



Rugged, sealed M12 CAT6_A Connector System with innovative x-code cross-shielding achieves superior signal integrity and up to 10 Gbps Ethernet for vision systems and other high-speed data transfer applications in harsh environments

The Brad® Micro-Change® M12 CAT6_A connector system with its innovative cross shielding (X-code conforming to IEC 61076-2-109) for superior signal integrity is the next development in terms of speed in the M12 form factor. Conventional M12 connectors support Cat5e Ethernet up to 10/100 megabits per second vs. the Micro-Change M12 CAT6_A system which achieves up to 10 Gigabits per second (Gbps) Ethernet.

The rugged M12 CAT6_A system is ideal for vision systems and other high-speed data transfer applications in harsh environments that may be subject to vibration. Sealed Cat6_A RJ45 connectors that are twice the size of the M12 form factor can be replaced by the Micro-Change CAT6_A system, enabling the use of smaller enclosures.

Product family extensions already in development include an M12 to RJ45 CAT6_A bulkhead panel-mount adapter and M12 to RJ45 CAT6_A molded male cable assemblies. Planned future product extensions to this system will use the M12 Ultra-Lock® connection system with a push/ pull locking mechanism rated to IP69K. For more information visit: www.molex.com/link/bradm12cat6a.html

Features and Benefits

Robust, compact M12 CAT6 _A X-Code connector design	Transmission performance meets TIA-568 and ISO/IEC 11801 Cat6 _A specification up to 500Mhz for 10 Gbps Ethernet
Complete 360° shielded design: 4 twisted-cable pairs individually shielded and protected with a braided metal shield	When mated the 2 shielding crosses of the connector and receptacle overlap to achieve optimal signal performance without system noise interference Achieves superior signal-integrity values when compared to a Cat6 system
Male connector features x-code keying alignment	Allows for blind-mating
Recessed male pins within die-cast-metal x-code shield	Anti-scoop proof design: prevents damage to pins during mating
External and internal o-ring seals	Complete sealing to IP67 standard
Factory overmolded and tested cable assemblies in AWG26 wire gauge	Uncompromised reliability
Receptacle PCB stand-offs	Securely attaches to PCB; prevents damaging of PCB and contacts; prevents connector rotation
Nickel-plated brass housings and coupling nuts	Corrosion resistant hardware assures compatibility with harsh demanding environments
System mates using a standard M12 threaded coupling nut	Guarantees IP67 protection from dust and water Accepted standard in the market and conforms to IEC 61076-2-10x
Receptacles can be mounted using through-hole reflow (THR) technology	Allows for an automated assembly process at the customer

Brad Micro-Change® M12 CAT6_A Connector System

120341 M12 Cat6_A X-Code 8-Pole Female Receptacles

120341 M12 Cat6_A X-Code 8-Pole Male Threaded Cable Assemblies



M12 Male-to-Male Cable Assemblies



M12 Back Panel-Mount Receptacle



M12 Front Panel-Mount Receptacle



Brad Micro-Change[®] M12 CAT6_A Connector System

Applications

Transportation

- Commercial vehicles
- GPS
- Telematics
- Mobile data acquisition systems

Railways

- Train data networks
- Video protection

Military

- Vehicle Open System Architectures
- High-speed video communication
- Mobile data acquisition systems
- Sensor networks
- Unmanned vehicles
- Avionics

Industrial

- Robotic welding applications
- Food and beverage production lines

Telecoms



Military Vehicles



Robotic Welding Applications

Additional Product Features

O-ring seals for IP67 protection

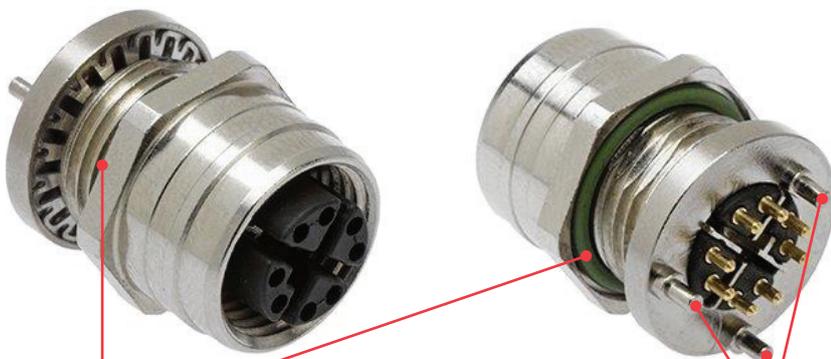


Back panel-mount receptacle

PCB stand-offs



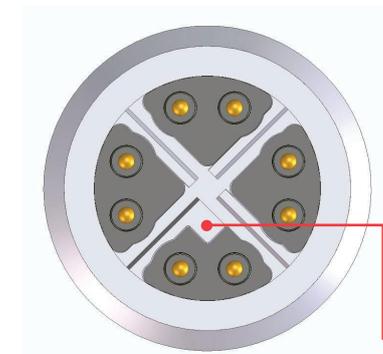
M12 X-code female
receptacle mating interface



O-ring seals for IP67
protection

Front panel-mount receptacle

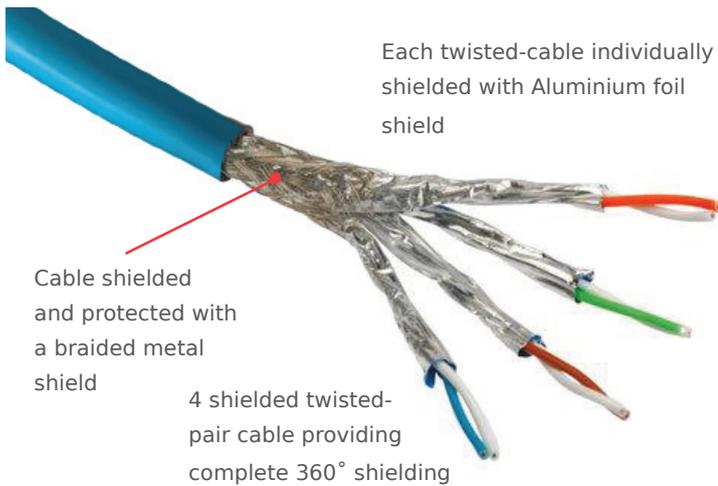
PCB stand-offs



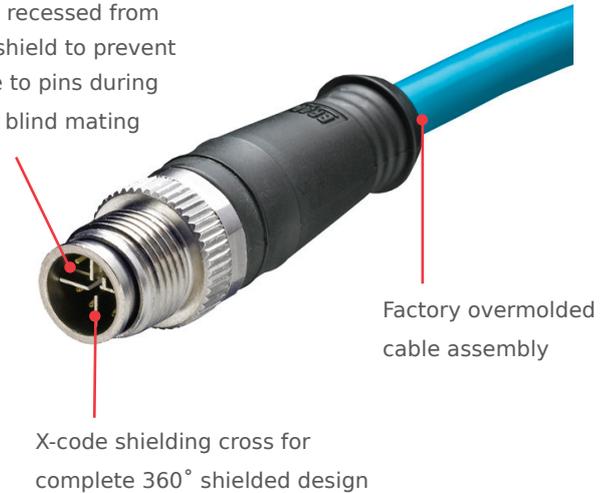
Keying alignment

M12 X-code male
connector mating
interface

Additional Product Features



Pins are recessed from x-code shield to prevent damage to pins during mating/ blind mating



Specifications

REFERENCE INFORMATION

Packaging:
 Receptacles: Blister packs:
 25 pcs per pack
 Cables: Plastic bags, carton
 UL File No.: E200650 Pending
 RoHS: Yes
 Halogen Free: Yes

Environmental

Protection: IP65 to IP67
 Operating Temperature: -40 to +70°C

PHYSICAL

Housing: Nickel Plated Brass
 Coupling Nut: Nickel Plated Brass
 Contact: Gold Over Nickel
 Connector Body: PUR Black

Cable:

Blue PUR Outer Jacket, 4
 Twisted Pairs 26 AWG,
 Pair Shielding: Aluminum-bonded
 Polyester Tape (PIFM),
 Cable shielding: Tinned
 Copper Wire Braid: -40 to +70°C

ELECTRICAL

Voltage (max.): 48V
 Current (max.): 0.5A
 Contact Resistance: <5m Ohm
 Insulation Resistance: >100M Ohm
 Transmission Characteristics
 (Category): 6_A to TIA-568 and ISO/
 IEC 11801

Ordering Information

Mounting Style	No. of Poles	Attribute	Order No.
Front panel-mount	8	CAT6 _A	120341-0075
Back panel-mount			120341-0150

Cable Length	No. of Poles	Attribute	Order No.
0.5M	8	CAT6 _A	120341-0300
1.0M			120341-0301
2.0M			120341-0302
3.0M			120341-0303
4.0M			120341-0304
5.0M			120341-0305
10.0M			120341-0306

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