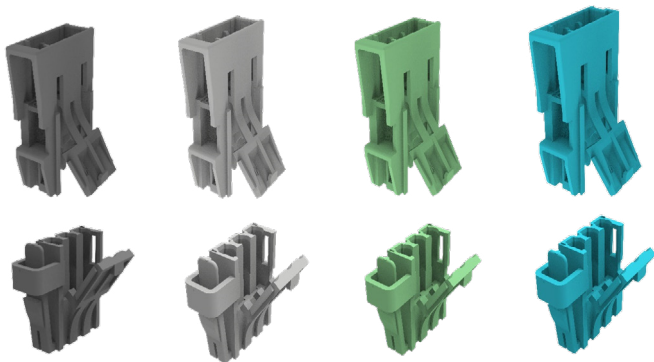
6 Position
6 * MCON 1.2

PRODUCT FEATURES

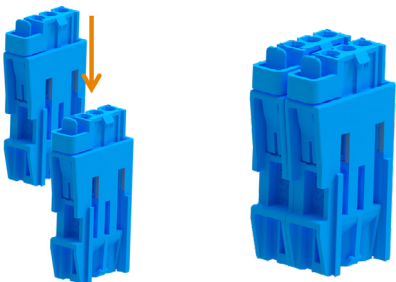
- Increased density utilizing the MCON 1.2 contact
- Stackable connector design
- Simplified assembly with color coding, mechanical keying and wall mounting features
- Contact alignment and retention with integrated secondary locking feature



Stackable connector design provide increased density for stand alone applications.



Make a quick installation from a 3-position to a 6-position connector possible.



ORDERING INFORMATION

MCON 1.2 Connectors				
Position	Code	Color	Part Numbers	
			Receptacle Housing	Tab Housing
3	A	Black	2382877-1	2382878-1
	B	Gray	2382877-2	2382878-2
	C	Green	2382877-3	2382878-3
	D	Blue	2382877-4	2382878-4

MCON 1.2 16 POSITION CONNECTOR

TECHNICAL INFORMATION

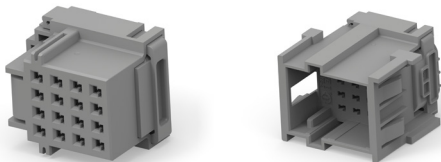
- **Contact System:** MCON 1.2
- **Housing Material:** PA6-GF15
- **Wire Size Range:** 0.22 mm² - 1.5 mm²
- **Temperature:** -40°C to +105°C
- **Protection:** IP 30
- **Flammability:** UL 94 V-0



16 Position
16 * MCON 1.2

PRODUCT FEATURES

- Increased density utilizing the MCON 1.2 contact
- Bulkhead connector design
- Simplified assembly with color coding, mechanical keying and wall mounting features
- Contact alignment and retention with integrated secondary locking feature



ORDERING INFORMATION

MCON 1.2 Connectors				
Position	Code	Color	Part Numbers	
			Receptacle Housing	Tab Housing
16	A	Black	2382871-1	2382874-1
	B	Gray	2382871-2	2382874-2
	C	Green	2382871-3	2382874-3
	D	Blue	2382871-4	2382874-4

UNSEALED AMP MCP 1.5K & 2.8 CONNECTORS



TECHNICAL INFORMATION

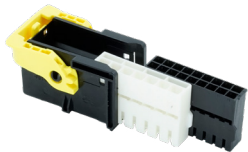
- **No. of Positions:** 25 Positions
- **Housing Material:** PBT/ASA-GF30
- **Wire Size Range (with Receptacle Insert):**
7 Position Receptacle insert: 2.5 mm² FLR Max. (7x)
18 Position Receptacle insert: 1.5 mm² FLR Max. (18x)
- **Temperature:** -40°C to +120°C
- **Protection:** IP 30
- **Flammability:** UL 94 HB



25 Positions
18*1.5k + 7*2.8

PRODUCT FEATURES

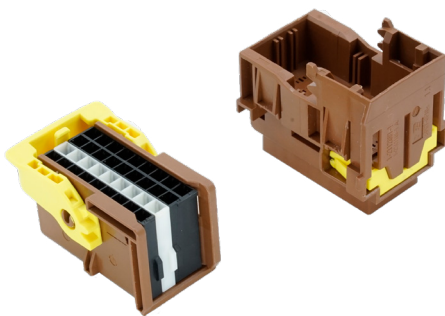
- Polarized to prevent improper mating
- Mechanical and color keyed
- Integrated secondary lock confirms contact alignment and retention
- Several keyings available for receptacle and tab housings
- Lever mechanism for higher pin counts
- Vibration resistance at cabin level



ORDERING INFORMATION

No. of Positions	Keying Options	Housing Color	Carrier with Lever	7 Position Insert	18 Position Insert	Mating Tab Housing	Mating Tab Header
25	A	Black	1-1718484-1	1718488-1	1718489-1	1-2112890-1	1-1718491-1
	B	Gray	1-1718484-2			1-2112890-2	1-1718491-2
	C	Light Blue	1-1718484-3			1-2112890-3	1-1718491-3
	D	Yellow Green	1-1718484-4			1-2112890-4	1-1718491-4

UNSEALED AMP MCP 1.5K CONNECTORS



TECHNICAL INFORMATION

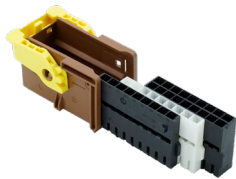
- **No. of Positions:** 36 Positions
- **Housing Material:** PBT/ASA-GF30
- **Wire Size Range:**
1.5 mm² FLR Max. (With Receptacle Insert)
Part No. 1718489 and Part No. 1718490
- **Temperature:** -40°C to +120°C
- **Protection:** IP 30
- **Flammability:** UL 94 HB



36 Positions
36*1.5K

PRODUCT FEATURES

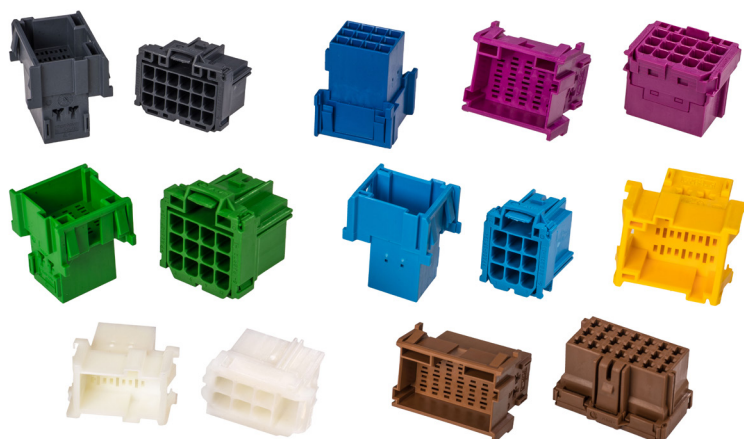
- Polarized to prevent improper mating
- Mechanical and color keyed
- Integrated secondary lock confirms contact alignment and retention
- Several keyings available for receptacle and tab housings
- Lever mechanism for higher pin counts
- Vibration resistance at cabin level
- Options for in-line, bulkhead and PCB mounts



ORDERING INFORMATION

No. of Positions	Keying Options	Housing Color	Carrier with Lever	9 Position Insert Key A	9 Position Insert Key B	18 Position Insert	Mating Tab Housing	Mating Tab Housing	Mating Tab Header
36	A	Brown	1-1718485-1	1718490-1	1718490-2	1718489-1	1-2112891-1	1-1718492-1	1-2236715-1
	B	Purple	1-1718485-2				1-2112891-2	1-1718492-2	1-2236715-2
	C	Green	1-1718485-3				1-2112891-3	1-1718492-3	-
	D	Blue	1-1718485-4				1-2112891-4	1-1718492-4	*
	E	Gray	1-1718485-5				1-2112891-5	1-1718492-5	*
	F	Orange	1-1718485-6				1-2112891-6	1-1718492-6	-

UNSEALED AMP MCP 2.8 CONNECTORS



TECHNICAL INFORMATION

- **No. of Positions:** 3-21 Positions
- **Housing Material:** PA66 (TAB) / PBT (REC)
- **Wire Size Range:**
2.5 mm² FLR Max.
4.0 mm² FLR Max. (3 Pos. only)
- **Temperature:** -40°C to +120°C
- **Protection:** IP 30
- **Flammability:** UL 94 HB

PRODUCT FEATURES

- Polarized to prevent improper mating
- Integrated and separate secondary lock confirms contact alignment and retention
- Mechanical and color keyed
- Up to 6 codings available for receptacle and tab housings
- In-line, bulkhead, PCB mount options
- AMP MCP 2.8 connectors for potential distribution are available



3 Positions
3*2.8



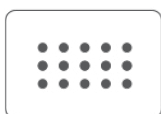
6 Positions
6*2.8



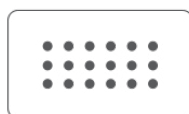
9 Positions
9*2.8



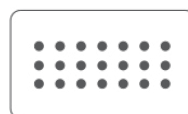
12 Positions
12*2.8



15 Positions
15*2.8



18 Positions
18*2.8



21 Positions
21*2.8

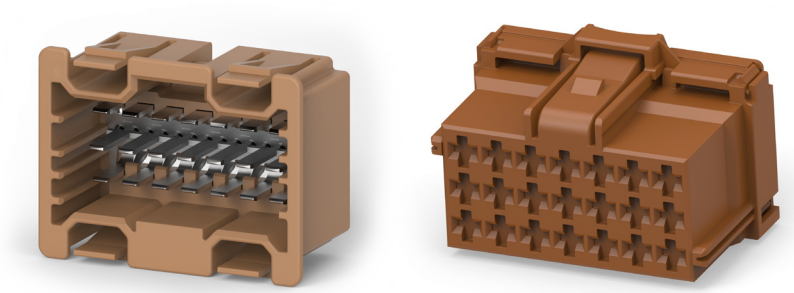
ORDERING INFORMATION

No. of Positions	Keying Options	Housing Color	Part Number		
			Receptacle Housing	Mating Tab Housing	Mating PCB Header Right-Angle
3	A	Black	1-968976-9	1-968977-9	For detailed information please check Page 24 Unsealed AMP MCP 2.8 90° Headers
6		Blue**	8-968970-1	1-965641-1*	
9		Yellow**	8-968971-1	1-967626-1*	
12		Green**	8-968972-1	1-967627-1*	
15		Violet**	8-968973-1	1-967628-1*	
18		Gray	8-968974-1	1-967629-1*	
21		Brown**	8-968975-1	1-967630-1*	
3	B	Gray	2-968976-9	2-968977-9	
6		Natural	7-968970-1	2-965641-1	
9		Natural	7-968971-1	2-967626-1	
12		Natural	7-968972-1	2-967627-1	
15		Natural	7-968973-1	2-967628-1	
18		Natural	7-968974-1	2-967629-1	
21		Natural	7-968975-1	2-967630-1	
3	C	Blue	3-968976-9	3-968977-9	
6		Blue	6-968970-1	3-965641-1	
9		Blue	6-968971-1	3-967626-1	
12		Blue	6-968972-1	3-967627-1	
15		Blue	6-968973-1	3-967628-1	
18		Blue	6-968974-1	2-967629-1	
21		Blue	6-968975-1	3-967630-1	
6	D	Violet	5-968970-1	4-965641-1	
9		Violet	5-968971-1	4-967626-1	
12		Violet	5-968972-1	4-967627-1	
15		Violet	5-968973-1	4-967628-1	
18		Violet	5-968974-1	4-967629-1	
6	E	Green	4-968970-1	5-965641-1	
12		Green	4-968972-1	5-967627-1	
18		Green	4-968974-1	5-967629-1	
21		Green	4-968975-1	5-967630-1	
6	F	Orange	9-968970-2	6-965641-1	
12		Orange	9-968972-2	6-967627-1	
18		Orange	9-968974-2	6-967629-1	
21		Orange	9-968975-2	6-967630-1	

*Other colors available. See Product Group Drawing 1355072.

**Other colors available. See Product Group Drawing 1355073.

UNSEALED AMP MCP 2.8 CONNECTORS FOR POTENTIAL DISTRIBUTION

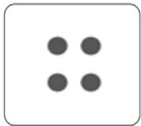


No. of Positions	Keying Options	Housing Color	Part Number	
			Tab Housing	Mating Receptacle Housing
21	A	Brown	1-1394765-1	8-968975-1
	B	Natural	2-1394765-1	7-968975-1
2x9	C	Blue	3-1394766-1	6-968975-1
2x9 120Ω	C	Blue	3-1394766-2	6-968975-1
21	A	Brown	1534188-1	8-968975-1

AMP MCP 6.3 4 POSITION CONNECTOR

TECHNICAL INFORMATION

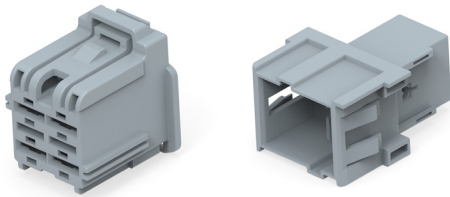
- **No. of Positions:** 4 Positions
- **Housing Material:** PA6-GF15
- **Wire Size Range:** 4 mm² - 6 mm²
- **Temperature:** -40°C to +105°C
- **Protection:** IP 30
- **Flammability:** UL 94 HB



4 Positions
4 * 6.3

PRODUCT FEATURES

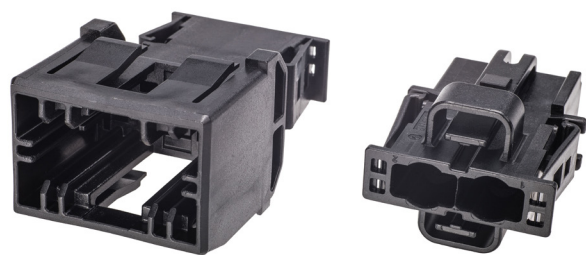
- Contact alignment and retention with separate secondary locking feature (PN:2388168-1) for receptacle and tab housing
- Reduce improper mating with 2 mechanical and color-coding options
- Tab housing fits into standard bulkhead cutout



ORDERING INFORMATION

AMP MCP 6.3 4 Position				
Position	Code	Color	Part Numbers	
			Receptacle Housing	Tab Housing
4	A	Black	2388170-1	2388171-1
	B	Gray	2388170-2	2388171-2

UNSEALED AMP MCP 9.5 2 POSITION CONNECTORS



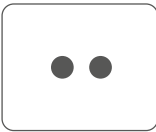
TECHNICAL INFORMATION

- **No. of Positions:** 2 Positions
- **Housing Material:** PA66 GF13
- **Wire Size Range:** 10 mm² FLK Max
- **Temperature:** -40°C to +120°C
- **Protection:** IP 30
- **Flammability:** UL 94 HB

PRODUCT FEATURES

- Polarized to prevent improper mating
- Mechanical and color keyed
- Integrated secondary lock confirms contact alignment and retention
- Several keyings available for receptacle and tab housings
- For power applications

CONFIGURATION

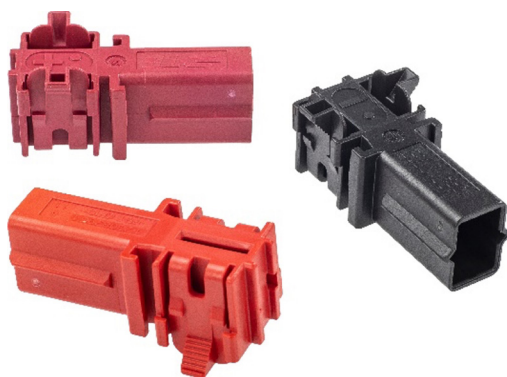


2 Positions
2*9.5

ORDERING INFORMATION

No. of Positions	Keying Options	Housing Color	Part Number	
			Receptacle Housing	Mating Tab Housing
2	A	Black	1355289-1	1355290-1
	B	Gray	1355289-2	1355290-5
	C	Blue	1355289-3	1355290-6

PCON 12 CONNECTOR



TECHNICAL INFORMATION

- **No. of Positions:** 1 Position 90°
- **Housing Material:** PBT GF10
- **Wire Size Range:** 5 mm² - 16 mm²
- **Temperature:** -40°C to +105°C
- **Protection:** IP 20
- **Flammability:** UL 94 V-0
- **Voltage:** up to 60 V DC

PRODUCT FEATURES

- 90° cable exit configuration accommodates tight spaces
- Excellent for in-cabin, bulkhead and control unit applications
- Dual side-actuated snap-in locks provide an audible “click” for enhanced security
- Cost efficient solution for customers’ high-power needs

CONFIGURATION



1 Position
1 * PCON 12

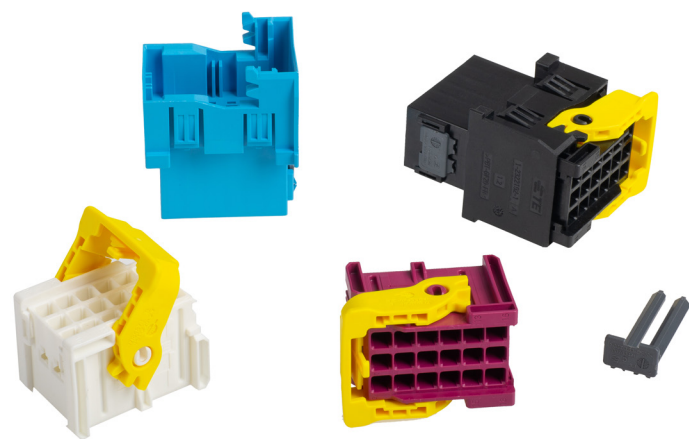
PRODUCT PART NUMBERS – PCON 12 1-P CONNECTOR



One-Position 90° Unsealed Connector Using PCON 12 Terminals	Part Number
One-position 90° unsealed connector, Code A (red)	1-2308295-1
One-position 90° unsealed connector, Code B (violet)	2-2308295-1
One-position 90° unsealed connector, Code C (black)	3-2308295-1

MONOBLOCK CONNECTORS

UNSEALED AMP MCP 2.8 18P MONOBLOCK CONNECTORS



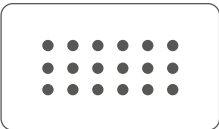
TECHNICAL INFORMATION

- **No. of Positions:** 18 Positions
- **Housing Material:** PBT GF20
- **Wire Size Range:** 0.75 mm² - 2.5 mm²
- **Temperature:** -40°C to +105°C
- **Protection:** IP 30
- **Flammability:** UL 94 V-0

PRODUCT FEATURES

- Requires a secondary lock to aid with contact alignment
- Reduced mating force below 75 N
- 4 color-coding options available to reduce improper mating
- Fits in existing bulkhead cut-outs and therefore no design changes are needed
- Made out of flame-retardant UL 94 V-0 material for additional safety inside the cabin

CONFIGURATION



18 Positions
18*2.8



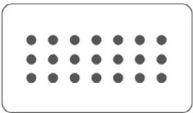
ORDERING INFORMATION

No. of Positions	Keying Options	Housing Color	Part Number		
			Receptacle Housing	Mating Tab Housing	Secondary Locking Device
18	A	Black	1-2322190-1	1-2322192-1	967634-1
	B	White	2-2322190-1	2-2322192-1	
	C	Blue	3-2322190-1	3-2322192-1	
	D	Violet	4-2322190-1	4-2322192-1	

AMP MCP 2.8 21 POSITION MONOBLOCK CONNECTORS

TECHNICAL INFORMATION

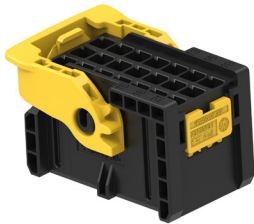
- **No. of Positions:** 21 Position
- **Housing Material:** PBT GF20
- **Wire Size Range:** 0.5 mm² - 2.5 mm²
- **Temperature:** -40°C to +105°C
- **Protection:** IP 30
- **Flammability:** UL 94 V-0
- **Current Rating:** 33A @23°C



21 Positions
21 * 2.8

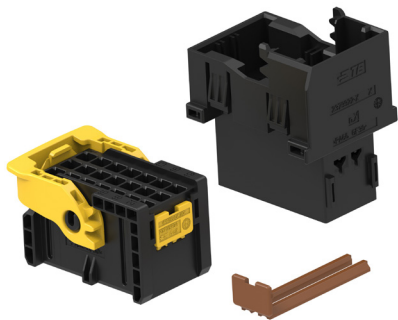
PRODUCT FEATURES

- Requires a secondary locking feature to aid with contact alignment
- Reduced mating force below 75N
- 4 color-coding options available to reduce improper mating
- Fits in existing bulkhead cut-outs and therefore no design changes needed
- Made from flame-retardant UL 94 V-0 material for additional safety inside the cabin



ORDERING INFORMATION

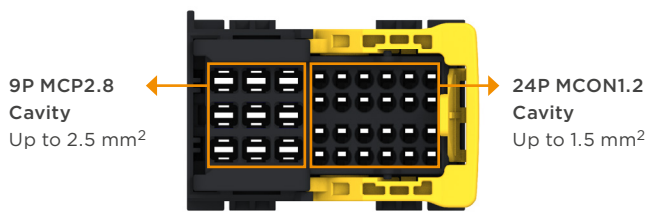
Position	Code	Color	Part Numbers		Secondary Locking Device
			Receptacle Housing	Tab Housing	
21	A	Black	2379921-1	2379922-1	967635-1
	B	Gray	2379921-2	2379922-2	
	C	Green	2379921-3	2379922-3	
	D	Blue	2379921-4	2379922-4	



AMP MCP 2.8 AND MCON 1.2 33 POSITION MONOBLOCK CONNECTOR

TECHNICAL INFORMATION

- **Contact System:** MCON 1.2 and AMP MCP 2.8
- **Housing Material:** PBT GF30
- **Wire Size Range:** 0.5 mm² - 1.5 mm² and 2.5 mm²
- **Temperature:** -40°C to +105°C
- **Protection:** IP 30
- **Flammability:** UL 94 HB



PRODUCT FEATURES

- Secondary locking feature to aid with contact alignment
- Reduced mating force
- Up to 2 coding options
- Fits in existing bulkhead cut-outs and therefore no design changes needed



ORDERING INFORMATION

Position	Code	Color	Part Numbers	
			Receptacle Housing	Mating Tab Housing
33	A	Brown	2484261-1	2484266-1
	B	Grey	2484261-2	2484266-2

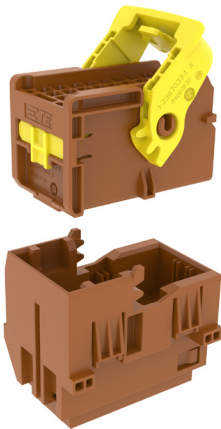
36P MONOBLOCK CONNECTOR

TECHNICAL INFORMATION

- **Contact System:** AMP MCP 1.5K
- **Housing Material:** PBT GF30
- **Wire Size Range:** 0.5 mm² - 1.5 mm²
- **Temperature:** -40°C to +105°C
- **Protection:** IP 30
- **Flammability:** UL 94 HB
- **Current Rating:** 20A@23°C



36 Positions
36 * AMP MCP 1.5K



PRODUCT FEATURES

- Secondary locking feature to aid with contact alignment
- Reduced mating force
- 4 color-coding options available to reduce improper mating
- Fits in existing bulkhead cut-outs and therefore no design changes needed



Carrier + Insert Type



Mono Type

ORDERING INFORMATION

No. of Positions	Code	Color	Part Number		
			Receptacle Housing	Mating Tab Housing	Compatible 90° header
36	A	Brown	2377780-1	2377783-1	1-2236715-1
	B	Purple	2377780-2	2377783-2	1-2236715-2
	C	Green	2377780-3	2377783-3	-
	D	Blue	2377780-4	2377783-4	-

MCON 1.2 48 POSITION MONOBLOCK CONNECTOR

TECHNICAL INFORMATION

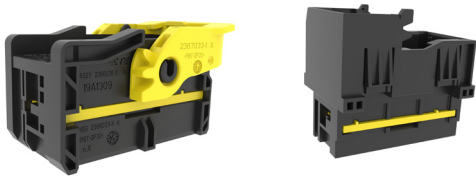
- **Contact System:** MCON 1.2
- **Housing Material:** PBT GF30
- **Wire Size Range:** 0.5 mm² - 1.5 mm²
- **Temperature:** -40°C to +105°C
- **Protection:** IP 30
- **Flammability:** UL 94 HB
- **Current Rating:** 17A@23°C



38 Positions
48 * MCON 1.2

PRODUCT FEATURES

- Secondary locking feature to aid with contact alignment
- Reduced mating force
- 6 color-coding options available to reduce improper mating
- Fits in existing bulkhead cut-outs and therefore no design changes needed



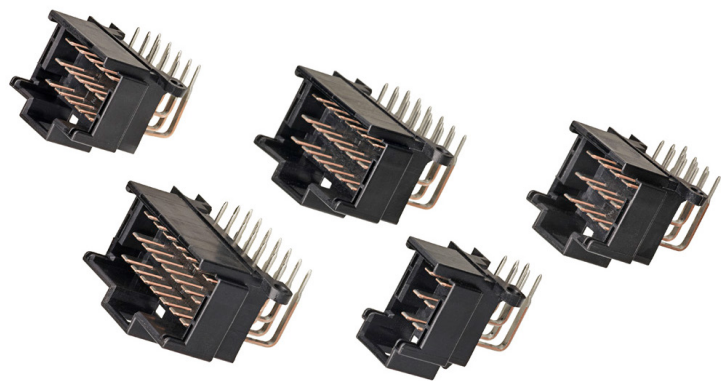
ORDERING INFORMATION

No. of Positions	Code	Color	Part Number	
			Receptacle Housing	Mating Tab Housing
48	A	Black	2366036-1	2366066-1
	B	Grey	2366036-2	2366066-2
	C	Green	2366036-3	2366066-3
	D	Blue	2366036-4	2366066-4
	E	White	2366036-5	2366066-5
	F	Orange	2366036-6	2366066-6

UNSEALED HEADER CONNECTORS

The Unsealed product portfolio offers robust and rugged PCB headers that support low to medium power, high pin counts for wire to board and wire to device applications. Some key application areas include cabin & bulkhead, dashboard & infotainment, door control module, Battery Management System (BMS) and telematics. Headers are available in 90° and 180° variants.

UNSEALED AMP MCP 2.8 90° HEADERS



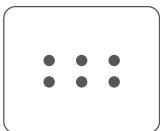
TECHNICAL INFORMATION

- **No. of Positions:** 6-21 Positions
- **Housing Material:** PBT GF20
- **Mounting Orientation:** Horizontal/90°
- **Termination Method:** Through Hole - Solder
- **Tab Material:** Tin/Silver Plated
- **Flammability:**
UL 94 HB
21P Also in UL 94 V0

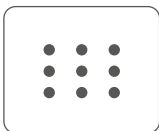
PRODUCT FEATURES

- Polarized to prevent improper mating
- Mechanical keyed
- Available in different codings
- PCB mounting option with 90° Pins

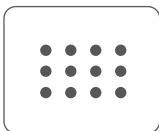
CONFIGURATION



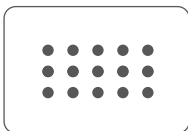
6 Positions
6*2.8



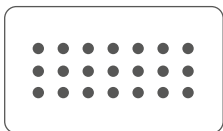
9 Positions
9*2.8



12 Positions
12*2.8



15 Positions
15*2.8



21 Positions*
21*2.8

*Also in UL 94 V-0

21P V0 + REFLOW HEADER

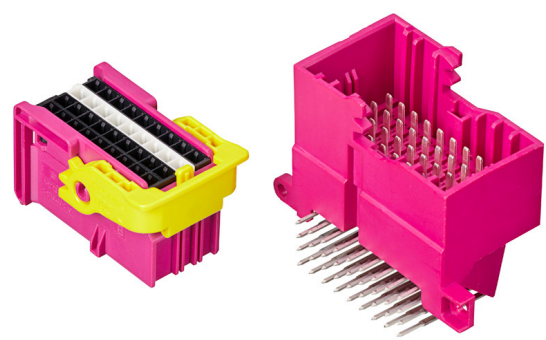
Receptacle Housing	Position	Code	Color	Tab Housing	90° Header
8-968975-1	21	A	Black	1-967630-1	2421721-6

ORDERING INFORMATION

Terminal Plating Type	Number of positions	Header PN	Coding Header	Colour Housing	AMP MCP 2.8 Housing		
					Mating PN Housing	Coding Mating PN Housing	Colour Mating Housing
CuSn4 Tin Plated	6	966140-5	A	BLACK	8-968970-1	A	BLUE
		9-966140-5			8-968970-2		GREY
	9	966140-4	A	BLACK	8-968971-1	A	YELLOW
		9-966140-4			8-968971-2		GREY
	12	966140-3	A	BLACK	8-968972-1	A	GREEN
		9-966140-3			8-968972-2		GREY
	15	966140-2	A	BLACK	8-968973-1	A	PURPLE
		9-966140-2			8-968973-2		GREY
	18	966140-1	A	BLACK	8-968974-1	A	GREY
		9-966140-1					
	21	966140-6	A	BLACK	8-968975-1	A	BROWN
		9-966140-6			8-968975-2		GREY
	15	1-966140-3	B	NATURAL	7-968973-1	B	NATURAL
		8-966140-3					
	21	1-966140-6	B	NATURAL	7-968975-1	B	NATURAL
		8-966140-6					
CuSn4 Silver Plated	6	3-966140-5	A	BLACK	8-968970-1	A	BLUE
		6-966140-5			8-968970-2		GREY
	9	3-966140-4	A	BLACK	8-968971-1	A	YELLOW
		6-966140-4			8-968971-2		GREY
	12	3-966140-3	A	BLACK	8-968972-1	A	GREEN
		6-966140-3			8-968972-2		GREY
	15	3-966140-2	A	BLACK	8-968973-1	A	PURPLE
		6-966140-2			8-968973-2		GREY
	18	3-966140-1	A	BLACK	8-968974-1	A	GREY
		6-966140-1					
	21	3-966140-6	A	BLACK	8-968975-1	A	BROWN
		6-966140-6			8-968975-2		GREY
CuSnO,15 Silver Plated	21	4-966140-6	B	NATURAL	7-968975-1	B	NATURAL
		5-966140-6					

*The headers are available in both antistatic and non-antistatic packaging options. For detailed part information, please refer to group drawing 966140.

UNSEALED AMP MCP 1.5K 90° HEADERS



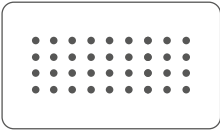
TECHNICAL INFORMATION

- **No. of Positions:** 36 Positions
- **Housing Material:** PBT GF20-FR
- **Mounting Orientation:** Horizontal/90°
- **Termination Method:** Through Hole - Solder
- **Tab Material:** Tin/Silver Plated
- **Flammability:** UL94 V-0
- **Voltage:** Up to 60 V DC

PRODUCT FEATURES

- Polarized to prevent improper mating
- Mechanical keyed
- Available in different codings
- PCB mounting option with 90° Pins

CONFIGURATION



36 Positions
36*1.5K

ORDERING INFORMATION

No. of Positions	Keying Options	Header Right-Angle	Part Number			
			9 Position Insert Key A	9 Position Insert Key B	18 Position Insert	Carrier
36	Brown	1-2236715-1	1718490-1	1718490-2	1718489-1	1-1718485-1
	Purple	1-2236715-2				1-1718485-2

18P 180° TIMER 3.0 HEADER

TECHNICAL INFORMATION

- **Contact System:** TIMER TAB 3.0
- **Housing Material:** PA66 GF13
- **Wire Size Range:** 0.5 mm² - 2.5 mm²
- **Temperature:** -40°C to +120°C
- **Protection:** IP 30

ORDERING INFORMATION

Position	Code	Color	Receptacle Housing	180° Header
18	A	Black	1-967624-1	967116-1

UNSEALED AMP MCP 25 & 36 POSITION 180° HEADERS

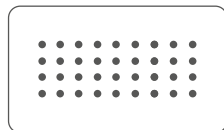
TECHNICAL INFORMATION

- **No. of Positions:** 25 & 36 Positions
- **Contact System:** AMP MCP 1.5K & 2.8
- **Housing Material:** PBT GF30
- **Mounting Orientation:** Horizontal/180°
- **Tab Material:** Tin / Gold Plated
- **Flammability:** UL 94 V-0
- **Termination Method:** Solder



25 Position
18 * AMP MCP 1.5K +
7 * AMP MCP 2.8

VO

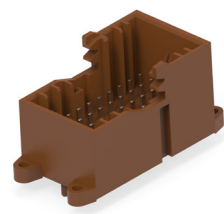


36 Positions
36 * AMP MCP 1.5K

VO

PRODUCT FEATURES

- Improve security with flame retardant UL 94 V-0 material
- Enhance robust with screw hole and position pin design
- Reduce improper mating with 2 mechanical and color-coding options



ORDERING INFORMATION

Receptacle Housing				Position	Code	Color	Tab Housing	Tab Housing	180° Header
Carrier	Insert	Insert	Insert						
1-1718484-1	1718488-1 (7 Pos)	1718489-1 (18 Pos)	-	25	A	Black	1-2112890-1	1-1718491-1	1-1670615-2
1-1718484-2				25	B	Gray	1-2112890-2	1-1718491-2	2-1670615-2
1-1718484-3				25	C	Light Blue	1-2112890-3	1-1718491-3	-
1-1718484-4				25	D	Yellow Green	1-2112890-4	1-1718491-4	-
1-1718485-1	1718490-1 (9 Pos)	1718490-2 (9 Pos)	1718489-1 (18 Pos)	36	A	Brown	1-2112891-1	1-1718492-1	1-1670615-1
1-1718485-2				36	B	Purple	1-2112891-2	1-1718492-2	2-1670615-1
1-1718485-3				36	C	Green	1-2112891-3	1-1718492-3	-
1-1718485-4				36	D	Blue	1-2112891-4	1-1718492-4	
1-1718485-5				36	E	Gray	1-2112891-5	1-1718492-5	-
1-1718485-6				36	F	Orange	1-2112891-6	1-1718492-6	

AMP MCP ACCESSORIES

Several accessory items are available to complement the Unsealed Interconnection System, including secondary locking and covers.

SECONDARY LOCKING

ORDERING INFORMATION

Positions	Keying Color	Secondary Locking	Material
6	Blue	968271-1	PBT GF30
9	Yellow	967631-1	
12	Green	967632-1	
15	Purple	967633-1	
18	Grey	967634-1	
21	Brown	967635-1	



COVER

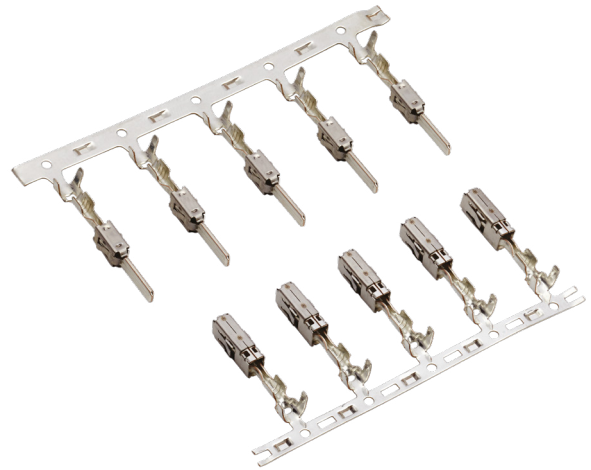
ORDERING INFORMATION

Positions	Keying Color	Cover	Material
25/36	Black	2112286-1	PA66 GF30



AMP MCP CONTACTS

High reliability, power connection for long term use. The AMP MCP Interconnection System is designed for electronic and electrical power applications in passenger cars and commercial vehicles as well as harsh environment off highway vehicle applications.



AMP MCP CONTACTS PERFORMANCE SPECIFICATION

Durability
10 cycles (tin)
50 cycles (silver)
100 cycles (gold)

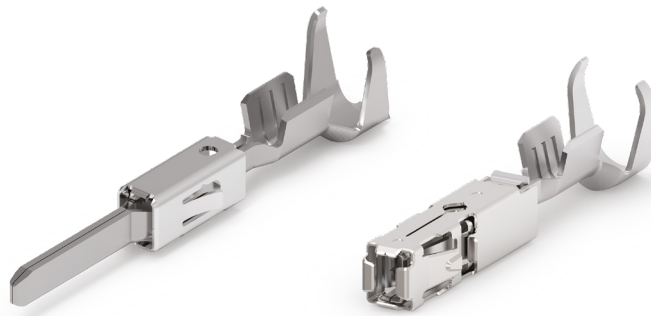
Current Rating		
Contact Size	Max Current	Max. Wire Size
1.5K	Up to 20 A	1.5 mm ²
2.8	Up to 40 A	4.0 mm ²
9.5	Up to 80 A	10 mm ²

Contact Retention	
Contact Size	Min. Load
1.5K	40/60 N
2.8	80 N
9.5	150 N

Crimp Tensile	
Strength Contact Size	Tensile Strength
1.5K	
.22 mm ²	≥ 32 N
.35 mm ²	≥ 50 N
.50 mm ²	≥ 60 N
.75 mm ²	≥ 85 N
1.0 mm ²	≥ 108 N
1.25 mm ²	≥ 135 N (16 AWG)
1.5 mm ²	≥ 135 N
2.8	
.22 mm ²	≥ 28 N
.35 mm ²	≥ 50 N
.50 mm ²	≥ 60 N
.75 mm ²	≥ 85 N
1.0 mm ²	≥ 108 N
1.5 mm ²	≥ 150 N
2.5 mm ²	≥ 200 N
4.0 mm ²	≥ 310 N
9.5	
6.0 mm ²	350 N
10.0 mm ²	500 N

AMP MCP 1.5K CONTACTS

Stamped & Formed Tabs and Receptacles



1.5K	Wire Size (mm ²)	Insulation Diameter FLR (mm)	Strip Form Part Number	Applicator*	Finish Code	Hand Tool Complete	Extraction Tool Part Number
Receptacle Contacts	0.20-0.35	1.1-1.4	1564980	x-1530216-x	1-xxx-1/1-xxx-2/1-xxx-3	4-1579016-0	1-1579007-1
	0.5-1.0	1.4-2.1	1241374	x-1528195-x	1-xxx-1/1-xxx-2/1-xxx-3	539950-2	
	>1.0-1.5	2.2-2.4	1534334	x-1528312-x	1-xxx-1/1-xxx-3	5-1579001-3	
Tab Contacts	0.2-0.35	1.15-1.60	964265	x-1528091-x	xxx-2/xxx-3/xxx-5	169400-0, 539635-1	539960-1
	0.22-0.35	1.15-1.60	2141882	x-1528091-x	xxx-2/xxx-3	169400-0, 539635-1	
	0.5-1.0	1.4-2.1	964267	x-1528092-x	xxx-1 /xxx-2 /xxx-3 / xxx-4	169400-0, 539635-1	
	1.5	2.2-2.4	1241846	x-1528123-x	xxx-1/xxx-2	169400-0, 539635-1	

**Double Crimp

AMP MCP 1.5K Terminal Material and Finish Codes

1.5K	Finish Code	1-xxx-1	1-xxx-2	1-xxx-3		
Receptacle Contacts	Material	CuNiSi	CuNiSi	CuNiSi		
	Plating	Pre-tin Plated	Selective Gold Plated	Selective Silver Plated		
Tab Contacts	Finish Code	xxx-1	xxx-2	xxx-3	xxx-4	xxx-5
	Material	CuSn4	CuFe2	CuSn4	CuSn4	CuSn4
	Plating	Pre-tin Plated	Pre-tin Plated	Gold Plated	Selective Silver Plated	Selective Silver Plated

*Other configurations available upon request. Please contact TE for additional information.

AMP MCP 2.8 CONTACTS

Stamped & Formed Tabs and Receptacles



2.8	Wire Size (mm²)	Insulation Diameter FLR (mm)	Strip Form Part Number	Applicator	Material/Finish Codes	Hand Tool Complete	Extraction Tool Part Number
Receptacle Contacts	0.2-0.5	1.2-1.4	2141857	x-2836996-x	1-xxx-1 / 1-xxx-3	2363592-2	1-1579007-2
	0.5-1.0	1.4-2.1	968849	x-2151164-x	1-xxx-1 / 1-xxx-2 / 1-xxx-3	539722-2	
	1.0-2.5	2.2-3.0	968851	x-2151166-x	1-xxx-1 / 1-xxx-2 / 1-xxx-3	539723-2	
	2.5-4.0	3.0-3.7	968853	x-2151634-x	1-xxx-1 / 1-xxx-3	539723-2	
Tab Contacts	0.2-0.5	1.15-1.60	963860	2-878549-2	1-xxx-1/1-xxx-2/1-xxx-3 / 2-xxx-1/2-xxx-2	734538-1	1-1579007-6
	0.5-1.0	1.4-2.1	962841	2-878550-2	1-xxx-1/1-xxx-2/2-xxx-1	734417-1	
	1.0-2.5	2.2-3.0	962842	2-878551-2	1-xxx-1 / 1-xxx-2 / 1-xxx-3 / 2-xxx-1	734417-2	
	2.5-4.0	3.4-3.7	968946	2-541534-2	1-xxx-1 / 1-xxx-2 / 2-xxx-1 / 2-xxx-2	539635-1 / Matrise: 539723-2	

AMP MCP 1.5K Terminal Material and Finish Codes

2.8	Finish Code	1-xxx-1	1-xxx-2	1-xxx-3		
Receptacle Contacts	Material	CuNiSi	CuNiSi	CuNiSi		
	Plating	Pre-tin Plated	Selective Gold Plated	Selective Silver Plated		
Tab Contacts	Finish Code	1-xxx-1	1-xxx-2	1-xxx-3	2-xxx-1	2-xxx-2
	Material	CuSn4	CuSn	CuSn	CuFe	CuFe
	Plating	Pre-tin Plated	Selective Silver Plated	Selective Gold Plated	Pre-tin Plated	Selective Silver Plated

*Other configurations available upon request. Please contact TE for additional information.

AMP MCP 6.3 CONTACTS

Stamped & Formed Tabs and Receptacles



6.3	Wire size (mm ²)	Insulation Diameter (mm)	Terminal Part	Terminal Application spec.	Applicator	Hand Tool Complete	Extraction Tool Part Number
Receptacle contacts	4-6	3.4-4.3	1241408-1	114-18388	X-2151254-X	539954-2	1-1579007-3
Tab Contacts	4-6	3.4-4.3	1-968050-1	114-18052	2836646	2836646-2	1-1579007-6

AMP MCP 9.5 CONTACTS

Stamped & Formed Tabs and Receptacles



9.5	Wire Size (mm ²)	Insulation Diameter FLR (mm)	Strip Form Part Number	Applicator	Finish Codes	Hand Tool Complete	Extraction Tool Part Number
Receptacle Contacts	3.0-6.0	4.0-5.2	1719386 **	-	1-xxx-1	-	539971-1
	6.0-10.0	4.6-6.6	967588	on request	1-xxx-1 / 1-xxx-2	on request 539783-5 for 6 mm	
	6.0-10.0	4.6-6.6	1241930 **	on request	1-xxx-1	on request 539783-5 for 6 mm	
Tab Contacts	2.5-4.0	3.3-4.5	963764	on request	xxx-1 /xxx -2	734532-1	1-1579007-7
	4.0-6.0	4.0-5.2	963766	on request			
	6.0-10.0	4.6-6.6	963768	on request		734533-1	

** For Tab 9.5 x 0.8 mm

AMP MCP 9.5 Terminal Material and Finish Codes

9.5	Finish Code	1-xxx-1	1-xxx-2
Receptacle Contacts	Material	CuNiSi	CuNiSi
	Plating	Pre-tin Plated	Selective Silver Plated
Tab Contacts	Finish Code	xxx-1	xxx-2
	Material	CuSn	CuFe
	Plating	Pre-tin Plated	Pre-tin Plated

PCON 12 TERMINALS

TE's PCON high-power contacts are specifically designed to support the increased connectivity requirements in high-voltage interconnection systems of hybrid and all-electric vehicles powertrain and auxiliary applications.



PCON 12 TERMINALS PERFORMANCE SPECIFICATION

Durability		
10 cycles		

Current Rating		
Contact Size	Max Current	Max. Wire Size
12	120A	16 mm ²

Contact Retention	
Contact Size	Min. Load
12	150N

Crimp Tensile	
Strength Contact Size	Tensile Strength
PCON 12	
5.0 mm ²	≥ 290 N
6.0 mm ²	≥ 320 N
8.0 mm ²	≥ 350 N
10 mm ²	≥ 450 N
12 mm ² - 16 mm ²	≥ 600 N

PCON 12 TERMINALS

Stamped & Formed Tabs and Receptacles

PCON 12	Wire Size (mm ²)	Insulation Diameter FLR (mm)	Strip Form Part Number	Applicator	Finish Code	Insertion/Extraction Tool Part Number
Receptacle Contacts	5.0 - 8.0	N/A	2840573	2305470-1	xxx-1	8-1579028-2
	10.0 - 16.0	N/A	2840573		xxx-2	

PCON 12 Terminal Materials and Finish Code

PCON 12	Finish Code	1-xxx-1	1-xxx-2
Receptacle Contacts	Material	Cu	Cu
	Plating	Ag/Ni	Ag/Ni

MCON CONTACTS

MCON is a series of contact systems commonly used for electrical and electronic applications for passenger cars and commercial vehicles. The contact design meets standardized blade sizes and interface requirements of the automotive industry. All contacts except MCON 0.5 follow the two-piece contact design strategy to separate the electrical from the mechanical performance.

MCON 1.2 CONTACTS

Stamped & Formed Tabs and Receptacles

- **Tab Size:** 1.2 x 0.6 mm
- **Vibration Resistance:** Up to SG4 (LV214)
- **Wire Size:** 0.13 – 1.5 mm²
- **Current Carrying Capacity:** Up to 17 A (@80° C ambient temperature)
- **Temperature Range:** -40° C to +130° C Sn (Tin Plating)
-40° C to +150° C Au (Gold Plating)
-40° C to +150° C Ag (Silver Plating)
- **Validation Standards:** LV214 / USCAR2
- **Product Specification:** 108-18782
- **Application Specification:** 114-18464



MCON 1.2	Wire size (mm ²)	Insulation Diameter (mm)	Finish code	Surface Plating	Applicator	Hand Tool Complete	Extraction Tool Part Number
Receptacle contacts	0.13 - 0.22	0.95-1.2	2141861-x	-X -1 Sn (Tin) -2 Au (Gold) -3 Ag (Silver)	2151333	-	5-1579007-3
	0.25 - 0.35	1.1-1.75	7-1452653-x		2151042	4-1579001-3	
	0.50 - 0.75	1.4-1.9	7-1451656-x		2151037	4-1579001-2	
	1.0 - 1.5	1.9-2.4	7-1452659-x		2151353	4-1579001-1	
Tab Contacts	0.13 - 0.22	0.85-1.2	2141864-x		2151657	-	8-1579008-4
	0.25 - 0.35	1.1-1.75	5-1418758-x		2151311	4-1579001-3	
	0.50 - 0.75	1.4-1.9	5-1418760-x		2151300	4-1579001-2	
	1.0 - 1.5	1.9-2.4	1418762-x		2151479	4-1579001-1	

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