

# HALVONEX CONNECTOR SERIES

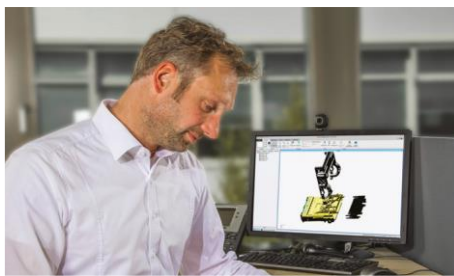
**FOR INDUSTRIAL & COMMERCIAL TRANSPORTATION**  
TERMINALS AND CONNECTORS





## 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 outstanding 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

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# HALVONEX CONNECTOR SERIES

Our HALVONEX connectors portfolio is a series of Sealed, Low Voltage Connectors for High Power Solution designed to meet the evolving demands of modern electrical vehicle systems utilizing 48V architecture while covering a wide range of wire sizes from 6mm<sup>2</sup> to 95mm<sup>2</sup>. These connectors are engineered to provide reliable and efficient power transmission to address the need for higher current ratings with lower voltage connections in a compact design.



## KEY BENEFITS

- Sealed, Low Voltage (60 V- up to 100 V\*), High Current (up to 400 A) and High Power Connectors
- Ensure optimal electrical conductivity, capable of supporting high currents without compromising performance.
- Made from premium materials that are specifically selected for their durability, resistance to wear, and ability to maintain electrical performance even in harsh conditions.
- Built to withstand extreme environmental conditions such as high humidity, dust, vibrations, and corrosive elements.
- Compact size, helps save space.

## KEY INDUSTRIES



Truck



Bus



Agriculture



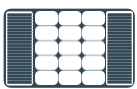
Construction



Forklift

## APPLICATIONS

The HALVONEX connector series can be utilized in the following applications:



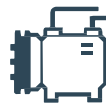
EV Battery



After-Treatment



Chassis



High Power  
Air Compressor



Electric Power  
Steering



DC/DC converter



eFan



Battery Box

\* :- upto 100V(need to be verified and approved by user)

## PRODUCT DOCUMENTATION

Additional product documentation is available for assistance with HALVONEX connector series products.

### HALVONEX MAX CONNECTORS

	PRODUCT DOCUMENTATION	RECEPTACLE CONTACTS
PRODUCT SPECIFICATION	108-94935	108-94638
APPLICATION SPECIFICATION	114-97857	114-94511



### HALVONEX PRO CONNECTORS

	PRODUCT DOCUMENTATION	TERMINAL SPECIFICATIONS
PRODUCT SPECIFICATION	108-18630	108-18809
APPLICATION SPECIFICATION	114-18022	114-18501



PERFORMANCE SPECIFICATIONS	
Temperature:	Operating at temperatures -40°C to +120°C
Mating Durability:	Contacts: up to 50 cycles (silver) (see individual product specifications for additional details.)
Insulation Resistance:	500 V DC, test per ISO 16750-2 (4.12)
Immersion:	IP67 rating, IP69K (with cover), for flanged tab housings, only by observing mounting instructions.
Random Vibration:	Tested at 177 m/s <sup>2</sup> , 94 hours per axis. (See product spec 108-94020 for full specifications.)
Voltage:	60V (up to 100V)*
Flammability:	UL 94-V0-rated material

MATERIAL SPECIFICATIONS	
Flange Seal:	Silicone rubber
Seal for Secondary Locking:	Silicone rubber
Housing:	Glass-filled PBT
Secondary Lock:	PBT GF30 FR V0 material
Slide Lock:	Glass-filled PBT

\* - upto 100V(need to be verified and approved by user)

HALVONEX MAX CONNECTOR SERIES HOUSINGS

HALVONEX Max connectors are a high-power PCON 21 terminal connector which specifically supports the increased connectivity requirements in Low-voltage interconnection systems of hybrid and all-electric vehicles, powertrain and auxiliary applications. With a wide range of wire sizes from 50mm<sup>2</sup> to 95mm<sup>2</sup>\*\*, the connectors provide a backbone for efficient and sustainable operations, no matter the conditions.

1 POSITION WIRE TO BOARD/BUSBAR SOLUTIONS



DIMENSIONS

Receptacle Housing			Header		
Overall Length A	Overall Height B	Overall Width C	Overall Length D	Overall Height E	Overall Width F
94.4 - 113.5* (3.71"-4.46")	47.4mm - 58.19mm (1.86"-2.29")	44.4 mm (1.74")	44.6mm (1.75")	87.4mm (3.44")	55.5mm (2.18")

2 POSITION WIRE TO BOARD/BUSBAR SOLUTIONS



DIMENSIONS

Receptacle Housing			Header		
Overall Length A	Overall Height B	Overall Width C	Overall Length D	Overall Height E	Overall Width F
94.35mm - 120mm* ( 3.71"-4.72")	47.4mm-58.2mm (1.86"-2.29")	79.6mm (3.13")	79.8mm (3.14")	87.4mm (3.44")	55.5mm (2.18")

\* : Lower limit without the cover, upper limit with cover  
\*\* : more wire sizes coming soon. Please contact TE for more information

## ORDERING INFORMATION





Positions	Contacts	Keying Color	Header 90°	Header 180°	Housing Type		
					Receptacle 90°	Receptacle 180°	Tab Housing
1	PCON 21	Black	1-2461731-1	2461731-1	2461715-1	2461722-1	*
		Emerald Green	1-2461731-2	2461731-2	2461715-2	2461722-2	*
2	PCON 21	Black	1-2461733-1	2461733-1	2461719-1	2461726-1	*
		Emerald Green	1-2461733-2	2461733-2	2461719-2	2461726-2	*
		Black	2-2461733-1**		2461719-1	2461726-1	*
		Green	2-2461733-2**		2461719-2	2461726-2	*

\* - Coming soon. Please contact TE for further information

\*\* - Flat Header Pins

## HALVONEX MAX CONNECTOR ACCESSORIES

Several accessories are available to complement the HALVONEX connector series, including Terminal Position Assurance. Accessory items cover a wide array of design requirements such as assisting with mounting, providing additional protection, and offering enhanced functionality.

Image	Accessory	Wire size (mm <sup>2</sup> )	Part Number
	Terminal Position Assurance	50	2461738-1
		70	2461738-2
		95	2461738-3
	Cable Clamp	50	2461741-1
		70	2461741-2
		95	2461741-3
	Connector Cover	50	2461742-1
		70	2461742-2
		95	2461742-3
	Single Wire Seal	50	2461743-1
		70	2461743-2
		95	2461743-3

CONTACTS AND TOOLING FOR HALVONEX CONNECTOR SERIES

HALVONEX MAX CONNECTOR SERIES CONTACTS

HALVONEX Max connectors utilize the common PCON 21 terminal contact system. These are high-power terminals specially designed for supporting increased connectivity requirements in interconnection systems of hybrid and all-electric vehicles.

Product Specification: 108-94638

Application Specification: 114-94511



PCON 21 CONTACT PERFORMANCE SPECIFICATIONS

PCON 21 Contacts	
Durability	50 cycles (silver)
Vibration Level	USCAR V1 / LV214, SG2
Max Current @ 80°C	Up to 400 A
Contact Normal Force	Approx. 3.5N

HALVONEX MAX CONNECTOR SERIES CONTACTS

ORDERING INFORMATION

Stamped & Formed Tabs and Receptacles with Single Wire Sealing System

PCON 21	Orientation	Wire Size (mm <sup>2</sup> )	Insulation Range (mm)	Part Number	Material
Receptacle	90°	25-50	10.4-13.5	2317017-1	Silver
		70-95	15.5-18.0	2317017-2	
	180°	25-50	10.4-13.5	2317680-1	
		70-95	15.5-18.0	2317680-2	



HALVONEX MAX CONNECTOR SERIES APPLICATION TOOLING

PCON 21	Orientation	Wire Size (mm2)	Strip Form Part Number	Crimp Height	Material	Master Application Tool
PCON 21	90°	25	2317017-1	6.4 +/- 0.15	14.5	541935-2
		35		6.6 +/- 0.15	14.5	
		50		7.7 +/- 0.15	15.0	
		70	2317017-2	8.6 +/- 0.15	19.0	541936-2
		95		9.6 +/- 0.15	19.0	
	180°	25	2317680-1	6.4 +/- 0.15	14.5	541923-2
		35		6.6 +/- 0.15	14.5	
		50		7.7 +/- 0.15	15.0	
		70	2317680-2	8.6 +/- 0.15	19.0	541924-2
		95		9.6 +/- 0.15	19.0	

HALVONEX PRO CONNECTOR SERIES

HALVONEX PRO CONNECTORS

HALVONEX Pro connectors serve as a reliable solution for harsh environment applications that require a high-power, environmentally sealed two position electrical connector for wire sizes ranging from 6mm² to 10mm². With non-negotiable reliability and performance, the connector provides robust resistance to high temperature and vibrations.



DIMENSIONS

Receptacle Housing			Tab Housing			Header		
Overall Length A	Overall Height B	Overall Width C	Overall Length D	Overall Height E	Overall Width F	Overall Length G	Overall Height H	Overall Width I
56.4-57.4 mm (2.22-2.25")	58.5-59.5 mm (2.30-2.34")	36.0-38.0 mm (1.42-1.49")	83.6-84.4 mm (3.29-3.32")	37.5-38.2 mm (1.47-1.5")	57.4-58 mm (2.25-2.28")	58 mm (2.28")	49.35 mm (1.94")	49 mm (1.9")

ORDERING INFORMATION

Positions	Contacts	Keying Color	Header 180°	Receptacle Housing	Tab Housing	
					With Flange Seal	Without Flange Seal
2	(2x) 9.5	Black	2282162-1	1355328-1	1394026-1	1394026-2

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

## HALVONEX PRO CONNECTOR ACCESSORIES

Backshells provide additional protection against environmental conditions as well as provide additional strain relief to the wire bundle.

Accessory	Accessibility	Part Number
Backshell for Tab and Receptacle Housing	2 way, 90° NW17 tubing	2286685-1



## HALVONEX PRO CONNECTOR SERIES CONTACTS

HALVONEX Pro connectors utilize the common AMP MCP 9.5 terminal contact system. These are high-power terminals specially designed for supporting increased connectivity requirements.

**Product Specification : 108-18630**

**Application Specification : 114-18022**



## ORDERING INFORMATION

Stamped & Formed Tabs and Receptacles with Single Wire Sealing System

	Wire Size (mm <sup>2</sup> )	Insulation Diameter FLK (mm)	Strip Form Part Number	Loose Piece Part Number	Material/Finish Codes
Receptacle Contacts	6.0-10.0	4.6-6.4	967590	929152	1-x-1*
Tab Contacts	6.0-10.0	4.6-6.4	963774	963775	1-x-1*; 1-x-2*

## AMP MCP 9.5 CONTACT MATERIAL AND FINISH CODES

	Finish Code	1-x-1	1-x-2
Receptacle Contacts	Material	CuNiSi	-
	Plating	Pre-Tin	-
Tab Contacts	Material	CuSn	CuFe
	Plating	Pre-Tin	Pre-Tin

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

## HALVONEX PRO CONNECTOR SERIES

### AMP MCP 9.5 WIRE SEALS

Wire seals are required for connectors without an integrated rear seal to maintain an environmental seal.

Insulation Diameter (mm)	Wire Size Range (mm <sup>2</sup> )	Color	Part Number
4.6-5.2	6.0	Violet	1355437-1
5.8-6.6	10	Blue	1355437-2



HALVONEX PRO CONNECTOR SERIES APPLICATION TOOLING

Tools are specific to each contact style. To create a proper crimp and achieve the highest performance specifications, contacts must be crimped with the recommended tooling.



HAND TOOL FOR AMP MCP CONTACTS

Contact Size	Contact Type	Strip Form Part Number	Loose Piece Part Number	Hand Tool Part Number	Die Set Part Number
9.5	Receptacle	967590	929152	539783-1	539783-8 for 6mm <sup>2</sup> 539783-9 for 10mm <sup>2</sup>
	Tab	963774	963775	-	-

Applicator available on request

EXTRACTION TOOLS

Contact Size	Contact Type	Tool Part number
9.5	Receptacle	539971-1
	Tab	1-1579007-1



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## ABOUT TE CONNECTIVITY

TE Connectivity is a global industrial technology leader creating a safer, sustainable, productive, and connected future. Our broad range of connectivity and sensor solutions enable the distribution of power, signal and data to advance next-generation transportation, renewable energy, automated factories, data centers, medical technology and more. With more than 85,000 employees, including 8,000 engineers, working alongside customers in approximately 140 countries, TE ensures that EVERY CONNECTION COUNTS.

Learn more at [www.te.com](http://www.te.com) and on LinkedIn, Facebook, WeChat, Instagram and X (formerly Twitter).

## Connect With Us

We make it easy to connect with our experts and are ready to provide all the support you need. For additional information or product assistance, please contact your field representative or our customer service department. Additional information is also available on the website [te.com/ict](http://te.com/ict).

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