

# Brad<sup>®</sup> Micro-Change<sup>®</sup> CAT6<sub>A</sub> Connector System

**molex**<sup>®</sup>

Suited for harsh and high-vibration applications, the Brad<sup>®</sup> Micro-Change<sup>®</sup> CAT6<sub>A</sub> Connector System delivers next-gen speeds of up to 10 Gigabit Ethernet and superior signal integrity through a 360° shielded X-code interface

## Features and Benefits

M12 CAT6 <sub>A</sub> X-Code or RJ45 connector design	Delivers CAT6 <sub>A</sub> speeds of 500Mhz for 10 Gigabit Ethernet. Delivers design flexibility through a compact, robust connector interface. Meets TIA-568 and ISO/IEC 11801 CAT6 <sub>A</sub> specification. Allows blind-mating via X-code keying alignment
Complete 360° shielded design	Provides optimal signal performance without system noise interference via the two shielding crosses of the M12 connector. Achieves superior signal-integrity values when compared to current RJ45 CAT6 systems
Recessed male pins within die-cast X-code shield	Prevents damage to pins during mating. Eliminates scooping
Factory overmolded and tested cable assemblies in 26 AWG wire gauge	Assures uncompromised reliability in harsh environments
IDC wire termination	Ensures a secure and reliable wire connection. Enhances speed and simplicity in assembly
Nickel-plated die-cast housings	Performs reliably in harsh, demanding environments. Utilizes corrosion-resistant hardware
Standard M12-threaded coupling nut mating interface with internal and external o-ring seals	Guarantees IP67 protection from dust and water. Conforms to TIA-568 and IEC 61076-2-10x
Receptacle PCB standoff	Secures the receptacle to the PCB. Prevents damaging of the PCB and contacts. Prevents connector rotation
Through-Hole Reflow (THR) mounting technology	Allows for automated assembly process for attaching the receptacle to the PCB



Micro-Change<sup>®</sup> M12 CAT6<sub>A</sub> Cable and Receptacle



Micro-Change<sup>®</sup> M12 CAT6<sub>A</sub> Field-Attachable Connectors

## Applications

### Commercial Vehicle

- GPS
- Telematics
- Mobile Data Acquisition
- Railway Data Networks
- Video Protection Systems

### Military

- Vision Systems
- High-Speed Video Communication
- Vehicle Open-System Architecture
- Mobile Data Acquisition
- Sensor Networks
- Unmanned Vehicles

### Industrial Automation

- Robotic Welding
- Food and Beverage Production



Automation



Railways



Vision Systems

## Specifications

### REFERENCE INFORMATION

Packaging:  
 Receptacles – Blister Pack  
 Cables – Bag  
 Field Attachable – Individual  
 UL File No.: E200650 Pending  
 RoHS: Yes  
 Halogen Free: Yes  
 NEMA Rating:  
 M12: IP67  
 RJ45: IP20

### ENVIRONMENTAL

Protection: IP67 for M12, IP20 for RJ45  
 Operating Temperature: -40 to +85°C

### ELECTRICAL

Voltage (max.): 48V  
 Current (max.): 0.5A  
 Contact Resistance (max.):  
 M12 – 10 milliohms  
 RJ45 – 20 milliohms  
 Insulation Resistance (min.):  
 M12 – 100 Megohms  
 RJ45 – 500 Megohms  
 Transmission Characteristics (Category): CAT6<sub>A</sub>  
 POE+ According to IEEE 802.3AT

### WIRE TERMINATION

IDC Technology

### PHYSICAL

Housing:  
 Receptacles and Cables – Nickel-Plated Brass  
 Field-Attachables – Nickel Plated Zinc Die-cast  
 Coupling Nut: Nickel-Plated Brass  
 Contact: Gold Over Nickel  
 Connector Body: PUR Black  
 Insertion Force (max.): 30 N  
 Durability (mating cycles):  
 M12 – 100  
 RJ45 – 750  
 Cable Jacket (Outer): Blue PUR  
 Wire Type: 4 Twisted Pairs  
 Wire Gauge: 26 AWG  
 Pair Shielding: Aluminum-Bonded Polyester Tape  
 Cable Shielding: Tinned Copper Wire Braid  
 Operating Temperature: -40 to +75°C

## Ordering Information

### Field Attachables

Order No.	Description	Orientation	Number of Positions	MOQ
<a href="#">120341-0806</a>	M12 Male X-Coded Shielded Field-Attachable	Straight	8 Pole	10
<a href="#">130047-8008</a>	RJ45 Male RJ-45 STR Shielded Field-Attachable (AWG 22)			
<a href="#">130047-8010</a>	RJ45 Male RJ-45 STR Shielded Field-Attachable (AWG 26)			
<a href="#">130047-8009</a>	RJ45 Male RJ-45 90° Shielded Field-Attachable (AWG 22)	Right Angle	8 Pole	10
<a href="#">130047-8011</a>	RJ45 Male RJ-45 90° Shielded Field-Attachable (AWG 26)			

### Receptacles

Order Number	Mounting Style	Poles	Ethernet Protocol	MOQ
<a href="#">120341-0075</a>	Front Panel	8	CAT6 <sub>A</sub>	100
<a href="#">120341-0150</a>	Back Panel			

### Cable Assemblies

Order Number	Cable Length	Poles	Ethernet Protocol	MOQ
<a href="#">120341-0300</a>	0.5m	8	CAT6 <sub>A</sub>	8
<a href="#">120341-0301</a>	1.0m			
<a href="#">120341-0302</a>	2.0m			
<a href="#">120341-0303</a>	3.0m			
<a href="#">120341-0304</a>	4.0m			
<a href="#">120341-0305</a>	5.0m			
<a href="#">120341-0306</a>	10.0m			

[www.molex.com/link/bradindustrialethernet.html](http://www.molex.com/link/bradindustrialethernet.html)