Industrial Products

Power Products,
Sealed Connector Systems,
Automation Connectivity
and I/O Connectors

molex®

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** DeviceNet is a trademark of Open DeviceNet Vendor Association (ODVA)*
† PROFIBUS is a trademark of PROFIBUS International

Visit www.molex.com to access more part numbers and product information, download sales drawings, product specifications, 3D models, place sample requests, and more.

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Typical Styles

Standard Ring Tongue

The ring tongue terminal is the safest and most reliable style because it cannot be disconnected unless the screw is completely removed.

The basic Molex barrel, called Krimptite®, is noninsulated and features a quality, one-piece design. It is also the most economical style and has the greatest variety of uses where special features are not required.

The InsulKrimp® version features a rigid insulation sleeve of PVC affixed to the Krimptite barrel or the brazed-seam VersaKrimp™ barrel. It attaches to the wire with one quick crimp and the insulation sleeve protects against vibration damage by preventing wire flex at the crimp point. The funnel entrance into the barrel eliminates wire strand "fold back," increases crimping rates and enhances wire termination reliability.

When the butted-seam Krimptite barrel is bonded with a special brazing alloy, it becomes a VersaKrimp barrel. These brazed-seam barrel terminals will not open under conditions of stress or wire pull. As versatile as it is tough, it can be crimped under most adverse conditions by many types of tooling. The VersaKrimp is ideal for hard-to-crimp solid and stranded wires.

The NylaKrimp® barrel was designed specifically for larger wire applications. The color-coded barrel is formed by affixing a permanent, rigid, color-coded nylon insulating sleeve to the barrel. The insulation has a funnel entrance into the barrel that eliminates wire strand "fold back," increases crimping rates and enhances wire termination.

AviKrimp® terminals with color-coded barrels offer you the ultimate in high-performance terminal design and rugged construction. The Tin-plated Brass sleeve strengthens the barrel and secures the wire to protect against stress and high vibration. The color-coded nylon insulating sleeve extends beyond the metal support sleeve. A funnel ferrule wire entrance into the barrel prevents wire strand "fold back" for increased crimping rates and added wire termination reliability in the standard barrel length.

Features

- Material: Copper
- Available in wire ranges from 24 to 26 AWG to 4/0
- All parts available loose piece; some are also available on mylar tape carrier

AviKrimp | InsulKrimp | NylaKrimp | Krimptite | VersaKrimp

Splices

Molex offers standard and special splices for nearly every type of wiring needed.

Butt Splice
Stripped wires are inserted from each end and "butt" in the center, then a crimp at each end secures the connection.

Step Down Butt Splice
The perfect solution when two wires need to be inserted in one end of a splice and a single wire in the other end.

Parallel Splice
Stripped wires lie side-by-side in the splice and are secured by a single crimp in the middle.

AviKrimp Butt Splice
With the extra metal sleeve and nylon insulation, these splices should be used when heavy vibration is anticipated and a strong strain relief is needed.

Funnel Entry Butt Splice
With the funnel entry butt splice, the end that will be crimped by the crimping press is funneled to allow quick and easy wire insertion.

Window Butt Splice
The unique feature of this splice is the "window" that is stamped into the copper splice and covered by nylon. The inspection window guarantees proper wire insertion and crimp tool alignment. QPL'd to Mil-T-7928/5

Multi-Lock
This is an insulation displacement connector that allows tap-and-run connections. Using only ordinary channel lock pliers, these color-coded connectors make quick, reliable, preinsulated splices without having to strip, twist or solder.

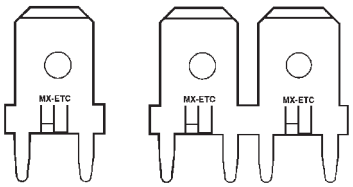
Nylon Closed End Connector
The nylon closed end connectors are used in a wide variety of situations to "pigtail" or tie together two or more wires.

Wire Tap
The Wire Tap splices onto a wire using an insulation displacement barb. No special tools are required, simply squeeze together with pliers.

Note: The connectors shown here are only a representation of our product line. For a complete listing of all solderless terminals and connectors, please contact Molex Industrial Division at 1-800-800-0449, or at www.molex.com.

Quick Disconnects

Quick Disconnect Terminals For PC Board



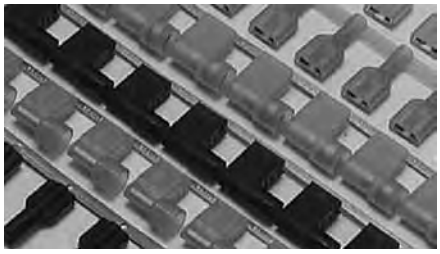
Molex offers a large selection of Standard Printed Circuit Board Mountable quick disconnect terminals. Some products offer a tab support mounting feature providing increased mounting reliability and terminal strength. Products are available as strip applied and loose piece. All products can be easily inserted into printed circuit boards using widely available, industry standard bench-type and fully-automated XY insertion tooling.

Molex PC board Quick Disconnect terminals are available in tab sizes ranging from 2.79 by 0.51mm (.110 by .020") to 6.35 by 0.81mm (.250 by .032"). Products are available in both vertical and right angle mounting configurations. All products are manufactured to NEMA specifications and are UL and CSA recognized.

Features

Material: Brass
Tab conforms to NEMA specifications
Plating: Tin 3.81μm (150μ") min. thickness

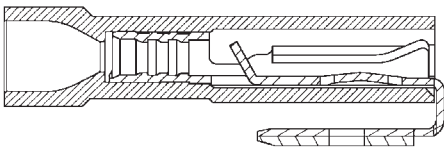
Fully-Insulated Quick Disconnects



Features

- Meets UL 310 standards (listed under UL File No. E79133)
- Color coded translucent insulator allows easy identification of terminal size and wire gauge
- Funnel entrance designed for increased crimping rates by speeding wire delivery into crimp section and eliminating wire strand fold back
- Wire stop stamped into the crimp barrel prevents insertion of over-stripped wire
- AviKrimp version has extra advantage of the secure metal support sleeve, and fulfills double crimp (support) requirements of VDE and DIN specifications
- The right angle flag terminal provides space saving design
- All parts available as loose piece; most are also available on either mylar tape, metal strip, and/or continuous molded carrier
- Some parts meet the UL 94V-0 flammability rating

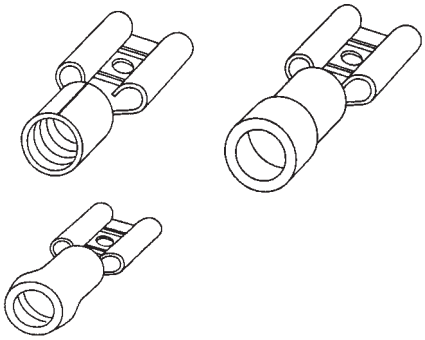
Fully-Insulated Piggyback Quick Disconnects



Features

- Same functions as a standard piggyback terminal with the added feature of being fully insulated with a rigid nylon housing
- Also available in expanded flare versions
- Available in InsulKrimp (single crimp) or AviKrimp (double crimp) style
- Also available in barrel insulated InsulKrimp and AviKrimp versions

Tape-fed And Loose-piece Quick Disconnects



These non-insulated and partially insulated quick disconnects are available either loose piece or tape-mounted. Loose piece versions are individually fed into the dies of manual and powered hand crimping tools. Tape-fed versions are the same terminals mounted on mylar tape for automatic feeding into air- or electric-powered bench crimping presses.

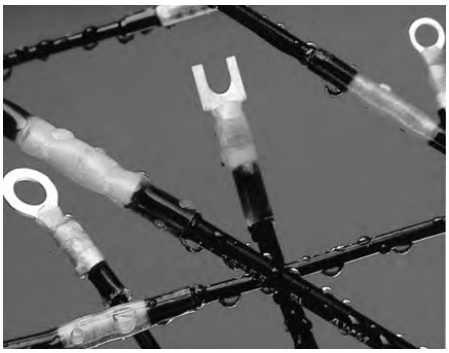
Tape-fed terminals are ideal for applications where there are too many terminals for hand tool crimping and too few for strip press crimping. All loose piece and tape-fed terminals have a fully Tin-plated Brass construction with closed electrical barrels.

Parts are available in the following styles: Krimptite (butted seam), InsulKrimp (PVC insulated), and AviKrimp (nylon insulated with vibration support).

Note: The connectors shown here are only a representation of our product line. For a complete listing of all solderless terminals and connectors, please contact Molex at 1-800-800-0449, or at www.molex.com.

Specialty Connectors

Perma-Seal™ Terminals and Splices

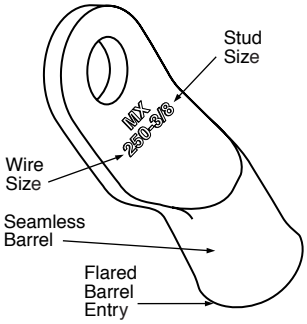


Perma-Seal terminals and splices provide a rugged, environmentally sealed connection for wire sizes 8 to 22 AWG that will insulate, seal and protect joints from physical abuse and abrasion, water, salt and other corrosive compounds.

These terminals give you long-lasting, moisture-proof connections that withstand water, salt, corrosion and heat, all of which cause serious problems for conventional, unsealed splices. The inner wall of the heat-shrinkable insulation sleeve is lined with a special hot-melt adhesive that is inert at room temperature, permitting wires to be inserted easily into the splices and terminals. As the sleeve is heated, the adhesive melts and flows under pressure from the tubing. This action creates a voidless seal that repels moisture incursion even during pressure cycling, and stands up to some of the most rigorous tests that can be applied to high-performance splices, such as the salt fog test MIL-T-7928.

The tough insulation sleeve of Perma-Seal splices and terminals resists abrasion and cutting. This protection helps to maintain the insulation and sealing properties even in the most hostile environments, inside and out.

Heavy-Duty Copper Lugs and Splices



Our heavy-duty closed end crimpable terminals are designed for electrical and industrial applications such as welding equipment, forklifts, generators, power distribution equipment, motors, etc. They are manufactured of pure electrolytic copper, and are available in 8 AWG through 4/0 AWG wire and cable with a variety of stud sizes.

Features

- Rated to 35KV applications
- UL listed, CSA certified
- Crimps in industry standard tooling
- Seamless barrel design
- Can be easily soldered or crimped
- Flared barrel entry for easy wire insertion
- AWG wire size identification on barrel
- Made of CDA-110 Copper stock offering 100% conductivity

Star Ring Terminals

The Star Ring is a serrated ring that is mainly used for grounding. Unlike a ring terminal, when you tighten down on a star ring, the “star blades,” or serrated edges, actually pierce through paint or other coatings, and bite into the metal to insure a good connection or ground. The product may also eliminate the need for lock washers.

Features

Material: Brass or Steel
Non-insulated, PVC insulated, or nylon insulated
Wire ranges from 18 to 22 AWG and 14 to 16 AWG

Note: The connectors shown here are only a representation of our product line. For a complete listing of all solderless terminals and connectors, please contact Molex at 1-800-800-0449, or at www.molex.com.

Eurostyle™ PCB Terminal Blocks

Fixed, One Piece or Pluggable, Two Piece

Molex manufactures a wide variety of Eurostyle terminal blocks to fit your connector needs.
Whether you need a fixed, single-piece solution, or a pluggable, two-piece combination, Eurostyle terminal blocks from Molex provide a quality connection every time.

Beau Eurostyle terminal blocks are available from 3.50mm (.138") pitch to 15.00mm (.591") pitch, with current ratings ranging from 8.0 to 30.0A per circuit. The range of styles, configurations, pitches and ratings makes it easy for you to find the right connector for your design.

Features and Benefits

- Rising cage clamp termination provides a secure connection without strand damage or intermittence
- Various imprinting styles available making wiring and repair faster and easier in the field
- Optional mounting ends ensure plugs maintain connection with PCB headers
- Some PCB headers available as surface mount compatible
- Industry standard interface for compatibility with existing baord layouts
- Made from self-extinguishing nylon material, UL 94 V-0 flammability rating

Reference Information

UL File No.: E48521

Plugs

No. of Circuits	Pitch	Series	Component	Orientation	Current	Voltage	Wire Range (AWG)	Lead-free
2-20	3.50mm (.138")	39500	Plug	Horizontal	8.0	300V	16-30	Yes
		39503		Vertical				
		39504	Plug with retention screws	Horizontal				
		39507		Vertical				
2-20	3.81mm (.150")	39510	Plug	Horizontal	8.0	300V	16-30	
		39513		Vertical				
		39514	Plug with retention screws	Horizontal				
		39517		Vertical				
2-24	5.00mm (.197")	39520	Plug	Horizontal	18.0	300V	12-30	
		39523		Vertical				
		39524	Plug with retention screws	Horizontal				
		39527		Vertical				
2-24	5.08mm (.200")	39530	Plug	Horizontal	18.0	300V	12-30	
		39533		Vertical				
		39534	Plug with retention screws	Horizontal				
		39537		Vertical				
2-12	7.50mm (.295")	39371	Plug	Horizontal	15.0	300V	12-30	
		39374		Vertical				

Headers

Reference Information

UL File No.: E48521

PCB Headers

No. of Circuits	Pitch	Series	Component	Orientation	Current	Voltage	Wire Range (AWG)	Lead-free
2-20	3.50mm (.138")	39502	PCB Header	Horizontal	8.0	300V	N/A	Yes
		39501		Vertical				
		39506	PCB Header with retention inserts	Horizontal				
		39505		Vertical				
2-20	3.81mm (.150")	39512	PCB Header	Horizontal	8.0	300V	N/A	
		39511		Vertical				
		39516	PCB Header with retention inserts	Horizontal				
		39515		Vertical				
2-24	5.00mm (.197")	39522	PCB Header	Horizontal	18.0	300V	N/A	
		39521		Vertical				
		39526	PCB Header with retention inserts	Horizontal				
		39525		Vertical				
4-48		39528	PCB Header, dual level	Horizontal and Vertical				
2-24	5.08mm (.200")	39532	PCB Header	Horizontal	18.0	300V	N/A	
		39531		Vertical				
		39536	PCB Header with retention inserts	Horizontal				
		39535		Vertical				
4-48		39538	PCB Header, dual level	Horizontal and Vertical				
2-12	7.50mm (.295")	39373	PCB Header	Horizontal	15.0	300V	N/A	
		39372		Vertical				

Beau® Eurostyle™ PCB Terminal Blocks

Fixed Terminal Blocks

Reference Information
UL File No.: E48521

No. of Circuits	Pitch	Series	Orientation	Current	Voltage	Wire Range (AWG)	Lead-free
2-25	3.50mm (.138")	39357	Vertical	12.0	300V	16-18	Yes
2-24	5.00mm (.197")	39543	Vertical, Horizontal, 45° angle	10.0		14-22	
		39890	Vertical, 35° angle	13.5		16-30	
	5.08mm (.200")	39544	Vertical, Horizontal, 45° angle	15.0		12-30	
		39880	Vertical, 35° angle	13.5		16-30	
2-3*	6.35mm (.250")	39380	Vertical	30		10-30	
	9.53mm (.375")	39390					

*Note: 39380 and 39390 are modular. Two and three circuit parts can be used to assemble larger circuit sizes.

Eurostyle™ PCB Terminal Blocks

Multi-level (Fixed) Blocks

Features and Benefits

- Modular design allows larger circuit sizes to be created by stacking smaller circuit parts together, which reduces inventory
- Rising cage clamp wire termination provides secure, reliable contact
- Two and three level parts have staggered rows to make wiring easier

Reference Information
UL File No.: E48521

Multi-Level

Circuits	Pitch	Series	Profile	Levels	Current	Voltage	Wire Range (AWG)	Lead-free
4-48	5.00 (.197)	39890	Low	2	13.5A	300V	16-30	Yes
			Medium		17.5A		12-30	
	5.08 (.200)	39880	Low		13.5A		16-30	
			Medium		17.5A		12-30	
			High		24.0A			
6-72	5.00 (.197)	39890	Low	3	13.5A		16-30	
			Medium		17.5A		12-30	
	5.08 (.200)	39880	Low		13.5A		16-30	
			Medium		17.5A		12-30	
			High		24.0A			

Beau® Eurostyle™ PCB Terminal Blocks

High-Power Terminal Blocks

Features and Benefits

- Rising cage clamp wire termination provides secure, reliable contact
- Multiple PCB terminals distribute power more evenly, reducing "hot spots"
- Combination slotted/posi drive screw heads improve transmission of torque for superior wire retention
- Extended wire funnel entry surrounds the wire insulator, eliminating exposed wire strands and possible shorting

Reference Information

UL File No.: E48521

Fixed High-Power

Circuits	Pitch	Series	Orientation	Current	Voltage	Wire Range (AWG)	Lead-free
2-14	10.16 (.400)	39910	Vertical	60.0/40.0A	600V	6-18	Yes
2-12	15.00 (.591)	39920		85.0/115.0A		3-14/1-8	
3-16	8.00 (.315)	39950		20.0A		12-22	
3-12	8.00 (.315)	39960		30.0A		10-22	
2-12	10.16 (.400)	39970		60.0/40.0A	300V	6-18	

Pluggable High-Power

Plug

Circuits	Pitch	Series	Component	Orientation	Current	Voltage	Wire Range (AWG)	Lead-free
2-10	12.00 (.472)	39421	Plug	Horizontal	85.0A	600V	3-14	Yes
2-8		39422	Plug with retention screws					

Header

Circuits	Pitch	Series	Component	Orientation	Current	Voltage	Lead-free
2-10	12.00 (.472)	39425	PCB Header	Horizontal	85.0A	600V	Yes
2-8		39426	PCB Header with retention inserts				

www.molex.com/product/highpower_tb.html

Pluggable Beau® Euromate™

Features and Benefits

- Wiring terminals are staggered and offset vertically to facilitate easier wiring access
- Rear barrier prevents over-insertion of wire into device
- Accepts 6.35mm (.250") ring and spade wiring terminals

Reference Information

UL File No.: E48521

Circuits	Pitch	Series	Orientation	Current	Voltage	Wire Range (AWG)	Lead-free
3-21	3.81 (.138)	39930	Vertical	12.0A	300V	14-22	Yes
3-24	5.08 (.200)	39940		15.0A		12-22	

* Mates with most 3.81 and 5.08mm (.138 and .200") pitch headers.

Positive Locking Plugs and Headers

Features and Benefits

- Polarization feature eliminates the potential for mismating
- Low-profile Eurostyle plug
- Positive latching system resists vibration and wire loads
- Surface Mount Compatible headers can withstand reflow soldering temperatures, elminiating the need for a secondary wave soldering operation

Reference Information

UL File No.: E48521

Plugs

Circuits	Pitch	Series	Orientation	Current	Voltage	Wire Range (AWG)	Lead-free
2-24	5.08 (.200)	39980	Vertical	10.0A	300V	12-24	Yes
2-18	5.00 (.197)	39990				12-26	

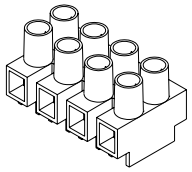
Headers

Circuits	Pitch	Series	Orientation	Current	Voltage	Lead-free
2-24	5.08 (.200)	39980	Vertical	10.0A	300V	Yes
2-18	5.00 (.197)	39990				

www.molex.com/product/poslatch_tb.html

Eurostyle™ Terminal Blocks

Eurostyle Two-Screw Terminal Strips



Features and Benefits

- Modular design allows larger blocks to be easily cut into smaller circuit sizes
- Contacts and screws are recessed in the housing to help prevent short circuits and provide added finger safety
- Wire protectors prevent stranded wire damage during connection

Circuits	Pitch	Series	Current	Voltage	Wire Range (AWG)	Description	Lead-free
2-12	8.00 (.315)	39100-08XX	20.0A	600V	12-22	Standard profile, with standoffs	Yes
	10.00 (.394)	39100-10XX	30.0A		10-18		
	12.00 (.472)	39100-12XX	40.0A		8-20		
	15.00 (.591)	39100-15XX	63.0A		6-14		

Low profile (300V) versions of 8.00, 10.00 and 12.00mm (.315, .394 and .472") terminal blocks available
Jumpers available in 2 or 3 circuit lengths

Beau®
Barrier Strips

Beau terminal blocks provide a robust connection between wires and the PCB.

Beau terminal blocks are a great connector for their durability and versatility. Barrier strips can handle currents of up to 45.0A per circuit and all are rated for 300 or 600V. With the variety of terminal styles, screws and other options available on barrier strips, these parts can be customized in many ways.

Special additions to barrier strips such as topside hardware, marker strips and hinged covers ensure that you get the best possible connector designed specifically for your application.

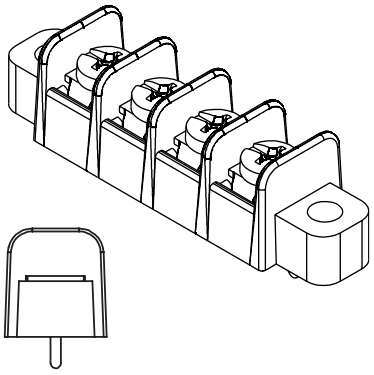
Features

- Optional topside hardware allows for further customization to fit your design requirements
- Robust and durable screw terminals are ultrasonically welded into the thermoplastic insulator, reducing the risk for terminal twisting and solder joint failure
- Tri-barrier construction of some barrier strips provides a back wall to prevent over insertion and shorting
- No special tools required to terminate wires, only a No. 2 screwdriver required
- Broad range of screw and terminal options improves interconnect performance
- Various imprinting styles aid in labeling circuits for wiring, testing and repair in the field
- RoHS and ELV compliant

8.26mm (.325") Pitch Barrier Terminal Strips

38700

PC Terminal



Reference Information

Packaging: Tray
UL File No.: E48521
Flammability: UL 94V-0
Designed In: Inches

Electrical

Voltage: 300V
Current: 15.0A
Dielectric Withstanding Voltage: 1600V AC
Insulation Resistance: 1000 Megohms min.

Mechanical

Recommended Tightening Torque: 1.36Nm (12 in.-lb)

Physical

Housing: PBT, black
Terminal: Brass
Screw: Steel, #6-32, Phillips/Slot combo head
Plating: Terminal Area—Tin
Screw—Zinc with clear chromate
Wire Range: 14 to 22 AWG

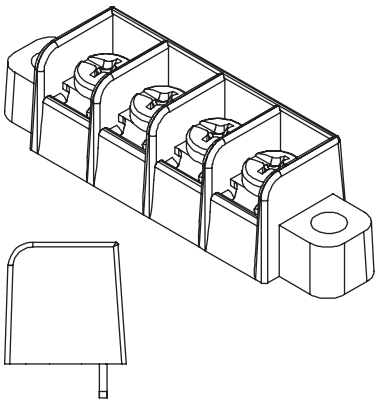
Circuits	Order No.		Lead-free
	With Mounting Ends	Without Mounting Ends	
2	38700-6102	38700-6302	Yes
3	38700-6103	38700-6303	
4	38700-6104	38700-6304	
5	38700-6105	38700-6305	
6	38700-6106	38700-6306	
7	38700-6107	38700-6307	
8	38700-6108	38700-6308	
9	38700-6109	38700-6309	
10	38700-6110	38700-6310	
11	38700-6111	38700-6311	
12	38700-6112	38700-6312	
13	38700-6113	38700-6313	
14	38700-6114	38700-6314	

Circuits	Order No.		Lead-free
	With Mounting Ends	Without Mounting Ends	
15	38700-6115	38700-6315	Yes
16	38700-6116	38700-6316	
17	38700-6117	38700-6317	
18	38700-6118	38700-6318	
19	38700-6119	38700-6319	
20	38700-6120	38700-6320	
21	38700-6121	38700-6321	
22	38700-6122	38700-6322	
23	38700-6123	38700-6323	
24	38700-6124	38700-6324	
25	38700-6125	38700-6325	
26	38700-6126	38700-6326	

8.26mm (.325") Pitch Single Row Tri-Barrier Terminal Strips

38704

PC Terminal



Reference Information
Packaging: Tray
UL File No.: E48521
Flammability: UL 94V-0
Designed In: Inches

Electrical
Voltage: 300V
Current: 15.0A
Dielectric Withstanding Voltage: 1600V AC
Insulation Resistance: 1000 Megohms min.

Mechanical
Recommended Tightening Torque: 1.36Nm (12 in.-lb)

Physical
Housing: PBT, black
Terminal: Brass
Screw: Steel, #6-32, Phillips/Slot combo head
Plating: Terminal Area—Tin
Screw—Zinc with clear chromate
Wire Range: 14 to 22 AWG

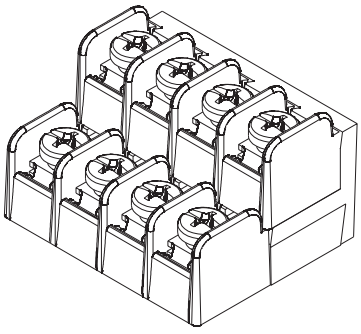
Circuits	Order No.		Lead-free
	With Mounting Ends	Without Mounting Ends	
2	38704-4002	38704-4102	Yes
3	38704-4003	38704-4102	
4	38704-4004	38704-4102	
5	38704-4005	38704-4102	
6	38704-4006	38704-4102	
7	38704-4007	38704-4102	

Circuits	Order No.		Lead-free
	With Mounting Ends	Without Mounting Ends	
8	38704-4008	38704-4108	Yes
9	38704-4009	38704-4109	
10	38704-4010	38704-4110	
11	38704-4011	38704-4111	
12	38704-4012	38704-4112	

8.26mm (.325") Pitch Dual Level Barrier Terminal Strips

38706

Dual Level, PC Terminal



Reference Information
Packaging: Tray
UL File No.: E48521
Flammability: UL 94V-0

Electrical
Voltage: 300V
Current: 15.0A
Insulation Resistance: 5000 Megohms min.
Dielectric Withstanding Voltage: 1600V AC

Mechanical
Recommended Tightening Torque: 1.36Nm (12 in-lb.)
Wire Range: 14 to 22 AWG

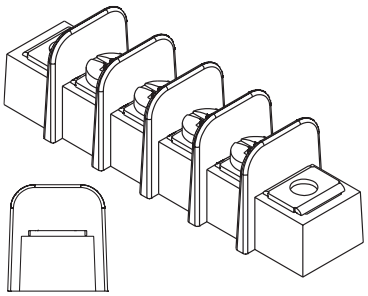
Physical
Housing: Polysulfone, black
Terminal: Brass
Screw: Steel, #6-32, Phillips/Slot combo head
Plating: Terminal—Tin
Screw—Zinc with clear chromate

Circuits	Order No.	Lead-free
4	38706-0004	Yes
6	38706-0006	
8	38706-0008	
10	38706-0010	
12	38706-0012	
14	38706-0014	

Circuits	Order No.	Lead-free
16	38706-0016	Yes
18	38706-0018	
20	38706-0020	
22	38706-0022	
24	38706-0024	

9.53mm (.375") Pitch Single Row Barrier Terminal Strips

38720
Panel Mount



Reference Information
Packaging: Tray
UL File No.: E48521
Flammability: UL 94V-0
Designed In: Inches

Electrical
Voltage: 300V
Current: 15.0A
Dielectric Withstanding Voltage: 1600V AC
Insulation Resistance: 5000 Megohms min.

Mechanical
Recommended Tightening Torque: 1.36Nm (12 in.-lb)

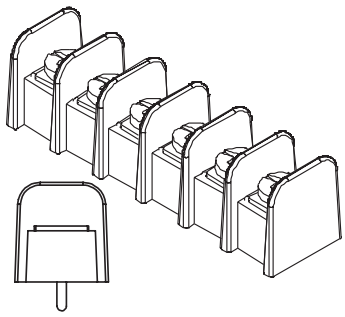
Physical
Housing: PBT, black
Terminal: Brass
Screw: Steel, #6-32, Phillips/Slot combo head
Plating: Terminal Area—Tin
Screw—Zinc with clear chromate
Wire Range: 14 to 22 AWG

Circuits	Order No.		Lead-free
	With Mounting Ends	Without Mounting Ends	
2	38720-0202	38720-0302	Yes
3	38720-0203	38720-0303	
4	38720-0204	38720-0304	
5	38720-0205	38720-0305	
6	38720-0206	38720-0306	
7	38720-0207	38720-0307	
8	38720-0208	38720-0308	
9	38720-0209	38720-0309	
10	38720-0210	38720-0310	
11	38720-0211	38720-0311	
12	38720-0212	38720-0312	
13	38720-0213	38720-0313	
14	38720-0214	38720-0314	

Circuits	Order No.		Lead-free
	With Mounting Ends	Without Mounting Ends	
15	38720-0215	38720-0315	Yes
16	38720-0216	38720-0316	
17	38720-0217	38720-0317	
18	38720-0218	38720-0318	
19	38720-0219	38720-0319	
20	38720-0220	38720-0320	
21	38720-0221	38720-0321	
22	38720-0222	38720-0322	
23	38720-0223	38720-0323	
24	38720-0224	38720-0324	
25	38720-0225	38720-0325	
26	38720-0226	38720-0326	

9.53mm (.375") Pitch Single Row Barrier Terminal Strips

38720
PC Terminal



Reference Information
Packaging: Tray
UL File No.: E48521
Flammability: UL 94V-0
Designed In: Inches

Electrical
Voltage: 300V
Current: 15.0A
Dielectric Withstanding Voltage: 1600V AC
Insulation Resistance: 1000 Megohms min.

Mechanical
Recommended Tightening Torque: 1.36Nm (12 in.-lb)

Physical
Housing: PBT, black
Terminal: Brass
Screw: Steel, #6-32, Philips/Slot combo head
Plating: Terminal Area—Tin
Screw—Zinc with clear chromate
Wire Range: 14 to 22 AWG

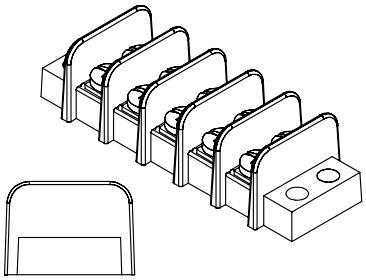
Circuits	Order No.		Lead-free
	With Mounting Ends	Without Mounting Ends	
2	38720-6202	38720-6302	Yes
3	38720-6203	38720-6303	
4	38720-6204	38720-6304	
5	38720-6205	38720-6305	
6	38720-6206	38720-6306	
7	38720-6207	38720-6307	
8	38720-6208	38720-6308	
9	38720-6209	38720-6309	
10	38720-6210	38720-6310	
11	38720-6211	38720-6311	
12	38720-6212	38720-6312	
13	38720-6213	38720-6313	
14	38720-6214	38720-6314	

Circuits	Order No.		Lead-free
	With Mounting Ends	Without Mounting Ends	
15	38720-6215	38720-6315	Yes
16	38720-6216	38720-6316	
17	38720-6217	38720-6317	
18	38720-6218	38720-6318	
19	38720-6219	38720-6319	
20	38720-6220	38720-6320	
21	38720-6221	38720-6321	
22	38720-6222	38720-6322	
23	38720-6223	38720-6323	
24	38720-6224	38720-6324	
25	38720-6225	38720-6325	
26	38720-6226	38720-6326	

9.53mm (.375") Pitch Double Row Barrier Terminal Strips

38760/38770

Panel Mount



Reference Information
Packaging: Tray
UL File No.: E48521
Flammability: UL 94V-0
Designed In: Inches

Electrical
Voltage: 300V
Current: 15.0A
Dielectric Withstanding Voltage: 1600V AC
Insulation Resistance: 1000 Megohms min.

Mechanical
Recommended Tightening Torque: 1.26Nm (12 in.-lb)

Physical
Housing: PBT, black
Terminal: Brass
Screw: Steel, #6-32, Philips/Slot combo head
Plating: Terminal Area—Tin
Screw—Zinc with clear chromate
Wire Range: 14 to 22 AWG

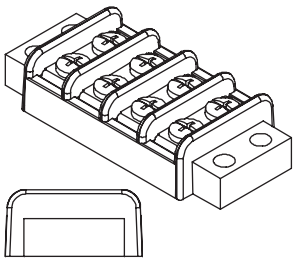
Circuits	Order No.		Lead-free
	Low Profile	Standard	
2	38770-0102	38760-0102	Yes
3	38770-0103	38760-0103	
4	38770-0104	38760-0104	
5	38770-0105	38760-0105	
6	38770-0106	38760-0106	
7	38770-0107	38760-0107	
8	38770-0108	38760-0108	
9	38770-0109	38760-0109	
10	38770-0110	38760-0110	
11	38770-0111	38760-0111	
12	38770-0112	38760-0112	
13	38770-0113	38760-0113	
14	38770-0114	38760-0114	
15	38770-0115	38760-0115	

Circuits	Order No.		Lead-free
	Low Profile	Standard	
16	38770-0116	38760-0116	Yes
17	38770-0117	38760-0117	
18	38770-0118	38760-0118	
19	38770-0119	38760-0119	
20	38770-0120	38760-0120	
21	38770-0121	38760-0121	
22	38770-0122	38760-0122	
23	38770-0123	38760-0123	
24	38770-0124	38760-0124	
25	38770-0125	38760-0125	
26	38770-0126	38760-0126	
27	38770-0127	38760-0127	
28	38770-0128	38760-0128	
29	38770-0129	38760-0129	
30	38770-0130	38760-0130	

11.11mm (.438") Pitch Double Row Barrier Terminal Strips

38780

Panel Mount



Reference Information
Packaging: Tray
UL File No.: E48521
Flammability: UL 94V-0
Designed In: Inches

Electrical
Voltage: 300V
Current: 15.0A
Dielectric Withstanding Voltage: 1600V AC
Insulation Resistance: 1000 Megohms min.

Mechanical
Recommended Tightening Torque: 1.36Nm (12 in.-lb)

Physical
Housing: PBT, black
Terminal: Brass
Screw: Steel, #6-32, Phillips/Slot combo head
Plating: Terminal Area—Nickel
Screw—Zinc with clear chromate
Wire Range: 14 to 22 AWG

Circuits	Order No.	Lead-free
2	38780-0102	Yes
3	38780-0103	
4	38780-0104	
5	38780-0105	
6	38780-0106	
7	38780-0107	
8	38780-0108	
9	38780-0109	
10	38780-0110	
11	38780-0111	

Circuits	Order No.	Lead-free
12	38780-0112	Yes
13	38780-0113	
14	38780-0114	
15	38780-0115	
16	38780-0116	
17	38780-0117	
18	38780-0118	
19	38780-0119	
20	38780-0120	
21	38780-0121	

Circuits	Order No.	Lead-free
22	38780-0122	Yes
23	38780-0123	
24	38780-0124	
25	38780-0125	
26	38780-0126	
27	38780-0127	
28	38780-0128	
29	38980-0129	
30	38780-0130	

Beau™ Power Connectors Panel Mount Plugs and Sockets

38330

Angle Bracket, Angle Bracket Tapped, Without Angle Bracket

Angle Bracket shown

Features and Benefits

- Robust blade contacts resist damage from improper mating
- Large surface area of dual wipe female contact produces maximum current capacity
- All circuits are rated for full current load

Reference Information

Packaging: Tray
UL File No.: E34763
CSA File No.: 22156
Designed In: Inches

Electrical

Voltage: 250V
Current: 10.0A

Mechanical

Durability: 500 cycles

Physical

Housing: Phenolic
Plug Contact: Brass
Socket Contact: Phosphor Bronze
Plating: Plug Contact—Tin
Socket Contact—Tin

Plugs

Circuits	Order No.			Lead-free
	Angle Bracket	Angle Bracket Tapped	Without Angle Bracket	
2	38330-0102	38330-1502	38330-2202	Yes
3	38330-0103	38330-1503	38330-2203	
4	38330-0104	38330-1504	38330-2204	
6	38330-0106	38330-1506	38330-2206	
8	38330-0108	38330-1508	38330-2208	
10	38330-0110	38330-1510	38330-2210	
12	38330-0112	38330-1512	38330-2212	
15	38330-0115	38330-1515	38330-2215	
18	38330-0118	38330-1518	38330-2218	
21	38330-0121	38330-1521	38330-2221	
24	38330-0124	38330-1524	38330-2224	
27	38330-0127	38330-1527	38330-2227	
30	38330-0130	38330-1530	38330-2230	
33	38330-0133	38330-1533	38330-2233	

Sockets

Circuits	Order No.			Lead-free
	Angle Bracket	Angle Bracket Tapped	Without Angle Bracket	
2	38330-0502	38330-1902	38330-2602	Yes
3	38330-0503	38330-1903	38330-2603	
4	38330-0504	38330-1904	38330-2604	
6	38330-0506	38330-1906	38330-2606	
8	38330-0508	38330-1908	38330-2608	
10	38330-0510	38330-1910	38330-2610	
12	38330-0512	38330-1912	38330-2612	
15	38330-0515	38330-1915	38330-2615	
18	38330-0518	38330-1918	38330-2618	
21	38330-0521	38330-1921	38330-2621	
24	38330-0524	38330-1924	38330-2624	
27	38330-0527	38330-1927	38330-2627	
30	38330-0530	38330-1930	38330-2630	
33	38330-0533	38330-1933	38330-2633	

Note: Solder Eye is the standard contact tail for plugs and sockets. Contact Molex for additional contact options and order numbers.

Beau™ Power Connectors Cable Mount Plugs and Sockets

38331

Cable Clamp Top

Cable Clamp Top shown

Features and Benefits

- Latch and keeper hardware ensure that plug and socket remain mated even in high vibration applications
- Robust blade contacts resist damage from improper mating
- Large surface area of dual wipe female contact produces maximum current capacity
- All circuits are rated for full current load

Reference Information

Packaging: Tray
UL File No.: E34763
CSA File No.: 22156
Designed In: Inches

Electrical

Voltage: 250V
Current: 10.0A

Mechanical

Durability: 500 cycles

Physical

Housing: Phenolic
Plug Contact: Brass
Socket Contact: Phosphor Bronze
Plating: Plug Contact—Tin
Socket Contact—Tin

Plugs

Circuits	Order No.	Lead-free
	Cable Clamp Top	
2	38331-5602	Yes
3	38331-5603	
4	38331-5604	
6	38331-5606	
8	38331-5608	
10	38331-5610	
12	38331-5612	

Circuits	Order No.	Lead-free
	Cable Clamp Top	
15	38331-5615	Yes
18	38331-5618	
21	38331-5621	
24	38331-5624	
27	38331-5627	
30	38331-5630	
33	38331-5633	

Sockets

Circuits	Order No.	Lead-free
	Cable Clamp Top	
2	38331-8002	Yes
3	38331-8003	
4	38331-8004	
6	38331-8006	
8	38331-8008	
10	38331-8010	
12	38331-8012	

Circuits	Order No.	Lead-free
	Cable Clamp Top	
15	38331-8015	Yes
18	38331-8018	
21	38331-8021	
24	38331-8024	
27	38331-8027	
30	38331-8030	
33	38331-8033	

Note: Solder Eye is the standard contact tail for plugs and sockets.
Contact Molex for additional contact options and order numbers.

Beau™ Power Connectors Panel Mount Plugs and Sockets

38540
Angle Bracket

Angle Bracket shown

Features and Benefits
- Robust blade contacts resist damage from improper mating
- Large surface area of dual wipe female contact produces maximum current capacity
- All circuits are rated for full current load

Reference Information
Packaging: Tray
UL File No.: E34763
CSA File No.: 22156
Designed In: Inches

Electrical
Voltage: 250V
Current: 15.0A

Mechanical
Durability: 500 cycles

Physical
Housing: Phenolic
Plug Contact: Brass
Socket Contact: Phosphor Bronze
Plating: Plug Contact—Tin
Socket Contact—Tin

Plugs

Circuits	Order No.	Lead-free
	Angle Bracket	
4	38540-0104	Yes
5	38540-0105	
6	38540-0106	
7	38540-0107	
8	38540-0108	
9	38540-0109	
10	38540-0110	
11	38540-0111	
12	38540-0112	
13	38540-0113	
14	38540-0114	
15	38540-0115	
16	38540-0116	

Note: Solder Hook is the standard contact tail for plugs. Contact Molex for additional contact options and order numbers.

Sockets

Circuits	Order No.	Lead-free
	Angle Bracket	
4	38540-0604	Yes
5	38540-0605	
6	38540-0606	
7	38540-0607	
8	38540-0608	
9	38540-0609	
10	38540-0610	
11	38540-0611	
12	38540-0612	
13	38540-0613	
14	38540-0614	
15	38540-0615	
16	38540-0616	

Note: Solder Eye is the standard contact tail for sockets. Contact Molex for additional contact options and order numbers.

Beau™ Power Connectors Cable Mount Plugs and Sockets

38541
Cable Clamp Top

Cable Clamp Top shown

Features and Benefits
- Strain relief cable clamps can be used with round or flat cable
- Robust blade contacts resist damage from improper mating
- Large surface area of dual wipe female contact produces maximum current capacity
- All circuits are rated for full current load

Reference Information
Packaging: Tray
UL File No.: E34763
CSA File No.: 22156
Designed In: Inches

Electrical
Voltage: 250V
Current: 15.0A

Mechanical
Durability: 500 cycles

Physical
Housing: Phenolic
Plug Contact: Brass
Socket Contact: Phosphor Bronze
Plating: Plug Contact—Tin
Socket Contact—Tin

Plugs

Circuits	Order No.	Lead-free
	Cable Clamp Top	
4	38541-5404	Yes
5	38541-5405	
6	38541-5406	
7	38541-5407	
8	38541-5408	
9	38541-5409	
10	38541-5410	
11	38541-5411	
12	38541-5412	
13	38541-5413	
14	38541-5414	
15	38541-5415	
16	38541-5416	

Note: Solder Hook is the standard contact tail for plugs. Contact Molex for additional contact options and order numbers.

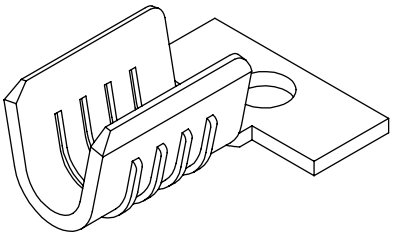
Sockets

Circuits	Order No.	Lead-free
	Cable Clamp Top	
4	38541-8404	Yes
5	38541-8405	
6	38541-8406	
7	38541-8407	
8	38541-8408	
9	38541-8409	
10	38541-8410	
11	38541-8411	
12	38541-8412	
13	38541-8413	
14	38541-8414	
15	38541-8415	
16	38541-8416	

Note: Solder Eye is the standard contact tail for sockets. Contact Molex for additional contact options and order numbers.

Wire Splice Terminal

35760



Features and Benefits

- Uninsulated splices shaped like an open "U" accommodate stranded wire
- Non-insulation support

Reference Information

Product Specification: PS-35760-003
Packaging: Reel
Designed In: Millimeters

Electrical

Current: 25.0A
Contact Resistance: 3 milliohms max.

Physical

Contact: Brass
Plating: Tin

Order No.	Material	Wire Range	Lead-free
35760-7100	Brass	24-22	Yes
35760-7110	Tin-plated Brass		
35760-7200	Brass	22-18	
35760-7205	Tin-plated Brass		
35760-7210	Tin-plated Brass		
35760-7300	Brass	16-14	
35760-7310	Tin-plated Brass		
35760-7400	Brass	14-10	
35760-7410	Tin-plated Brass		

www.molex.com/customer.html?seriesNumber=35760

Wire Management Products

Heat Shrink Tubing

Molex offers a wide variety of heat shrink tubing including thin-wall, adhesive-lined dual-wall and heavy-wall polyolefin tubing as well as heat shrinkable PVC.

Thin (single) wall is high quality tubing with a wide variety of uses. It is made from flame retardant polyolefin, giving it excellent physical, chemical and electrical properties that meet industrial and military requirements for highly reliable, general-purpose tubing.

Dual-wall tubing is adhesive lined, and manufactured using fully flame retardant polyolefin tubing which offers superior strain relief as well as environmental sealing capabilities.

Heavy-wall tubing is UL rated for direct burial applications. This tubing is chemically cross linked during manufacturing which ensures that it will not split or rupture during installation, even if overheated.

Closed-End Connectors

Molex nylon closed-end connectors feature two-piece construction. A translucent nylon insulator is adhered to the pure electrolytic, copper insert. Closed-end connectors are used in a wide variety of situations to "pigtail" two or more wires together, and can be used as a dead end splice or one power line and multiple lead offs.

Multi-Lock Connectors

The Multi-Lock is an insulation displacement connector that allows quick tap-and-run connections. Using ordinary channel lock pliers, these color-coded connectors make quick, reliable, pre-insulated splices without having to strip, twist or solder.

The Multi-Lock connector consists of a polypropylene insulation with a tin-plated brass barb. Once the appropriate wires have been inserted, the barb is squeezed such that it "displaces" the insulation and makes contact with the wire, creating an electrical connection. The cover is then snapped into position, completely insulating the barb and wire.

Wire Connectors

Molex Wire Connectors offer a cost effective way to produce safe and secure wire connections. The tough, thermoplastic shell provides UL-94V2 flame retardant protection while the fixed square-wire spring construction offers a secure connection that will not relax over time.

Standard Twist Locks feature a threaded funnel entry to easily guide wires into the connector.

Wing Locks offer deep gripping ribs and swept-back wings that permit a higher torque.

High Temp Wire Connectors are used in applications that require continued exposure to heat.

Cable Ties

Molex offers a full line of standard cable ties as well as selected mounting and identification ties. Our cable ties are constructed from durable nylon 6/6 and offer a compact, one piece design. These industry standard products are designed to meet or exceed the MIL-S-23190E tensile strength requirements.

Heavy-Duty Rectangular Industrial Connectors

INTRODUCTION

Molex's line of HMC heavy-duty rectangular industrial connectors are designed for rugged applications such as robotics, machinery equipment, transportation, power generation and industrial controls. HMC provides an innovative new approach to traditional heavy-duty connections.

The HMC series includes some unique design features such as: rugged metal cable-side hood with easy-to-actuate "one-touch" lock; removable modular housing inserts that can be custom configured; and various circuit and amperage types to meet different power and signal needs.

Features

HMC™ Series

- Unique rounded-shape metal hood with single-action lock for space savings and easy handling
- Easy field removal of modules
- Cable-clamp solution that integrates sealed ring and holder into one-piece cover
- Single-module type enables housing inserts to be loaded into either side
- Multi-module type enables flexible module configurations for hybrid application needs

HMC Series—Module Type

12 circuits, 35.0/10.0A, IP65

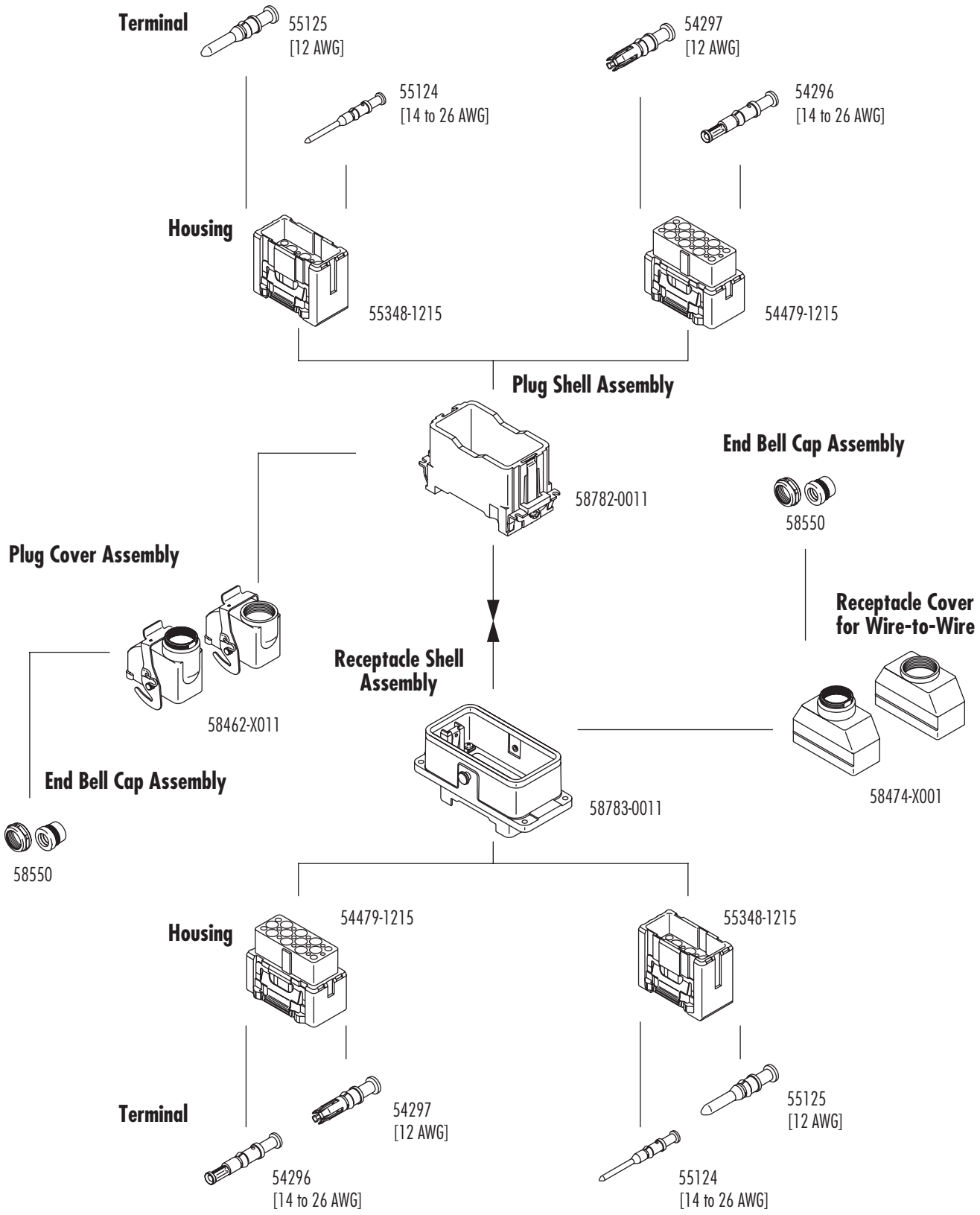
40 circuits, 10.0A, IP65

52 circuits, 10.0A, IP65

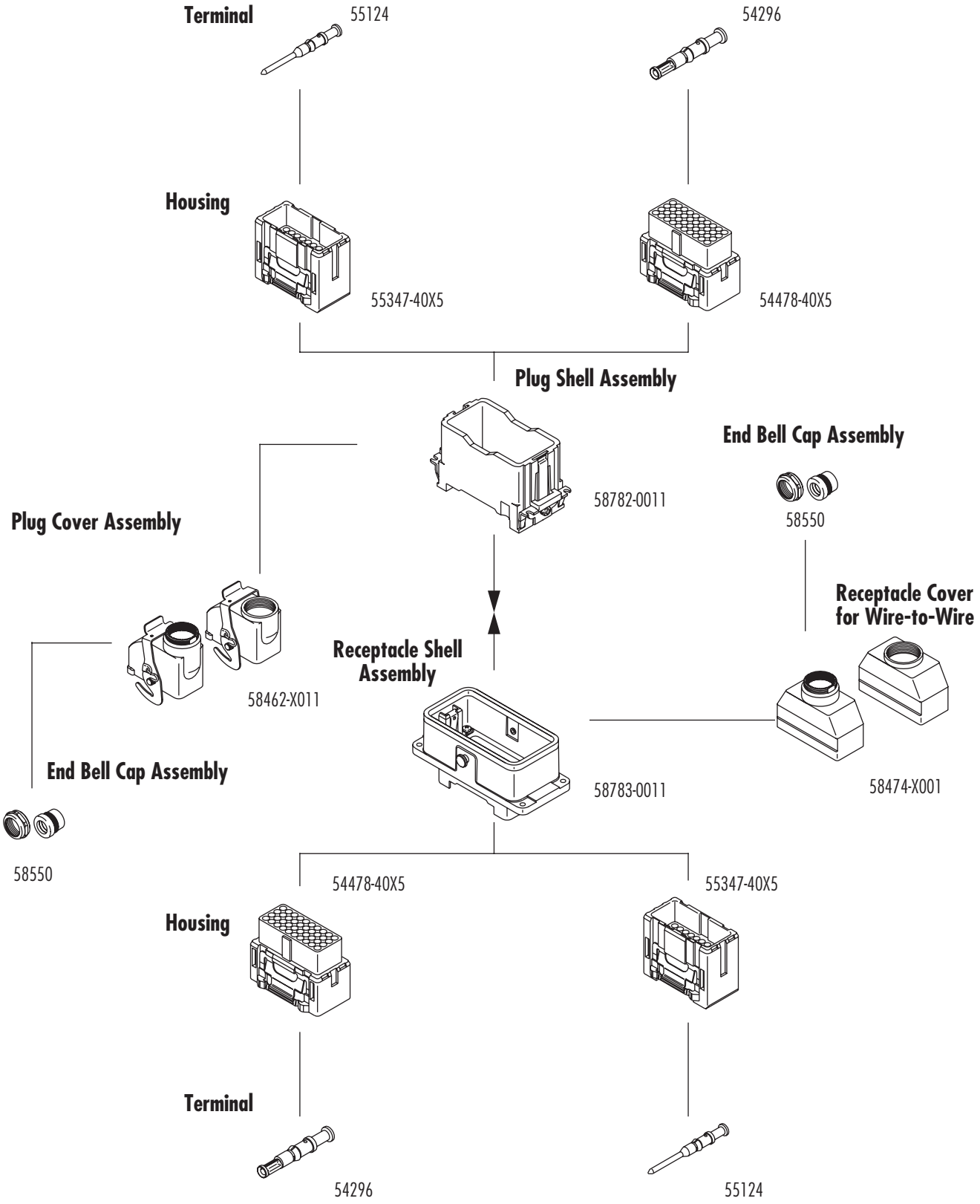
36 circuits, 12.0A, IP65

48/72 circuits, 20.0/12.0A, IP65

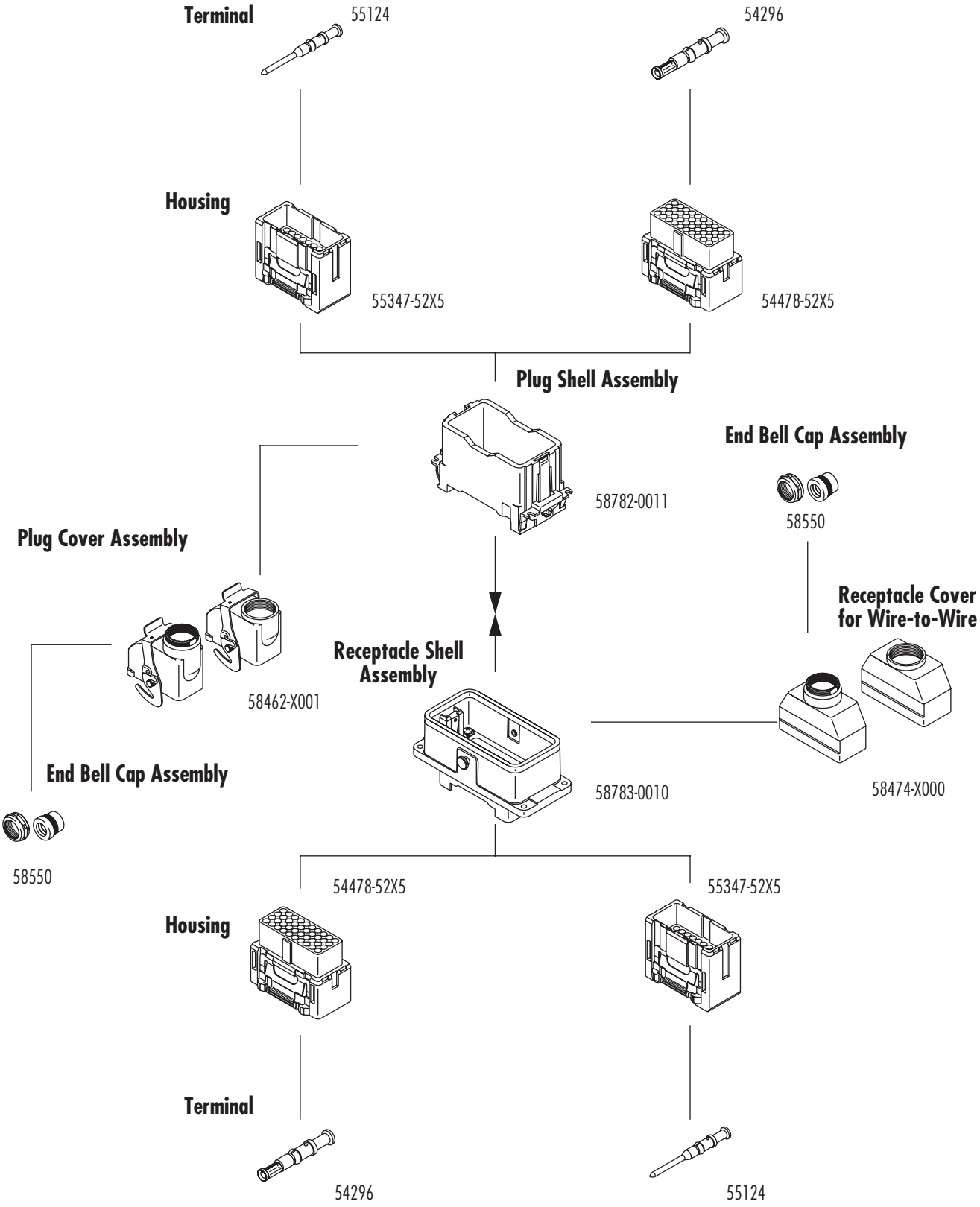
HMC™
12 circuits—35A/ 10 circuits - IP65 10A/2 circuits Connection System



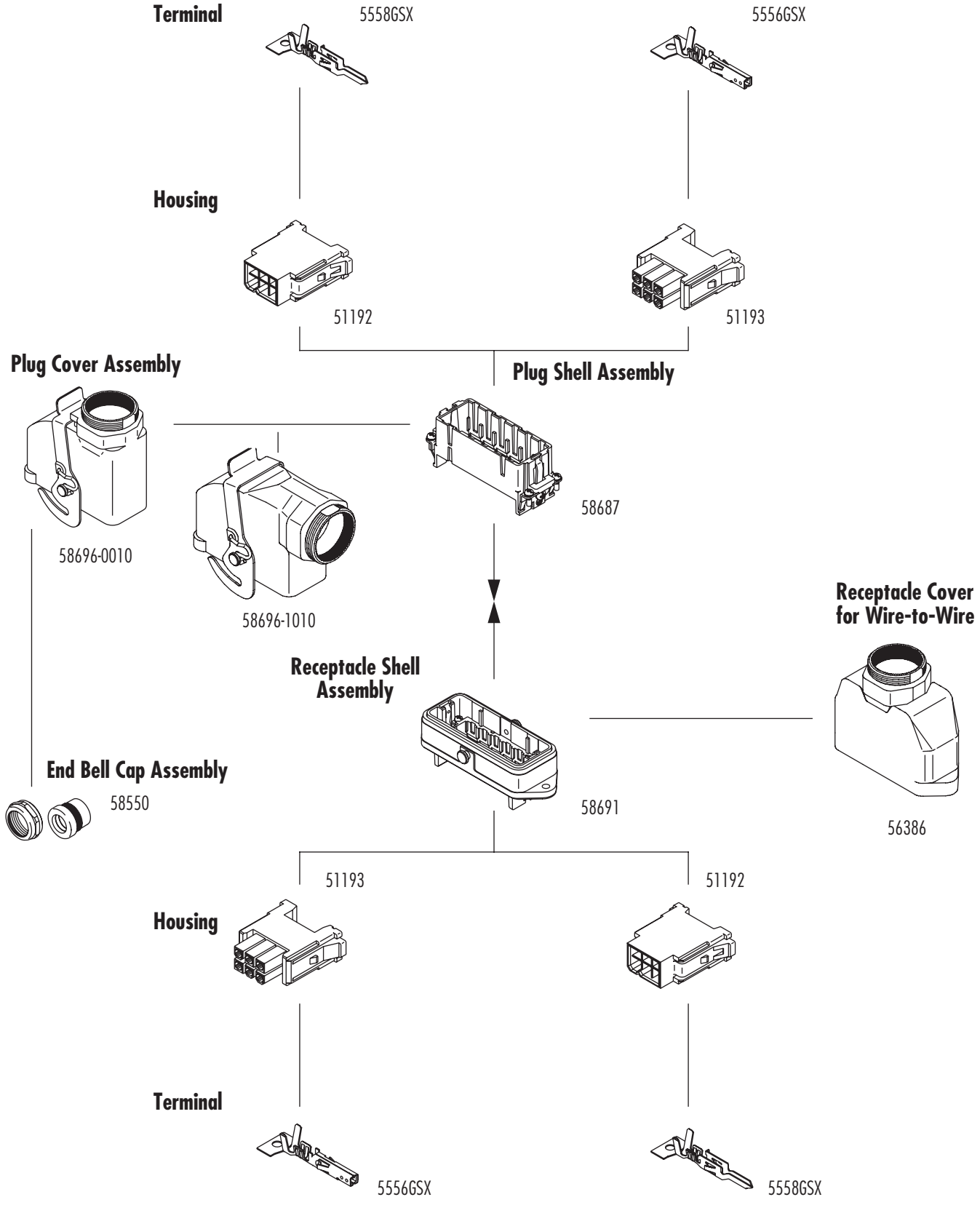
HMC™
10A/40 circuits—IP65
Connection System



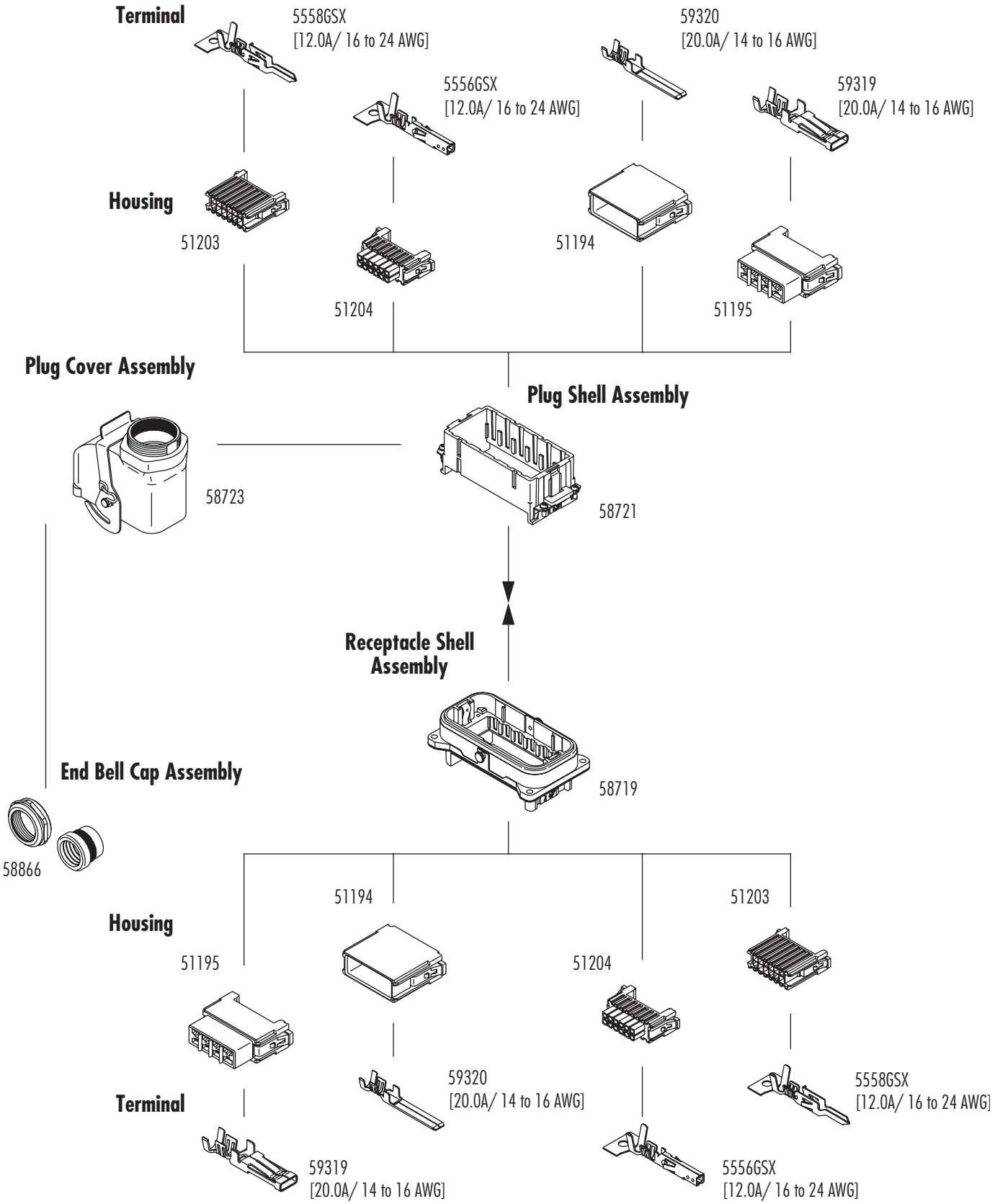
HMC™
10A/52 circuits—IP65
Connection System



HMC™
12A/36 circuits—IP65
Connection System



HMC™
(20A/48 circuits)—IP65
(12A/72 circuits)
Connection System



Mini-HMC™ Rectangular Industrial Connector System

Introduction

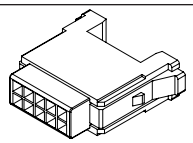
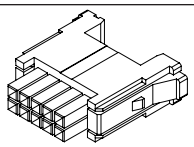
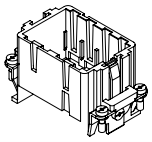
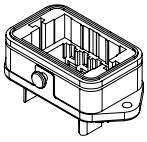
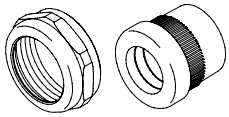
Molex's Mini-HMC system was developed to meet the needs of smaller industrial robatic applications. Mini-HMC provides the ruggedness of traditional Heavy Duty connectors but in a smaller form factor.

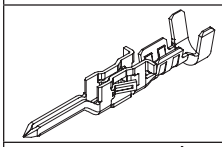
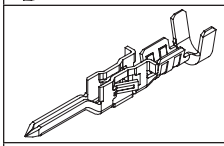
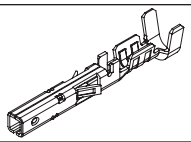
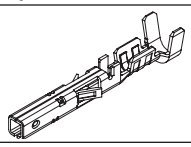
Mini-HMC offers many of the same unique features of our standard HMC™ (Heavy Duty Modular) connectors such as "one-touch" lock and removable housings. The system also utilizes the same crimp terminals as our CRC™ (Compact Robotic) industrial connectors.

Specifications

- Current: 7.0A
- Voltage: 250V
- Circuit Size Range: 40 (fully loaded)
- Contact Resistance: 10 milliohms max.
- Insulation Resistance: 1000 Megohms min.
- Dielectric Strength: AC 1500V/1 minute
- Contact Retention Force: 24.5N
- Durability: 50 cycles

SELECTION MATRIX

	Description	Order No.	Circuits	Rows	Material	Plating	Packaging
	Plug	500812-1000	10	2	Nylon 66, Glass-Filled UI 94V-0		Bag
	Receptacle	500813-1000	10	2	Nylon 66, Glass-Filled UI 94V-0		Bag
	Plug Shell	500810-0000 (A) 500810-0010 (B)	40	8	Plug Shell: Aluminum Alloy Plug Grounded Terminal: Brass Head Screws: Steel	Nickel	Bag
	Receptacle Shell	500809-0000 (A) 500809-0010 (B)	40	8	Receptacle Shell: Aluminum Alloy Receptacle Ground Terminal: Brass Head Screws: Steel	Nickel	Bag
	Cover	500811-0010	40		Plug Cover: Aluminum Alloy Cover Lock Pin/Level Spring: Stainless Steel	Nickel	Bag
	End Bell Cap Assembly	58550-000*			Cable Cap: Brass Bush: PVC	Nickel	Bag

	Description	Order No.	Material	Plating (Contact/Crimp)	Packaging
	AWG# 24-28	56118-8*28	Phosphor Bronze	Gold/Tin	-8228: Reel -8328: Bag
	AWG# 18-22	56119-8*28	Phosphor Bronze	Gold/Tin	-8228: Reel -8328: Bag
	AWG# 24-28	56120-8*28	Phosphor Bronze	Gold/Tin	-8428: Reel -8528: Bag
	AWG# 18-22	56121-8*28	Phosphor Bronze	Gold/Tin	-8428: Reel -8528: Bag

MX150L™ Sealed Connector System

The pre-assembled, submersible MX150L is a high performance connector system suitable for challenging, rugged and harsh applications.

The MX150L sealed connector system is designed to meet the need for a rugged, environmentally sealed connector system supporting both low-level signal applications as well as power applications up to 40.0A, from on-engine automotive and marine applications to off-road construction equipment applications. The system is comprised of wire-to-wire, wire-to-panel and wire-to-board configurations.

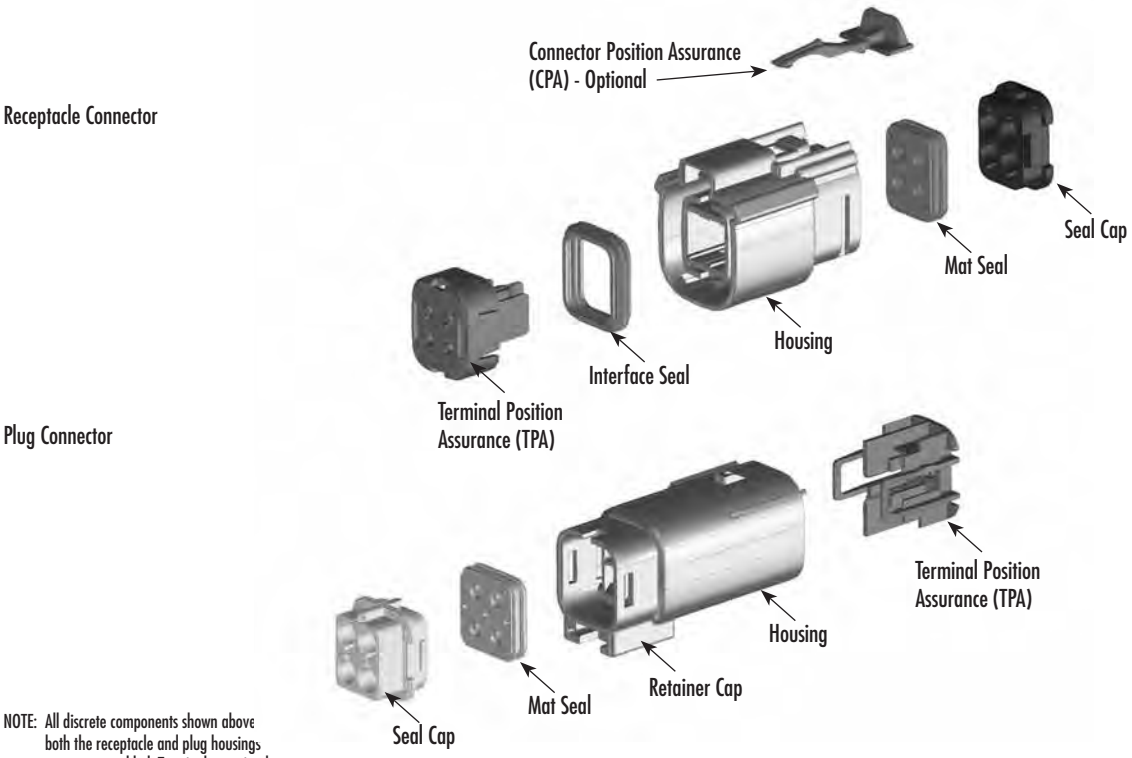
These innovative mat-sealed connectors are based upon the 1.50 and 2.50mm (.059 and .098") blade-type terminals. This design eliminates the need to purchase, handle and crimp individual wire seals to lower applied cost. The mat-seal design is a single silicone-based seal with individual wire openings and a seal cap to protect, securely retain and provide strain relief to the seal. The cost-effective connector design features all-in-one plug and receptacle housings with pre-assembled mat-wire and interfacial connector seals. Integral Terminal Position Assurance (TPA) and optional Connector Position Assurance (CPA) components eliminate time-consuming and costly assembly operations. Completing the application is as simple as crimping the appropriate terminal, inserting the crimped terminal lead and seating the TPA to its final locked position. No additional components are required.

Tooling solutions include FineAdjust™ crimp press applicators for high-volume production, as well as hand tools for low-volume production and field repairs.

Features and Benefits

- Pre-assembled connector housings, seals, TPA components and mat-seal cap shipped in 1 piece to provide applied labor and cost savings
- Integral TPA assures that crimped terminal leads are properly locked into connector (TPA will not seat into final lock position and connector system will not latch if terminal is not locked properly into position)
- Conforms to UL 1977, which allows for a UL recognized sealed connector system for use in data, signal, control and power applications
- Superior electrical and mechanical performance capabilities surpass performance of most mature competitive products in market
- Audible and tactile clicks on insertion, extraction and mating feedback facilitates reliable mating and terminal loading and removal
- Unused circuits can be blocked using plastic seal plugs, which facilitates flexibility of sealing unused circuits without adding complexity to part numbers and customer inventory
- Integral locking latch with secondary, pre-loaded CPA option assures that connector system is properly latched. CPA will not move to final locked position if connector is not latched. Confirms positive mating of connector
- Sealed panel mount plugs are equipped with a blind hole loss feature that reduces extra hardware while improving the sealing process during assembly by eliminating a leak path
- Integral, 2-way mat and interface seals designed and tested to IEC IP 67 exceeds "waterproof" demands as a true sealed connector system tested under submersed conditions in various fluids
- Easy terminal insertion and extraction provides quick, low-cost field repairs using common screwdriver, needle nose pliers and terminal extraction tool
- Protective mat-seal cap protects, securely retains and provides strain relief to wire seal interface
- Simple crimp, poke and plug application eliminates need to crimp individual wire seals

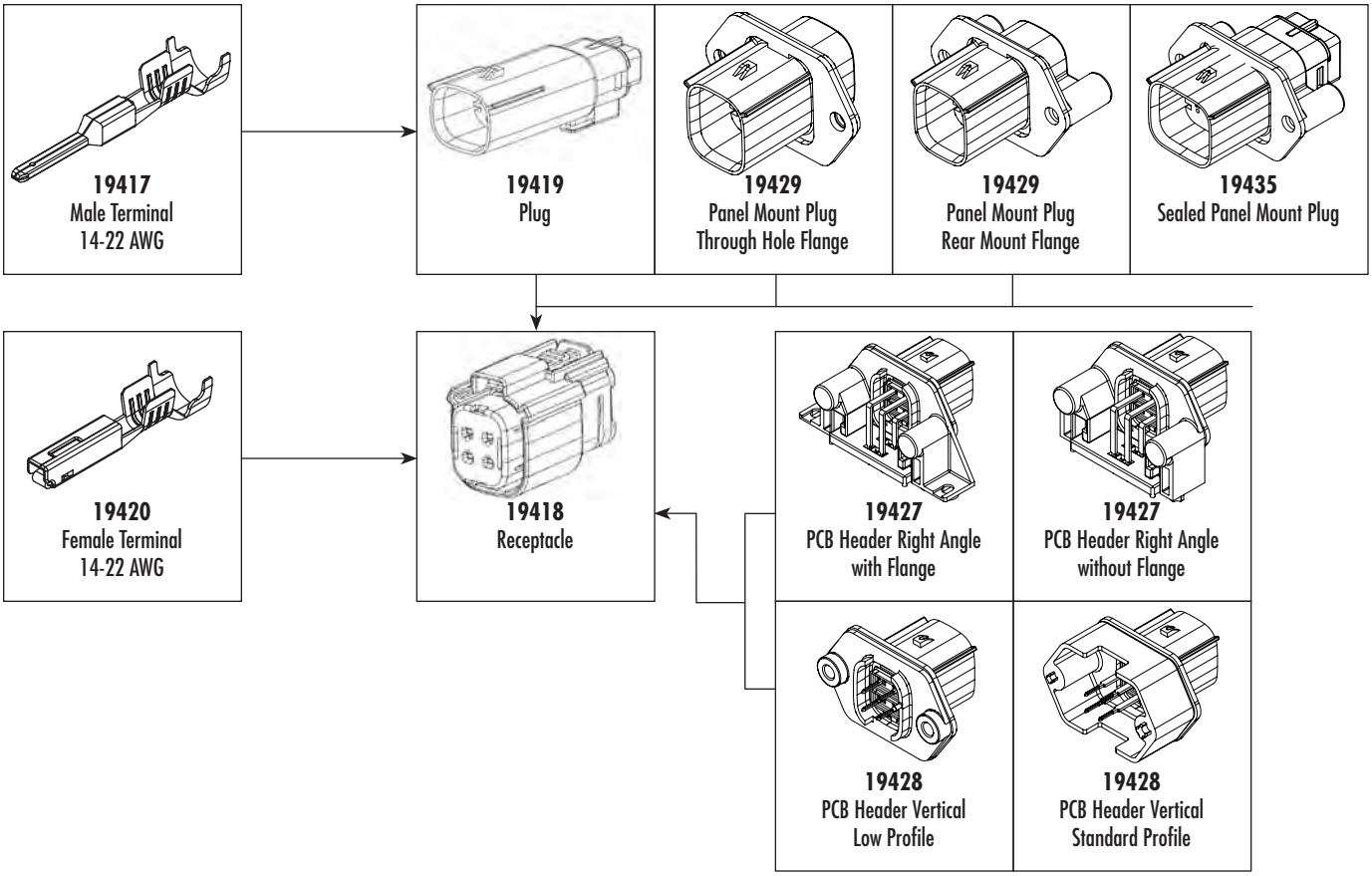
MX150L Sealed Connector Systems - Exploded View



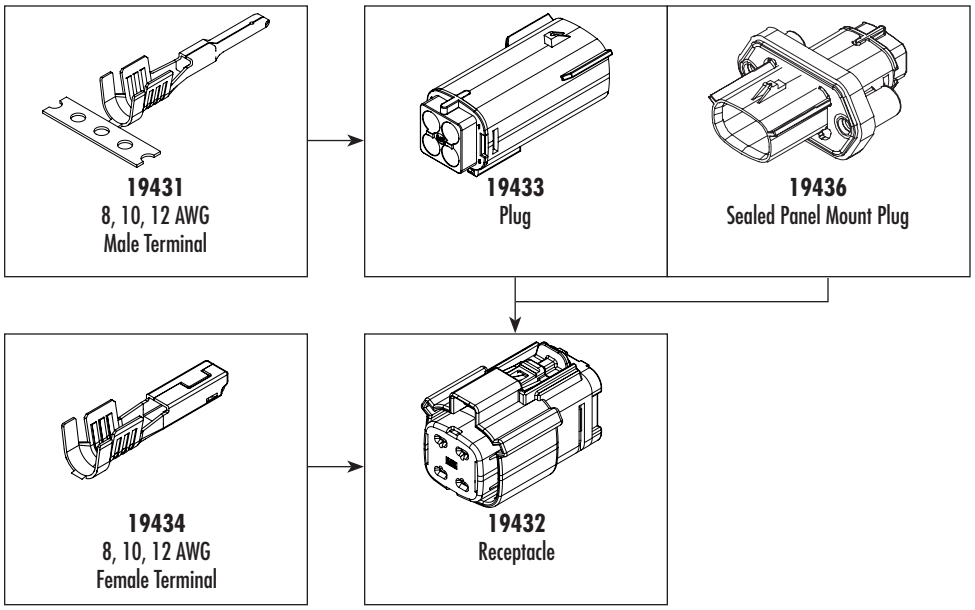
NOTE: All discrete components shown above both the receptacle and plug housings are pre-assembled. Terminals are simply crimped and poked into the housings. No additional wire seals, wedge locks or CPA locks are required.

MX150L™
Product Overview

14 TO 22 AWG Wire-to-Wire, Wire-to-Board and Panel Mount

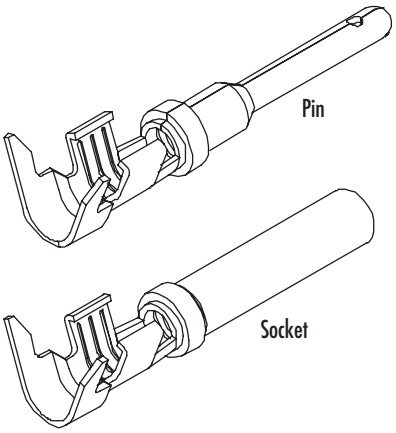


8, 10 and 12 AWG Wire-to-Wire and Panel Mount



XRC™ Extra Rugged Circular Sealed Connectors Crimp Terminal

84590



Reference Information

Packaging: Reel
Use With: 84501 and 84507 plug housings
84502 and 84508 receptacle housings
Designed In: Inches

Electrical

Current: 18 AWG—10.0A max.
16 and 14 AWG—13.0A max.
Contact Resistance: 30 milliohms max.

Mechanical

Contact Retention to Housing: 53.4N (12 lb)
Durability: 100 cycles

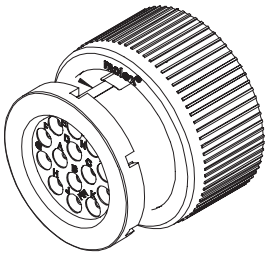
Physical

Contact: Copper Alloy
Plating: Contact Area—Nickel Overall
Underplating—Copper

Order No.	Wire Range (AWG)	Gender	Terminal Size	Insulation Outside Diameter	Lead-free
84590-0021	14 to 18	Pin	16	2.41 to 3.81mm (.095 to .150")	Yes
84590-0022				1.91 to 3.91mm (.075 to .150")	
84590-0020	16 to 18			1.40 to 2.16mm (.055 to .085")	
84590-0024	14 to 18	Socket		2.41 to 3.81mm (.095 to .150")	
84590-0023				1.91 to 3.91mm (.075 to .150")	
84590-0025	16 to 18			1.40 to 2.16mm (.055 to .085")	

XRC™ Extra Rugged Circular Sealed Connectors Plug Housing

84501



Features and Benefits

- Environmentally sealed to IP67 standard and protects against the ingress of dust, water and other contaminants to maintain the integrity of the mated pair
- Seal retainer lip is compatible with backshell and overmolding applications
- Bayonet style latch provides quick and easy connections for reduced installation and service time as well as ensures proper depth when mated
- Simple crimp-and-poke technology does not require terminal alignment when installing crimped wires
- Tactile and audible mating feedback facilitates reliable mating

Reference Information

Packaging: Tray
Mates With: 84508 receptacle
Use With: 84590 crimp terminals and
84509-0002 circuit plug
Designed In: Inches

Electrical

Current: 18 AWG—10.0A max.
16 and 14 AWG—13.0A max.
Contact Resistance: 30 milliohms max.
Dielectric Withstanding Voltage: 1600V AC
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 53.4N (12 lb)
Mating Force: 133.5N (30 lb) max.
Unmating Force: 26.7N (6 lb) min.
Durability: 100 cycles

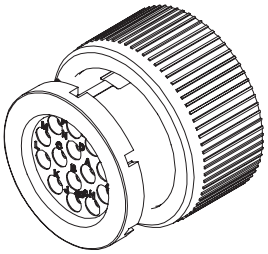
Physical

Housing: Glass-filled PBT
Seals: Silicone rubber
Contact: Copper Alloy
Insulation Outside Diameter: Thin wall

Circuits	Shell Size	Order No.	Terminal Insert Configuration	Wire Range	Lead-free
14	18	84501-0001	Pin insert	14 to 18	Yes

XRC™ Extra Rugged Circular Sealed Connectors Plug Housing

84507



Features and Benefits

- Environmentally sealed to IP67 standard and protects against the ingress of dust, water and other contaminants to maintain the integrity of the mated pair
- Seal retainer lip is compatible with backshell and overmolding applications
- Bayonet style latch provides quick and easy connections for reduced installation and service time as well as ensures proper depth when mated
- Simple crimp-and-poke technology does not require terminal alignment when installing crimped wires
- Tactile and audible mating feedback facilitates reliable mating

Reference Information

Packaging: Tray
Mates With: 84502 receptacle
Use With: 84590 crimp terminals and
84509-0002 circuit plug
Designed In: Inches

Electrical

Current: 18 AWG—10.0A max.
16 and 14 AWG—13.0A max.
Contact Resistance: 30 milliohms max.
Dielectric Withstanding Voltage: 1600V AC
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 53.4N (12 lb)
Mating Force: 133.5N (30 lb) max.
Unmating Force: 26.7N (6 lb) min.
Durability: 100 cycles

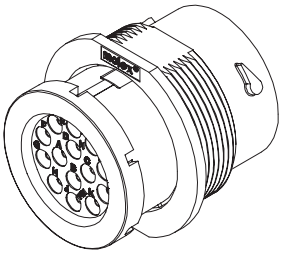
Physical

Housing: Glass-filled PBT
Seals: Silicone rubber
Contact: Copper Alloy
Insulation Outside Diameter: Thin wall

Circuits	Shell Size	Order No.	Terminal Insert Configuration	Wire Range	Lead-free
14	18	84507-0012	Socket insert	14 to 18	Yes

XRC™ Extra Rugged Circular Sealed Connectors Receptacle Housing

84502



Features and Benefits

- Environmentally sealed to IP67 standard and protects against the ingress of dust, water and other contaminants to maintain the integrity of the mated pair
- Seal retainer lip is compatible with backshell and overmolding applications
- Bayonet style latch provides quick and easy connections for reduced installation and service time as well as ensures proper depth when mated
- Simple crimp-and-poke technology does not require terminal alignment when installing crimped wires
- Tactile and audible mating feedback facilitates reliable mating

Reference Information

Packaging: Tray
Mates With: 84507 plug
Use With: 84590 crimp terminals,
84502-0004 panel mount hex nut (optional) and
84509-0002 circuit plug
Designed In: Inches

Electrical

Current: 18 AWG—10.0A max.
16 and 14 AWG—13.0A max.
Contact Resistance: 30 milliohms max.
Dielectric Withstanding Voltage: 1600V AC
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 53.4N (12 lb)
Mating Force: 133.5N (30 lb) max.
Unmating Force: 26.7N (6 lb) min.
Durability: 100 cycles

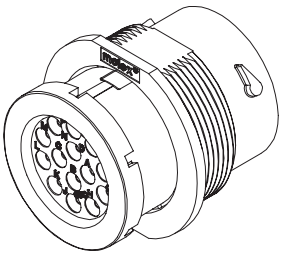
Physical

Housing: Glass-filled PBT
Seals: Silicone rubber
Contact: Copper Alloy
Insulation Outside Diameter: Thin wall

Circuits	Shell Size	Order No.	Terminal Insert Configuration	Wire Range	Lead-free
14	18	84502-0008	Pin insert	14 to 18	Yes

XRC™ Extra Rugged Circular Sealed Connectors Receptacle Housing

84508



Features and Benefits

- Environmentally sealed to IP67 standard and protects against the ingress of dust, water and other contaminants to maintain the integrity of the mated pair
- Seal retainer lip is compatible with backshell and overmolding applications
- Bayonet style latch provides quick and easy connections for reduced installation and service time as well as ensures proper depth when mated
- Simple crimp-and-poke technology does not require terminal alignment when installing crimped wires
- Tactile and audible mating feedback facilitates reliable mating

Reference Information

Packaging: Tray
Mates With: 84501 plug
Use With: 84590 crimp terminals,
84502-0004 panel mount hex nut (optional) and
84509-0002 circuit plug
Designed In: Inches

Electrical

Current: 18 AWG—10.0A max.
16 and 14 AWG—13.0A max.
Contact Resistance: 30 milliohms max.
Dielectric Withstanding Voltage: 1600V AC
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 53.4N (12 lb)
Mating Force: 133.5N (30 lb) max.
Unmating Force: 26.7N (6 lb) min.
Durability: 100 cycles

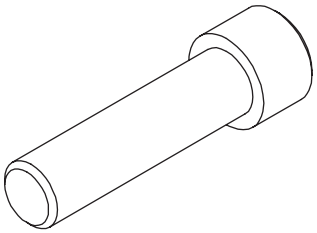
Physical

Housing: Glass-filled PBT
Seals: Silicone rubber
Contact: Copper Alloy
Insulation Outside Diameter: Thin wall

Circuits	Shell Size	Order No.	Terminal Insert Configuration	Wire Range	Lead-free
14	18	84508-0001	Socket insert	14 to 18	Yes

XRC™ Extra Rugged Circular Sealed Connectors Circuit Plug

84509



Features and Benefits

- Optional circuit plug supports the ability to implement sealed blank cavities in both plug and receptacle housings
- Provides the ability to plan for possible future circuit additions while maintaining the sealing integrity of the mated pair

Reference Information

Packaging: Box
Use With: 84501 and 84507 plug housings
84502 and 84508 receptacle housings
Designed In: Inches

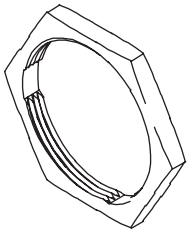
Physical

Material: PBT, UL 94V-0

Order No.	Contact Size	Color	Lead-free
84509-0002	12 and 16	Natural/White	Yes

XRC™ Extra Rugged Circular Sealed Connectors Panel Mount Hex Nut

84502



Reference Information

Packaging: Box
Use with: Molex shell size 18 receptacle housings
Designed In: Inches

Physical

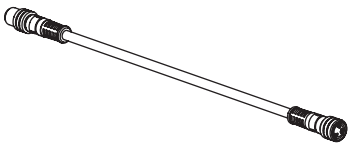
Material: PBT, UL 94V-0

Order No.	Color	Lead-free
84502-0004	Black	Yes

Brad® Nano-Change® (M8) Cordset

120027/120028/120086/120087

Single and Double-Ended



Features and Benefits

- M8 connector per IEC 61072-2-104
- 24 AWG yellow PVC/black PUR/yellow TPE (thermoplastic elastomer) cables
- Threaded coupling to withstand harsh industrial environments

Reference Information

UL File No.: E152210

Electrical

Voltage: 60V AC/75V DC
Current: 3P—4.0A
4P—4.0A
5P—3.0A

Mechanical

Connector Face: PBT
Molded Body: TPE
O-Ring: Viton
Coupling Nut: Nickel-plated Brass
Cable: Yellow, PVC Cable Jacket, #24 AWG over 19 by #36 Copper stranding, UL style 2661
Outside Diameter:
3P—0.17" (4.3mm)
4P—0.18" (4.6mm)
5P—0.20" (5.1mm)

Environmental

Protection: IP67

Single-Ended

Poles	Cable Length (m)	PVC Cable				PUR* Cable			
		Male		Female		Male		Female	
		Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
3	2.0	403006A10M020	120086-0132	403000A10M020	120086-0102	403006P03M020	120027-0911	403000P03M020	120027-0003
	4.0	403006A10M040	120086-0133	403000A10M040	120086-0106	403006P03M040	120027-0453	403000P03M040	120027-1130
	5.0	403006A10M050	120086-0134	403000A10M050	120086-0107	403006P03M050	120086-0474	403000P03M050	120086-0466
	6.0	403006A10M060	120086-0575	403000A10M060	120086-0108	403006P03M060	120086-0583	403000P03M060	120086-0589
	10.0	403006A10M100	120086-0135	403000A10M100	120086-0111	403006P03M100	120027-0933	403000P03M100	120027-0005
4	2.0	404006A10M020	120086-0183	404000A10M020	120086-0144	404006P03M020	120027-0960	404000P03M020	120027-0014
	4.0	404006A10M040	120086-0184	404000A10M040	120086-0146	404006P03M040	120086-0584	404000P03M040	120086-0590
	5.0	404006A10M050	120086-0185	404000A10M050	120086-0147	404006P03M050	120027-1017	404000P03M050	120027-0015
	6.0	404006A10M060	120086-0576	404000A10M060	120086-0148	404006P03M060	120086-0585	404000P03M060	120086-0591
	10.0	404006A10M100	120086-0577	404000A10M100	120086-0155	404006P03M100	120027-1137	404000P03M100	120027-0016
5	2.0	405006A10M020	120086-0206	405000A10M020	120086-0191	405006P02M020	120027-0752	405000P02M020	120027-0709
	4.0	405006A10M040	120086-0207	405000A10M040	120086-0192	405006P02M040	120086-0586	405000P02M040	120086-0592
	5.0	405006A10M050	120086-0208	405000A10M050	120086-0193	405006P02M050	120027-0657	405000P02M050	120086-0475
	6.0	405006A10M060	120086-0541	405000A10M060	120086-0578	405006P02M060	120086-0587	405000P02M060	120086-0593
	10.0	405006A10M100	120086-0579	405000A10M100	120086-0194	405006P02M100	120086-0588	405000P02M100	120086-0594

* Preferred version in Europe. For black PVC cables, please contact Molex.

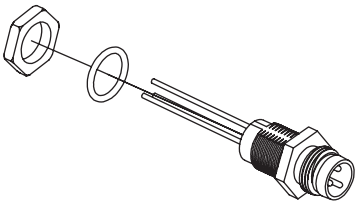
Double-Ended

Poles	Cable Length (m)	PVC Cable		PUR* Cable	
		Male Straight/Female Straight Extension			
		Old Part No.	Order No.	Old Part No.	Order No.
3	0.6	443030A10M006	120087-0071	443030P03M006	120028-0681
	1.0	443030A10M010	120087-0074	443030P03M010	120087-0515
	2.0	443030A10M020	120087-0078	443030P03M020	120028-0682
	3.0	443030A10M030	120087-0079	443030P03M030	120028-0947
	4.0	443030A10M040	120087-0080	443030P03M040	120028-1269
	5.0	443030A10M050	120087-0081	443030P03M050	120028-0870
4	0.6	444030A10M006	120087-0092	444030P03M006	120028-0473
	1.0	444030A10M010	120087-0093	444030P03M010	120028-0365
	2.0	444030A10M020	120087-0095	444030P03M020	120028-0696
	3.0	444030A10M030	120087-0096	444030P03M030	120028-0697
	4.0	444030A10M040	120087-0097	444030P03M040	120087-0686
	5.0	444030A10M050	120087-0098	444030P03M050	120028-0970
5	0.6	445030A10M006	120087-0677	445030P02M006	120087-0687
	1.0	445030A10M010	120087-0112	445030P02M010	120028-1309
	2.0	445030A10M020	120087-0113	445030P02M020	120087-8035
	3.0	445030A10M030	120087-0678	445030P02M030	120087-0688
	4.0	445030A10M040	120087-0114	445030P02M040	120087-8036
	5.0	445030A10M050	120087-0041	445030P02M050	120028-1310

* Preferred version in Europe. For black PVC cables, please contact Molex.

Brad® Nano-Change® (M8) Receptacle

120090



Features and Benefits
- M8 connector per IEC 61072-2-104
- Nickel-plated Brass body
- IP67 rating on threaded connection

Reference Information
UL File No.: E152210

Electrical
Voltage: 60V AC/75V DC
Current: 3P—4.0A
4P—4.0A
5P—3.0A

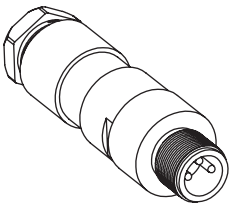
Mechanical
Connector Face: PBT
Shell: Nickel-plated Brass
O-Ring: Viton
Wire: PVC; #24 AWG (19 by #36)

Environmental
Protection: Coupler—NEMA IP67
Snap—NEMA 4, IP65

Poles	Old Part No.	Order No.	Gender
3	4R3P00A27C300	120090-0016	Female
	4R3P06A27C300	120090-0020	Male
4	4R4P00A27C300	120090-0029	Female
	4R4P06A27C300	120090-0032	Male
5	4R5P00A27C300	120090-0037	Female
	4R5P06A27C300	120090-0038	Male

Brad® Nano-Change® (M8) Attachable Connector

120091



Features and Benefits
- M8 connector per IEC 61076-2-104
- Allows easy field conversion to threaded connection quick-disconnect
- Solder connections for reliability in vibration applications
- Male and female in both straight and 90˚ versions

Electrical
Voltage: 60V AC/75V DC
Current: 4.0A

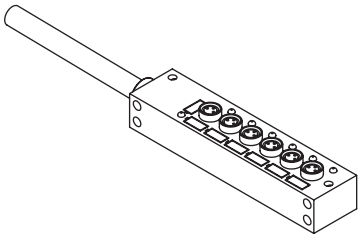
Mechanical
Connector Face: PA
Body: PA
Coupling Nut: Nickel-plated Brass
Termination: Solder lugs; accepts conductor to #20 AWG

Environmental
Protection: IP67

Poles	Old Part No.	Order No.	Orientation	Gender
3	N03FA03124	120091-0001	Straight	Female
	N03FA04124	120091-0003	90˚	Female
	N03MA03124	120091-0004	Straight	Male
	N03MA04124	120091-0006	90˚	Male
4	N04FA03124	120091-0007	Straight	Female
	N04FA04124	120091-0009	90˚	Female
	N04MA03124	120091-0010	Straight	Male
	N04MA04124	120091-0012	90˚	Male

Brad® Nano-Change® (M8) Distribution Box

120113



Features and Benefits

- M8 connector per IEC 61072-2-104
- Connectorized Home Run cable connector version for maximum flexibility
- Flexibility with 4, 8, and 10 ports
- PNP and NPN versions for use with a variety of DC sensor

Mechanical

Insert: Thermoplastic polyester
Housing: PBT
Receptacle Housing: Nickel-plated Brass
ID Label: ABS
O-Ring: Viton
Home Run Connector Cabling: M16 14 pole connector, metal shell
Cable Jacket: Black PUR/PVC composite, black PUR
Diameter: PUR—0.28" (7mm)

	4 Port	6 Port	8 Port	10 Port
V(+) and V(-):	2 x 0.75mm²	2 x 0.75mm²	2 x 0.75mm²	2 x 0.75mm²
Control:	4 x 0.34mm²	6 x 0.34mm²	8 x 0.34mm²	Outer
Stranding				
V(+) and V(-):	95 x 0.1mm	85 x 0.1mm	95 x 0.1mm	95 x 0.1mm
Control	42 x 0.1mm	42 x 0.1mm	42 x 0.1mm	42 x 0.1mm

Electrical

Voltage: 10 to 30V DC
Current: 2.0A max. per port; 6A total per MPIS unit
Indicating Lights: Green LED—power; Yellow LED—function
Average LED Life: 100,000 hours

Environmental

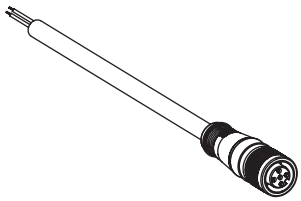
Protection: IP67

Ports	Old Part No.	Order No.	Description
4	BNY401P-FBC	120113-0023	Top Mount, Connector with Integral Home Run Connector
8	BNY801P-FBC	120113-0029	
10	BNYA01P-FBC	120113-0020	
4	BNY401P-FBP-05	120113-0025	Top Mount with Top Cable Entry, Molded Home Run Cable
8	BNY801P-FBP-05	120113-0032	
10	BNYA01P-FBP-05	120113-0022	
4	BEY401P-FBP-05	120113-0006	
6	BEY601P-FBP-05	120113-0011	
8	BEY801P-FBP-05	120113-0014	
10	BEYA01P-FBP-05	120113-0002	
4	BEY401P-FBP-10	120113-0007	

Brad® Micro-Change® (M12) Cordset

120006/120065

Single Keyway
Single-Ended



Features and Benefits

- Single key M12 connector per IEC 61076-2-101
- 22 AWG yellow PVC/black PUR/yellow TPE (thermoplastic elastomer) cables
- DC color code
- Highly reliable low-resistance contact design with Gold/Palladium Nickel plating

Reference Information

UL File No.: E152210
CSA File No.: LR6837

Electrical

Voltage: 250V AC/DC
Current: 4.0A

Mechanical

Connector Face: PUR
Molded Body: PUR
O-Ring: Nitrile rubber
Coupling Nut: Nickel plated brass
Cable:
PVC—Yellow 22 AWG PVC jacket and PVC conductor insulation over 26 x 36 Copper strand, 300V, UL Style AWM 2661, CSA AWM I/IT A/B
TPE—Yellow 22 AWG TPE jacket and PVC conductor insulation over 19 x 34 copper stranding, 300V, High Flex Cable(>10 millionbind cycles), UL ITC/PLTC 105˚C, CSA AWM I/IT AB 90˚C 300V FT4
Cable Outside Diameter: 4P—0.20" (5.10mm)
5P—0.23" (5.80mm)

Environmental

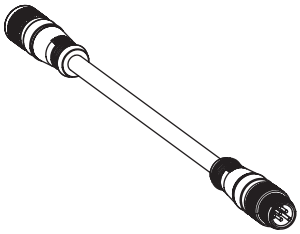
Protection: IP67

Cable Type	Poles	Length (m)	Straight				Right Angle			
			Male		Female		Male		Female	
			Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
TPE	4	2.0	804006K05M020	120065-1129	804000K05M020	120065-1121	804007K05M020	120065-1691	804001K05M020	120065-1639
		4.0	804006K05M040	120065-1130	804000K05M040	120065-1123	804007K05M040	120065-1692	804001K05M040	120065-1641
		5.0	804006K05M050	120065-1131	804000K05M050	120065-1124	804007K05M050	120065-1693	804001K05M050	120065-1642
		6.0	804006K05M060	120065-1132	804000K05M060	120065-1125	804007K05M060	120065-1694	804001K05M060	120065-1643
		10.0	804006K05M100	120065-1133	804000K05M100	120065-1126	804007K05M100	120065-1695	804001K05M100	120065-1644
PVC		2.0	804006A09M020	120065-0414	804000A09M020	120065-0255	804007A09M020	1200651662	804001A09M020	120065-1551
		4.0	804006A09M040	120065-0418	804000A09M040	120065-0261	804007A09M040	120065-1665	804001A09M040	120065-1555
		5.0	804006A09M050	120065-0419	804000A09M050	120065-0265	804007A09M050	120065-1666	804001A09M050	120065-1558
		6.0	804006A09M060	120065-0421	804000A09M060	120065-0268	804007A09M060	120065-1668	804001A09M060	120065-1562
		10.0	804006A09M100	120065-0425	804000A09M100	120065-0277	804007A09M100	120065-1669	804001A09M100	120065-1567
PUR*		2.0	804006P03M020	120006-0570	804000P03M020	120006-0018	804007P03M020	120006-0592	804001P03M020	120006-0024
		4.0	804006P03M040	120065-2141	804000P03M040	120065-2143	804007P03M040	120065-2145	804001P03M040	120065-2147
		5.0	804006P03M050	120006-0047	804000P03M050	120006-0019	804007P03M050	120006-0594	804001P03M050	120006-0025
		6.0	804006P03M060	120065-2142	804000P03M060	120065-2144	804007P03M060	120065-2146	804001P03M060	120065-8206
		10.0	804006P03M100	120006-0572	804000P03M100	120065-1782	804007P03M100	120006-0595	804001P03M100	120065-1787
TPE	5	2.0	805006K03M020	120065-1374	805000K03M020	120065-1367	805007K03M020	120065-2159	805001K03M020	120065-1720
		4.0	805006K03M040	120065-2150	805000K03M040	120065-1369	805007K03M040	120065-2160	805001K03M040	120065-1721
		5.0	805006K03M050	120065-2151	805000K03M050	120065-1370	805007K03M050	120065-2161	805001K03M050	120065-1722
		6.0	805006K03M060	120065-2152	805000K03M060	120065-1371	805007K03M060	120065-2162	805001K03M060	120065-1723
		10.0	805006K03M100	120065-2153	805000K03M100	120065-1373	805007K03M100	120065-2163	805001K03M100	120065-2155
PVC		2.0	805006A09M020	120065-0523	805000A09M020	120065-0471	805007A09M020	120065-1724	805001A09M020	120065-1697
		4.0	805006A09M040	120065-0526	805000A09M040	120065-0476	805007A09M040	120065-1726	805001A09M040	120065-1700
		5.0	805006A09M050	120065-0528	805000A09M050	120065-0479	805007A09M050	120065-1727	805001A09M050	120065-1701
		6.0	805006A09M060	120065-0531	805000A09M060	120065-0483	805007A09M060	120065-1728	805001A09M060	120065-1703
		10.0	805006A09M100	120065-0533	805000A09M100	120065-0487	805007A09M100	120065-2123	805001A09M100	120065-1706
PUR*		2.0	805006P03M020	120006-0680	805000P03M020	120006-0647	805007P03M020	120006-0697	805001P03M020	120006-0663
		4.0	805006P03M040	120065-2157	805000P03M040	120065-8020	805007P03M040	120006-0699	805001P03M040	120065-8184
		5.0	805006P03M050	120006-0682	805000P03M050	120065-1792	805007P03M050	120065-8186	805001P03M050	120065-1793
		6.0	805006P03M060	120006-2082	805000P03M060	120065-2154	805007P03M060	120065-2149	805001P03M060	120065-2156
		10.0	805006P03M100	120065-2158	805000P03M100	120006-0649	805007P03M100	120065-5006	805001P03M100	120006-0664

* Preferred version in Europe. For black PVC cables, please contact Molex.

Brad® Micro-Change® (M12) Cordset

120066
Double-Ended Single Keyway



Features and Benefits
- Single key M12 connector per IEC 61076-2-101
- 22 AWG yellow PVC/black PUR/yellow TPE (thermoplastic elastomer) cables
- DC color code
- Highly reliable low-resistance contact design with Gold/Palladium Nickel plating

Reference Information
UL File No.: E152210
CSA File No.: LR6837

Electrical
Voltage: 250V AC/DC
Current: 4.0A

Mechanical
Connector Face: PUR
Molded Body: PUR
O-Ring: Nitrile rubber
Coupling Nut: Nickel plated brass
Cable:
PVC—Yellow 22 AWG PVC jacket and PVC conductor insulation over 26 x 36 Copper strand, 300V, UL Style AWM 2661, CSA AWM I/IT A/B
TPE—Yellow 22 AWG TPE jacket and PVC conductor insulation over 19 x 34 copper stranding, 300V, High Flex Cable(>10 millionbind cycles), UL ITC/PLTC 105˚C, CSA AWM I/IT AB 90˚C 300V FT4
Cable Outside Diameter: 4P—0.20" (5.10mm)
5P—0.23" (5.80mm)

Environmental
Protection: IP67

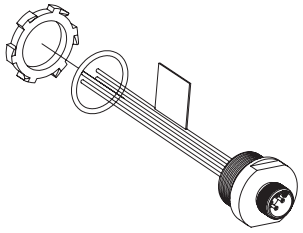
Cable Type	Poles	Length (m)	Female/Male Extension	
			Old Part No.	Order No.
PVC	4	0.6	884030A09M006	120066-0262
		1.0	884030A09M010	120066-0266
		2.0	884030A09M020	120066-0271
		4.0	884030A09M040	120066-0279
		5.0	884030A09M050	120066-0284
TPE	4	0.6	884030K05M006	120066-0686
		1.0	884030K05M010	120066-0687
		2.0	884030K05M020	120066-0689
		3.0	884030K05M030	120066-0690
		4.0	884030K05M040	120066-0691
		5.0	884030K05M050	120066-0692
	5	0.6	885030K03M006	120066-1033
		1.0	885030K03M010	120066-1034
		2.0	885030K03M020	120066-1035
		4.0	885030K03M040	120066-1037
		5.0	885030K03M050	120066-1038
PUR*	4	0.6	884030F03M006	120007-0487
		1.0	884030F03M010	120007-0488
		2.0	884030F03M020	120007-0489
		4.0	884030F03M040	120007-2803
		5.0	884030F03M050	120007-0490

* Preferred version in Europe. For black PVC cables, please contact Molex.

Brad® Micro-Change® (M12) Receptacle

120070

Single Keyway



Features and Benefits

- Single key M12 connector per IEC 61076-2-101
- 22 AWG PVC 12 inch leads—DC color code, epoxy potted
- Black anodized aluminum shell
- Used in control panels, junction boxes and sensors

Reference Information

UL File No.: 3P and 4P E152210, 5P UL recognized
CSA File No.: LR6837

Electrical

Voltage: 250V AC/DC
Current: 4.0A

Mechanical

Shell: Black anodized aluminum
Insert: Nylon 6/6
Conductors: 22 AWG with PVC insulation over 26 by #36 Copper stranding, 300V, UL Style 1061, CSA AWM SR
O-Ring: Nitrile Rubber

Environmental

Protection: IP67

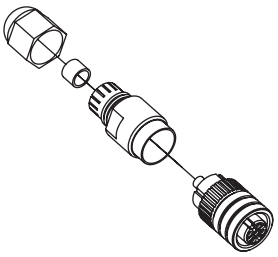
Poles	Male		Mounting Thread	Female		Mounting Thread
	Old Part No.	Order No.		Old Part No.	Order No.	
4	8R4006A18A120	120070-0184	1/2" - 14NPT	8R4A00A18A120	120070-0114	1/4" - 18NPT
5	8R5006A18A120	120070-0252		8R5A00A18A120	120070-0201	

*Note: Other mounting threads available, contact Molex.

Brad® Micro-Change® (M12) Field Attachables

120071

Single Keyway



Features and Benefits

- Single key M12 connector per IEC 61076-2-101
- Screw terminal connection accepts up to 18 AWG conductors
- Easy field installation of quick-disconnect design
- For use with all standard single keyway M12 receptacles and cordsets

Reference Information

CSA File No.: LR6837

Electrical

Voltage: 4P—250V AC, 300V DC
5P—30V AC, 36V DC
Current: 4.0A

Mechanical

Connector Face: Polyamide
Molded Body: Polyamide
Contact: Silver plated Brass
Coupling Nut: Nickel plated Brass
Grommet: Nitrile rubber
Maximum Conductor Size: 18 AWG

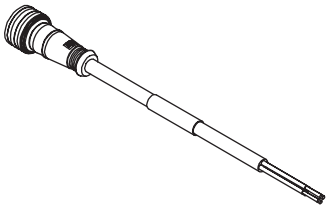
Environmental

Protection: IP67

Poles	Male		Female		Orientation	Description
	Old Part No.	Order No.	Old Part No.	Order No.		
4	8A4006-31	120071-0038	8A4000-31	120071-0035	Straight	With PG 7 Cable Fitting (0.13 - 0.26" O.D. [3.3-6.6mm] cable)
	8A4007-31	120071-0040	8A4001-31	120071-0037	90 degree	
5	8A5006-31	120071-0045	8A5000-31	120071-0041	Straight	
	8A5007-31	120071-0049	8A5001-31	120071-0044	90 degree	
4	8A4006-32	120071-0039	8A4000-32	120071-0036	Straight	With PG 9 Cable Fitting (0.16 - 0.32" O.D. [4.1-8.1mm] cable)
5	8A5006-32	120071-0047	8A5000-32	120071-0043		

Brad® Ultra-Lock® (M12) Cordset

120079
Single-Ended



Features and Benefits

- Simply push down to connect and pull up to disconnect
- Surpasses the performance and reliability of traditional threaded connectors to deliver increased productivity and cost savings
- Ultra-lock connectors incorporate a unique radial seal and mechanical locking design that deliver unsurpassed performance

Electrical

Voltage: 3P and 4P—250V
5P—60V
Insulation Resistance: $>10^9$ ohms
Rated Current T Amb. 40C: 4.0A
Contact Resistance: <5 milliohms

Mechanical

Connector Face: PUR
Connector Body: PUR
Locking Mechanism: Nickel-plated Brass
Contact: Male—Brass
Female—Phosphor Bronze
Contact Plating: Gold over Nickel
O-Ring: Viton

Environmental

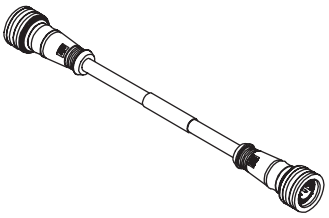
Pollution Degree (IEC 60 664-1): 3
Protection: IP67/69K

Poles	Cable Type	Length (m)	Male Straight		Female Straight		Female Right Angle	
			Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
4	PVC	2.0					W04001A09M020	120079-0232
		4.0					W04001A09M040	120079-0233
		5.0					W04001A09M050	120079-0234
		6.0					W04001A09M060	120079-0235
		10.0					W04001A09M100	120079-0195
	TPE	2.0	W04006K05M020	120079-0156	W04000K05M020	120079-0149	W04001K05M020	120079-0221
		4.0	W04006K05M040	120079-0143	W04000K05M040	120079-0148	W04001K05M040	120079-0183
		5.0	W04006K05M050	120079-0142	W04000K05M050	120079-0147	W04001K05M050	120079-0184
		6.0	W04006K05M060	120079-0141	W04000K05M060	120079-0134	W04001K05M060	120079-0185
		10.0	W04006K05M100	120079-0140	W04000K05M100	120079-0145	W04001K05M100	120079-0186
	PUR*	2.0	W04006P03M020	120079-8006	W04000P03M020	120079-8012	W04001P03M020	120079-8013
		4.0	W04006P03M040	120079-5064	W04000P03M040	120079-5068	W04001P03M040	120079-5071
		5.0	W04006P03M050	120079-5065	W04000P03M050	120079-5069	W04001P03M050	120079-8007
		6.0	W04006P03M060	120079-5066	W04000P03M060	120079-5070	W04001P03M060	120079-5073
		10.0	W04006P03M100	120079-8011	W04000P03M100	120079-8010	W04001P03M100	120079-5072
5	PVC	2.0	W05006A09M020	120079-0092	W05000A09M020	120079-0109	W05001A09M020	120079-0223
		4.0	W05006A09M040	120079-0091	W05000A09M040	120079-0096	W05001A09M040	120079-0202
		5.0	W05006A09M050	120079-0090	W05000A09M050	120079-0095	W05001A09M050	120079-0203
		6.0	W05006A09M060	120079-0089	W05000A09M060	120079-0094	W05001A09M060	120079-0204
		10.0	W05006A09M100	120079-0088	W05000A09M100	120079-0093	W05001A09M100	120079-0205
	PUR*	2.0	W05006P03M020	120079-5055			W05001P03M020	120079-5088
		4.0	W05006P03M040	120079-5079			W05001P03M040	120079-5089
		5.0	W05006P03M050	120079-5080			W05001P03M050	120079-5090
		6.0	W05006P03M060	120079-5081			W05001P03M060	120079-5091
		10.0	W05006P03M100	120079-5082			W05001P03M100	120079-5092

* Preferred version in Europe. For black PVC cables, please contact Molex.

Brad® Ultra-Lock® (M12) Cordset

120080
Doubled-Ended



Features and Benefits
- Simply push down to connect and pull up to disconnect
- Surpasses the performance and reliability of traditional threaded connectors to deliver increased productivity and cost savings
- Ultra-lock connectors incorporate a unique radial seal and mechanical locking design that deliver unsurpassed performance

Electrical
Voltage: 4P—250V
5P—60V
Insulation Resistance: >10^9 ohms
Rated Current T Amb.: 4.0A
Contact Resistance: <5 milliohms

Mechanical
Connector Face: PUR
Contact Carrier: PUR
Locking Mechanism: Nickel-plated Brass
Contact: Male—Brass
Female—Phosphor Bronze
Contact Plating: Gold over Nickel
O-Ring: Viton
Durability: 30,000 mate/demate

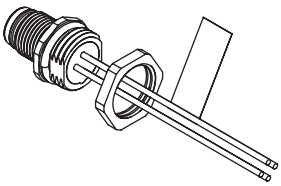
Environmental
Pollution Degree (IEC 60 664-1): 3
Protection: IP67/69K

Poles	Cable Type	Length (m)	Ultra-Lock Male/Threaded Female Extension		Ultra-Lock Male/ Ultra-Lock Female Extension	
			Old Material No.	Order No.	Old Material No.	Order No.
4	PVC	0.6	8W4030A09M006	120080-0042	WW4030A09M006	120080-0009
		1.0	8W4030A09M010	120080-0043	WW4030A09M010	120080-0403
		2.0	8W4030A09M020	120080-0044	WW4030A09M020	120080-0331
		3.0	8W4030A09M030	120080-0449	WW4030A09M030	120080-0450
		4.0	8W4030A09M040	120080-0045	WW4030A09M040	120080-0332
		5.0	8W4030A09M050	120080-0046	WW4030A09M050	120080-0333
	TPE	0.6	8W4030K05M006	120080-0455	WW4030K05M006	120080-5054
		1.0	8W4030K05M010	120080-0073	WW4030K05M010	120080-0417
		2.0	8W4030K05M020	120080-0074	WW4030K05M020	120080-0406
		3.0	8W4030K05M030	120080-0442	WW4030K05M030	120080-5055
		4.0	8W4030K05M040	120080-0075	WW4030K05M040	120080-0405
		5.0	8W4030K05M050	120080-0076	WW4030K05M050	120080-0404
	PUR*	0.6	8W4030P03M006	120080-5028	WW4030P03M006	120080-5044
		1.0	8W4030P03M010	120080-5029	WW4030P03M010	120080-5045
		2.0	8W4030P03M020	120080-5030	WW4030P03M020	120080-5018
		3.0	8W4030P03M030	120080-8004	WW4030P03M030	120080-5046
		4.0	8W4030P03M040	120080-5031	WW4030P03M040	120080-5047
		5.0	8W4030P03M050	120080-8005	WW4030P03M050	120080-5048
5	PVC	0.6	8W5030A09M006	120080-0451	WW5030A09M006	120080-0453
		1.0	8W5030A09M010	120080-0059	WW5030A09M010	120080-0325
		2.0	8W5030A09M020	120080-0060	WW5030A09M020	120080-0313
		3.0	8W5030A09M030	120080-0452	WW5030A09M030	120080-0454
		4.0	8W5030A09M040	120080-0061	WW5030A09M040	120080-0312
		5.0	8W5030A09M050	120080-0062	WW5030A09M050	120080-0311
	PUR*	0.6	8W5030P03M006	120080-5032	WW5030P03M006	120080-5049
		1.0	8W5030P03M010	120080-5033	WW5030P03M010	120080-5050
		2.0	8W5030P03M020	120080-5034	WW5030P03M020	120080-5051
		3.0	8W5030P03M030	120080-5035	WW5030P03M030	120080-5052
		4.0	8W5030P03M040	120080-5036	WW5030P03M040	120080-5053
		5.0	8W5030P03M050	120080-5037	WW5030P03M050	120080-5019

*Preferred version in Europe. For black PVC cables, please contact Molex.

Brad® Ultra-Lock® (M12) Receptacle

120025/120084
Single Keyway



Features and Benefits
- Mating receptacles for Ultra-Lock® cordsets
- 0.34mm² (22 AWG) PVC 30cm wire leads, DC color code
- Fully potted to maintain water tight rating of enclosure
- Used in control panels, junction boxes and sensors
- Offered with wire leads or PCB pins for easy incorporation into devices

Electrical
Voltage: 4P—250V AC/DC
5P—60V AC/DC
Current: 4.0A

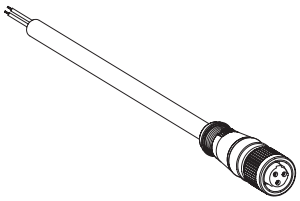
Mechanical
Shell: Nickel-plated Brass
Insert: PUR
Conductors: 0.34mm² (22 AWG) PVC insulation
O-Ring: Viton

Environmental
Protection: IP67/IP69K

Poles	Mounting Thread	Front Panel Mount				Rear Panel Mount			
		Male		Female		Male		Female	
		Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
4	M16 x 1	WR4U26E03C300	120025-0005	WR4U20E03C300	120025-0006	WR4U46000	120084-0028	WR4U40000	120084-0029
5		WR5U26E03C300	120025-0007	WR5U20E03C300	120025-0008	WR5U46000	120084-0031	WR5U40000	120084-0030

Brad® Micro-Change® (½"-20 UNC) Cordset

120072
Single-Ended Dual Keyway



Features and Benefits
- Dual key connector with ½"-20 UNF coupler
- 22 AWG yellow PVC cable with metallic braid—auto color code
- Low-resistance contact design with Gold/Palladium Nickel plating

Reference Information
UL File No.: E152210
CSA File No.: LR6837

Electrical
Voltage: 250V AC/DC
Current: 4.0A

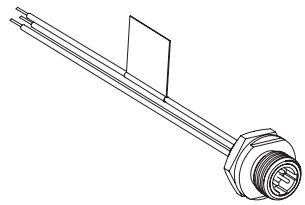
Mechanical
Connector Face: Nylon 6/6
Molded Body: PVC
O-Ring: Nitrile rubber
Coupling Nut: Zinc diecast with black epoxy coat
Cable: Yellow 22 AWG PVC jacket 70% metallic braid and PVC conductor insulation over 26 by #36 Copper stranding, 300V, UL Style 2661, CSA AWM I/II A/B
Outside Diameter (22 AWG with 70% Braid):
3P—0.23" (5.80mm)
4P—0.25" (6.40mm)
5P—0.26" (6.60mm)

Environmental
Protection: IP67

Poles	Length	Male Straight		Female Straight	
		Old Part No.	Order No.	Old Part No.	Order No.
3	6.0'	703006D02F060	120072-0302	703000D02F060	120072-0171
	12.0'	703006D02F120	120072-0305	703000D02F120	120072-0178
	20.0'	703006D02F200	120072-0308	703000D02F200	120072-0185
4	6.0'	704006D02F060	120072-0445	704000D02F060	120072-0356
	12.0'	704006D02F120	120072-0447	704000D02F120	120072-0359
	20.0'	704006D02F200	120072-0450	704000D02F200	120072-0364
5	6.0'	705006D02F060	120072-0551	705000D02F060	120072-0471
	12.0'	705006D02F120	120072-0553	705000D02F120	120072-0474
	20.0'	705006D02F200	120072-0555	705000D02F200	120072-0477

Brad® Micro-Change® (½"-20 UNC) Receptacle

120074
Dual Keyway



Features and Benefits
- Dual keyway connector with ½"-20 UNC coupler
- 22 AWG PVC 12 inch leads—auto color code, epoxy potted
- Gray anodized aluminum shell
- Used in control panels, junction boxes and sensors

Reference Information
UL File No.: E152210
CSA File No.: LR6837

Electrical
Voltage: 250V AC/DC
Current: 4.0A

Mechanical
Shell: Gray anodized aluminum
Insert: Nylon 6/6
O-Ring: Nitrile Rubber
Conductors: 22 AWG with PVC insulation over 26 by #36 Copper stranding, 300V, UL Style 1061, CSA AWM SR

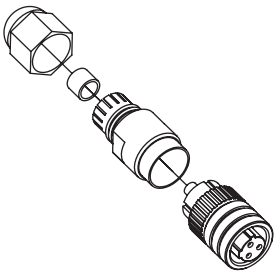
Environmental
Protection: IP67

Poles	Male		Female		Mounting Thread
	Old Part No.	Order No.	Old Part No.	Order No.	
3	7R3A06A19A120	120074-0079	7R3A00A19A120	120074-0058	1/4" - NPT
4	7R4A06A19A120	120074-0140	7R4A00A19A120	120074-0122	
5	7R5A06A19A120	120074-0190	7R5A00A19A120	120074-0178	

*Note: Other mounting threads available, contact Molex.

Brad® Micro-Change® (½"-20 UNF) Field Attachables

120075
Dual Keyway



Features and Benefits
- Dual keyway connector with ½"-20 UNC coupler
- Screw terminal connection accepts up to 18 AWG conductors
- Easy field installation of quick-disconnect design
- For use with all standard dual keyway ½"-20 UNF receptacles and cordsets

Electrical
Voltage: 250V AC/DC
Current: 3P—4.0A

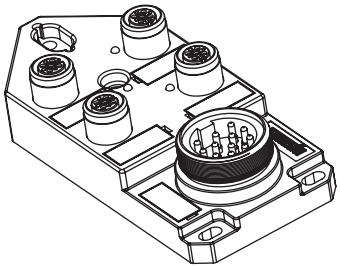
Mechanical
Connector Face: Nylon 6/6
Molded Body: Nylon 6/6
Contact: Gold plated Copper alloy
Coupling Nut: Nickel plated Brass
Grommet: Nitrile rubber
Maximum Conductor Size: 18 AWG

Environmental
Protection: IP67

Poles	Male		Female		Orientation	Description
	Old Part No.	Order No.	Old Part No.	Order No.		
3	7A3006-31	120075-0017	7A3000-31	120075-0014	Straight	With PG 7 Cable Fitting (0.13 - 0.26" O.D. [3.3-6.6mm] cable)
	7A3007-31	120075-0019	7A3001-31	120075-0016	90 degree	
	7A3006-32	120075-0018	7A3000-32	120075-0015	Straight	With PG 9 Cable Fitting (0.16 - 0.32" O.D. [4.1-8.1mm] cable)

Brad® Micro-Change® (M12) Ultra-Lock® Sealed Distribution Box

120119/130007/130008



Features and Benefits
- Available in a variety of formats for backward compatibility with different connector styles
- Accepts Ultra-Lock and threaded M12 cordsets

Electrical
Voltage (IEC 60 664-1): 10-30V DC
Insulation Resistance (IEC 60 512-2): >10^9 ohms
Rated Current T Amb. 40C (IEC 60 512-3): 2 A per I/O
Current: 12.0A
Contact Resistance (IEC 60 512-2): <5 milliohms

Mechanical
Body: PBT
Contact Carrier: PBT
Shell Material: Nickel over Brass
Contact: Phosphor Bronze
Contact Plating: Gold over Nickel
Cable Jacket: PUR
O-Ring: Viton

Environmental
Pollution Degree (IEC 60 664-1): 3
Protection: IP67/69K

Single I/O Per Port with/Integral Mini-Change Connector		
Old Part No.	Order No.	Description
BKY401P-FBB	120119-0002	4-Port, 5-Pole/ 4 wire-single 1/0 per port
BKY601P-FBB	120119-0010	6-Port, 5-Pole/ 4 wire-single 1/0 per port
BKY801P-FBB	120119-0017	8-Port, 5-Pole/ 4 wire-single 1/0 per port

Double I/O Per Port with/Integral Mini-Change Connector		
Old Part No.	Order No.	Description
BKY403P-FBB	120119-0005	4-Port, 5-Pole/ 5 wire-dual 1/0 per port
BKY603P-FBB	120119-0013	6-Port, 5-Pole/ 5 wire-dual 1/0 per port
BKY803P-FBB	120119-0020	8-Port, 5-Pole/ 5 wire-dual 1/0 per port

Suggested home-run cable assembly for above junction boxes

Mini-Change® 90° Female Single-Ended Home Run Cable			
Old Part No.	Order No.	Description	Length (m)
302101A04M050	130008-0279	18/3 22/8 PVC MI	5.0
302101A04M100	130008-0282	18/3 22/8	10.0

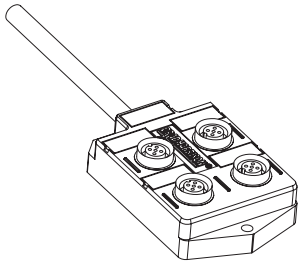
Suggested home-run cable assembly for above junction boxes

Mini-Change Female			
Old Part No.	Order No.	Description	Length (m)
208000A04M050	130007-0176	MC 8P FP 5M 8 PVC MICRO MPIS	5.0
208000A04M100	130007-0177	MC 8P FP 10M 8 PVC MICRO MPIS	10.0
301000A04M050	130008-0073	MC 10P FP 5M PVC HOME RUN	5.0
301000A04M100	130008-0075	MC 10P FP 10M PVC HOME RUN	10.0
301001A04M050	130008-0489	MC 10P FP 90D 5M PVC HOME RUN	5.0
301001A04M100	130008-0112	MC 10P FP 90D 10M 22/10 PVC	10.0

Brad® Micro-Change® (M12) Sealed Distribution Box

120114

Top Mount, Single Keyway with Molded Home Run Cable



Features and Benefits
- Simplifies wiring installation, molded PVC home run cable
- Flexibility with 4 and 8 port configurations
- PNP and NPN versions for use in a variety of DC sensors

Reference Information
UL File No.: E46237
CSA File No.: LR6837

Electrical
Voltage: 10-30V DC
Current: 4.0A per port, 12.0A max. per unit
Indicating Lights: Green LED—power, yellow LED—function
Average LED Expectancy: 100,000 hours

Mechanical
Insert: PA
Housing: Glass-filled PBT
Receptacle Housing: Nickel-plated Brass
ID Label: ABS
Home Run Connector: Black, PUR cable jacket, (3) 16 AWG over either (4) or (8) 22 AWG and PVC conductor insulation over either 41 by #34 (16 AWG) or 26 by #36 (22 AWG) Copper stranding over 65 by #34 Copper stranding, 600 V
Outside Diameter: 0.29" (7.4mm)

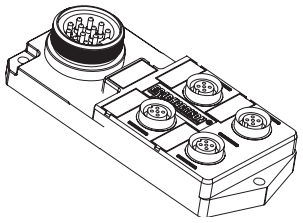
Environmental
Protection: IP67

Port	Old Part No.	Order No.	Functional Wiring	Home Run Cable
4	BTY401P-FBE-05	120114-0021	PNP	5M PVC
	BTY401P-FBE-10	120114-0022		10M PVC
	BTY401P-FBP-05	120114-0024		5M PUR
	BTY405P-FBP-05	120114-0039	Dual-in PNP	5M PU
8	BTY801N-FBE-05	120114-0061	NPN	5M PVC
	BTY801P-FBE-05	120114-0068	PNP	5M PVC
	BTY801P-FBE-10	120114-0069		10M PVC
	BTY801P-FBP-05	120114-0072		5M PUR
	BTY805P-FBP-05	120114-0089	Dual-in PNP	5M PUR

Brad® Micro-Change® (M12) Sealed Distribution Box

120114

Top Mount, Single Keyway with Mini-Change® Home Run Connector



Features and Benefits
- Connectorized home run cable connector version for maximum flexibility
- Flexibility with 4 and 8 port configurations
- PNP and NPN versions for use with a variety of DC sensors

Reference Information
UL File No.: E46237
CSA File No.: LR6837

Electrical
Voltage: 10-30V DC
Current: 4.0A per port, 12.0A total per MPIS unit
Indicating Lights: Green LED—power, yellow LED—function
Average LED Expectancy: 100,000 hours

Mechanical
Insert: PA
Housing: Glass-filled PBT
Receptacle Housing: Nickel-plated Brass
ID Label: ABS

Environmental
Protection: IP67

Port	Old Part No.	Order No.	Functional Wiring
4	BTY401N-FBB	120114-0014	PNP
	BTY401P-FBB	120114-0019	
8	BTY801N-FBB	120114-0059	NPN
	BTY801P-FBB	120114-0065	

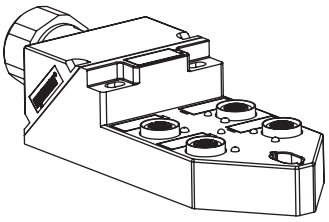
Home Run Cables

Cable Type	Length	Old Part No.	Order No.
PVC	5m	302000A01M050	130008-0187
	10m	302000A01M100	130008-0188
	3 feet	302001A01F030	130008-0211
	6 feet	302001A01F060	130008-0212

Brad® Micro-Change® (M12) Sealed Distribution Box

120114

Top Mount, Single Keyway Twin Wired with Field Attachable Home Run Cable



Port	Old Part No.	Order No.
4	BTY403P-FBA	120114-0029

Features and Benefits

- Field-attachable home run cable provides flexibility in installation
- Allows for specialty user-supplied control cable options
- User can decide home run cable lengths at last minute
- Cable can exit at either top or end of MPIS

Electrical

Voltage: 10-30V DC
Current: 2.0A max. per port, 12A max. per unit
Indicating Lights: Green LED—power, yellow LED—function
Average LED Expectancy: 100,000 hours

Mechanical

Insert: PBT
Housing: PBT
Receptacle Housing: Nickel-plated Brass
ID Label: PA
Home Run Connector: Screw termination; maximum wire gauge 18 AWG, control cable diameter to fit PG16 grommet 0.31-0.51" (8-14mm)

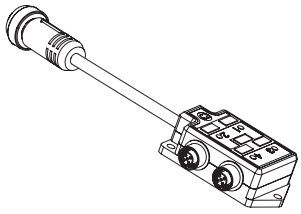
Environmental

Protection: IP67

Brad® Micro-Change® (M12) Sealed Distribution Box

120115

Side Mount, Single Keyway with 12" Mini-Change® Molded Home Run Connector



Port	Old Part No.	Order No.	Functional Wiring
4	803P402	120115-0047	PNP
6	803P602	120115-0050	
8	803P802	120115-0055	

Features and Benefits

- Molded home run connector provides flexibility
- Flexibility with 4, 6 and 8 port configurations
- PNP for use with a variety of DC sensors

Reference Information

UL File No.: E46237
CSA File No.: LR6837

Electrical

Voltage: 10-30V DC
Current: 4.0A per port, 12.0A total per MPIS unit
Indicating Lights: Green LED—power, yellow LED—function
Average LED Expectancy: 100,000 hours

Mechanical

Insert: Nylon 6/6
Housing: Nylon 6/6
Receptacle Housing: Black E-coat
ID Label: ABS
Home Run Connector Cabling: Yellow, PVC cable jacket, (1) 18 AWG and either (5) or (7) 22 AWG control cabling and PVC conductor insulation over 41 by #34 (18 AWG) and 26 by #36 (22 AWG), UL listed style 2661, CSA certified 105° C, 300 V
Outside Diameter: 0.29" (7.4mm)

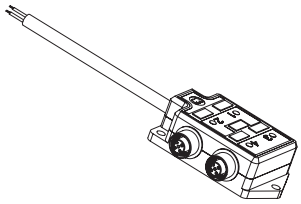
Environmental

Protection: IP67

Brad® Micro-Change® Sealed Distribution Box

120115

Side Mount, Single Keyway with Home Run Connector



Features and Benefits
- Simplifies wiring installation, integrated PVC home run cable
- Flexibility with 4, 6 and 8 port configurations
- PNP for use with a variety of DC sensors

Reference Information
UL File No.: E46237
CSA File No.: LR6837

Electrical
Voltage: 10-30V DC
Current: 4.0A max. per port, 12.0A total per MPIS unit
Indicating Lights: Green LED—power, yellow LED—function
Average LED Expectancy: 100,000 hours

Mechanical
Insert: Nylon 6/6
Housing: Nylon 6/6
Receptacle Housing: Black E-coat
ID Label: ABS
Home Run Connector Cabling: Yellow, PVC cable jacket, (1) 18 AWG and either (5) or (7) 22 AWG control cables and PVC conductor insulation over 41 by #34 (18 AWG) and 26 by #36 (22 AWG) Copper stranding, UL listed style 2661, CSA certified 105˚ C, 300 V
Outside Diameter: 0.29" (7.4mm)

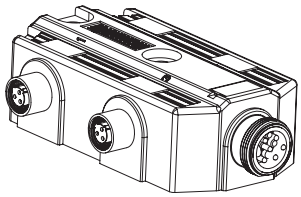
Environmental
Protection: IP67

Port	Old Part No.	Order No.	Functional Wiring	Home Run Cable
4	803P401	120115-0046	PNP	5.0m - PVC #18 AWG
6	803P601	120115-0048		
8	803P801	120115-0054		

Brad® Micro-Change® (½" NPT-20) Sealed Distribution Box

120115

Side Mount, Dual Keyway Parallel Wiring with Home Run Connector



Features and Benefits
- Connectorized home run cable connection for maximum flexibility
- Flexibility with 4 and 8 port configurations
- For use with a variety of AC sensors

Reference Information
UL File No.: E46237
CSA File No.: LR6837

Electrical
Voltage: 120V AC
Current: 4.0A per port, 12.0A total per MPIS unit

Mechanical
Insert: Nylon 6/6
Housing: PBT
Receptacle Housing: Zinc die cast with black epoxy coat
ID Label: ABS
Home Run Connector: Yellow, STOOW PVC cable jacket, 16 AWG/6,8 and 10 conductor and PVC conductor insulation over 65 by #34 Copper stranding, UL listed STOOW 105˚ C, CSA certified ST 105˚ C, 600 V
Outside Diameter: 4 Port—0.54" (13.7mm)
8 Port—0.66" (16.8mm)

Environmental
Protection: IP67

Port	Old Part No.	Order No.	Home Run Connector Style
4	702P401	120115-0017	6P MR STD
8	702P801	120115-0022	10P MR STD

BradConnectivity™ mPm® Connectors

Our BradConnectivity mPm product line offers a wide range of connectors including DIN connectors, DIN splitters, molded cable connectors, suppressor adaptors, Junior Timer connectors and proximity switches for magnetic cylinders.

The mPm range of connectors is available with standard options including filament, neon or LED illuminating devices, VDR, diodes or transil diodes (with or without illuminating devices) to offer protection against overvoltage or peaks caused when switching off.

The mPm connectors are used extensively to provide electrical connections in a wide range of applications. The most common applications are in conjunction with hydraulic, pneumatic or electro magnetic devices, including solenoid valves. Other applications include pressure transducers, proximity switches, flow monitors, level sensors, limit switches, thermostats, industrial thermometers and low energy motors.

The mPm connectors are also available with approval cURus on request.

All mPm connectors offer protection from dust and water according to EN60529 (IP65 and IP67 on request) and conform to VDE 01101/89 operating voltage up to 250V group C with respect to the insulation class. The terminal block in mPm connectors is securely assembled and retained in the connector casing by way of a spring loaded lug. With this feature the terminal block remains secure in the casing reducing the danger of accidental contact or exposure to live parts even when the fixing screw is removed.

The mPm DIN connectors are designed to reduce the number of components, making them easier to assemble and with fewer parts to stock. They are supplied in single set or bulk components, eliminating the costly effort of disassembly and providing further cost savings. The new generation of mPm DIN connectors provide repeatable, unsurpassed IP67 sealing performance (even in humidity) using an external nut over the cable. The external nut accepts a wider range of cables from 4mm to 9mm, reducing the current number of different nuts from 3 (P607, P608, P611) to 1 (external nut).

Choose from the largest selection of DIN field-attachables, molded DIN and DIN accessories.

The mPm connectors with moulded cables offer a fast and efficient method of connection resulting in greatly reduced installation time and cost. They can be supplied with or without integral LED indicators and suppression circuits. A diagram is printed on each connector with circuit to allow easy user identification.

BradConnectivity mPm overmolded Junior Timer connectors are available in straight and 90 degree versions. These pre-wired overmolded connectors offer an economical alternative to hard wiring and mate with industry standard Junior Timer interfaces or solenoids and other mobile hydraulic devices and other harsh environment applications. The integrated surge suppression circuitry (VDR) protects the system and extends overall lifetime. LED indication is built into the connector head for easy identification of system status. With an IP65 environmental rating the Junior Timer provides protection in harsh and demanding environments. Plus the cable locking clip protects the connection in high vibration applications.

Also mPm offers a wide range of proximity switches. They are available with attached flying leads or a plug connector, the latter facilitating maintenance operations with all voltage disconnected. The plug connector is also available with an M12 ring nut fastener, giving enhanced security in the presence of high vibrations. The switches are impregnated with epoxy resin to give protection in accordance with IP67, excellent resistance to impact and operational temperature range of -20˚ to +85˚C.

DIN Field Attachable

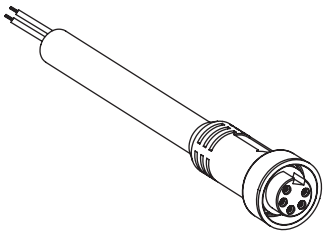
DIN Connectors

DIN Overmolded Valve Connectors

DIN Splitter

Brad® Mini-Change® A-Size Single-Ended Cordset STOOW Cable

130006
Internal Thread



Features and Benefits
- Patented Quad Beam contact with gold/nickel plating provides high reliability and low resistance
- Epoxy coated coupling nut is corrosion and weld slag resistant
- Cable is oil, water and UV resistant

Reference Information
UL File No.: E152210
CSA File No.: LR6837

Electrical
Voltage: 600V AC/DC
Current: 2P—13.0A
3P—13.0A
4P—10.0A
5P—8.0A
6P—8.0A

Mechanical
Connector Face: PVC UL 94-V0
Molded Body: PVC UL 94-V0
Coupling Nut: Zinc diecast with black epoxy coat. Optional Stainless Steel type 303, type 316 or gray Nylon 6/6
Cable: Yellow, #16 AWG, UL STOOW, CSA ST, PVC jacket and insulation, 65 x #34 stranding
Cable Diameter: 2P—0.37" (9.4mm)
3P—0.41" (10.4mm)
4P—0.42" (10.7mm)
5P—0.50" (12.7mm)
6P—0.54" (13.7mm)

Environmental
Protection: IP67

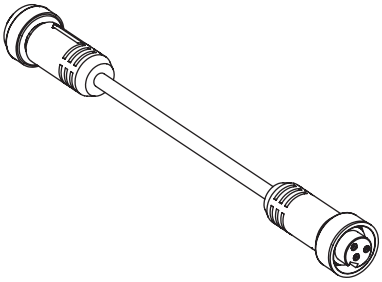
Poles	Length	Male Straight		Female Straight		Female Right Angle	
		Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
2	3.0'	102002A01F030	130006-0156	102000A01F030	130006-0088	102001A01F030	130006-0134
	6.0'	102002A01F060	130006-0159	102000A01F060	130006-0091	102001A01F060	130006-0137
	12.0'	102002A01F120	130006-0162	102000A01F120	130006-0096	102001A01F120	130006-0141
	20.0'	102002A01F200	130006-0168	102000A01F200	130006-0102	102001A01F200	130006-0146
3	3.0'	103002A01F030	130006-0529	103000A01F030	130006-0217	103001A01F030	130006-0422
	6.0'	103002A01F060	130006-0534	103000A01F060	130006-0221	103001A01F060	130006-0426
	12.0'	103002A01F120	130006-0542	103000A01F120	130006-0232	103001A01F120	130006-0430
	20.0'	103002A01F200	130006-0549	103000A01F200	130006-0241	103001A01F200	130006-0436
4	3.0'	104002A01F030	130006-0991	104000A01F030	130006-0725	104001A01F030	130006-0898
	6.0'	104002A01F060	130006-0995	104000A01F060	130006-0728	104001A01F060	130006-0902
	12.0'	104002A01F120	130006-1002	104000A01F120	130006-0737	104001A01F120	130006-0905
	20.0'	104002A01F200	130006-1009	104000A01F200	130006-0744	104001A01F200	130006-0912
5	3.0'	105002A01F030	130006-1435	105000A01F030	130006-1160	105001A01F030	130006-1346
	6.0'	105002A01F060	130006-1438	105000A01F060	130006-1163	105001A01F060	130006-1349
	12.0'	105002A01F120	130006-1447	105000A01F120	130006-1171	105001A01F120	130006-1353
	20.0'	105002A01F200	130006-1453	105000A01F200	130006-1179	105001A01F200	130006-1360
6	3.0'	106002A01F030*	130006-1672*	106000A01F030	130006-1579	106001A01F030*	130006-1651*
	6.0'	106002A01F060*	130006-1675*	106000A01F060	130006-1583	106001A01F060*	130006-1653*
	12.0'	106002A01F120*	130006-1679*	106000A01F120	130006-1590	106001A01F120*	130006-1656*
	20.0'	106002A01F200*	130006-1686*	106000A01F200	130006-1600	106001A01F200*	130006-1661*

*Note: This is the A-Size 6-pole Mini-Change, please refer to series 130007 for the B-Size.

Brad® Mini-Change® A-Size Double-Ended Cordset STOOW Cable

130011

Extension Cable
Internal Thread Both Ends



Features and Benefits

- Patented Quad Beam contact with gold/nickel plating provides high reliability and low resistance
- Epoxy coated coupling nut is corrosion and weld slag resistant
- Cable is oil, water and UV resistant

Reference Information

UL File No.: E152210
CSA File No.: LR6837

Electrical

Voltage: 600V AC/DC
Current: 2P—13.0A
3P—13.0A
4P—10.0A
5P—8.0A
6P—8.0A

Mechanical

Connector Face: PVC UL 94-V0
Molded Body: PVC UL 94-V0
Coupling Nut: Zinc diecast with black epoxy coat. Optional Stainless Steel type 303, type 316 or gray Nylon 6/6
Cable: Yellow, #16 AWG, UL STOOW, CSA ST, PVC jacket and insulation, 65 x #34 stranding
Cable Diameter: 2P—0.37" (9.4mm)
3P—0.41" (10.4mm)
4P—0.42" (10.7mm)
5P—0.50" (12.7mm)
6P—0.54" (13.7mm)

Environmental

Protection: IP67

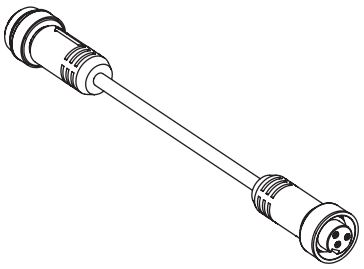
Poles	Length	Female/Male	
		Old Part No.	Order No.
2	6.0'	112020A01F060	130010-0147
	12.0'	112020A01F120	130010-0152
	20.0'	112020A01F200	130010-0159
3	3.0'	113020A01F030	130010-0214
	6.0'	113020A01F060	130010-0221
	12.0'	113020A01F120	130010-0228
	15.0'	113020A01F150	130010-0233
	20.0'	113020A01F200	130010-0238
4	3.0'	114020A01F030	130010-0519
	6.0'	114020A01F060	130010-0525
	12.0'	114020A01F120	130010-0533
	20.0'	114020A01F200	130010-0541
5	3.0'	115020A01F030	130010-0999
	6.0'	115020A01F060	130010-1005
	12.0'	115020A01F120	130010-1013
	15.0'	115020A01F150	130010-1016
	20.0'	115020A01F200	130010-1020
6*	3.0'	116020A01F030	130010-1312
	6.0'	116020A01F060	130010-1316
	12.0'	116020A01F120	130010-1327
	20.0'	116020A01F200	130010-1338

*Note: This is the A-Size 6-pole Mini-Change, please refer to series 130011 for the B-Size.

Brad® Mini-Change® A-Size Double-Ended Cordset TPE Cable

130010

Extension Cord
Male External Thread
Female Internal Thread



Features and Benefits

- Patented Quad Beam contact with gold/nickel plating provides high reliability and low resistance
- Epoxy coated coupling nut is corrosion and held slag resistant
- TPE cable is weld slag and coolant resistant. It is exposed-run, tray routed and continuous flex rated.

Reference Information

UL File No.: E152210
CSA File No.: LR6837

Electrical

Voltage: 600V AC/DC
Current: 3P—13.0A
4P—10.0A
5P—8.0A

Mechanical

Connector Face: PVC UL 94-V0
Molded Body: PVC UL 94-V0
Coupling Nut: Zinc diecast with black epoxy coat. Optional Stainless Steel type 303 or type 316
Cable: Yellow, #16 AWG, UL type TC-ER, CSA TC, TPE jacketed, PVC/Nylon insulation, 65 x #34 stranding
Outside Diameter: 3P—0.41" (10.4mm)
4P—0.42" (10.7mm) .43" (10.9mm)
5P—0.50" (12.7mm) .46" (11.7mm)

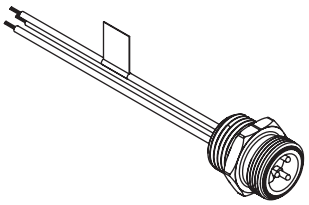
Environmental

Protection: IP67

Poles	Length	Female/Male	
		Old Part No.	Order No.
3	1.0m	113030K13M010	130010-0487
	2.0m	113030K13M020	130010-0488
	3.0m	113030K13M030	130010-0489
	4.0m	113030K13M040	130010-0490
	5.0m	113030K13M050	130010-0491
	6.0m	113030K13M060	130010-0492
4	1.0m	114030K12M010	130010-0864
	2.0m	114030K12M020	130010-0865
	3.0m	114030K12M030	130010-0866
	4.0m	114030K12M040	130010-0867
	5.0m	114030K12M050	130010-0868
	6.0m	114030K12M060	130010-0869
5	1.0m	115030K13M010	130010-0102
	2.0m	115030K13M020	130010-0103
	3.0m	115030K13M030	130010-0104
	4.0m	115030K13M040	130010-1750
	5.0m	115030K13M050	130010-0105
	6.0m	115030K13M060	130010-1758

Brad® Mini-Change® A-Size Receptacle 16 AWG

130013/130099
External Thread with Leads



Features and Benefits
- Patented Quad Beam contact with gold/nickel plating provides high reliability and low resistance
- Black epoxy coated Zinc diecast shell design
- #16 AWG, PVC insulated leads, U.S. color code

Reference Information
UL File No.: E152210
CSA File No.: LR6837

Electrical
Voltage: 600V AC/DC
Amperage: 2P—13.0A
3P—13.0A
4P—10.0A
5P—8.0A
6P—8.0A

Mechanical
Shell: Zinc diecast with black epoxy coat, optional stainless steel type 303, type 316 or gray Nylon 6/6
90°—Zinc diecast with black epoxy coat (only)
Flange Mount—Gray anodized aluminum, optional stainless steel type 303
Insert: PVC UL 94-V0
Conductors: #16 AWG, PVC insulation over 26 x #30 Copper stranding, 600V, UL Style 1015, CSA TEW

Environmental
Protection: IP67

Accessories

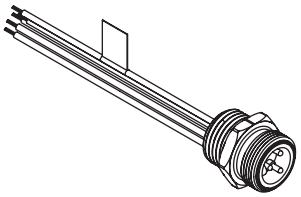
Old Part No.	Order No.	Description
5601	130099-0143	Locknut ½" - 14NPT, Zinc plated Steel
5611	130099-0149	½" Gasket, black neoprene

Poles	Length	Male		Female		Orientation
		Old Part No.	Order No.	Old Part No.	Order No.	
2	12"	1R2006A20A120	130013-0076	1R2004A20A120	130013-0060	Straight
	6'	1R2006A20F060	130013-0084	1R2004A20F060	130013-0067	
3	12"	1R2007A20A120	130013-0090	1R2005A20A120	130013-0074	90°
	6'	1R3006A20A120	130013-0202	1R3004A20A120	130013-0135	Straight
	12"	1R3006A20F060	130013-0215	1R3004A20F060	130013-0148	
4	6'	1R3007A20A120	130013-0247	1R3005A20A120	130013-0184	90°
	12"	1R4006A20A120	130013-0353	1R4004A20A120	130013-0314	Straight
	6'	1R4006A20F060	130013-0361	1R4004A20F060	130013-0325	
5	12"	1R4007A20A120	130013-0386	1R4005A20A120	130013-0337	90°
	6'	1R5006A20A120	130013-0493	1R5004A20A120	130013-0442	Straight
	12"	1R5006A20F060	130013-0503	1R5004A20F060	130013-0452	
6	6'	1R5007A20A120	130013-0534	1R5005A20A120	130013-0482	90°
	12"	1R6006A20A120	130013-0593	1R6004A20A120*	130013-0567*	Straight
		1R6006A20F060	130013-0605	1R6004A20F060*	130013-0576*	
		1R6007A20A120	130013-0612	1R6005A20A120*	130013-0589*	90°

*Note: This is the A-Size 6-pole Mini-Change, please refer to series 130014 for the B-Size.

Brad® Mini-Change® A-Size Receptacle

130013
With Leads



Features and Benefits
- Patented Quad Beam contact with gold/nickel plating provides high reliability and low resistance
- Black epoxy coated Zinc diecast shell design
- #16 AWG, PVC insulated leads, U.S. color code

Reference Information
UL File No.: E152210
CSA File No.: LR6837

Electrical
Voltage: 300V AC/DC
Current: 3P—10.0A
4P—7.0A
5P—5.6A

Mechanical
Shell: Zinc diecast with black epoxy coat, optional stainless steel type 303
Insert: PVC UL 94-V0
Conductors: #18 AWG, PVC insulation over 16 x #30 Copper stranding, 300V, UL Style 1061, CSA AWM SR

Environmental
Protection: IP 68, NEMA 6P

AWG	Mounting Thread	Poles	Length	Male		Color Rotation
				Old Part No.	Order No.	
18	½" -1 NPT	3	12"	1R3006A17A120	130013-0193	#18 Auto
		4		1R4006A16A120	130013-0341	#18 IEC
		5		1R5006A17A120	130013-0489	#18 Auto
16	½" -NPT	4		1R4006A39M020	1300130378	#16 IEC
18	PG 13.5	3		1R3D06A25A120	130013-0268	#18 IEC
		4		1R4D06A16A120	130013-0396	
		5		1R5D06A25A120	130013-0548	

Solder Cup Contacts

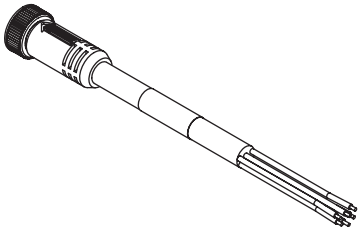
Mounting Thread	Poles	Order No.	
		Male	Female
½"-14 NPT	4		84854-9102
	5	84854-9101	84854-9100

Internal Thread

Poles	Length	Female		Color Rotation
		Old Part No.	Order No.	
3	2M	1R3000A20M020	130013-0112	#16 US
4		1R4000A39M020	130013-0301	
5		1R5000A20M020	130013-0426	#16 IEC

Brad® Mini-Change® B-Size Single-Ended Cordset STOOW Cable

130007
Internal Thread



Features and Benefits
- Patented Quad Beam contact with gold/nickel plating provides high reliability and low resistance
- Epoxy coated coupling nut is corrosion and held slag resistant
- Cable is oil, water and UV resistant

Reference Information
UL File No.: E152210
CSA File No.: LR6837

Electrical
Voltage: 600V AC/DC
Current: 6P—8.0A
7P—8.0A
8P—7.0A

Mechanical
Connector Face: PVC UL 94-V0
Molded Body: PVC UL 94-V0
Coupling Nut: Zinc diecast with black epoxy coat, optional Stainless Steel type 303
Cable: Yellow, #16 AWG, UL STOOW, CSA ST, PVC jacket and insulation, 65 x #34 stranding
Outside Diameter: 6P—0.54" (13.7mm)
7P—0.54" (13.7mm)
8P—0.61" (15.5mm)

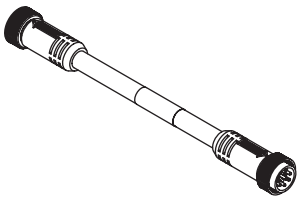
Environmental
Protection: IP67

Poles	Length	Male Straight		Female Straight	
		Old Part No.	Order No.	Old Part No.	Order No.
6	3'	206002A01F030*	130007-0049*	206000A01F030	130007-0022
	6'	206002A01F060*	130007-0051*	206000A01F060	130007-0024
	12'	206002A01F120*	130007-0054*	206000A01F120	130007-0026
	20'	206002A01F200*	130007-0057*	206000A01F200	130007-0028
7	3'	207002A01F030	130007-0113	207000A01F030	130007-0071
	6'	207002A01F060	130007-0115	207000A01F060	130007-0073
	12'	207002A01F120	130007-0117	207000A01F120	130007-0076
	20'			207000A01F200	130007-0080
8	3'	208002A01F030	130007-0197	208000A01F030	130007-0139
	6'	208002A01F060	130007-0199	208000A01F060	130007-0142
	12'	208002A01F120	130007-0202	208000A01F120	130007-0145
	20'	208002A01F200	130007-0204	208000A01F200	130007-0149

*Note: This is the B-Size 6-pole Mini-Change, please refer to series 130006 for the A-Size.

Brad® Mini-Change® B-Size Double-Ended Cordset STOOW Cable

130011
Extension Cable
Internal Thread Both Ends



Features and Benefits
- Patented Quad Beam contact with gold/nickel plating provides high reliability and low resistance
- Epoxy coated coupling nut is corrosion and held slag resistant
- Cable is oil, water and UV resistant

Reference Information
UL File No.: E152210
CSA File No.: LR6837

Electrical
Voltage: 600V AC/DC
Current: 6P—8.0A
7P—8.0A
8P—7.0A

Mechanical
Connector Face: PVC UL 94-V0
Molded Body: PVC UL 94-V0
Coupling Nut: Zinc diecast with black epoxy coat, optional Stainless Steel type 303
Cable: Yellow, #16 AWG, UL STOOW, CSA ST, PVC jacket and insulation, 65 x #34 stranding
Outside Diameter: 6P—0.54" (13.7mm)
7P—0.54" (13.7mm)
8P—0.61" (15.5mm)

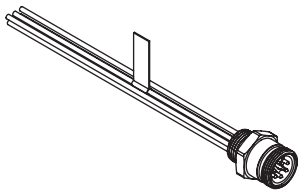
Environmental
Protection: IP67

Poles	Length	Female Straight/Male Straight	
		Old Part No.	Order No.
6	6'	226020A01F060*	130011-0010*
	12'	226020A01F120*	130011-0016*
	20'	226020A01F200*	130011-0019*
7	6'	227020A01F060	130011-0051
	12'	227020A01F120	130011-0055
	20'	227020A01F200	130011-0057
8	6'	228020A01F060	130011-0119
	12'	228020A01F120	130011-0124
	20'	228020A01F200	130011-0130

*Note: This is the B-Size 6-pole Mini-Change, please refer to series 130006 for the A-Size.

Brad® Mini-Change® B-Size Receptacle 16 AWG

130014
External Thread



Features and Benefits
- Patented Quad Beam contact with gold/nickel plating provides high reliability and low resistance
- Black epoxy coated Zinc diecast shell design
- #16 AWG, PVC insulated leads, U.S. color code

Reference Information
UL File No.: E152210
CSA File No.: LR6837

Electrical
Voltage: 600V AC/DC
Current: 6P—8.0A
7P—8.0A
8P—7.0A

Mechanical
Shell: Zinc diecast with black epoxy coat, optional Stainless Steel type 303
Insert: PVC UL 94-V0
Conductors: #16 AWG, PVC insulation over 26 x #30 Copper stranding, 600V, UL Style 1015, CSA TEW

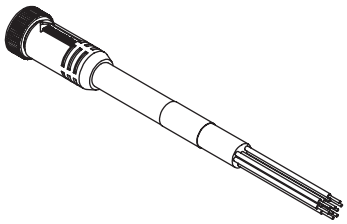
Environmental
Protection: IP67

Poles	Lead Length	Male		Female	
		Old Part No.	Order No.	Old Part No.	Order No.
6	12"	2R6006A20A120*	130014-0025*	2R6004A20A120	130014-0015
	6'	2R6006A20F060*	130014-0032*	2R6004A20F060	130014-0019
7	12"	2R7006A20A120	130014-0050	2R7004A20A120	130014-0037
	6'	2R7006A20F060	130014-0055	2R7004A20F060	130014-0042
8	12"	2R8006A20A120	130014-0078	2R8004A20A120	130014-0061
	6'	2R8006A20F060	130014-0084	2R8004A20F060	130014-0067

*Note: This is the B-Size 6-pole Mini-Change, please refer to series 130006 for the A-Size.

Brad® Mini-Change® C-Size Single-Ended Cordset STOOW Cable

130008
Internal Thread



Features and Benefits
- Patented Quad Beam contact with gold/nickel plating provides high reliability and low resistance
- Epoxy coated coupling nut is corrosion and weld slag resistant
- Cable is oil, water and UV resistant

Reference Information
UL File No.: E152210
CSA File No.: LR6837

Electrical
Voltage: 600V AC/DC
Current: 9P—7.0A
10P—7.0A
12P—5.0A

Mechanical
Connector Face: PVC UL 94-V0
Molded Body: PVC UL 94-V0
Coupling Nut: Zinc diecast with black epoxy coat. Optional Stainless Steel type 303 or gray Nylon 6/6
Cable: Yellow, #16 AWG, UL STOOW, CSA ST, PVC jacket and insulation, 65 x #34 stranding
Outside Diameter: 9P—0.64" (16.3mm)
10P—0.66" (16.8mm)
12P—0.71" (18.0mm)

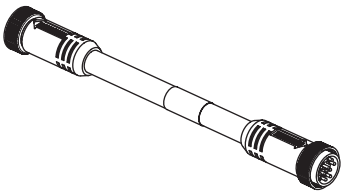
Environmental
Protection: IP67

Poles	Length	Male Straight		Female Straight		Female Right Angle	
		Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
9	3'	309002A01F030	130008-0364	309000A01F030	130008-0323		
	6'	309002A01F060	130008-0366	309000A01F060	130008-0325	309001A01F060	130008-0351
	12'	309002A01F120	130008-0368	309000A01F120	130008-0329	309001A01F120	130008-0353
	20'	309002A01F200	130008-0370	309000A01F200	130008-0332	309001A01F200	130008-0355
10	3'	301002A01F030	130008-0115	301000A01F030	130008-0023		
	6'	301002A01F060	130008-0117	301000A01F060	130008-0025	301001A01F060	130008-0098
	12'	301002A01F120	130008-0120	301000A01F120	130008-0028	301001A01F120	130008-0100
	20'	301002A01F200	130008-0124	301000A01F200	130008-0033	301001A01F200	130008-0104
12	3'	302002A01F030	130008-0229	302000A01F030	130008-0154		
	6'	302002A01F060	130008-0231	302000A01F060	130008-0157	302001A01F060	130008-0212
	12'	302002A01F120	130008-0234	302000A01F120	130008-0161	302001A01F120	130008-0215
	20'	302002A01F200	130008-0238	302000A01F200	130008-0165	302001A01F200	130008-0218

Brad® Mini-Change® C-Size Double-Ended Cordset PVC Cable

130012

Extension Cord
Internal Thread Both Ends



Features and Benefits
- Patented Quad Beam contact with gold/nickel plating provides high reliability and low resistance
- Epoxy coated coupling nut is corrosion and weld slag resistant
- Cable is oil, water and UV resistant

Reference Information
UL File No.: E152210
CSA File No.: LR6837

Electrical
Voltage: 600V AC/DC
Current: 9P—7.0A
10P—7.0A
12P—5.0A

Mechanical
Connector Face: PVC UL 94-V0
Molded Body: PVC UL 94-V0
Coupling Nut: Zinc diecast with black epoxy coat, optional Stainless Steel type 303
Cable: Yellow, #16 AWG, UL STOOW, CSA ST, PVC jacket and insulation, 65 x #34 stranding
Outside Diameter: 9P—0.64" (16.3mm)
10P—0.66" (16.8mm)
12P—0.71" (18.0mm)

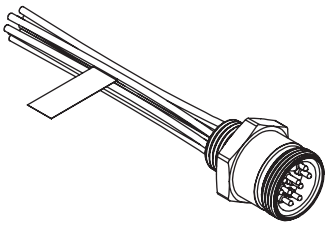
Environmental
Protection: IP67

Poles	Length	Male Straight	
		Old Part No.	Order No.
9	6'	339020A01F060	130012-0385
	12'	339020A01F120	130012-0391
	20'	339020A01F200	130012-0396
10	6'	331020A01F060	130012-0009
	12'	331020A01F120	130012-0016
	20'	331020A01F200	130012-0019
12	6'	332020A01F060	130012-0113
	12'	332020A01F120	130012-0119
	20'	332020A01F200	130012-0127

Brad® Mini-Change® C-Size Receptacle

130015

External Thread



Features and Benefits
- Patented Quad Beam contact with gold/nickel plating provides high reliability and low resistance
- Black epoxy coated Zinc diecast shell design
- #16 AWG, PVC insulated leads, U.S. color code

Reference Information
UL File No.: E152210
CSA File No.: LR6837

Electrical
Voltage: 600V AC/DC
Current: 9P—7.0A
10P—7.0A
12P—5.0A

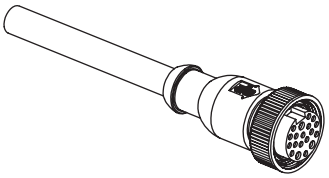
Mechanical
Shell: Zinc diecast with black epoxy coat, optional Stainless Steel type 303
Insert: PVC UL 94-V0
Conductors: #16 AWG, PVC insulation over 36 x #30 Copper stranding, 600V, UL Style 1015, CSA TEW

Environmental
Protection: IP67

Mounting Thread	Poles	Length	Male Straight		Female Straight	
			Old Part No.	Order No.	Old Part No.	Order No.
½"-14 NPT	9	12"	3R9006A20A120	130015-0137	3R9004A20A120	130015-0117
		6'	3R9006A20F060	130015-0143	3R9004A20F060	130015-0124
	10	12"	3R1006A20A120	130015-0044	3R1004A20A120	130015-0024
		6'	3R1006A20F060	130015-0049	3R1004A20F060	130015-0033
	12	12"	3R2006A20A120	130015-0076	3R2004A20A120	130015-0054
		6'	3R2006A20F060	130015-0082	3R2004A20F060	130015-0062

Brad® Mini-Change® C-Size Single and Double-Ended Cordset and Receptacle

130008/130012/130015
19-Pole



Features and Benefits
- #18 AWG power and #22 AWG control conductors
- Oil- and abrasion-resistant black polyurethane (PUR) jacket
- Mating receptacles available in male and female designs

Electrical
Voltage: 300V AC/DC
Current: 3.0A—18AWG
2.0A—22AWG

Mechanical
Connector Face: PVC UL 94-V0
Molded Body: PVC UL 94-V0
Coupling Nut: Zinc diecast with black epoxy coat
Contact: Gold plated Brass
Cable: Black #18 AWG (.75mm²) and #22 AWG (.34mm²), PUR jacket and PVC conductor insulation over 42 x .15mm (#18) and 42 x .10mm (#22) Copper stranding
Outside Diameter: 19P—.45" (11.4mm)
Receptacle Shell: Gray anodized Aluminum
Receptacle Insert: PVC UL 94-V0
Receptacle Conductors: #22 AWG with PVC insulation
#18 AWG with PVC insulation

Environmental
Protection: IP67

Single-Ended Cordset

Poles	Length	Female Straight		Female Right Angle	
		Old Part No.	Order No.	Old Part No.	Order No.
19	5M	303000P80M050	130008-0303	303001P80M050	130008-0315
	10M	303000P80M100	130008-0306	303001P80M100	130008-0316
	5M	303000B20M050	130008-0294	303001B20M050	130008-0312
	10M	303000B20M100	130008-0295	303001B20M100	130008-0313

Double-Ended Cordset

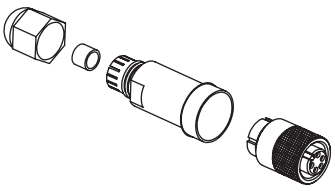
Poles	Length	Male Straight/Female Straight	
		Old Part No.	Order No.
19	5M	333030P80M050	130012-0339
	10M	333030P80M100	130012-0341
	5M	333030B20M050	130012-0561
	10M	333030B20M100	130012-0562

Receptacle

Poles	Length	Male		Female	
		Old Part No.	Order No.	Old Part No.	Order No.
19	0.3M	3R3N36E80C300	130015-0109	3R3N30E80C300	130015-0098
	2M	3R3N36E80M020	130015-0112	3R3N30E80M020	130015-0102

Brad® Mini-Change® Field Attachable Connector

130017



Features and Benefits
- Allows easy field conversion to quick disconnect
- Male with internal or external threads—female with internal threads
- Secure screw terminals #15 AWG to #24 AWG—compatible with existing Mini-Change®

Reference Information
CSA File No.: LR6837

Electrical
Voltage: 600V AC/DC
Current: 3P—13.0A
4P—10.0A
5P—8.0A

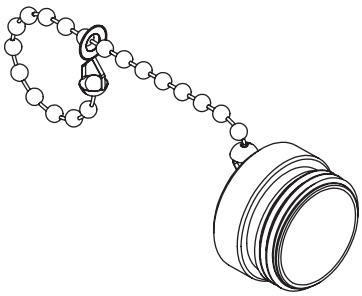
Mechanical
Connector Face: Polyurethane
Body: Polyamide PA6
Contact: Gold-plated Brass
Coupling Nut: Nickel-plated Brass or type 36 stainless steel
Grommet: Neoprene
Cable Range O.D.: .20" to .48" (5.0 to 12.0mm)
Acceptable Wire Gauge Range:
#24 AWG (.25mm²) to #15 AWG (2.0mm²)

Environmental
Protection: IP67

Poles	Male		Female		Description
	Old Part No.	Order No.	Old Part No.	Order No.	
3	1A3002-34	130017-0008	1A3000-34	130017-0004	Straight with internal threads
	1A3002-348	130017-0009	1A3000-348	130017-0005	Stainless Steel straight with internal threads
	1A3006-34	130017-0011			Straight with external threads
	1A3006-348	130017-0012			Stainless Steel straight with external threads
4	1A4002-34	130017-0018	1A4000-34	130017-0015	Straight with internal threads
	1A4002-348	130017-0019	1A4000-348	130017-0016	Stainless Steel straight with internal threads
	1A4006-34	130017-0020			Straight with external threads
	1A4006-348	130017-0021			Stainless Steel straight with external threads
5	1A5002-34	130017-0026	1A5000-34	130017-0023	Straight with internal threads
	1A5002-348	130017-0027	1A5000-348	130017-0024	Stainless Steel straight with internal threads
	1A5006-34	130017-0029			Straight with external threads
	1A5006-348	130017-0030			Stainless Steel straight with external threads

Brad® Mini-Change® Accessories

130006/130013/ 130018/130201



Features and Benefits

- Closure caps for receptacles, connectors and Multi-ports
- Threaded unions for mating (2) cordsets
- Female and male plugs for liquid tight conduit terminations
- 90˚ adapters with (1) male and (1) female plug

Reference Information

UL File No.: E152210*
CSA File No.: LR6837†

Electrical

Liquid-tight plugs and 90˚ adaptors
Voltage: 600V
Current: 2P—13.0A
3P—10.0A
4P—8.0A
5P—8.0A

Mechanical

Closure Caps: Anodized aluminum, stainless steel or gray nylon (A-size only)
Threaded Union: Gray anodized Aluminum
Liquid-tight Plugs Connector Body: Zinc plated Steel
Coupling Nut: Gray anodized Aluminum
Clamp Nut: Zinc plated Steel
Insert: PVC UL 94-V0
90˚ Adapter Connector Body: Yellow PVC
Coupling Nuts: Zinc diecast with black epoxy
Insert: PVC UL 94-V0

Environmental

Protection: IP67

Dust Cap

Size	Poles	Plug			Receptacle		
		Old Part No.	Order No.	Description	Old Part No.	Order No.	Description
A	2-6	65-0085	130201-1109	Black Epoxy Coat	65-0086	130201-1111	Anodized Aluminum
		65-0085SS	130201-1110	Stainless Steel	65-0086N	130201-1112	Nylon
					65-0086SS	130201-1113	Stainless Steel
B	6, 7 and 8	65-0102	130201-1115	Anodized Aluminum	65-0103	130201-1116	Anodized Aluminum
					65-0103SS	130201-1117	Stainless Steel
C	9, 10 and 12	65-0104	130201-1118	Anodized Aluminum	65-0105	130201-1120	Anodized Aluminum
		65-0104SS	130201-1119	Stainless Steel	65-0105SS	130201-1121	Stainless Steel

Threaded Unions

Old Part No.	Order No.	Description
55-0426	130201-1224	A-Size, 2P-6P
55-0466	130201-1226	B-Size, 6P, 7P, 8P
55-0496	130201-1228	C-Size, 9P, 10P, 12P

Bulk Head Pass-Through Adapters

Old Part No.	Order No.
1R3030	130013-0255*†
1R4030	130013-0388†
1R5030	130013-0541†

* UL File No.: E152210
† CSA File No.: LR6837

Plugs

Poles	Male		Female	
	Old Part No.	Order No.	Old Part No.	Order No.
2	40780	130006-2098	40718	130006-2098
3	41037	130006-2102	40925	130006-2099
4	51149	130006-0184	41132	130006-2103
5	41593	130006-2109	41344	130006-2107

90° Adapters

Poles	Old Part No.	Order No.
2	40761	130018-0204
3	41048	130018-0206
4	41212	130018-0207
5	41481	130018-0210

The Brad® Brand of Automation Products—Designed for Performance and Reliability

Molex empowers the industrial infrastructure through its Brad automation products. Brad products are ruggedly designed, engineered and constructed to provide easy installation and long-term, reliable performance in harsh environments. Whether they're for connecting power, industrial networks or automation equipment such as sensors, I/O devices, computer systems, robots, or conveyor systems, Brad products are the ideal choice for connecting the plant floor.

Brad products include:

BradConnectivity™ connectors, cordsets and distribution boxes for sensor and actuator applications. Designed to meet our customers' requirements and built industrial-tough to ensure flexibility, interoperability and rock-solid performance. The BradConnectivity solutions include:

Mini-Change® Connectivity

The industry's first quick-disconnect alternative to hardwiring, commonly used with 18 and 30mm proximity switches, photoelectric sensors and limit switches as well as for network I/O-power connection.

Micro-Change® (M12) Connectivity

When space and time are in short supply, Micro-Change (M12) connectivity provides compact migration towards soft-wiring solutions. These industry standard connectors are available in single and dual keyways for a myriad of network and I/O applications.

Nano-Change® (M8) Connectivity

The industry's broadest selection of space saving cordsets, receptacles, inserts, splitters and molded junction boxes. They provide rugged performance in tight spaces while minimizing downtime, maintenance and wiring time.

BradCommunications™ network interface cards, gateways, diagnostic tools and Industrial Ethernet switches. Designed to enhance communication of industrial networks and devices. The BradCommunications solutions include:

Network interface cards

PC network interfaces connect "Soft" PLC, HMI/OI or SCADA applications installed on a PC based computer to an industrial network

PLC communication modules connect a PLC to an industrial network

Embedded interfaces quickly integrate an industrial network into an OEM device

Gateways connect networks to other networks or devices, exchange information across many protocols as well as creating a communications link between the plant floor and the office.

Diagnostic tools provide a clear understanding of the "health" of the network to increase production uptime as well as obtaining an early warning through its predictive technologies.

Industrial Ethernet switches intelligently route Ethernet messages, eliminate collisions and provide deterministic performance of your Ethernet network.

BradControl™ networked I/O for on-machine applications. Designed to provide reliable connections in harsh environments between industrial controllers communicating on an industrial network and I/O devices. The BradControl solution includes:

Classic 60mm I/O modules

Compact 30mm I/O modules

BradPower™ products bring power reliably to motors, lights, heaters and other electrical devices. The BradPower solution includes:

Cordsets, connectors, receptacles, tees and reducers that create a modular, flexible wiring system for machine power distribution and motor control

BradPower™ Modular Power Solutions Overmolded Cordsets and Connectors

Features and Benefits

- Available in 3 or 4 pole
- UL Listed for use in US and Canada
- IP67, IP68 and IP69K rated
- NFPA-79-2002 standard compliance
- Total installed cost can be reduced from 20 to 50% vs. conventional hard-wiring
- Modular components mean faster, easier installation and maintenance
- Eliminates the potential for mis-wiring
- Requires no tools, no pipe bending, no wire pulling, no conduit or raceways
- Complete range of modular components available for food and beverage processors

Modular, Easy to install

BradPower solutions replace machine hard wiring with modular, quick-connect systems comprised of crush-resistant, pre-wired cordsets and factory-molded connectors. The result is a robust, scalable and easy-to-install power distribution system that does not require the specialized tools and labor typically associated with traditional conduit or raceway installations.

Performance

BradPower wiring systems' modular components make installation faster, easier and more reliable. Where multiple machines are involved, assembling the systems is consistent and repeatable.

Bottom-Line Benefits

Compared to traditional conduit-based hard wiring, BradPower modular solutions provide:

- Reduced labor costs
- Simplified connections
- Increased plant flexibility
- Reduced commission time

BradPower modular solutions deliver rapid return on capital equipment investments

Markets and Applications

Robotic machinery
Material handling equipment
Packaging systems
Food and beverage processing
Factory automation
Motor control
Power distribution

BradPower™ Modular Power Solutions

Trunk/Feeder Cordsets

Features

- 600V AC; 30.0A (3 pole) and 25.0A (4 pole)
- Dual rated 10 AWG cable
- Multiple key options available

Drop/Branch Cordsets

Features

- 600V AC
- 15.0A (3 pole, 14 AWG); 13.0A (3 pole, 16 AWG)
- 15.0A (4 pole, 14 AWG); 10.0A (4 pole, 16 AWG)
- Features Mini-Change® to allow for quick connection of field devices

Tees

Features

- 600V AC
- 30.0A (3 pole) and 25.0A (4 pole)
- Multiple key options available
- Multiple key options available
- Serve as the termination point at motors and devices

Receptacles

Features

- 600V AC
- 30.0A (3 pole) and 25.0A (4 pole)
- Multiple key options available
- Tees with drop connector available for access points to branch circuits to field devices
- Tees with trunk connector available to split main feeder circuit into sub-segments

Reducers

Features

- 600V AC
- Trunk reducer to female drop
- Reducers are essential in achieving the most versatile, scalable wiring system possible
- Multiple key options available (trunk/feeder lines)

BradPower™ Modular Power Solutions

Field Attachables

Features

- 600V AC
- Trunk/Feeder—30.0A (3 pole); 25.0A (4 pole)
- Drop/Branch—15.0A
- Cut cable to length on-site for maximum flexibility and convenience

Disconnect Switch

Features

- 600V AC
- 15.0A
- Easily installed without special tools or highly skilled labor

Accessories

Features

- Closure caps maintain sealing integrity and provide convenient "stop points" for expandable power systems
- Locking clips snap over the outside of trunk/feeder or drop/branch connection points to limit access to the flexible wiring system

BradConnectivity™ M23 Signal and Power Connectors

BradConnectivity M23 connectors and receptacles for signal and power applications were designed to meet our customers' stringent requirements for reliability and performance in the harshest of industrial environments.

M23 Signal Connectors

Includes field attachable male and female cable connectors and receptacles from 6-pole to 19-pole in straight and right-angled versions. Cable connectors for a broad range of cable outer diameters and receptacles for front mounting or back mounting guarantee the highest flexibility.

Features

- Cable assembly and shielding in one assembly step
- Clipped-on strain-relief insert prevents cable rotation
- Flexible EMC-O-Ring guarantees reliable EMC-protection
- Radial-encompassing spring contacts assure low plug-in resistance and high mating cycles
- Integrated locking clip secures the contact in the insert and allows easy assembly and disassembly

M23 Power Connectors

For power applications up to 28 amps. Brad® offers field-attachable cable connectors and receptacles in 5+PE and 4+3+PE versions. Applying the same modular design as the signal connectors, both pole counts can be used in straight and right-angled versions.

Crimp contacts are available with different crimp ranges. Female contacts with integrated springs assure exceptional electrical performance with ultimate contact reliability in both signal and power product ranges.

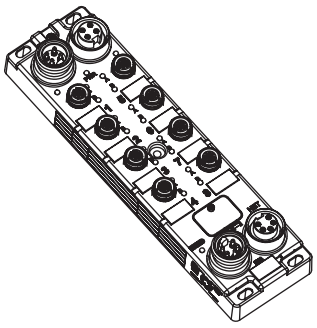
Additional tools and accessories are available, contact Molex

Features

- Modularity—same insert for all housings
- The integrated locking clip allows quick assembly
- Complete assembly and disassembly without special tools
- Lowest contact resistance as a result of a Gold-plated contact area
- Integrated strain-relief fitting

DeviceNet*
IP67 I/O Module

112092



Features and Benefits

- IP67 digital IO modules—reliable world-class product for harsh environment
- Supports ADR and Quick-Connect
- Standard mounting hole pattern allows for interchangeable with popular I/O modules
- Visible diagnostic through status LEDs for network, module, external power, inputs and outputs

Reference Information

Approvals: ODVA, UL, CUL, CUE

Compact

Physical

I/O Configurations:
- 8 inputs
- 4 inputs/4 outputs

I/O Connectors:
- 4 Port—Micro-Change® 5-pole M12 female BradConnectivity™ Ultra-Lock™, internally threaded
- 8 Port—Nano-Change® 3-pole threaded M8 female

Bus Connectors:
- Network In—Micro-Change 5-pole M12 male
- Network Out— Micro-Change 5-pole M12 female

Auxiliary Power Connector:
- Power In—Micro-Change 5-pole M12 male

Address Settings: 0 to 63 using rotary switches or software

Input Type: Compatible with dry contact and PNP or NPN 3-wire switches; electronic short circuit protection.

Housing Dimensions:
- 30 x 175 x 20mm (1.18 x 6.89 x 0.78")

Mounting Dimensions:
- 23mm (0.91") horizontal on centers
- 168mm (6.61") vertical on centers
- Center hole

Storage Temperature: -25 to 85˚ C (-13 to 185˚ F)

RH Operating: 5 to 95% non-condensing

EMC: IEC 61000-6-2

Protection: IP67 according to IEC 60529

Vibration: IEC 60068-2-6 conformance

Shock: 10G, 11ms, 3 axis

Electrical

External Power Requirements:
- Module and Input Power—24V DC (input devices plus module)
- Output Power—24V DC (13 to 28V), 4.0A max. per module

Baud Rate Settings: Auto baud—125, 250, 500 KBaud

Input Delay: 3 ms

Input Device Supply: 140 mA per port at 25˚ C

Output Load Current:
- 1.0A max. per channel; electronic short circuit protection

Maximum Switching Frequency: 200 Hz

Classic

Physical

I/O Configurations:
- 16 inputs
- 8 inputs/8 outputs

I/O Connectors:
- Micro-Change® 5-pole M12 female BradConnectivity™ Ultra-Lock™, internally threaded

Bus Connectors:
- Network In—Mini-Change® 5-pole male
- Network Out—5-pole female

Auxiliary Power Connector:
- Power In—Mini-Change 4-pole male
- Power Out—4-pole female

Address Settings: 0 to 63 using rotary switches or software

Input Type:
- Compatible with dry contact and PNP or NPN 3-wire switches; electronic short circuit protection

Housing Dimensions:
- 60 x 220 x 20mm (2.36 x 8.66 x 0.78")

Mounting Dimensions:
- 37.5mm (1.48") horizontal on centers
- 210mm (8.27") vertical on centers Center hole

Storage Temperature: -20 to 85˚ C (-4 to 185˚ F)

RH Operating: 5 to 95% non-condensing

EMC: IEC 61000-6-2

Protection: IP67 according to IEC 60529

Vibration: IEC 60068-2-6 conformance

Shock: 10G, 11ms, 3 axis

Electrical

External Power Requirements:
- Module and Input Power—24V DC (input devices plus module)
- Output Power—24V DC (13 to 28V), 8.0A max. per module

Baud Rate Settings: Auto baud—125, 250, 500 KBaud

Input Device Supply: 140 mA per port at 25˚ C

Output Load Current: 1.0A max. per channel; electronic short circuit protection

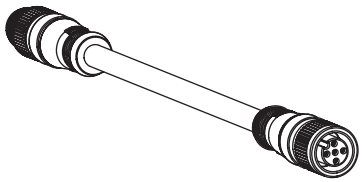
Maximum Switching Frequency: 200 Hz

	Old Part No.	Order No.	Option	Description
Compact (30mm)	TBDDN-480N-80U	112092-0018	8 input	DeviceNet Slave, Compact Digital, 4-port, M12 Ultra-Lock, 8 input
	TBDDN-480P-80U	112092-0007	8 input	DeviceNet Slave, Compact Digital, 4-port, M12 Ultra-Lock, 8 input
	TBDDN-444N-88U	112092-5004	4 input, 4 output	DeviceNet Slave, Compact Digital, 4-port, M12 Ultra-Lock, 4 input , 4 output
	TBDDN-444P-88U	112092-0006	4 input, 4 output	DeviceNet Slave, Compact Digital, 4-port, M12 Ultra-Lock, 4 input , 4 output
	TBDDN-880N-804	112092-0022	8 input	DeviceNet Slave, Compact Digital, 8-port, M8, 8 input
	TBDDN-880P-804	112092-0008	8 input	DeviceNet Slave, Compact Digital, 8-port, M8, 8 input
Classic (60mm)	TCDDN-8D0P-10U	112092-0010	16 input	DeviceNet Slave, Classic Digital, 8-port, M12 Ultra-Lock, 16 input
	TCDDN-8D0N-10U	112092-0019	16 input	DeviceNet Slave, Classic Digital, 8-port, M12 Ultra-Lock, 16 input
	TCDDN-888P-11U	112092-0009	8 input 8 output	DeviceNet Slave, Classic Digital, 8-port, M12 Ultra-Lock, 8 input / 8 output
	TCDDN-888N-11U	112092-0020	8 input 8 output	DeviceNet Slave, Classic Digital, 8-port, M12 Ultra-Lock, 8 input / 8 output

* DeviceNet is a trademark of Open DeviceNet Vendor Association (ODVA)

DeviceNet* Micro-Change® (M12) Drop Cordset

130027/130028
Single and Double-Ended



Features and Benefits

- Rugged, IP68 rated connectors for continued connection integrity in industrial environments
- Variety of cable types, cable exit, form factor, coupling nut and length options for maximum flexibility
- Connect tees or ports on drop distribution boxes to active devices
- Micro-Change (M12) to Micro-Change (M12) cordsets or Micro-Change (M12) to Nano-Change® (M8) cordsets
- Single and double-ended
- Straight and 90˚
- Standard and application-specific lengths

Thin Standard Specifications

Overall

Rating: 300V 80˚C
Outer Jacket: PVC
Inner Insulation: Power—Semirigid PVC
Data—PE foam
Construction: Two shielded pairs, #22 Tin-Copper drain wire between pairs
Cable Jacket Color: Gray

Power Pair

Wire: Two #22 individually Tinned stranded Copper
Shielding: Aluminum foil shield, 25% overlap
DC Resistance: 16.5 ohms/1000 ft max. at 20˚ C max.
Current: 4.0A
Color Code: Red/black

Data Pair

Wire: Two #22 individually Tinned stranded Copper
Shielding: Aluminum foil shield, 25% overlap
DC Resistance: 16.5 ohms/1000 ft max. at 20˚ C
Velocity of Propogation: 75%
Capacitance: 11 pF/ft
Color Code: White/blue

Reference Information

UL: CL2, AWM 2464
CSA: FT4 Rated

Thin High Flex Specifications

Overall

Rating: 300V 80˚C
Outer Jacket: PVC
Inner Insulation: Power—Semirigid PVC
Data—PE foam
Flexure: Rolling Flex > 1 million cycles at 10x bend radius
Construction: Two foil shielded pairs, #26 Tin-Copper drains between pairs
Cable Jacket Color: Gray

Power Pair

Wire: Two #22 individually Tinned stranded Copper
Shielding: Aluminum outside/polyester tape, 25% overlap
DC Resistance: 17.5 ohms/1000 ft max. at 20˚C
Current: 4.0A max.
Color Code: Red/black

Data Pair

Wire: Two #24 individually Tinned stranded Copper
Shielding: Aluminum outside/polyester tape, 25% overlap
DC Resistance: 28 ohms/1000 ft max. at 20˚C
Velocity of Propogation: 75%
Capacitance: 12 pF/ft
Color Code: White/blue

Reference Information

UL : CL3 AWM 20626, Flame UL 1581
CSA : AWM: I/II A/B, 80˚C, 300V ft1

Thin Standard Cable

Cable Length (m)	Single-Ended						Double-Ended					
	Male Straight		Male 90°		Female 90°		Female Straight/Male Straight		Female 90°/Male Straight		Female 90°/Male 90°	
	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
1.0	DND02A-M010	130027-0012	DND03A-M010	130027-0037	DND30A-M010	130027-0075	DND22A-M010	130028-0028	DND32A-M010	130028-0085	DND33A-M010	130028-0104
3.0	DND02A-M030	130027-0015	DND03A-M030	130027-0040	DND30A-M030	130027-0077	DND22A-M030	130028-0037	DND32A-M030	130028-0089	DND33A-M030	130028-0110
5.0	DND02A-M050	130027-0017	DND03A-M050	130027-0041	DND30A-M050	130027-0079	DND22A-M050	130028-0042	DND32A-M050	130028-0091	DND33A-M050	130028-0113

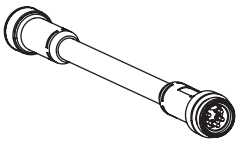
Thin High Flex

Cable Length (m)	Single-Ended						Double-Ended					
	Male Straight		Male 90°		Female 90°		Female Straight/Male Straight		Female 90°/Male Straight		Female 90°/Male 90°	
	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
1.0	DNDF02A-M010	130027-0103	DNDF03A-M010	130027-0115	DNDF30A-M010	130027-0161	DNDF22A-M010	130028-0132	DNDF32A-M010	130028-0172	DNDF33A-M010	130028-0183
3.0	DNDF02A-M030	130027-0159	DNDF03A-M030	130027-0117	DNDF30A-M030	130027-0162	DNDF22A-M030	130028-0140	DNDF32A-M030	130028-0244	DNDF33A-M030	130028-0249
5.0	DNDF02A-M050	130027-0106	DNDF03A-M050	130027-0160	DNDF30A-M050	130027-0130	DNDF22A-M050	130028-0143	DNDF32A-M050	130028-0178	DNDF33A-M050	130028-0185

* DeviceNet is a trademark of Open DeviceNet Vendor Association (ODVA)

DeviceNet* Mini-Change® Trunk Cordset

130024/130025
Single and Double-Ended



Features and Benefits
- Plug-and-play connection between DeviceNet nodes
- Mini-Change® cordsets
- Single and double-ended
- Straight and 90˚
- Standard and application-specific lengths
- Rugged, IP-68 rated connectors for continual connection integrity in industrial environments
- Phosphor-bronze contacts for greater reliability
- Variety of cable types, cable exit, coupling nut and length options for maximum flexibility

Reference Information
UL File No.: E152210
CSA File No.: LR6837

Thick Standard

Overall
Rating: 300V, 80˚C
Outer Jacket: Gray PVC
Outside Diameter: 0.48" (12.10mm)
Inner Insulation:
Power—PVC with Nylon skin
Data—PE foam
Construction: Two shielded pairs with #18 AWG (19 by #30) drain wire between pairs

Power Pair
Wire: Two #15 AWG (19 by #28) stranded Tinned Copper
Shielding: Aluminum outside/polyester tape 25% overlap
DC Resistance: 3.6 ohms/1000 ft max. at 20˚C
Current: 8.0A max.
Color Code: Red/black

Data Pair
Wire: Two #18 AWG (19 by #28) stranded Tinned Copper
Shielding: Aluminum outside/polyester tape 25% overlap
DC Resistance: 6.92 ohms/1000 ft max. at 20˚C
Capacitance: 12pF/ft
Color Code: White/blue

Environmental
Protection: IP68, NEMA 6P
Ambient Operating Temp: -4 to 176˚ F (-20 to 80˚ C)

Reference Information
UL File No.: UL type CL2, VL 1581 flame resistance
CSA File No.: CSA AWM I/II and A/B FT4

Thick Flex-Rated

Overall
Rating: 300V, 80˚C
Outer Jacket: TPE
Outside Diameter: 0.48" (12.10mm)
Inner Insulation:
Power—PVC with Nylon skin
Data—PE foam
Flexure: Rolling Flex >1.40m cycles at 10x Bend Radius
Construction: Two Shielded Pairs with #18 (19 by #30) drain wires between pairs

Power Pair
Wire: Two #15AWG (19 by #28) individually Tinned Copper
Shielding: Aluminum outside/polyester tape 25% overlap
DC Resistance: 3.6 ohms/1000 ft max. at 20˚C
Current: 8.0A max.
Color Code: Red/black

Data Pair
Wire: Two #18AWG (19 by #30) individually Tinned Copper
Shielding: Aluminum outside/polyester tape 25% overlap
DC Resistance: 6.9 ohms/1000 ft max. at 20˚C
Capacitance: 12pF/ft
Color Code: White/blue

Reference Information
UL: CL3; AWM 20626, UL 1581
CSA: AWM I/II A/B 80˚C 300V Ft1

Mid Cable

Overall
Rating: 300V, 80˚C
Outer Jacket: Gray PVC
Outside Diameter: 0.330" (8.38mm)
Inner Insulation:
Power—PVC
Data—PE foam
Construction: Two shielded pairs, #20 AWG Tin Copper drain wire between pair

Power Pair
Wire: Two #16 AWG (65 by 34) Tinned Copper
Shielding: Aluminum outside/polyester tape 25% overlap
Velocity of Propogation: 75%
DC Resistance: 4.1 ohms/1000 ft max. at 20˚C
Current: 8.0A max.
Color Code: Red/black

Data Pair
Wire: Two #20 AWG (19 by #36) stranded Copper
Shielding: Aluminum outside/polyester tape 25% overlap
DC Resistance: 10.4 ohms/1000 ft max. at 20˚C
Capacitance: 12.35pF/ft
Color Code: White/blue
Cable Jacket Color: Gray

Reference Information
UL File No.: Style 1569
CSA File No.: I/II A/B 300V Ft1, 80˚C

Thick Standard Cable

Cable Length (m)	Single-Ended								Double-Ended (Female/Male)					
	Male Straight		Male 90°		Female Straight		Female 90°		Straight/Straight		90°/Straight		90°/90°	
	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
1.0	DN01A-M010	130024-0028	DN09A-M010	130024-0059	DN10A-M010	130024-0073	DN90A-M010	130024-0133	DN11A-M010	130025-0054	DN91A-M010	130025-0173	DN99A-M010	130025-0197
3.0	DN01A-M030	130024-0032	DN09A-M030	130024-0061	DN10A-M030	130024-0078	DN90A-M030	130024-0136	DN11A-M030	130025-0067	DN91A-M030	130025-0177	DN99A-M030	130025-0200
5.0	DN01A-M050	130024-0034	DN09A-M050	130024-0064	DN10A-M050	130024-0080	DN90A-M050	130024-0137	DN11A-M050	130025-0073	DN91A-M050	130025-0179	DN99A-M050	130025-0202

Thick Flex-Rated Cable

Cable Length (m)	Single-Ended								Double-Ended (Female/Male)					
	Male Straight		Male 90°		Female Straight		Female 90°		Straight/Straight		90°/Straight		90°/90°	
	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
1.0	DNF01A-M010	130024-0265	DNF09A-M010	130025-0538	DNF10A-M010	130024-0337	DNF90A-M010	130024-0341	DNF11A-M010	130025-0408	DNF91A-M010	130025-0468	DNF99A-M010	130025-0482
3.0	DNF01A-M030	130024-0267	DNF09A-M030	130025-0539	DNF10A-M030	130024-0338	DNF90A-M030	130024-0342	DNF11A-M030	130025-0412	DNF91A-M030	130025-0470	DNF99A-M030	130025-0542
5.0	DNF01A-M050	130024-0269	DNF09A-M050	130025-0540	DNF10A-M050	130024-0287	DNF90A-M050	130024-0343	DNF11A-M050	130025-0415	DNF91A-M050	130025-0472	DNF99A-M050	130025-0486

Mid Cable

Cable Length (m)	Single-Ended								Double-Ended (Female/Male)					
	Male Straight		Male 90°		Female Straight		Female 90°		Straight/Straight		90°/Straight		90°/90°	
	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
1.0	DNB01A-M010	130024-0146	DNB09A-M010	130024-0163	DNB10A-M010	130024-0169	DNB90A-M010	130024-0178	DNB11A-M010	130025-0233	DNB91A-M010	130025-0259	DNB99A-M010	130025-0267
3.0	DNB01A-M030	130024-0149	DNB09A-M030	130024-0336	DNB10A-M030	130024-0339	DNB90A-M030	130024-0344	DNB11A-M030	130025-0235	DNB91A-M030	130025-0541	DNB99A-M030	130025-0270
5.0	DNB01A-M050	130024-0151	DNB09A-M050	130024-0165	DNB10A-M050	130024-0340	DNB90A-M050	130024-0180	DNB11A-M050	130025-0237	DNB91A-M050	130025-0261	DNB99A-M050	130025-0271

Thin Standard Cable

Cable Length (m)	Double-Ended					
	Female Straight/Male Straight		Female 90°/Male Straight		Female 90°/Male 90°	
	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
1.0	DND11A-M010	130025-0287	DND91A-M010	130025-0322	DND99A-M010	130025-0543
3.0	DND11A-M030	130025-0292	DND91A-M030	130025-0324	DND99A-M030	130025-0544
5.0	DND11A-M050	130025-0295	DND91A-M050	130025-0326	DND99A-M050	130025-0545

Thin High Flex Cable

Cable Length (m)	Double-Ended					
	Female Straight/Male Straight		Female 90°/Male Straight		Female 90°/Male 90°	
	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
1.0	DNDF11A-M010	130025-0502	DNDF91A-M010	130025-0546	DNDF99A-M010	130025-0513
3.0	DNDF11A-M030	130025-0504	DNDF91A-M030	130025-0547	DNDF99A-M030	130025-0333
5.0	DNDF11A-M050	130025-0508	DNDF91A-M050	130025-0548	DNDF99A-M050	130025-0515

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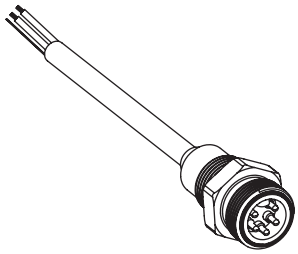
DeviceNet* Receptacle

120070/130031/ 130039/130188



Features and Benefits

- Connects the external trunk line with an enclosure
- Mini-Change® receptacles with DeviceNet color rotation
- Male and female
- Front-Panel mount
- Bulkhead feed-through
- PCB-mount or cable lead
- A variety of options allows for maximum flexibility in connecting devices nodes
- Bulkhead version features rugged keyways for positive alignment of connections

Thick Media

Electrical

Voltage: 300V AC/DC
Current: Based on cable used

Mechanical

Shell (Receptacle): Gray anodized Aluminum
Shell (Bulkhead) Nickel-Brass
Gasket Material (Bulkhead): Neoprene
Thrust Washer (Bulkhead): Nylon
Locknut Material (Bulkhead): Brass alloy
Insert: PVC UL 94V
Outside Diameter: Thick—0.48" (12.10mm)
Mid—0.34" (8.60mm)
Thick-Flex—0.48" (12.20mm)

Environmental

Protection: IP67

Thin Media

Reference Information

(Except for Bulkhead)
UL File No.: E152210
CSA File No.: LR6837

Electrical

Voltage Rating: 250V AC/DC
Current: 4.0A

Mechanical

Shell: Receptacle—Andonized Aluminum
Bulkhead—Nickel over Brass
PCB—Thermoplastic
Insert: Nylon 6/6
Coupling Nut: PCB—Delrin
Gasket Material: Bulkhead—Neoprene
Lock Washer: Bulkhead—Steel Alloy
Support Bracket: Steel, Tin, Lead, coated
MB Panel Thickness: PCB—0.639 to 0.070"

Environmental

Protection: Receptacles—IP67
Bulkhead—PCB IP67

Drop Receptacle Micro-Change (M12)

PCB Mount								12" Wire Pigtail			
Male Straight		Male 90°		Female Straight		Female 90°		Male Straight		Female Straight	
Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
8R5L560005-35	120070-0243	8R5L570005-35	120070-0245	8R5L500005-35	120070-0239	8R5L510005-35	120070-0241	81612	130031-0026	81611	130031-0023

Trunk Receptacle—Front Panel Mount with Cable

Mounting Thread	Cable Length (m)	Description	Male Straight		Female Straight	
			Old Part No.	Order No.	Old Part No.	Order No.
1/2" - 14 NPT	0.50	Thick Standard Cable	DN5100-M005	130039-0297	DN5000-M005	130039-0283
	1.0		DN5100-M010	130039-0299	DN5000-M010	130039-0284
	0.50	Mid Cable	DNB5100-M005	130039-0317	DNB5000-M005	130039-0311
	1.0		DNB5100-M010	130039-0318	DNB5000-M010	130039-0312

Trunk Receptacle—Double-Ended Back Panel Mount to Mini-Change Receptacle (Female/Male)

Mounting Thread	Cable Length (m)	Description	Receptacle/Straight		Receptacle/90°		Straight/Receptacle	
			Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
1/2" - 14 NPT	1.0	Thick Standard Cable	DN5210A-M010	130039-0096	DN5290A-M010	130039-0098	DN5301A-M010	130039-0101

Mounting Thread	PCB Mount				Bulkhead Feed-Through	
	Male Straight		Female Straight		Male Straight	Female Straight
	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
1/2" - 14 NPT	67-0065	130188-0033	67-0075	130188-0034	1R5030	130013-0541

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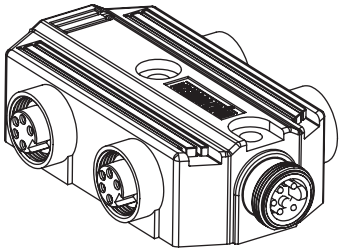
DeviceNet*
Sealed Distribution Box

130036/130037/130039



Features and Benefits

- Allows several trunk cables or drop cables with Mini-Change® style of connectors to be consolidated and can be connected to the trunk
- Eliminate the need to have numerous tees connected near a single point
- Rugged enclosure for reliable connectors in industrial environment

Thin Media

Reference Information
cCSAus File No.: LR6837

Electrical
Voltage: 120V AC/DC
Amperage: 7.0A total per unit

Mechanical
Insert: PVC
Housing: Zinc diecast with black epoxy coat
ID Label: ABS

Environmental
Protection: IP67

Thick Media

Reference Information
UL File No.: E46237
CSA File No.: LR6837

Electrical
Voltage: 120V AC/DC
Amperage: 7.0A total per unit

Mechanical
Insert: PVC
Housing: PET (Polyester)
Receptacle Housing: Zinc diecast with black epoxy coat
ID Label: ABS

Environmental
Protection: IP67

Mounting	Ports	Thick Media				Thin Media			
		Mini-Change BUS IN with Mini Ports		Mini-Change BUS IN/BUS OUT with Mini Ports		Mini-Change BUS IN with Mini Ports		Mini-Change BUS IN/BUS OUT with Mini Ports	
		Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
Side	2			DN2100	130039-0336				
	4	DN4000	130036-0005	DN4100	130036-0006	DND4000	130036-0011	DND4100	130036-0012
	6	DN6000	130036-0008	DN6100	130036-0009	DND6000	130036-0014	DND6100	130036-0015

Mounting	Ports	Thick Media					
		Mini-Change BUS IN with Micro Ports		Mini-Change BUS IN with 2 Meter Cable with Micro Ports		Mini-Change BUS IN/BUS OUT with 2 Meter Cable with Micro Ports	
		Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
Top	4	DND4200	130037-0004	DND4500-02	130037-0006	DND4300-02	130037-0005

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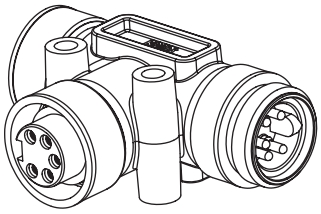
DeviceNet* Tee and Splitter

130035/130039



Features and Benefits

- Phosphor bronze contacts for greatest reliability
- Variety of Mini-Change® to Micro-Change® (M12) cordset configurations for installation flexibility
- Tees enable tapping into trunk line to add drop lines or devices
- Splitters allow service to two devices through just one connection
- Power monitor tees show you what the power condition is, when an improper condition occurred and what that condition is.

Tee

Electrical

Voltage: 50V
Current: Mini-Change drop—8.0A
Micro-Change drop—3.0A
Contact Material: Phosphor Bronze Alloy
Contact Plating: Gold over Nickel Alloy

Mechanical

Connector Face: Mini-Change Drop Tee—TPE
Micro-Change Drop Tee—PCV
Molded Body: Mini-Change Drop Tee—TPE
Micro-Change Drop Tee—PCV
Coupling Nut: Zinc diecast black E-Coat
MICT555—Nickel-plated Brass

Environmental

Protection: Mini-Change—IP67
Micro-Change—IP67

Splitter

Reference Information

UL File No.: E152210
CSA File No.: LR6337

Electrical

Voltage: Micro-Change—250V AC/DC
Mini-Change—600V AC/DC
Current: Micro-Change—4.0A
Mini-Change—10A

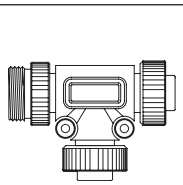
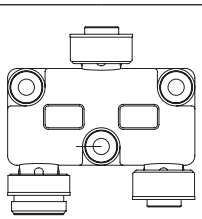
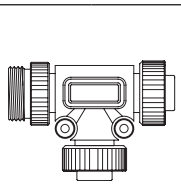
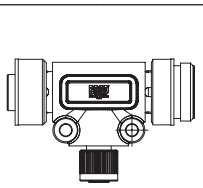
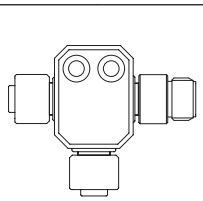
Mechanical

Connector Face: Micro-Change—Nylon 6/6
Mini-Change—PVC
Molded Body: PVC
Coupling Nut: Zinc diecast with black epoxy coat, optional stainless Steel type 303 Nickel-plated Brass
Outside Diameter: Thin—0.27" (6.9mm)
Thin-Flex—0.30" (12.2mm)

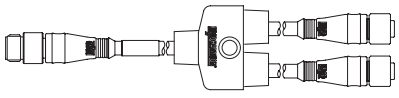
Environmental

Protection: IP67

Tee

Configuration										
	Standard Bus Drop with Power Diagnostics		Bus Drop Wye		Mini-Change Drop		Bus Drop Micro		Micro-Bus Drop	
	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
Right	DN3020-PM-1	130035-0061	DN3200	130035-0071	DN3020	130035-0057			MICT555	130035-0090
Back							DND3020	130039-0341		
Left	DN3020-PM-3	130035-0060								

Splitter



Male-Female/Female	
Old Part No.	Order No.
DNYG001	130039-0396

Tee Gender Configuration Chart

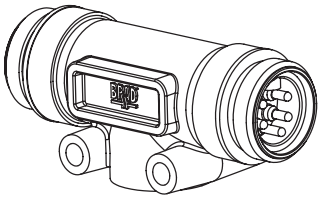
Old Part No.	Order No.	Left Trunk Connection	Right Trunk Connection	Drop Connection
DN3020PM-1	130035-0060	Male	Female	Female
DN3020PM-3	130035-0061	Female	Male	
DN3200	130035-0071			
DND3020	130035-0057			
MICT555	130035-0090			

* DeviceNet is a trademark of Open DeviceNet Vendor Association (ODVA)

DeviceNet* Trunk Gender Changer

130035/130039

Mini-Change® Connection



Features and Benefits

- Phosphor bronze contacts for greatest reliability
- Change connection interface from male to female or vice-versa
- Female-to-Male, Straight or 90˚ versions
- Right angle version specially designed for tight spaces

Electrical

Voltage: 50V
Current: 8.0A
Contact Material: Phosphor Bronze alloy
Contact Plating: Gold over Nickel

Mechanical

Connector Face: Thermoplastic Elastomer
Molded Body: Thermoplastic Elastomer
Coupling Nut: Zinc diecast, black E-Coat—Stainless Steel, Nickel-plated Brass optional

Environmental

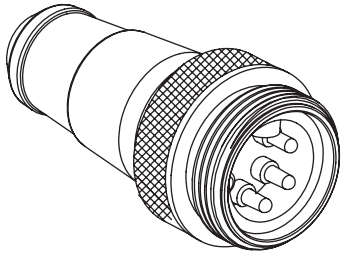
Protection: IP67

Male Straight/Male		Female Straight/Female		Female/Male 90°	
Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
115060A	130035-0015	115010A	130039-0351	115032A	130035-0013

* DeviceNet is a trademark of Open DeviceNet Vendor Association (ODVA)

DeviceNet* Termination Resistor

130039



Features and Benefits

- Phosphor bronze contacts for greatest reliability
- Diagnostics versions indicate power connection and correct polarity
- Used to terminate end of data line
- Trunk and drop versions
- LED diagnostic versions

Electrical

Voltage: 50V
Current: Mini-Change®—8.0A
Micro-Change®—4.0A
Contact Material: Phosphor Bronze Alloy
Contact Plating: Gold over Copper Alloy
LED: Green—Proper polarity
Red—Improper polarity

Mechanical

Connector Face: Mini-Change: PVC
Micro-Change: Nylon
Molded Body: Diagnostic—Clear PVC
Standard—Gray PVC
Coupling Nut: Zinc diecast, black E-Coat optional
302 stainless

Environmental

Protection: IP67

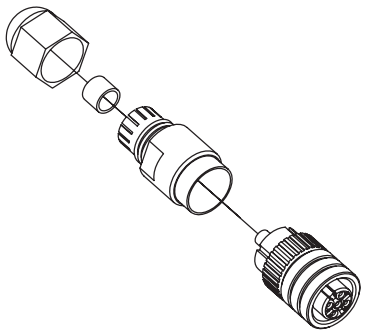
Option	Trunk (Mini-Change Connection)				Drop (Micro-Change (M12) Connection)			
	Male		Female		Male		Female	
	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
Standard	DN100	130039-0370	DN150	130039-0376	DND100	130039-0382	DND150	130039-0385
with LED	DN100L	130039-0371	DN150L	130039-0072				
Jumpered					DND101	130039-0125	DND151	130039-0386

Bus Extender	
Old Part No.	Order No.
DNETEXT-C	130039-0389

* DeviceNet is a trademark of Open DeviceNet Vendor Association (ODVA)

DeviceNet* Mini-Change® and Micro-Change® (M12) Field Attachable Connector

130034



Features and Benefits

- Accepts a wide range of DeviceNet cables for maximum installation flexibility
- Field termination for specific length or repair
- Internal and external threads
- Color-coded screw terminators make for error free field installation

Mini-Change® DeviceNet Field Attachable

Reference Information
CSA File No.: LR6837

Electrical
Voltage: 600V AC/DC
Current: 8.0A

Mechanical
Connector Face: Polyurethane
Connector Body: Polyamide Pag
Contact: Gold-plated Brass
Coupling Nut: Nickel-plated Brass
Grommet: Neoprene
Cable Range OD: 0.20-0.48" (5.0-12.0mm)
Acceptable Cable Types: Thick, thin, mid
Acceptable Wire Gauges: #24 AWG (0.25mm^2) to #15 AWG (2.0mm^2)
Color Coding: Per ODVA Standards

Environmental
Protection: IP67

Micro-Change® (M12) DeviceNet Field Attachable

Reference Information
CSA File No.: LR6835

Electrical
Voltage Rating: 36V DC
Current: 4.0A

Mechanical
Connector Face: Polyamide
Molded Body: Polyamide
Contact: Silver-plated Brass
Coupling Nut: Nickle-plated Brass
Grommet: Nitrite rubber
Cable Range OD: 0.16 to 32" OD (4.1 to 8.1mm)
Acceptable Cable Types: Thin, Thin-Flex, Thin-600V
Color Coding: Per DNET standards

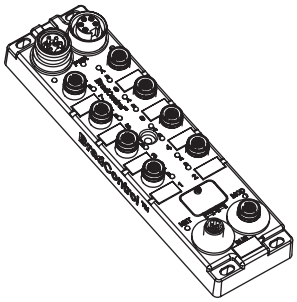
Environmental
Protection: IP67

Trunk (Mini-Change® Connection)				Drop (Micro-Change® (M12) Connection)			
Female Straight		Male Straight		Female Straight		Male Straight	
Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
1A5000-34DN	130034-0005	1A5006-34DN	130034-0006	8A5000-32DN	130034-0007	8A5006-32DN	130034-0008

* DeviceNet is a trademark of Open DeviceNet Vendor Association (ODVA)

PROFIBUS* I/O Module

112038



Features and Benefits

- Accepts both M12 threaded and Ultra-Lock®
- Compact
  - 30mm wide package size
  - 4 ports, M12 Ultra-Lock technology
  - Speed: 9.6 Kbps to 12 Mbps
  - Slave DP-V0
- Classic
  - 60mm wide package size
  - 8 ports, M12 Ultra-Lock technology
  - Speed: 9.6 Kbps to 12 Mbps
  - Slave DP-V0

Reference

EMC: IEC 61000-6-2
Protection: IEC IP67 according to IEC 60529
Vibration: IEC 60068-2-6 conformance
Approvals: CE, UL, CUL and PNO certification

Compact

Physical

I/O Configurations:
8 input
4 inputs/4 outputs
8 outputs
6 inputs/2 outputs
I/O Connectors:
5-pole female M12 BradConnectivity™ Ultra-Lock or 3-pole female threaded M8 connectors
Bus Connectors:
Bus in: Male reverse keyway M12 5-pole, B-coded
Bus out: Female reverse keyway M12 5-pole, B-coded BradConnectivity Ultra-Lock
Power Connectors:
Power in: Male Micro-Change® M12 5-pole
Address Settings:
1-99 by rotary switches;
1-126 by set_slave_address command
Input Type:
Dry contact, PNP or NPN
Housing Dimensions:
30 x 175 x 20mm (1.18 x 6.89 x 0.78")
Mounting Dimensions:
23mm (0.91") horizontal on centers,
168mm (6.61") vertical centers
Storage Temperature: -25 to 90˚ C (-13 to 194˚ F)
RH Operating: 5 to 95% non-condensing
Shock: 10G, 11ms, 3 axis

Electrical

External Power Requirements:
Module and input power: 24V DC, device current and module Output power: 24V DC (13 to 28V), 4.0A max. per module
Baud Rate Settings: Auto baud, all Profibus® baud rates up to 12 MBaud
Input Delay: 3ms
Input Device Supply: 140mA per port at 25˚ C
Output Load Current:
Sourcing, 1.4A per channel max., 4.0A per module max.
Input Signal Voltage: "0": -2 to 7V/ "1": 9 to 30V
Output Voltage: Auxiliary power value: 1V

Classic

Physical

I/O Configurations:
16 inputs
12 inputs/4 outputs
14 inputs/2 outputs
8 inputs/8 outputs
5-pole female M12 BradConnectivity Ultra-Lock allows 2 input or 2 output channels per connector
Bus Connectors:
Bus in: Male reverse-key M12 5-pole, B-coded
Bus out: Female reverse-key M12 5-pole, B-coded
Power Connectors:
Power in: Male Mini-Change® 5-pole
Power out: Female Mini-Change 5-pole
Address Settings:
1-99 by rotary switches (0 = factory default of 126);
1-126 by set_slave_address command
Input Type:
Compatible with dry contact and PNP or NPN 3-wire switches; electronic short circuit protection
Housing Dimensions:
60 x 220 x 20mm (2.36 x 8.66 x 0.78")
Mounting Dimensions:
37.5mm (1.48") horizontal on centers,
210mm (8.27") vertical on centers

Mechanical

Maximum Switching Frequency: 200 Hz

Electrical

External Power Requirements:
Module and input power: 24V DC, device current and module
Output power: 24V DC (13 to 28V), 8.0A max. per module
Baud Rate Settings: Auto baud, all Profibus® baud rates up to 12 MBaud
Input Delay: 3ms
Input Device Supply: 140mA per port at 25˚ C
Output Load Current:
2.0A per channel max., electronic short circuit protection
Input Signal Voltage: "0": -2 to 5V/ "1": 10 to 28V
Output Voltage: Supply value less 1V

LED Indicators

Electrical

Output Power (O):
Green—External supply present
Input/Output:
Compact—4 port: 1A to 4B
8 port: 1 to 8
Green: input/output on
Red: input/output fault
Classic—M12: 1A to 8B
Green: input/output on
Red: input/output fault

Physical

Profibus Network Status (NET):
Green—Running
Red—Device not configured
I/O Module Diagnostics:
Off—No fault
Red—Fault
Module and Input Power (I):
Green—External supply present

Compact Threaded and Ultra-Lock (M12) Connection

Ports	Old Part No.	Order No.	Input Interface	Description
4	TBDPB-480N-B8U	112038-0009	NPN	8 input
	TBDPB-480P-B8U	112038-0011	PNP	
	TBDPB-462N-B8U	112038-0007	NPN	6 input/2 output
	TBDPB-462P-B8U	112038-0008	PNP	
	TBDPB-444N-B8U	112038-0005	NPN	4 input/4 output
	TBDPB-444P-B8U	112038-0006	PNP	
	TBDPB-408P-B8U	112038-0003	PNP	8 output

Compact Threaded and Ultra-Lock (M8) Connection

Ports	Old Part No.	Order No.	Input Interface	Description
8	TBDPB-880N-B84	112038-0019	NPN	8 input
	TBDPB-880P-B84	112038-0021	PNP	
	TBDPB-862N-B84	112038-0017	NPN	6 input/2 output
	TBDPB-862P-B84	112038-0018	PNP	
	TBDPB-844N-B84	112038-0015	NPN	4 input/4 output
	TBDPB-844P-B84	112038-0016	PNP	
	TBDPB-808P-B84	112038-0014	PNP	8 output

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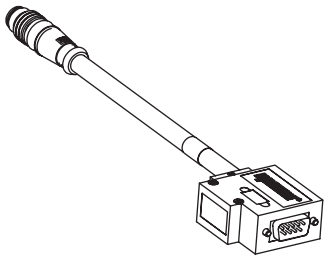
Classic Threaded and Ultra-Lock (M12) Connection

Ports	Old Part No.	Order No.	Input Interface	Description
8	TCDPB-8D0N-B1U	112038-0030	NPN	16 input
	TCDPB-8D0P-B1U	112038-0031	PNP	
	TCDPB-8C2N-B1U	112038-0028	NPN	14 input/2 output
	TCDPB-8C2P-B1U	112038-0029	PNP	
	TCDPB-8B4N-B1U	112038-0026	NPN	12 input/4 output
	TCDPB-8B4P-B1U	112038-0027	PNP	
	TCDPB-888N-B1U	112038-0024	NPN	8 input/8 output
	TCDPB-888P-B1U	112038-0025	PNP	

PROFIBUS* Double-Ended and D-Sub Cordset

120098



Features and Benefits (Double-Ended Cordset)

- Double ended straight and 90˚
- Used in a variety of configurations where a complete daisy-chain plug-and-play solution is desired

Features and Benefits (D-Sub Cordset)

- Shielded D-Sub connector maintains signal integrity in noisy environments
- D-Sub includes termination switch for field installation flexibility
- Plug and play connection between PROFIBUS interface cards and modules
- D-Sub to single or dual ended M12
- Horizontal, vertical, straight or 90˚ configurations
- Standard and application specific lengths

Physical

Micro-Change Connector

Connector Face: Nylon 6/6
Molded Body: PUR
Coupling Nut: Nickel-plated Brass (360˚ Shielded)

9-pin D-Sub Connector

Material: ABS

Environmental

Micro-Change Connector

Protection: IP67, NEMA 6

9-pin D-Sub Connector

Protection: IP40

Cable

Outside Diameter: 8 ± 0.2mm

Cable Construction

Jacket Material: PUR
Inner Material Insulation: PE insulation
Shield Type: PETP/AV foil, Tinned Copper braid 65%
Conductor: Twisted pair 24 AWG

Cable Flex Information

Torsion: Survived more than 2 million cycles at 360˚ over 1m
C-Track: Survived more than 3 million cycles at acceleration of 10m/s^2 and process speed of 5m/s
Bend Radius: 7.5 x cable diameter (static)

Electrical

Voltage: 250V AC/DC
Current: 4A

D-Sub (9-pin) to D-Sub (9-pin)

Configuration	Horizontal		Vertical		Single-Ended	
	Old Part Number	Order Number	Old Part Number	Order Number	Old Part Number	Order Number
Horizontal	MM3S60PP4M010	120098-0198	MM3S62PP4M010	120098-0200	M03S06PP4M010	120098-0202
	MM3S60PP4M050	120098-0118	MM3S62PP4M050	120098-0201	M03S06PP4M050	120098-0124
Vertical	MP3S62PP4M010	120098-0199				
	MP3S62PP4M050	120098-0153				
Vertical with Programming Port					P03S07PP4M010	120098-0203
					P03S07PP4M050	120098-0224

D-Sub (9-pin) to Dual D-Sub (9-pin)

Configuration	Horizontal		Vertical		Horizontal/Vertical	
	Old Part Number	Order Number	Old Part Number	Order Number	Old Part Number	Order Number
Horizontal	MM3G60PP4M010	120098-0204	MM3G61PP4M010	120098-0207	MM3G70PP4M010	120098-0211
	MM3G60PP4M050	120098-0205	MM3G61PP4M050	120098-0208	MM3G70PP4M050	120098-0212
Vertical with Programming Port	MP3G62PP4M010	120098-0206	MP3G63PP4M010	120098-0209	MP3G72PP4M010	120098-0213
	MP3G62PP4M050	120098-0154	MP3G63PP4M050	120098-0210	MP3G72PP4M050	120098-0214

D-Sub (9-pin) to Micro-Change® (M12) Cordsets

Single Reverse Keyway (end of segment) Module Connection									
Configuration	Cable Length (m)	Male Straight		Male 90˚		Female Straight		Female 90˚	
		Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
Horizontal	1.0	BM5S60PP4M010	120098-0062	BM5S61PP4M010	120098-0223	BM5S30PP4M010	120098-0155	BM5S31PP4M010	120098-0184
	5.0	BM5S60PP4M050	120098-0064	BM5S61PP4M050	120098-0157	BM5S30PP4M050	120098-0055	BM5S31PP4M050	120098-0185
Vertical with Programming Port	1.0	BP5S62PP4M010	120098-0079	BP5S63PP4M010	120098-0181	BP5S32PP4M010	120098-0183	BP5S33PP4M010	120098-0077
	5.0	BP5S62PP4M050	120098-0081	BP5S63PP4M050	120098-0182	BP5S32PP4M050	120098-0075	BP5S33PP4M050	120098-0161

D-Sub (9-pin) to Dual Micro-Change® (M12) Cordsets

Dual Reverse Keyway (Daisy chain) Module Connection											
Configuration	Cable Length (m)	Male Straight		Male 90˚		Female Straight		Female 90˚		Male Straight/Female Straight	
		Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
Horizontal	1.0	BM5G60PP4M010	120098-0150	BM5G61PP4M010	120098-0151	BM5G30PP4M010	120098-0190	BM5G31PP4M010	120098-0194	BM5G70PP4M010	120098-0048
	5.0	BM5G60PP4M050	120098-0045	BM5G61PP4M050	120098-0187	BM5G30PP4M050	120098-0191	BM5G31PP4M050	120098-0195	BM5G70PP4M050	120098-0180
Vertical	1.0	BM5G62PP4M010	120098-0186	BM5G63PP4M010	120098-0188	BM5G32PP4M010	120098-0192	BM5G33PP4M010	120098-0196	BM5G72PP4M010	120098-0051
	5.0	BM5G62PP4M050	120098-0047	BM5G63PP4M050	120098-0189	BM5G32PP4M050	120098-0193	BM5G33PP4M050	120098-0197	BM5G72PP4M050	120098-0053

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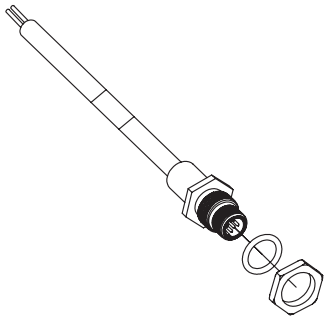
PROFIBUS* Receptacle

120099



Features and Benefits
- Used in control panels and junction boxes
- Epoxy potted for rugged industrial environments
- Male and female configurations
- Connects the external bus with an enclosure
- Front panel or back panel mount
- Bulkhead feed-through
- Wire or cable lead

Electrical
Voltage: 250V AC/DC
Current: 4.0A

Mechanical
Shell: Nickel-Plated Brass
Insert: Nylon 6/6
Conductors: Receptacles—#22 AWG PVC
Bulkhead Feed-Through—Solid Phosphor Bronze
O-Ring: Nitrile rubber

Environmental
Protection: IP67

Cable Construction
Jacket Material: PUR
Inner Material Insulation: PE insulation
Shield Type: PETP/AV foil, Tinned Copper braid 65%
Conductor: Twisted pair 24 AWG

Cable Flex Information
Torsion: Survived more than 2 million cycles at 360° over 1m
C-Track: Survived more than 3 million cycles at acceleration of 10m/s^2 and process speed up to 5m/s
Bend Radius: 7.5 x cable diameter (static)

Cable
Outside Diameter: 8 ± 0.2mm

Data Line Micro-Change® (M12)

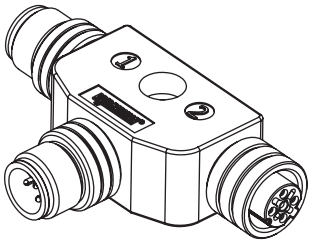
Mounting Style	Cable Length (m)	Male Straight		Female Straight	
		Old Part No.	Order No.	Old Part No.	Order No.
Back Panel	1.0	BR5U76PP4M0103	120099-0013	BR5U70PP4M0103	120099-0005
	5.0	BR5U76PP4M0503	120099-0019	BR5U70PP4M0503	120099-0010

Trunk

Mounting Style	Wire Length	Male Straight		Female Straight		Horizontal/Vertical	
		Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
Front Panel	3"	81688-030	120099-0025	81689-030	120099-0024	BR5L30	120099-0001

PROFIBUS Terminator and Tee

120101/120102



Features and Benefits
- Shielded to reduce RFI/EMI and improve signal integrity
- Male reverse key Micro-Change® terminator
- M12 threads
- Provides quick disconnection of bus line
- Allows disconnection of node without shutting down the network
- Used with remote activity I/O modules

Electrical
Voltage: Data Line Tee—30V AC/36V DC
Terminators—250V AC/DC
Current: 4A

Mechanical
Connector Face: Nylon 6/6
Molded Body: PVC
O-Ring: Data Line Tee—Viton
Terminators—Nitrile number
Coupling Nuts: Nickel-plated Brass
Shielding Sleeves: Nickel-plated Brass

Environmental
Protection: Data Line Tee—IP67 (IEC 605290)
Terminators—IP67

General
Coupling nuts, pin 5 and PCB all connected to provide full shielding; Reverse key for Profibus circuitry includes line balancing inductors

Data Line Micro-Change® (M12) Tee

Old Part No.	Order No.
PDTS01	120101-0002

Micro-Change (M12) Terminator

Old Part No.	Order No.
B05S06	120102-0002

Tee Gender Configuration Chart

Male	Female	Male
Bus in	Bus Out	Drop Bus

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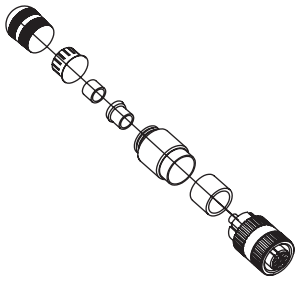
PROFIBUS*
Field-Attachable Connector

120100/120103



Features and Benefits

- Shielded to reduce RFI/EMI and improve signal integrity
- D-Sub IDC with or without built-in diagnostics
- Male and female configurations
- Field termination for specific length or repair
- Easy field installation of quick-disconnect design
- D-Sub horizontal or vertical

Mirco-Change® (M12)

Electrical

Voltage: 250V AC/DC
Current: 4.0A

Mechanical

Connector Face: Polyamide
Body: Nickel-plated Brass
Contact: Silver-plated Brass
Coupling Nut: Nickel-plated Brass
Grommet: Nitrile rubber
Conductor Size: 22 AWG

Environmental

Protection: IP67

D-Sub

Electrical

Voltage: 30V AC/DC
Current: 4.0A

Mechanical

Housing: Diecast Zinc
Housing Material: ABS
Cable Diameter: 8.0mm
Cable Connection: IDC technology
Terminating Resistor: Yes, externally switch selectable

Environmental

Protection: IP20

Micro-Change® (M12)

Male Straight		Female Straight	
Old Part No.	**Order No.**	**Old Part No.**	**Order No.**
BA5S06-32	120100-0002	BA5S00-32	120100-0001

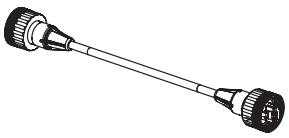
D-Sub

	Vertical		Horizontal		45°	
	Old Part No.	**Order No.**	**Old Part No.**	**Order No.**	**Old Part No.**	**Order No.**
With Diagnostics	PA9D01-42	120103-0001	MA9D00-42	120103-5001	PA9D0B-42	120103-0003
Without Diagnostics	PA9S01-42	120103-0005				

* PROFIBUS is a trademark of PROFIBUS International

Ethernet Cordset RJ45 Threaded

130050
Single and Double-Ended



Features and Benefits
- Overmolded threaded connectors for secure, robust IP67 connection between Ethernet nodes
- First IP67 industrial Ethernet connector
- Category 5e compliant
- Achieves IEC IP67 rated seal when mated with a RJ-Lnxx® receptacle

Unshielded Stranded PVC

Physical
Cable: Stranded
Conductors: #24 AWG stranded tinned Copper
Insulation: Polyolefin 0.037" (0.94mm) nominal diameter
Pair: 2 insulated conductors twisted together, lay lengths varied between pairs to minimize cross talk
Core: 4 pairs cabled together
Binder: Polyester tape, 20% overlay minimum
Jacket: PVC 0.025" (0.635mm) nominal thickness
Diameter: 0.220" (5.588mm) nominal
Wiring Sequence: 568B

Electrical
Cable: Stranded
Capacitance: 15 pF/FT
Velocity of Propagation: 70% nominal
Conductor DC Resistance: 9.0/100 meter max.
Impedence: 100 ±15 ohms
Delay Skew: 10 nS/100 meter typical,
25 nS/100 meter max.
TIA/EIA Rating: Category 5E

Frequency (MHz)	Attenuation (dB/100 M max.)	Next (dB min)
1	1.9	76
4	3.9	72
16	7.9	61
20	9.0	60
31.25	11.0	55
62.5	15.9	53
100	20.7	50

Shielded Solid PUR

Physical
Cable: Solid core
Conductors: #24 AWG solid bare Copper, 0.020" (0.510mm)
Insulation: 0.009" (0.229mm) of cellular polyethylene, 0.04" (1.0mm) nominal diameter
Pair: 2 insulated conductors twisted together, lay lengths varied between pairs to minimize cross talk
Core: 4 pairs cabled together
Binder: Polyester tape, 20% overlay minimum
Shield: Aluminum/polyester tape, 20% overlay minimum
Drain Wire: #24 AWG stranded (7/32") Tin-plated Copper
Jacket: Black polyurethane 0.025" (.635mm) nominal thickness
Diameter: 0.245" (6.223mm) nominal
Wiring Sequence: 568B

Electrical
Cable: Solid
Capacitance: 5.6 nF/100 meter max.
Velocity of Propagation: 72% nominal
Conductor DC Resistance: 9.38/100 meter max.
Impedence: 100 ±15 ohms
Delay Skew: 45 nS/100 meter max.
TIA/EIA Rating: Category 5E

Frequency (MHz)	Attenuation (dB/100 M max.)	Next (dB min)
1	2.0	65.3
4	4.1	56.3
10	6.5	50.3
16	8.2	47.3
20	9.3	45.8
31.25	11.7	42.9
62.5	17.0	38.4
100	22.0	35.3

Shielded Stranded PUR

Physical
Cable: Proplex™ Kevlar wrapped
Conductors: #26 AWG stranded bare copper
Insulation: Color coded HFFR, halogen free, 0.035" (0.90mm) nominal diameter
Pair: Cabled with Kevlar strength member and tape wrapped
Core: 4 pairs cabled together
Shield: Inner–Aluminum mylar,100% coverage
Outer—Tinned Copper
Braid—80% coverage
Jacket: Black urethane 0.059" (1.5mm) nominal thickness
Diameter: 0.287" (7.3mm) nominal
Wiring Sequence: 568B

Electrical
Cable: Proplex Kevlar wrapped
Capacitance: 4.6 nF/100 meters
Propagation Delay: 5.2 nS/M maximum
Conductor DC Resistance: 15/100 meter max.
Impedence: 100 ±15 ohms
Delay Skew: 20 nS/100 meter typical,
25 nS/100 meter max.
TIA/EIA Rating: Category 5E

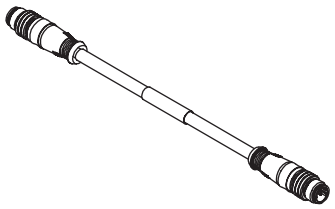
Frequency (MHz)	Attenuation (dB/100 M max.)	Next (dB min)
1	3.15	62
4	6.45	53
16	12.3	44
20	13.8	42
31.25	17.7	40
62.5	25.6	35
100	33.0	32

Cable Type	Length (m)	Single-Ended		Double-Ended			
		Industrial Male		Industrial Male/Industrial Male		Male Standard/Male Standard	
		Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
Unshielded Stranded PVC	1.0	ENQ3105M010	130050-0506	ENQ3115M010	130050-0251	ENQ3335M010	130050-0507
	5.0	ENQ3105M050	130050-0250	ENQ3115M050	130050-0255	ENQ3335M050	130050-0273
Shielded Solid PUR	1.0	ENS3105M010	130050-0408	ENS3115M010	130050-0412	ENS3335M010	130050-0503
	5.0	ENS3105M050	130050-0502	ENS3115M050	130050-0416	ENS3335M050	130050-0437
Shielded Stranded PUR (Proplex™) Kevlar Wrapped	1.0	ENP3105M010	130050-0162	ENP3115M010	130050-0170	ENP3335M010	130050-0457
	5.0	ENP3105M050	130050-0166	ENP3115M050	130050-0174	ENP3335M050	130050-0193

Micro-Change® (M12) Ethernet Cordset

130048

Single and Double-Ended



Features and Benefits

- For connecting Micro-Change (M12) Ethernet system components in harsh industrial environments
- Category 5e compliant
- IP67 rated, perfect for harsh industrial environments
- D-coded to ensure proper alignment/mating

Unshielded PVC

Mechanical

Cable Conductors: 4/24 AWG stranded tinned wire
Outside Diameter (Nom): 5.60mm
Jacket Material: Teal PVC
Inner Material Insulation: HDPE
Certification: UL CMR

Environmental

Protection: IP67

Shielded PVC

Electrical

TIA/EIA Rating: CAT5E
UL: CL2

Mechanical

Connector Face: PUR
Molded Body: Black PUR
Coupling Nut: Nickel-plated Brass
Cable Conductors: 4/24 AWG stranded tinned wire
Outside Diameter (Nom): 6.10mm
Jacket Material: Teal PVC
Inner Material Insulation: Foamed Polypropylene
Certification: UL CMR
Shield Type: Foil shield: 100% coverage, 25% min. overlap

Environmental

Protection: IP67

Shielded PUR

Mechanical

Cable Conductors: 4/22 AWG stranded tinned wire
Outside Diameter (Nom): 6.50mm
Jacket Material: Green PUR
Inner Material Insulation: FRNC
Certification: UL listed CMX
Shield Type: Foil—100% coverage
Braid—85% coverage

Environmental

Protection: IP67, sun/oil resistant

Single-Ended

Cable Type	Length (m)	Male Straight		Male 90°	
		Old Part No.	Order No.	Old Part No.	Order No.
Unshielded/Stranded Conductor/PVC Jacket	1.0	E10A00603M010	130048-0038	E10A00703M010	130048-0062
	5.0	E10A00603M050	130048-0040	E10A00703M050	130048-0064
Shielded/Stranded Conductor/PVC Jacket	1.0	E10A00610M010	130048-0046	E10A00710M010	130048-0070
	5.0	E10A00610M050	130048-0048	E10A00710M050	130048-0072
Shielded/Stranded Conductor/PUR Jacket	1.0	E10A00615M010	130048-0054	E10A00715M010	130048-0078
	5.0	E10A00615M050	130048-0056	E10A00715M050	130048-0080

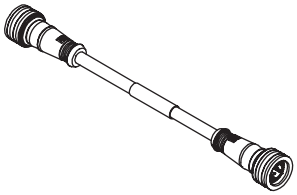
Double-Ended

Cable Type	Male Straight/Male Straight			Male Straight/Male 90°		Male 90°/Male 90°		Female Straight/ Male Staight Crossover		Female Straight/Male RJ45	
	Length (m)	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.	Old Part No.	Order No.
Unshielded/Stranded Conductor/PVC Jacket	0.2							E11B03003M002	130048-0193		
	1.0	E11A06003M010	130048-0088	E11A06203M010	130048-0137	E11A06303M010	130048-0161			E16A03003M010	130048-0197
	5.0	E11A06003M050	130048-0090	E11A06203M050	130048-0139	E11A06303M050	130048-0164			E16A03003M050	130048-0200
Shielded/Stranded Conductor/PVC Jacket	0.2							E11B03015M002	130048-0195		
	1.0	E11A06015M010	130048-0122	E11A06215M010	130048-0153	E11A06315M010	130048-0179				
	5.0	E11A06015M050	130048-0126	E11A06215M050	130048-0155	E11A06315M050	130048-0183				
Shielded/Stranded Conductor/PUR Jacket	1.0	E11A06010M010	130048-0114	E11A06210M010	130048-0145	E11A06310M010	130048-0170				
	5.0	E11A06010M050	130048-0116	E11A06210M050	130048-0147	E11A06310M050	130048-0172				

Note: Other standard lengths available. Please contact Molex.

Ultra-Lock® (M12) Ethernet Cordset

120108/130048
Double-Ended



Features and Benefits

- All the same benefits as the threaded Ethernet Cordsets, but with the patented Ultra-Lock connection system connectors
- Plug and play solution for quick field installation
- Superior performance, higher reliability and reduce installation time

Unshielded PVC

Mechanical

Cable Conductors: 4/24 AWG stranded tinned wire
Outside Diameter (Nom): 5.60mm
Jacket Material: Teal PVC
Inner Material Insulation: HDPE
Certification: UL CMR

Environmental

Protection: IP67

Shielded PVC

Electrical

TIA/EIA Rating: CAT5E
UL: CL2

Mechanical

Connector Face: PUR
Molded Body: Black PUR
Coupling Nut: Nickel-plated Brass
Cable Conductors: 4/24 AWG stranded tinned wire
Outside Diameter (Nom): 6.10mm
Jacket Material: Teal PVC
Inner Material Insulation: Foamed Polypropylene
Certification: UL CMR
Shield Type: Foil shield: 100% coverage, 25% min. overlap

Environmental

Protection: IP67

Shielded PUR

Mechanical

Cable Conductors: 4/22 AWG stranded tinned wire
Outside Diameter (Nom): 6.50mm
Jacket Material: Green PUR
Inner Material Insulation: FRNC
Certification: UL listed CMX
Shield Type: Foil—100% coverage
Braid—85% coverage

Environmental

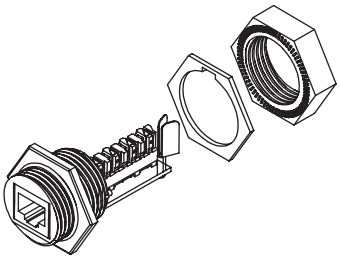
Protection: IP67, sun/oil resistant

Cable Type	Length (m)	Old Part No.	Order No.	Description
Unshielded PVC	1.0	EWWA06003M010	120108-0066	Male Straight/Male Straight
	5.0	EWWA06003M050	120108-0069	
	1.0	EWWA06203M010	120108-0074	Male Straight/Male 90˚
	5.0	EWWA06203M050	120108-0076	
	1.0	EWWA06303M010	120108-0082	Male 90˚/Male 90˚
	5.0	EWWA06303M050	120108-0084	
	0.2	E1WB03003M002	130048-0207	Threaded Female Straight/Male Straight Crossover
Shielded PVC	1.0	EWWA06015M010	120108-0042	Male Straight/Male Straight
	5.0	EWWA06015M050	120108-0044	
	1.0	EWWA06215M010	120108-0050	Male Straight/Male 90˚
	5.0	EWWA06215M050	120108-0052	
	1.0	EWWA06315M010	120108-0058	Male 90˚/Male 90˚
	5.0	EWWA06315M050	120108-0060	
	0.2	E1WB03015M002	130048-0209	Threaded Female Straight/Male Straight Crossover
Shielded PUR	1.0	EWWA06010M010	120108-0090	Male Straight/Male Straight
	5.0	EWWA06010M050	120108-0092	
	1.0	EWWA06210M010	120108-0098	Male Straight/Male 90˚
	5.0	EWWA06210M050	120108-0100	
	1.0	EWWA06310M010	120108-0106	Male 90˚/Male 90˚
	5.0	EWWA06310M050	120108-0108	
	0.2	E1WB03010M002	130048-0208	Threaded Female Straight/Male Straight Crossover

Note: Other standard lengths available. Please contact Molex.

Ethernet Receptacle RJ45 110 Punchdown

130053



Old Part No.	Order No.
ENDR2FB5	130053-0002

Features and Benefits

- Simple field termination of cable using a standard punchdown tool
- Category 5e compliant
- Can be used with TIA 568A or 568B wiring sequences
- Color-coded block simplifies wiring

Reference

TIA/EIA Rating: Category 5e compliant

Electrical

Voltage: 125V DC
Current: 1.5A

Mechanical

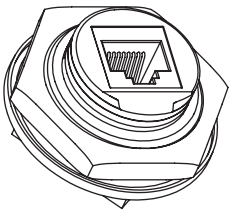
O-Ring Material: Viton
Insert Material: Acrylonitrile-Butadiene-Styrene (ABS)
Overmold Material: Polyurethane
Coupling Nut Material: Acrylonitrile-Butadiene-Styrene (ABS)
Shell Material: Acrylonitrile-Butadiene-Styrene (ABS)
Knockout Hole: 1.063"
Thread Size: UNC 1" - 14
Panel Thickness: With Gasket—0.125" max.
Without Gasket—0.187" max., 0.062" min.
Plating: RJ45 Jack—50µ Gold over 100µ Nickel
Return Loss: 5 dB at 100 MHZ

Environmental

Environmental Rating: IEC IP67

Ethernet Receptacle Direct PCB Mount

130053



Old Part No.	Order No.
ENPR1FF5	130053-0004

Features and Benefits

- Ideal for OEMs looking to incorporate a sealed, robust connection into their field device
- Category 5e compliant
- Short depths for space constrained applications
- Achieves IP67 rated seal when mated with an RJ-Lnxx cordset- but also compatible with commercial RJ45 patch cords

Reference

TIA/EIA Rating: Category 5e compliant

Electrical

Voltage: 125V DC
Current: 1.5A

Mechanical

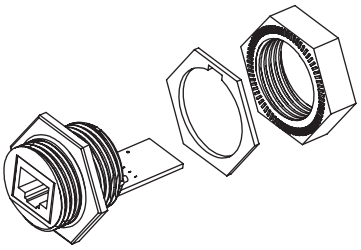
O-Ring Material: Viton
Insert Material: Acrylonitrile-Butadiene-Styrene (ABS)
Overmold Material: Polyurethane
Coupling Nut Material: Acrylonitrile-Butadiene-Styrene (ABS)
Shell Material: Acrylonitrile-Butadiene-Styrene (ABS)
Knockout Hole: 1.063"
Thread Size: UNC 1" - 14
Panel Thickness: With Gasket—0.125" max.
Without Gasket—0.187" max., 0.062" min.
Plating: RJ45 Jack—50µ Gold over 100µ Nickel
Return Loss: 5 dB at 100 MHZ

Environmental

Environmental Rating: IEC IP67

Ethernet Receptacle PC Board to Cable

130055



Old Part No.	Order No.
ENSR1FB5	130055-0016

Features and Benefits

- Highly flexible solution for OEMs looking to incorporate a sealed, robust receptacle into their field device or control panel
- Achieves IP67 rated seal when mated with an RJ-Lnxx cordset but also compatible with commercial RJ45 patch cords

Reference

TIA/EIA Rating: Not rated as additional customer termination is required

Electrical

Voltage: 125V DC
Current: 1.5A

Mechanical

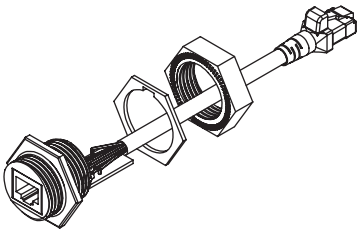
O-Ring Material: Viton
Insert Material: Acrylonitrile-Butadiene-Styrene (ABS)
Overmold Material: Polyurethane
Coupling Nut Material: Acrylonitrile-Butadiene-Styrene (ABS)
Shell Material: Acrylonitrile-Butadiene-Styrene (ABS)
Knockout Hole: 1.063"
Thread Size: UNC 1" - 14
Panel Thickness: With Gasket—0.125" max.
Without Gasket—0.187" max., 0.062" min.
RJ45 Jack Plating: 50µ Gold over 100µ of Nickel
Return Loss: 5 dB at 100 MHZ

Environmental

Environmental Rating: IEC IP67

Ethernet Receptacle Solder PCB and Cable Termination

130055



Old Part No.	Order No.	Description
ENSR1FB5M010	130055-0020	
ENSP1F5M010	130055-0005	Male RJ45

Features and Benefits

- Highly flexible solution for incorporating a sealed, robust receptacle into a field device or control panel, particularly when the Ethernet transreceiver is located some distance from the desired mounting point for the receptacle
- Achieves IEC IP67 rated seal when mated with an RJ-Lnxx cordset- but also compatible with commercial RJ45 patch cords

Reference

TIA/EIA Rating: Not rated as additional customer termination is required

Electrical

Voltage: 125V DC
Current: 1.5A

Mechanical

O-Ring Material: Viton
Insert Material: Acrylonitrile-Butadiene-Styrene (ABS)
Overmold Material: Polyurethane
Coupling Nut Material: Acrylonitrile-Butadiene-Styrene (ABS)
Shell Material: Acrylonitrile-Butadiene-Styrene (ABS)
Knockout Hole: 1.063"
Thread Size: UNC 1" - 14
Panel Thickness: With Gasket—0.125" max.
Without Gasket—0.187" max., 0.062" min.
RJ45 Jack Plating: 50µ Gold over 100µ of Nickel
Return Loss: 5 dB at 100 MHZ

Environmental

Environmental Rating: IEC IP67

Ultra-Lock® (M12) Ethernet Receptacle

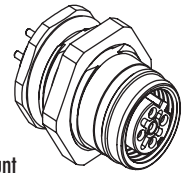
120109
4-Pole

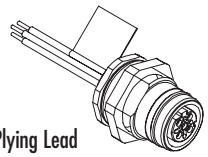
Features and Benefits
- Accepts both threaded and Ultra-Lock (M12) Cordsets
- Category 5e compliant
- IP67 rated, perfect for harsh industrial environments
- D-coded to ensure proper alignment/mating
- Board locking feature for more secure mounting

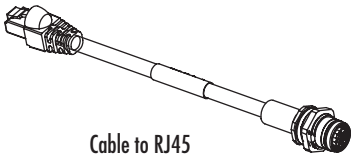
Electrical
Voltage: 215V
Current: 4.0A
TIA/EIA Rating: Category 5E

Mechanical
Shell: Nickel-Plated Brass
Insert: PUR
Conductors: Brass Gold plated/Bronze selective Gold plated
O-Ring: FPM (also called Viton or FKM)

Environmental
Protection: IP67, sun/oil resistant


PCB-Mount


With 0.5m Plying Lead


Cable to RJ45

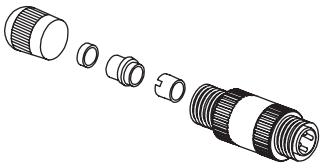
Old Part No.	Order No.	Description	Mount
ERWD2U70	120109-5005	PCB-Mount	Back-Panel Mount
ERWD2J30	120109-5003		Front-Panel Mount/PG9
ERWD2U30	120109-5004		Front-Panel Mount/M16
ERWAAU7000C050	120109-5002	With 0.5 M Flying Lead	Back-Panel Mount
ERWAAJ3000C050	120109-0004		Front-Panel Mount/PG9
ERWAAU3000C050	120109-5001		Front-Panel Mount/M16
ERWPAU7003M006	120109-0005	Cable to RJ45	Back-Panel Mount

Adapters

Old Part No.	Order No.	Description	Mount
ER1PADAPTER	130054-0009	Straight	Back-Panel Mount/ M16 to RJ45 Adapter
ER1PADAPTER90	130054-0010	90°	

Ethernet Field-Attachable Connector M12 Threaded

130047



Old Part No.	Order No.	Description
E1AS06-52	130047-0018	Male
E1AS00-52	130047-0017	Female

Features and Benefits

- Mirco-Change® (M12) field attachable connectors allow you to make field connections to bulk cable or single-ended cordsets
- Fast field termination without special tooling
- D-coded to ensure proper alignment/mating

Electrical

Voltage: 32V
Current: 4.0A

Mechanical

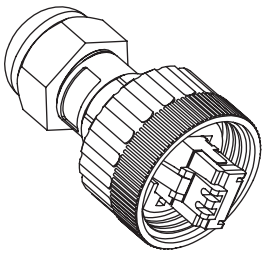
Coupling Nut: Zinc die-cast
Shell Material: Zinc die-cast
Contacts: Gold-plated Palladium Nickel
Cable: 22-24 AWG 0.25 to 0.34mm^2
Conductor Insulation: PVC
Conductor Diameter: 1.60 to 2.0mm
Conductor Cross-Section: 1.60 to 2.0mm
Cable Diameter: 5.50 to 7.20mm

Environmental

Protection: IP67

Ethernet Field-Attachable Connector RJ45 Threaded

130057



Old Part No.	Order No.	Description
ENQAM315	130057-0001	RJ45 Connector (for Stranded Core Cable)
ENSAM315	130057-0003	RJ45 Connector (for Solid Core Cable)

Features and Benefits

- Create an industrial Ethernet cordset in the field using standard crimp tools
- Achieves IEC IP67 rated seal when mated with an RJ-Lnxx receptacle

Mechanical

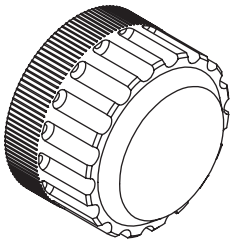
O-Ring Material: Viton
Insert Material: Acrylonitrile-Butadiene-Styrene (ABS)
Overmold Material: Polyurethane
Coupling Nut Material: Acrylonitrile-Butadiene-Styrene (ABS)
Shell Material: Acrylonitrile-Butadiene-Styrene (ABS)
Thread Size: UNC 1" - 14

Environmental

Environmental Rating: IEC IP67

Receptacle Closure Cap

130058



Old Part No.	Order No.	Rating
67-0300	130058-0035	IP65
67-0301	130058-0036	IP67

Features and Benefits

- Attaches to RJ-Lnxx receptacles to provide an IEC IP65 rated seal for instances when a cordset is not mated

Mechanical

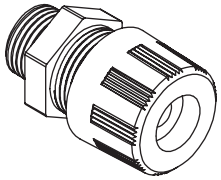
Material: Protective Cap—PA6 Nylon GF (UV Stabilized)
Lanyard—EPDM Rubber
Thread Size: UNC 1" - 14

Environmental

Environmental Rating: IEC IP65 (65-0300)
IEC IP67 (67-0300)

Woodhead® MAX-LOC® Strain Relief Cord Sealing Grip

130098/130099/130180



Features and Benefits

- Highly resistant to impact
- Totally corrosion resistant
- Non-metallic MAX-LOC cord sealing grip will not support combustion
- Suitable for use in wet locations so long as the listed sealing ring is used between box and fitting

Applications

- Electrical boxes
- Cabinets
- Push buttons
- Enclosures

Reference Information

UL File No.: E76954
CSA File No.: LR32159
NEMA:
Without O-Ring—NEMA 3R
With O-Ring—NEMA 6P

Mechanical

Stain Relief Force: 35 lb.

Physical

Body: Nylon
Fitting: UL 94V-2

Old Part No.	Order No.	Cable Diameter Range	Mounting Thread	Body Style	NEMA Rating
5398	130098-0024	0.075-0.135"	1/4" NPT	Straight Male	NEMA 3R
5400	130098-0025	0.135-0.200"			
5402	130098-0026	0.200-0.265"			
5500	130098-0027	0.125-0.187"	3/8" NPT		
5502	130098-0029	0.187-0.250"			
5504	130098-0031	0.250-0.312"			
5506	130098-0032	0.312-0.375"			
5508	130098-0034	0.375-0.437"			
5518	130098-0036	0.062-0.125"	1/2" NPT		
5520	130098-0041	0.125-0.187"			
5522	130098-0046	0.187-0.250"			
5524	130098-0052	0.250-0.312"			
5526	130098-0061	0.312-0.375"			
5528	130098-0069	0.375-0.437"			
5530	130098-0076	0.437-0.500"			
5532	130098-0082	0.500-0.562"			
5518W	130098-0038	0.062-0.125"		Straight Male with O-Ring	NEMA 6P
5520W	130098-0043	0.125-0.187"			
5522W	130098-0049	0.187-0.250"			
5524W	130098-0056	0.250-0.312"			
5526W	130098-0064	0.312-0.375"			
5528W	130098-0071	0.375-0.437"			
5530W	130098-0078	0.437-0.500"			
5532W	130098-0086	0.500-0.562"			
5620	130098-0235	0.187-1.250"	3/4" NPT	Straight Male	NEMA 3R
5622	130098-0236	0.250-0.375"			
5624	130098-0225	0.375-0.437"			
5536	130098-0096	0.437-0.562"			
5538	130098-0103	0.500-0.625"			
5540	130098-0112	0.562-0.687"			
5542	130098-0118	0.625-0.750"			
5620W	130098-0215	0.187-1.250"		Straight Male with O-Ring	NEMA 6P
5622W	130098-0221	0.250-0.375"			
5624W	130098-0227	0.375-0.437"			
5536W	130098-0099	0.437-0.562"			
5538W	130098-0107	0.500-0.625"			
5540W	130098-0114	0.562-0.687"			
5542W	130098-0121	0.625-0.750"			

Note: Additional thread sizes available, contact Molex

Multi-Hole Strain Relief

Straight Male		Straight Male with O-Ring		Cable Size	No. of Holes	Mounting Thread
Old Part No.	Order No.	Old Part No.	Order No.			
5594-007	130098-0202	5594-007W	130098-0203	0.156"	2, 3 or 4[1]	1/2" NPT
5594-008	130098-0204	5594-008W	130098-0205	0.187"	2, 3, 4, 5, 6 or 7[1]	
5594-004	130098-0195	5594-004W	130098-0196	0.225"	2, 3 or 4[1]	
5594-005	130098-0197	5594-005W	130098-0198	0.250"	2 or 3[1]	
5594-006	130098-0199	5594-006W	130098-0200	0.290"	2	

Note: Additional thread sizes available, contact Molex
[1] Indicates one or more holes are covered by a thin membrane which can easily be "poked" open if required.

O-Ring

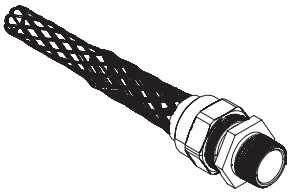
Old Part No.	Order No.	Mounting Thread
00-0820	130180-0314	1/2" NPT
00-0822	130180-0333	3/4" NPT

Lock Nut

Old Part No.	Order No.	Mounting Thread
5599	130099-0141	1/4" NPT
5600	130099-0142	3/8" NPT
5601	130099-0143	1/2" NPT
5602	130099-0144	3/4" NPT

Woodhead®
Strain Relief
Deluxe Cord Grip

130097/130099



Features and Benefits

- Stainless steel mesh with an aluminum body for corrosion resistance
- Offered in single/double weave construction to help absorb direct pull, to resist flexing and binding and to eliminate strain
- Recommended for indoor and outdoor use
- Suitable for use in hazardous locations per Class I, Div. 2, Class II, Div. 1 and 2, and Class III, Div. 1 and 2

Applications

- Pendant stations
- Processing equipment
- Hand tools
- Extension cord sets

Reference Information

UL File No.: E76954
CSA File No.: LR32159
Hazardous Locations:
Class I, Div. 2
Class II, Div. 1 and 2
Class III, Div. 1 and 2

Mechanical

Stain Relief Force: 35 lb

Physical

Thread: NPT
Body: Aluminum
Woven Mesh: Stainless Steel

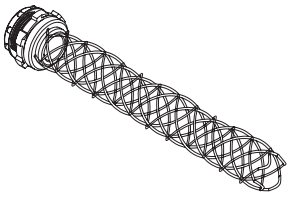
Straight Male		Cable Diameter Range	Mounting Thread
Old Part No.	Order No.		
36490	130097-0250	0.187-0.250"	3/8" NPT
36430	130097-0225	0.250-0.312"	
36431	130097-0226	0.312-0.375"	
36432	130097-0227	0.375-0.437"	
36250	130097-0160	0.187-0.250"	1/2" NPT
36251	130097-0161	0.250-0.375"	
36254	130097-0163	0.375-0.500"	
36256	130097-0165	0.500-0.625"	
36245	130097-0156	0.625-0.750"	
36246	130097-0157	0.750-0.875"	
36257	130097-0166	0.250-0.375"	3/4" NPT
36259	130097-0167	0.375-0.500"	
36261	130097-0168	0.500-0.625"	
36263	130097-0170	0.625-0.750"	
36248	130097-0158	0.750-0.875"	

Note: Additional thread sizes available, contact Molex

Lock Nut		Gasket		Mounting Thread
Old Part No.	Order No.	Old Part No.	Order No.	
5600	130099-0142	5610	130099-0148	3/8" NPT
5601	130099-0143	5611	130099-0149	1/2" NPT
5602	130099-0144	5612	130099-0150	3/4" NPT

Woodhead®
Strain Relief
Wide Range Dust Tight Grip

130097



Features and Benefits

- For indoor use
- Cost effective solution
- Dust tight, rubber membrane conforms to cable
- Includes insulted bushing

Applications

- Enclosures
- Power boxes
- Machine tools
- Power centers

Reference Information

UL File No.: E76954
CSA File No.: LR32159

Mechanical

Stain Relief Force: 35 lb

Physical

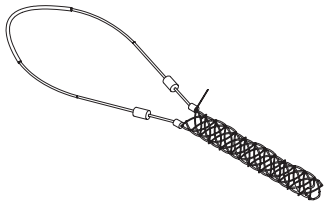
Thread: NPT
Body: Aluminum
Woven Mesh: Galvanized Steel

Straight Male		Cable Diameter Range	Mounting Thread
Old Part No.	Order No.		
36501	130097-0256	0.220-0.320"	1/2" NPT
36503	130097-0258	0.300-0.430"	
36505	130097-0260	0.400-0.540"	
36508	130097-0262	0.520-0.730"	3/4" NPT

Note: Additional thread sizes available, contact Molex

Woodhead®
Support Grip for Fiber Optics

130094
Closed Mesh, Single Eye



Features and Benefits
- Used to support Fiber Optic communication lines for temporary or permanent applications
- Designed to reduce stress on fragile cables in vertical or sloping runs
- Woven nonmagnetic tinned bronze wire
- Available in both single eye and locking bale configurations

Applications
- Vertical or sloping runs

Reference Information
CSA File No.: LR32159

Physical
Woven Mesh: Nonmagnetic Tinned Bronze wire

Old Part No.	Order No.	Cable Diameter Range	Bale Length	Mesh Length	Approximate Break Strength[1]
36670	130094-0522	0.180-0.250"	3"	1.7"	300 lbs
36671	130094-0523	0.230-0.320"	3"	2.5"	
36672	130094-0524	0.300-0.390"	4"	2.5"	
36673	130094-0525	0.370-0.480"	5"	4.0"	
36674	130094-0526	0.460-0.580"	6"	4.0"	400 lbs
36675	130094-0527	0.560-0.710"	7"	5.5"	600 lbs
36676	130094-0528	0.690-0.880"	8"	6.0"	800 lbs

Note: Additional thread sizes available, contact Molex
[1] To determine workload safety factor, divide approximate break strength by 10.

Woodhead®
Pulling Grip for Fiber Optics

130095
Closed Mesh, Rotating Eye

Features and Benefits
- Used for installation of fiber optic communications lines
- Easily installed on cables and reusable
- Rotating eye eliminates tortional stress between your pulling apparatus and your cable for long runs

Applications
- Underground
- Overhead
- Through conduit and/or enclosure-type pulls

Reference Information
CSA File No.: LR32159

Old Part No.	Order No.	Cable Diameter Range	Bale Length	Mesh Length	Approximate Break Strength[1]
36662	130095-0298	0.350-0.480"	5"	18"	2,200 lbs
36663	130095-0299	0.420-0.610"		21"	2,800 lbs
36664	130095-0300	0.530-0.740"		24"	3,300 lbs
36665	130095-0301	0.640-0.870"		27"	4,700 lbs

Note: Additional thread sizes available, contact Molex
[1] To determine workload safety factor, divide approximate break strength by 10.

Commercial Micro-D Connector

This commercial line of shielded Micro-D products with a 1.27mm (.050") pitch, offers an economical solution for commercial and industrial applications that require the density of a microminiature connector. The series is available in a right angle and vertical configuration, designed with a metal interface and grounding tabs for improved mechanical and electrical shield connection.

Also available is the cable receptacle, which has a "crimp and poke" configuration designed for hand or semi-automatic crimping. Our unique backshell design will maintain the integrity of the cable construction while the strain relief is crimped over the cable.

A wide variety of pre-made over-moulded cable assemblies are also available. Configurations include single-ended and double-end CMD, as well as CMD to standard D-sub connectors in 9, 15 and 25 circuit densities.

Features

- Right angle plug available in 9, 15, 18, 25, 30 and 50 circuits
- Vertical plug available in 9, 15 and 25 circuits
- Cable receptacle available in 9, 15 and 25 circuits
- LCP insulator, stamped metal shell
- Crimp and poke contacts on the cable receptacle for customer termination
- Current: 1.0A max.
- UL File No: E34763

Applications

- Commercial
- Computer I/O
- Data storage
- Telecomunications
- Industrial

Notes

Notes

www.molex.com/

Order No. 987650-3799 USA/KC/KC/2009.11
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