

# Introducing

## Industrial Ethernet 10 Gb M12 Connector System

TE Connectivity (TE) introduces a next generation M12 connector system for machine vision, industrial automation and control applications, called the Industrial Ethernet 10 Gb M12 connector system. This connector system provides users with a future-proof interface that supports higher bandwidth needs - meeting the requirements of today's 100 MB/s and 1 Gb/s and tomorrow's 10 Gb/s. The connector system consists of various PCB headers and cable assemblies in a standard industrial circular format. Its eight contact system makes it suitable for both high-speed data applications or Power+Ethernet applications. TE's flexible product portfolio provides customers with shielded and unshielded cable assembly options in both Cat5e and Cat6<sub>A</sub> cable types.





#### **KEY FEATURES**

- IP67 sealed and screw locking reliability
- Custom, orthogonal circuit pattern configuration - assures signal integrity/transmission performance
- Simplistic pin pattern eliminates the need for an additional pair isolation features
- High speed, industrial data solution in standard M12 format
- Small, compact form factor
- Configuration options:
   Cable assemblies (shielded and unshielded) and PCB mount connectors
- Quick connect, M12 modular wiring system with keyed connectors and pre-molded cable assemblies
- Rated Ethernet speed up to 10 Gbit/sec (10GBASE-T)
- Corrosion resistant hardware for compatibility with demanding environments

#### **APPLICATIONS**

- · Factory automation
- Industrial networking
- Industrial machine vision systems
- Industrial machine builders
- HMI panels
- · Harsh commercial applications
- Outdoor data communications
- Outdoor telecom
- Advanced traffic monitoring

#### **MECHANICAL**

- M12 standard threaded coupling
- Polarized to assure correct mating
- Vibration-proof feature
- IP65/IP67 sealing performance when mated

#### **ELECTRICAL**

- 48 V
- 0.5 A current rating
- Up to 500 MHz (Up to 10 Gb/s)

#### **MATERIALS**

- Boot material (PUR): Thermoplastic polyurethane
- Insert material (LCP): Thermoplastic
- Contact material: Brass
- Under-plating material: Nickel 1.25µm
- Plating material: Gold .75µm
- Cable Jacket: PVC or PUR
- PCB and panel mount shell: Carbon steel
- Coupling nuts: Zinc die cast
- O-ring: Fluoropolymer elastomer

## **STANDARDS**

- IEC 61076-2-109
- UL 1977

#### **SPECIFICATIONS**

- Product specification # 108-2464
- Application specification # 114-127000



## **PRODUCT OFFERING - CABLE ASSEMBLIES**

2184491-12   2   2   2   2   2   2   2   2   2	Part Number	Length (Meters)	Description
2184451-4   4   4   4   4   4   4   5   5   5	2154451-1	1	
2184481-4   4   Cable Assembly, Male to Male Double Ended, Shielded, CatSe, MI2 10 Gb	2154451-2	2	
2184481-6	2154451-3	3	
2184491-6   7   2184491-6   7   2184491-6   7   2184491-6   1   2184491-6   1   2184491-6   3   3   2184491-6   5   5   3   2184491-6   5   5   2184491-6   7   2184491-6   2   2   2   2   2   2   2   2   2	2154451-4	4	Cable Assembly, Male to Male Double Ended, Shielded, Cat5e, M12 10 Gb
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2154685-2   2   2   2154685-2   2   2   2154685-3   3   3   2154685-4   4   4   4   4   4   4   4   4   4	2154451-6	7	
214468-2   2   2   2   2   2   2   2   2   2	2154451-7	10	
2354685-3   3	2154685-1	1	
2154685-4   4	2154685-2	2	
2154685-6   7	2154685-3	3	
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	2154687-2	2	
	2154687-3	3	
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<b>2154687-5</b> 5	2154687-5	5	
<b>2154687-6</b> 7			
<b>2154687-7</b> 10		10	



## **PRODUCT OFFERING - PCB CONNECTORS**

Part Number	Description
2106988-1	Rear Mount PCB Connector, Female, 8 position, M12 10 Gb
2154648-1	Stand Alone PCB Connector, Female, 8 position, M12 10 Gb
2154694-1	Stand Alone PCB Connector, Female, No Grounding Ring, 8 position, M12 10 Gb
2154647-1	Front Mount Grounded PCB Connector, Female Assembly, M12 10 Gb

#### **APPLICATION EXAMPLES**

#### **Industrial machine vision systems**

- Gigabit Ethernet interface for IP67 machine vision cameras and accessories
- M12 upgrade path for Ethernet-based vision systems Standard Physical Layer
- High bandwidth (1000 Mb/s+) for real time transfer of large uncompressed images

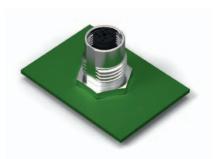
## **Industrial networking systems**

- High-speed Gigabit Ethernet uplinks for IP67 Industrial Ethernet switches
- Enhancement to current M12 D-Code Ethernet applications

## Wireless access points/wireless video

High-speed Ethernet links for:

- Outdoor video for next generation transportation control
- Campus and metro WiFi / WiMAX video surveillance applications



Part Number 2106988-1



Part Number 2154648-1



Part Number 2154647-1

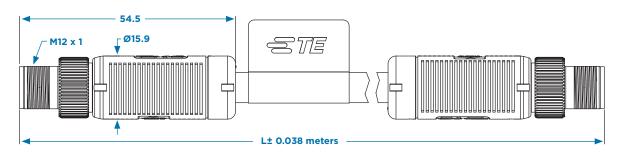
NOTE: Panel mounting plate and standoffs not included



## **CABLE ASSEMBLY CONFIGURATIONS**

## DOUBLE-ENDED: M12 MALE TO M12 MALE



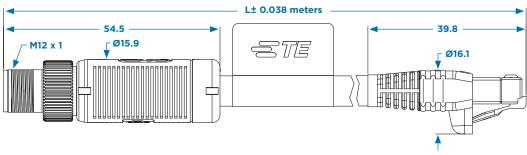


10.0m	
7.0m	
5.0m	
4.0m	
3.0m	
2.0m	
1.0m	
"L" METERS	

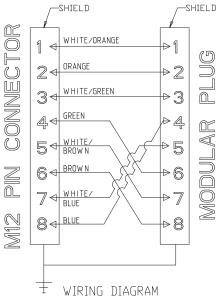
			WIRE TE	RMINATION	CHART			
NO 05				PIN N	UMBER			
NO OF POSITIONS	1	2	3	4	5	6	7	8
1 831118113				WIRE	COLOR			
8	WHITE- ORANGE	DRANGE	WHITE- GREEN	GREEN	WHITE- BROWN	BROWN	WHITE- BLUE	BLUE

#### **DOUBLE-ENDED: M12 MALE TO RJ-45**





10.0m
7.0m
5.0m
4.0m
3.0m
2.0m
1.0m
"L" METERS





## FOR MORE INFORMATION

te.com/products/IE-M12-10GB

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taly: +39-011-4012111
Latin/S. America: +54-11-4733-2200
Mexico: +52-55-1106-0800
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JSA: +1-800-522-6752

Part numbers in this brochure are RoHS Compliant\*, unless marked otherwise. \*as defined www.te.com/leadfree

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