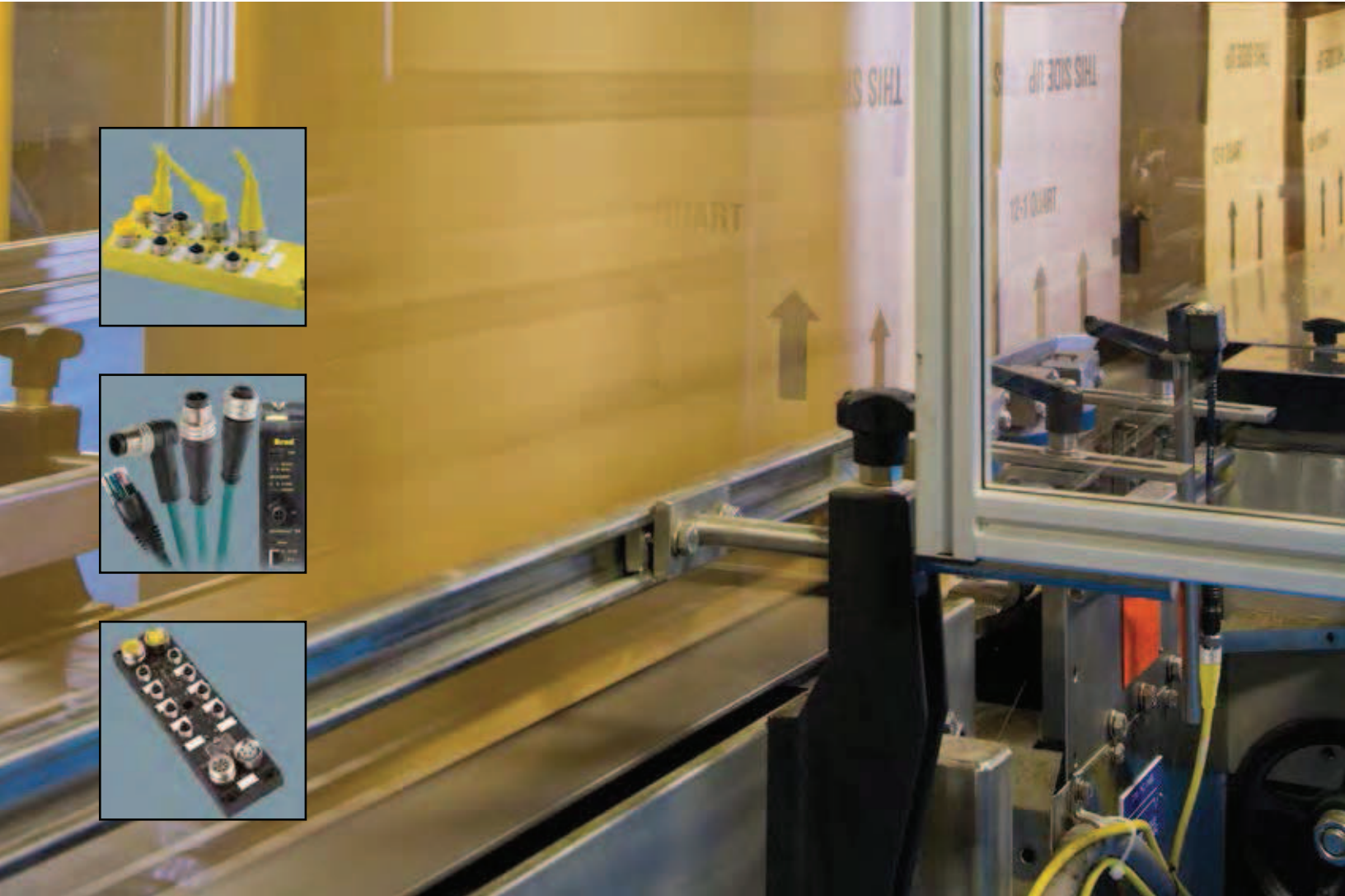


INDUSTRIAL AUTOMATION > Brad® IO DESIGNER GUIDE

North American Core Program





TOTAL SYSTEM SOLUTION >

Molex® is a leading one-source supplier of interconnect products. Our team of highly skilled experts is focused on the design, development and distribution of innovative product solutions that touch virtually every walk of life. The Molex® product portfolio is among the world's most extensive, with over 100,000 reliable products. Because our product line includes automation products for passive media, network media and power applications, Molex® can interconnect an entire automation infrastructure—one total system solution from a global company dedicated to meeting your total system needs. Molex® utilizes extensive worldwide resources to meet customer needs on a local, regional and global level. Molex® offers well-established sales, product development, manufacturing and logistics resources in Asia, Europe and the Americas.

The products you need...
when and where you need them.

The Brad® Core Program

- Molex® supports one of **the largest portfolios of connectivity and wiring solutions** in the industrial market for automotive manufacturing, automated machine tools, food and beverage, material handling and packaging, commercial vehicles and solar applications.
- The core program is part of this portfolio that is **focused on the standard requirements** related to automation in the North American market and highlights the active and passive IO modules and the related connectivity products for installation in harsh environments.
- Molex® commits to **supporting its customers** by helping them choose the right network as well as the most optimized infrastructure solution for their application. The Molex® tech support team also supports its customers in selecting corresponding parts from the complete portfolio or designing customer-dedicated solutions and prototyping.

Molex® has the right solution for your automation application!

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Instant Access to Product Specs



TABLE OF CONTENTS

ETHERNET

PROFINET IO Modules.....11
 EtherNet/IP IO Modules12
 Modbus TCP IO Modules13
 Ethernet Switches14
 PROFINET Infrastructure Components15
 EtherNet/IP Infrastructure Components16
 Ethernet Infrastructure Accessories17

PROFIBUS

PROFIBUS IO Modules..... 18-19
 PROFIBUS Infrastructure Components 20-21

DEVICENET

DeviceNet IO Modules 22-23
 DeviceNet Infrastructure Components 24-27

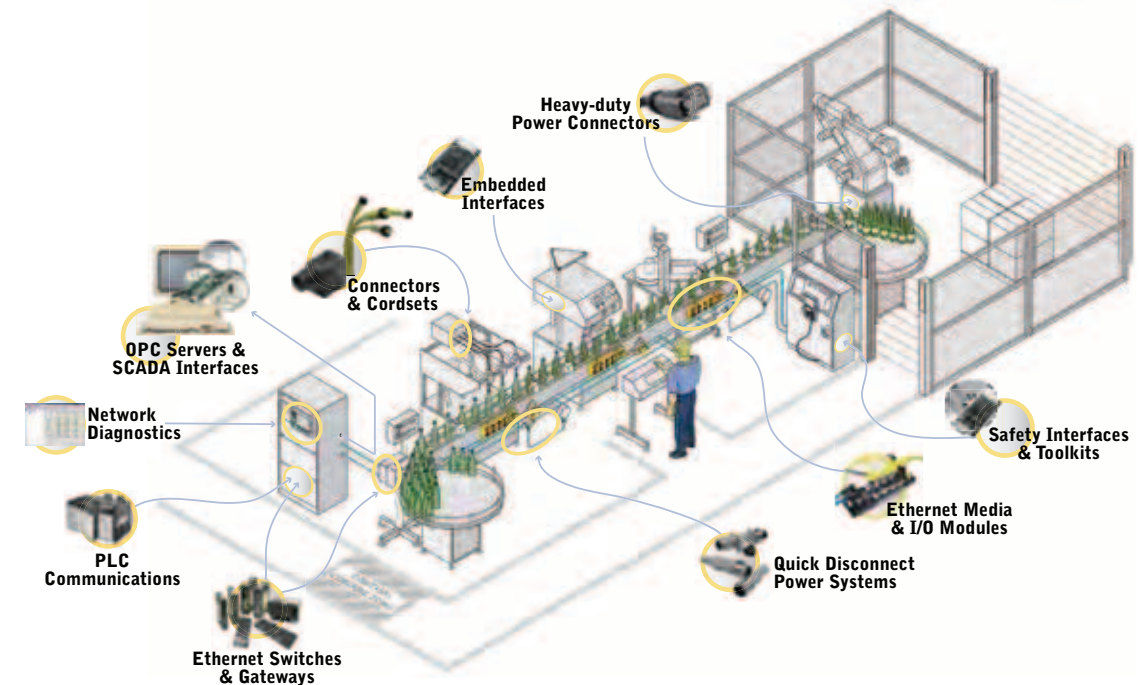
POWER

Mini-Change® 7/8" Auxiliary Power Infrastructure Components 28-33
 Micro-Change® M12 Auxiliary Power Infrastructure Components 34-35

PASSIVE MEDIA

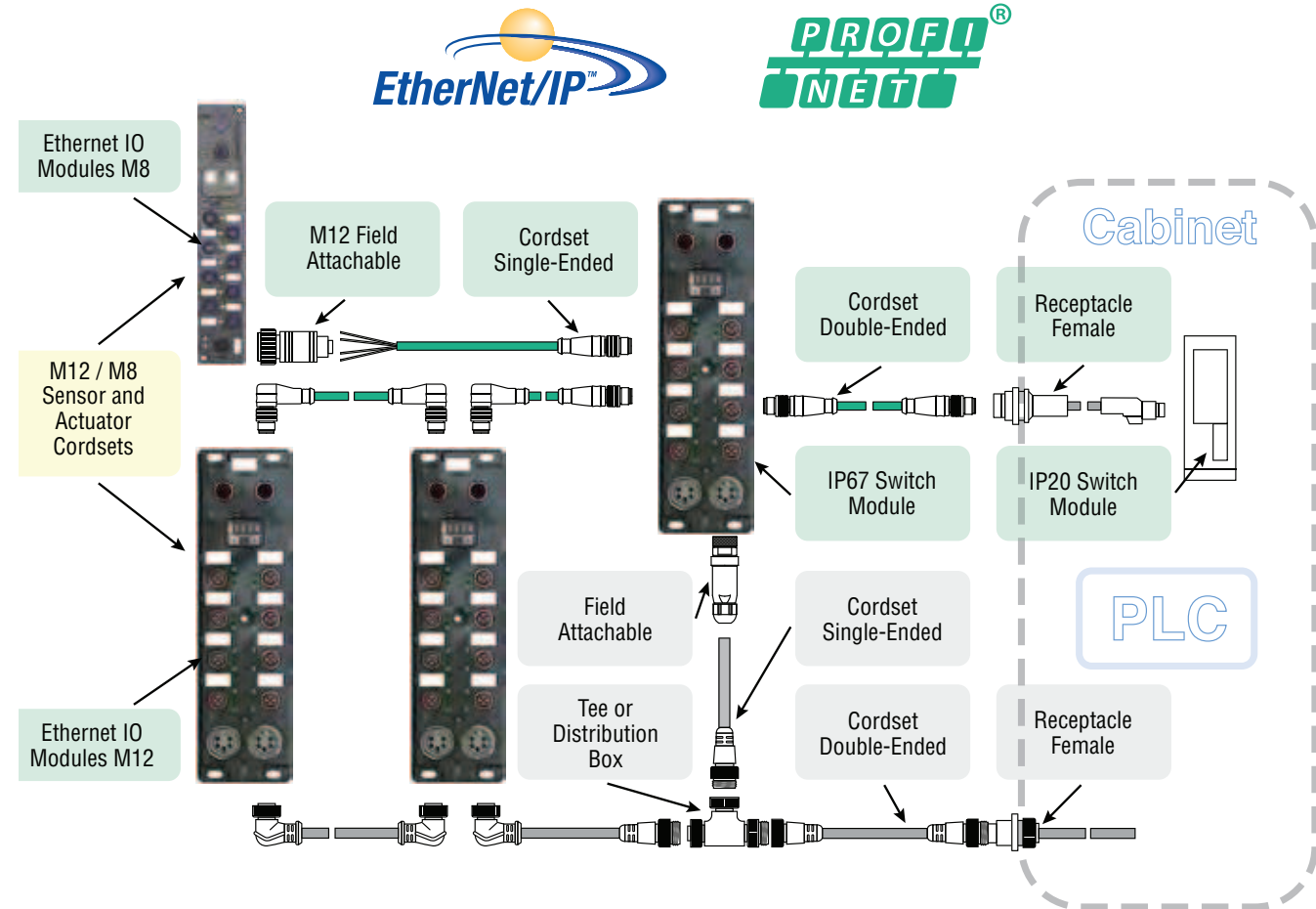
Distribution Boxes 36-37
 Micro-Change® M12 Connectivity..... 38-41
 Nano-Change® M8 Connectivity 42-45
 mPm® DIN Valve Connectors..... 46-47

Complete Solution For Automation Infrastructures In Harsh Environments

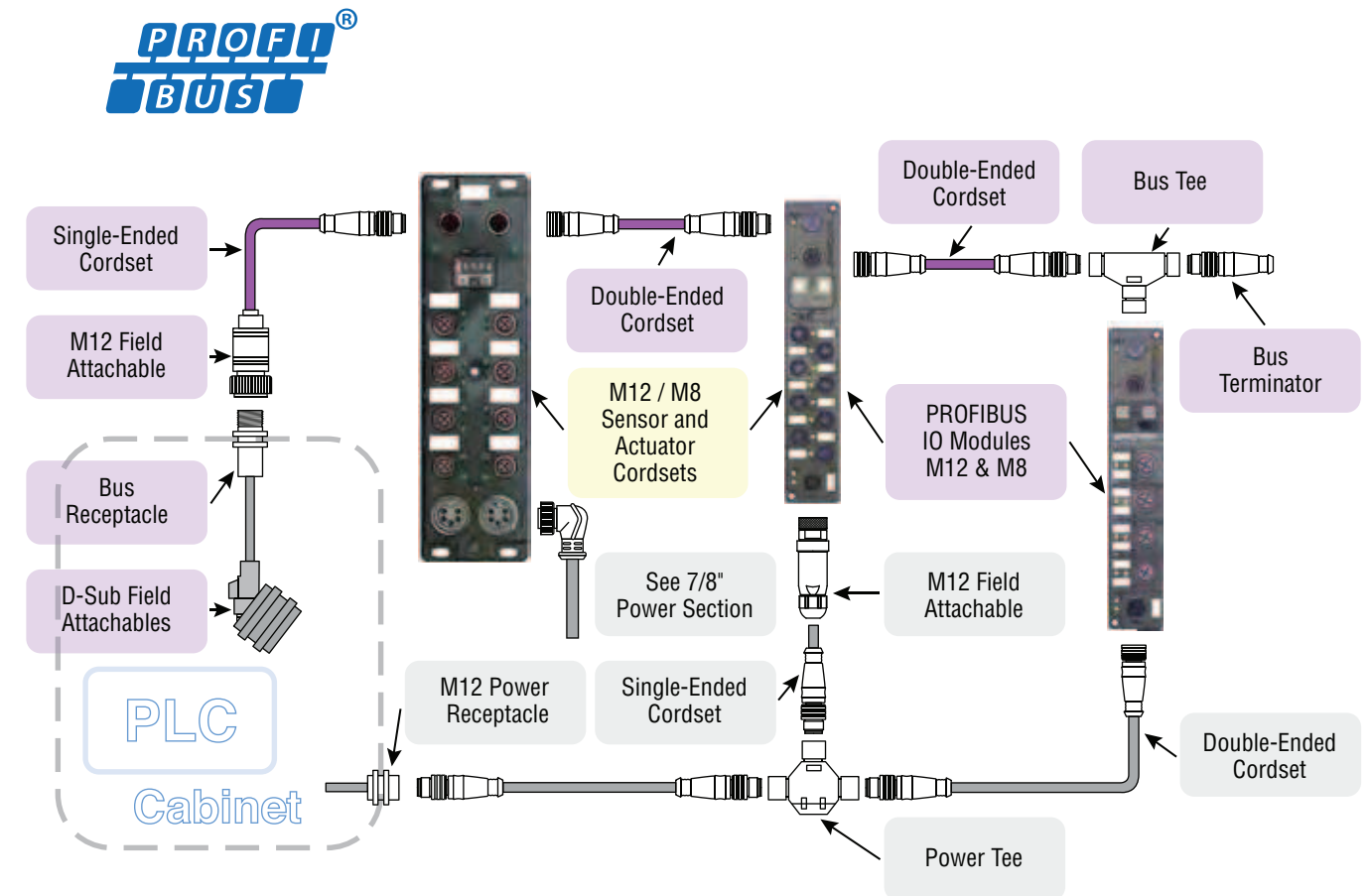


IP67 rated digital IO modules for harsh environments are designed for direct machine mount applications.

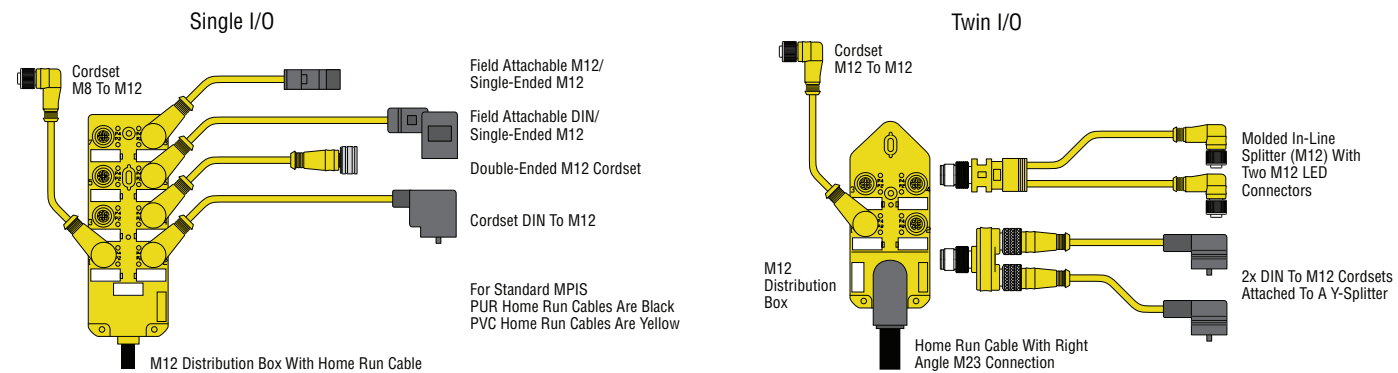
Ethernet and 7/8" Power Distribution Architecture



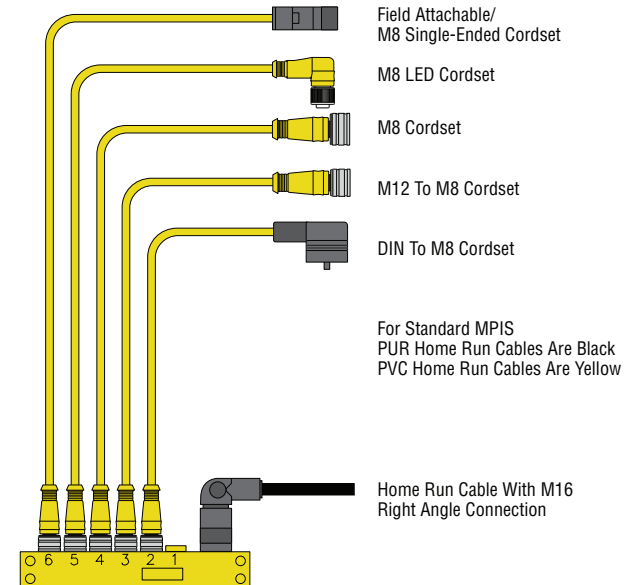
PROFIBUS and M12 Power Distribution Architecture



M12 Sensor Actuator Interconnection

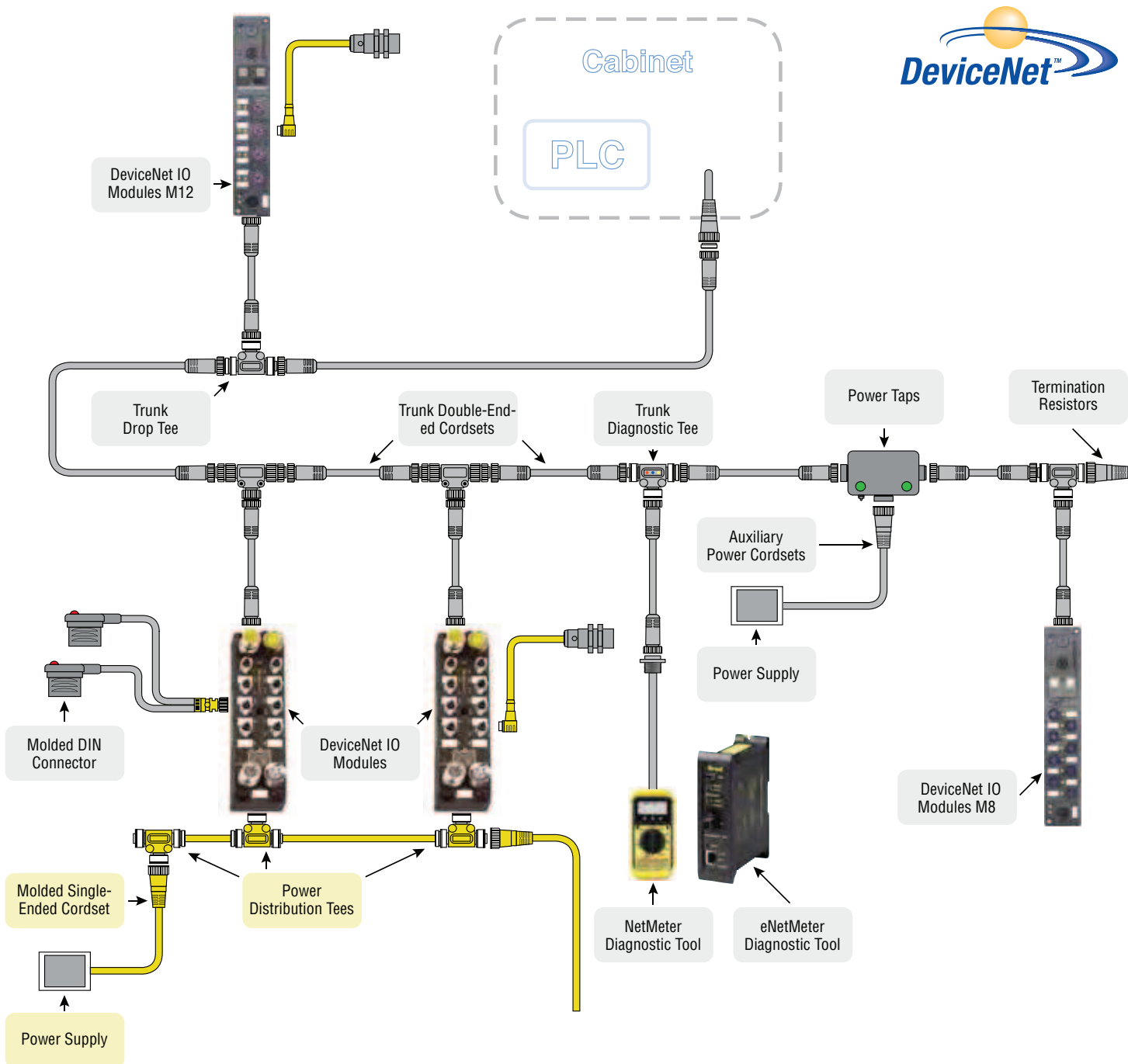


M8 Sensor Actuator Interconnection

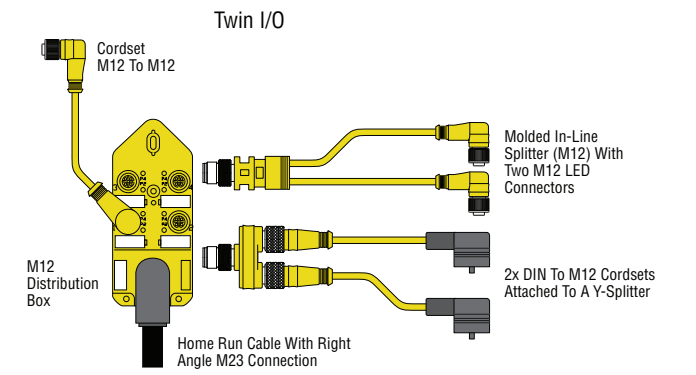
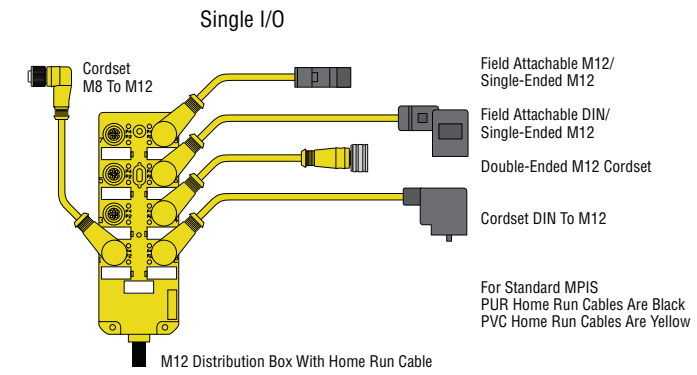


IP67 rated digital IO modules for harsh environments are designed for direct machine mount applications.

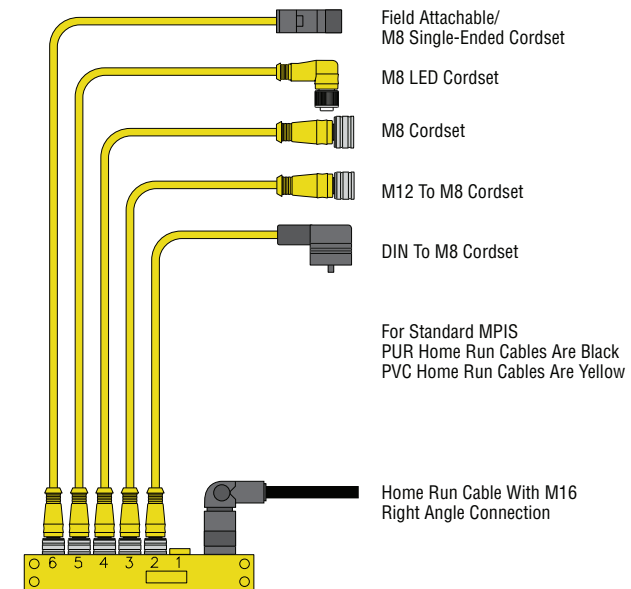
DeviceNet and 7/8" Power Distribution Architecture



M12 Sensor Actuator Interconnection



M8 Sensor Actuator Interconnection



Brad®
Automation
Infrastructure
Solutions

Ethernet IO reliable connections in harsh environments.



Worldwide Unique Feature: Quicker Setups and More Uptime through Secure Connections Using the Brad® Ultra-Lock® Patented Connection System

- One simple push delivers a secure, consistent seal each and every time
- Eliminates connector-related intermittent signals that lead to costly production downtime
- Quick change-overs can now be a reality

React to Problems Sooner Using Easy-to-Read Diagnostics

- Visible LEDs provide maintenance personnel with ability to easily determine I/O, module and network status
- Scrolling 4-character display for IP addressing and module status
- Built-in web server for remote monitoring, configuration and diagnostics

Reduce Infrastructure Costs with Built-in 2-Port Ethernet Switch

- 10/100 Mbps auto-sensing
- Supports straight or crossover Ethernet cable

Reduce Inventory Costs Using Configurable I/O

- User configurable – 16 points of digital I/O can be set as either an Input or Output (also available in fixed I/O configurations)

Save Time Configuring or Replacing I/O Modules

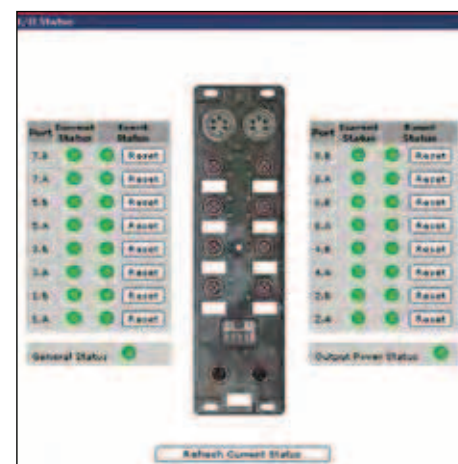
- On PROFINET or EtherNet/IP, configuration setup can be downloaded on the HarshIO directly from the Master, IO-Controller or Scanner
- With simple-to-use push buttons, quickly adjust the last three octets of the IP address

Save Energy by Minimizing Power Supply

- On PROFINET, HarshIO supports PROFlenergy service, allowing the IO-Controller to minimize power supply to the connected HarshIO Module(s)

Brad® HarshIO Modules

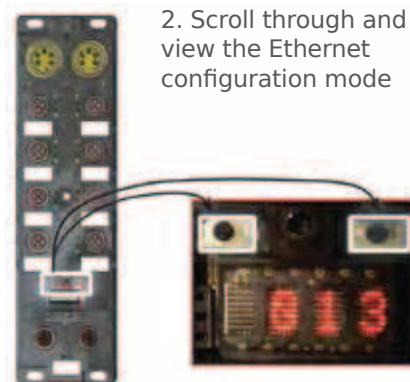
Built-in Web Server with Password Protection



Push Buttons

Two push buttons located above the display window are used to:

1. Quickly adjust the last octet or last 3 characters of the module's IP address
2. Scroll through and view the Ethernet configuration mode



IP67 rated digital IO modules for harsh environments are designed for direct machine mount applications with PROFINET-IO communication capabilities.

Specifications



PROFINET IO-Device, Conformance Class B
 IP addressing: DCP or static
 Real-Time I/O update, up to 1 ms
 Services²: PROFlenergy, SNMP V1/V2/V3, LLDP, MRP, I&M, EasyDevice replacement, Fast Start-Up (FSU) < 500ms
 GSDML configuration file (downloadable via integrated Web server)
 Embedded display¹ for diagnostic
 Grounding isolation² between Input/logic and Output Power
 Operating Temperature: -25 to +70°C
 Storage Temperature: -40 to +90°C
 Approvals: CE, UL, cUL, Rohs, REACH, PNO Certified

User manual and GSDML files to download under: www.molex.com (select Brad Automation Products Support Center)

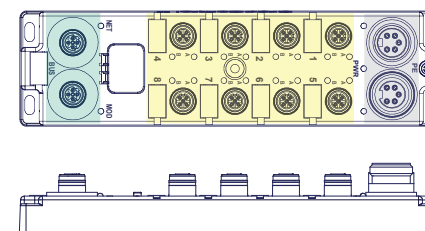
Brad® PROFINET HarshIO Modules



Brad® HarshIO IP67 PROFINET Modules 60mm and 30mm

Ordering Information

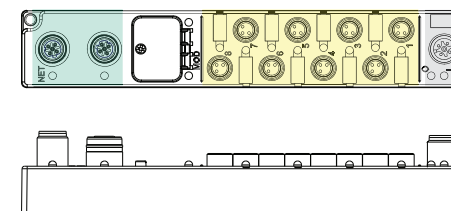
Brad® HarshIO IP67 PROFINET Module – 60mm M12



Connectivity

Ethernet: 2x Female M12 4P D-Code Built-in 2 port switch Ultra-Lock® compatible	Inputs/Outputs: 8x Female M12 5P A-Code Dual IO signal per port Inputs 24V max. 140mA Outputs 24V max. 2A Ultra-Lock® compatible	Power: 1x Male 7/8" 4 or 5 Pole 1x Fem. 7/8" 4 or 5 Pole Voltage: 24V Input & Output, max. 8 Amps
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Brad® HarshIO IP67 PROFINET Module – 30mm M8



Connectivity

Ethernet: 2x Female M12 4P D-Code Built-in 2 port switch Ultra-Lock® compatible	Inputs/Outputs: 8x Female M8 3 Poles Single IO signal per port Inputs 24V max. 140mA Outputs 24V max. 1.4A	Power: 1x Male M12 5 Pole Voltage: 24V Input & Output, max. 4 Amps
---	--	---

Power Type	Input/Output (PNP)	Engineering No.	Standard Order No.
7/8" 5 Pole	16I	TCDEP-8D0P-D1U-G	112095-5048
	8I/8O	TCDEP-888P-D1U-G	112095-5050
	12I/4O	TCDEP-8B4P-D1U-G	112095-5051
	16O	TCDEP-80DP-D1U-G	112095-5049
7/8" 4 Pole	User Config.	TCDEP-8YYX-D1U	112095-5037
	16I	TCDEP-8D0P-DYU-G	112095-5052
	8I/8O	TCDEP-888P-DYU-G	112095-5053
	12I/4O	TCDEP-8B4P-DYU-G	112095-5054
	16O	TCDEP-80DP-DYU-G	112095-5055

Power Type	Input/Output (PNP)	Engineering No.	Standard Order No.
M12 5 Pole	8I	TBDEP-880P-D84-G	112095-5064
	4I/4O	TBDEP-844P-D84-G	112095-5065
	8O	TBDEP-808P-D84-G	112095-5066
	User Config.	TBDEP-8YYP-D84	112095-5067

(1) Only on HarshIO 60mm model.
 (2) Not available on User Configurable IO model.



IP67 rated digital IO modules for harsh environments are designed for direct machine mount applications with EtherNet/IP communication capabilities.

Specifications

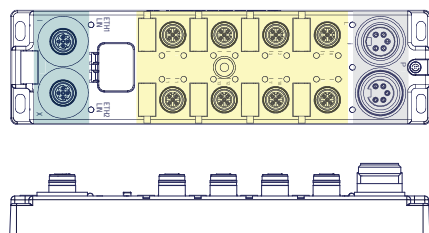
EtherNet/IP Adapter
 IP address: DHCP, Static Address, and 0xF5/0xF6 objects
 Real-Time I/O update, up to 1 ms
 Services: Automatic Conflict Detection (ACD), QuickConnect < 500ms (QC Class A device)
 EDS configuration file (downloadable via CIP File Service)
 Embedded display¹ for diagnostic
 Grounding isolation² between Input/logic and Output Power
 Operating Temperature: -25 to +70°C
 Storage Temperature: -40 to +90°C
 Approvals: CE, UL, cUL, Rohs, REACH, ODVA Certified



User manual and EDS files to download under:
www.molex.com (select Brad Automation Products Support Center)

Ordering Information

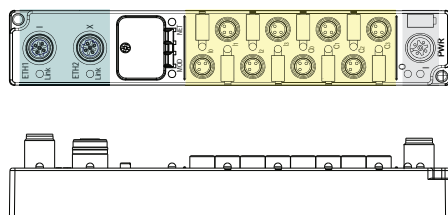
Brad® HarshIO IP67 EtherNet/IP Module – 60mm M12



Connectivity

Ethernet: 2x Female M12 4P D-Code Built-in 2 port switch Ultra-Lock® compatible	Inputs/Outputs: 8x Female M12 5P A-Code Dual IO signal per port Inputs 24V max. 140mA Outputs 24V max. 2A Ultra-Lock® compatible	Power: 1x Male 7/8" 4 or 5 Pole 1x Fem. 7/8" 4 or 5 Pole Voltage: 24V Input & Output, max. 8 Amps
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Brad® HarshIO IP67 EtherNet/IP Module – 30mm M8



Connectivity

Ethernet: 2x Female M12 4P D-Code Built-in 2 port switch Ultra-Lock® compatible	Inputs/Outputs: 8x Female M8 3 Poles Single IO signal per port Inputs 24V max. 140mA Outputs 24V max. 1.4A	Power: 1x Male M12 5 Pole Voltage: 24V Input & Output, max. 4 Amps
---	---	--

(1) Only on HarshIO 60mm model.
 (2) Not available on User Configurable IO model.

Power Type	Input/Output (PNP)	Engineering No.	Standard Order No.
7/8" 5 Pole	16I	TCDEI-8D0P-D1U-G	112095-5060
	8I/8O	TCDEI-888P-D1U-G	112095-5061
	12I/4O	TCDEI-8B4P-D1U-G	112095-5063
	16O	TCDEI-80DP-D1U-G	112095-5062
	User Config.	TCDEI-8YYX-D1U	112095-5011
7/8" 4 Pole	16I	TCDEI-8D0P-DYU-G	112095-5040
	8I/8O	TCDEI-888P-DYU-G	112095-5041
	12I/4O	TCDEI-8B4P-DYU-G	112095-5043
	16O	TCDEI-80DP-DYU-G	112095-5042
	User Config.	TCDEI-8YYX-DYU	112095-5020

Power Type	Input/Output (PNP)	Engineering No.	Standard Order No.
M12 5 Pole	8I	TBDEI-880P-D84-G	112095-5068
	4I/4O	TBDEI-844P-D84-G	112095-5069
	8O	TBDEI-808P-D84-G	112095-5070
	User Config.	TBDEI-8YYP-D84	112095-5071



IP67 rated digital IO modules for harsh environments are designed for direct machine mount applications with Modbus TCP communication capabilities.

Specifications

Modbus TCP server
 Speed: 10/100 Mbps. (auto-negotiation, full duplex)
 Data Access: I/O data
 IP address: DHCP, Static Address
 Embedded display for diagnostic
 Operating Temperature: -25 to +70°C
 Storage Temperature: -40 to +90°C
 Approvals: CE, UL, cUL, Rohs, REACH, Schneider Certified



Brad® Modbus TCP HarshIO Modules

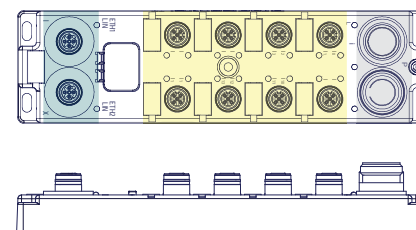


Brad® HarshIO IP67 Modbus TCP Module 60mm

User manual to download under:
www.molex.com (select Brad Automation Products Support Center)

Ordering Information

Brad® HarshIO IP67 Modbus TCP/IP Module – 60mm M12



Connectivity

Ethernet: 2x Female M12 4P D-Code Built-in 2 port switch Ultra-Lock® compatible	Inputs/Outputs: 8x Female M12 5P A-Code Dual IO signal per port Inputs 24V max. 140mA Outputs 24V max. 2A Ultra-Lock® compatible	Power: 1x Male 7/8" 4 or 5 Pole 1x Fem. 7/8" 4 or 5 Pole Voltage: 24V Input & Output, max. 8 Amps
---	---	--

Power Type	Input/Output	Engineering No.	Standard Order No.	
7/8" 5 Pole	NPN	16I	TCDEM-8D0N-D1U	112095-0007
		8I/8O	TCDEM-888N-D1U	112095-0001
		12I/4O	TCDEM-8B4N-D1U	112095-0003
		14I/2O	TCDEM-8C2N-D1U	112095-0005
	User Config.	TCDEM-8YYX-D1U	112095-0009	
	PNP	16I	TCDEM-8D0P-D1U	112095-0008
		8I/8O	TCDEM-888P-D1U	112095-0002
		12I/4O	TCDEM-8B4P-D1U	112095-0004
		14I/2O	TCDEM-8C2P-D1U	112095-0006
User Config.		TCDEM-8YYX-DYU	112095-5038	
7/8" 4 Pole	NPN	16I	TCDEM-8D0N-DYU	112095-5021
		8I/8O	TCDEM-888N-DYU	112095-5024
		12I/4O	TCDEM-8B4N-DYU	112095-5023
		14I/2O	TCDEM-8C2N-DYU	112095-5022
	User Config.	TCDEM-8YYX-DYU	112095-5038	
	PNP	16I	TCDEM-8D0P-DYU	112095-5025
		8I/8O	TCDEM-888P-DYU	112095-5028
		12I/4O	TCDEM-8B4P-DYU	112095-5027
14I/2O		TCDEM-8C2P-DYU	112095-5026	

(1) Only on HarshIO 60mm model.
 (2) Not available on User Configurable IO model.

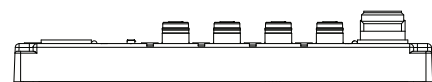
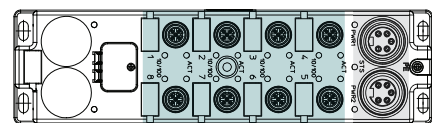
IP67 rated fast Ethernet switches for harsh environments are designed for direct machine mount applications.

Specifications

Unmanaged IP67 switches
 Speed 10/100Mbps auto negotiation, full or half duplex
 Auto-learning with no software or configuration required
 Operating Temperature:
 -20 to +75°C (DRL-750, DRL-780, DRL-781)
 -40 to +75°C (DRL-781-T)
 Storage Temperature: -40 to +90°C
 Approvals: CE, UL, cUL

Ordering Information

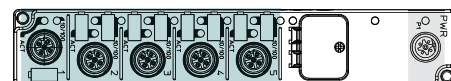
Brad® Harsh-Duty Unmanaged IP67 Ethernet Switch – 60mm M12



Connectivity

Ethernet: 8x Female M12 4P D-Code Ultra-Lock® compatible	Power: 1x Male 7/8" 4 or 5 Pole 1x Fem. 7/8" 4 or 5 Pole Dual power supply entry, 9-36VDC
---	--

Brad® Harsh-Duty Unmanaged IP67 Ethernet Switch – 30mm M12



Connectivity

Ethernet: 5x Female M12 4P D-Code	Power: 1x Male M12 5 Pole 9-36VDC
--	--

Brad® Harsh-Duty Ethernet Switches



Brad® Harsh-Duty Ethernet switches — 60mm and 30mm

Power Type	Engineering No.	Standard Order No.
7/8" 5 Pole	DRL-780	112105-5002
7/8" 4 Pole	DRL-781	112105-5004
7/8" 4 Pole	DRL-781-T	112105-5005

Power Type	Engineering No.	Standard Order No.
M12 5 Pole	DRL-750	112111-5001

Plug & Play infrastructure to interconnect Ethernet IP67 devices based on D-Code M12 standard connectors. Designed with 2 versions of cable to comply to the PROFINET (PUR, Green, AWG22) and EtherNet/IP (PVC, Teal, AWG26) specification and to cover most customer's Ethernet applications.

Ordering Information

Brad® PROFINET Single-Ended M12 Cordsets



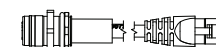
PROFINET Shielded PUR Cable				
Length	Male Straight		Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
5m	E10A00611M050	130048-0281	E10A00711M050	130048-0286
10m	E10A00611M100	130048-0282	E10A00711M100	130048-0287
20m	E10A00611M200	130048-0283	E10A00711M200	130048-0288
30m	E10A00611M300	130048-0284	—	—
50m	E10A00611M500	130048-0285	—	—

Brad® PROFINET Double-Ended M12 Cordsets



PROFINET Shielded PUR Cable				
Length	Male to Male Straight		Male to Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1m	E11A06011M010	120108-0236	E11A06311M010	120108-0295
2m	E11A06011M020	120108-0199	E11A06311M020	120108-0200
5m	E11A06011M050	120108-0238	E11A06311M050	120108-0296
10m	E11A06011M100	120108-0243	E11A06311M100	120108-0297
15m	E11A06011M150	120108-0246	—	—
20m	E11A06011M200	120108-0248	—	—
30m	E11A06011M300	120108-0250	—	—

Brad® PROFINET M12 Receptacle



Female M12 to RJ45 Straight

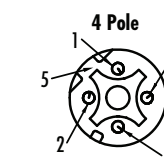
PROFINET Shielded PUR Cable		
Length	Engineering No.	Standard Order No.
1m	ERWPAU7011M010	120108-0252
2m	ERWPAU7011M020	120108-0206

Brad® PROFINET Infrastructure Components



PROFINET Cable Specification

AWG22 Shielded PROFINET Cat5e cable
 Jacket material: green PUR
 Conductors: 2 Pairs x 0.34mm² (White, Yellow, Blue, Orange)
 Operating Temperature: -20°C to +60°C
 C-Track compatible (5M cycles)
 Bend radius: 5x cable diameter
 Halogen free and silicon free
 Approvals: UL, CSA



1 - Orange 4 - Blue-White
 2 - Blue 5 - D-Code
 3 - Orange-White

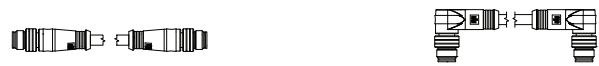
Ordering Information

Brad® EtherNet/IP Single-Ended M12 Cordsets



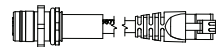
EtherNet/IP Shielded PVC Cable				
	Male Straight		Male 90°	
Length	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
5m	E10A00615M050	130048-0056	E10A00715M050	130048-0080
10m	E10A00615M100	130048-0057	E10A00715M100	130048-0081
20m	E10A00615M200	130048-8006	E10A00715M200	130048-0290
30m	E10A00615M300	130048-0059	—	—
50m	E10A00615M500	130048-0289	—	—

Brad® EtherNet/IP Double-Ended M12 Cordsets



EtherNet/IP Shielded PVC Cable (Teal)				
	Male to Male Straight		Male to Male 90°	
Length	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1m	E11A06015M010	130048-0122	E11A06315M010	130048-0179
2m	E11A06015M020	130048-0124	E11A06315M020	130048-0181
5m	E11A06015M050	130048-0126	E11A06315M050	130048-0183
10m	E11A06015M100	130048-0128	E11A06315M100	130048-0185
15m	E11A06015M150	130048-0130	—	—
20m	E11A06015M200	130048-0010	—	—
30m	E11A06015M300	130048-0132	—	—

Brad® EtherNet/IP M12 Receptacle



Female M12 to RJ45 Straight

EtherNet/IP Shielded PVC Cable		
Length	Engineering No.	Standard Order No.
1m	ERWPAB3002M010	130058-0025
2m	ERWPAB3002M020	130054-0021

Brad® EtherNet/IP Infrastructure Components



EtherNet/IP Cable Specification

Shielded Ethernet Cat5e cable
 Conductors: 2 Pairs AWG26 (White/Green, Green, White/Orange and Orange)
 Jacket Material: Teal PVC
 Operating Temperature: -20°C to +75°C
 Sun and Oil resistant
 Approvals: UL, cUL, EtherNet/IP

Note:

Further technical information, datasheet or drawing can be downloaded from the Molex® website using the ordering part number.

Ordering Information

Brad® Ethernet Bulkhead Adapter (M12 Female to RJ45)



Straight		90°	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
ER1PADAPTER	130054-0009	ER1PADAPTER90	130054-0010

Brad® Ethernet Field Attachable



M12 Male		M12 Female	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
E1AS06-52	130047-0018	E1AS00-52	130047-0017

Brad® RJ45 Connector



Engineering No.	Standard Order No.
85720-1050	85720-1050

Brad® Ethernet Infrastructure Accessories



IP67 rated digital IO modules for harsh environments are designed for direct machine mount applications.

Specifications

PROFIBUS DP-V0 Slave according EN 50170
 Auto baud: all baud rates up to 12M Baud
 Address Settings: 1 – 99 by 2 rotary switches
 Operating Temperature: -25 to +70°C
 Storage Temperature: -25 to +90°C
 Approvals: CE, UL, PNO Certification



Brad® PROFIBUS HarshIO Modules

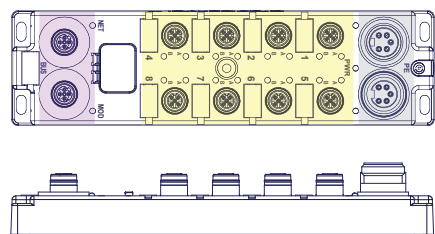


Brad® HarshIO IP67 PROFIBUS Modules
60mm and 30mm

User manual and GSD files to download under:
www.molex.com (select Brad Automation Products Support Center)

Ordering Information

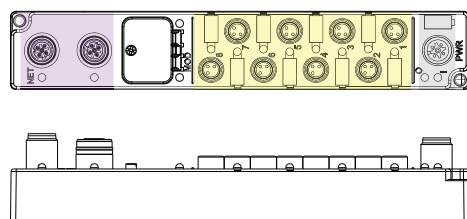
Brad® HarshIO IP67 PROFIBUS Module – 60mm M12



Connectivity		
PROFIBUS: 1x Male M12 5P B-Code 1x Fem. M12 5P B-Code	Inputs/Outputs: 8x Female M12 5P A-Code Dual IO signal per port Inputs 24V max. 140mA Outputs 24V max. 2A Ultra-Lock® compatible	Power: 1x Male 7/8" 5 Poles 1x Female 7/8" 5 Poles Voltage: 24V Input & Output, max. 8 Amps

Power Type	Input/Output	Engineering No.	Standard Order No.	
7/8" 5 Pole	NPN	16I	TCDPB-8D0N-B1U	112038-0030
		14I/2O	TCDPB-8C2N-B1U	112038-0028
		12I/4O	TCDPB-8B4N-B1U	112038-0026
		8I/8O	TCDPB-888N-B1U	112038-0024
	User Config.	TCDPB-8YYX-B1U	112038-5005	
	PNP	16I	TCDPB-8D0P-B1U	112038-0031
		14I/2O	TCDPB-8C2P-B1U	112038-0029
		12I/4O	TCDPB-8B4P-B1U	112038-0027
8I/8O		TCDPB-888P-B1U	112038-0025	

Brad® HarshIO IP67 PROFIBUS Module – 30mm M8

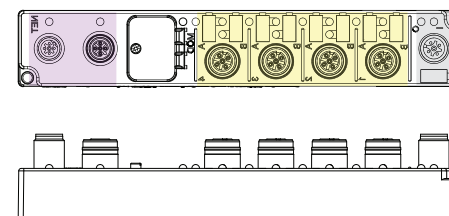


Connectivity		
PROFIBUS: 1x Male M12 5P B-Code 1x Fem. M12 5P B-Code	Inputs/Outputs: 8x Female M8 3 Poles Single IO signal per port Inputs 24V max. 140mA Outputs 24V max. 1,4A	Power: 1x Male M12 5 Pole Voltage: 24V Input & Output, max. 4 Ampere

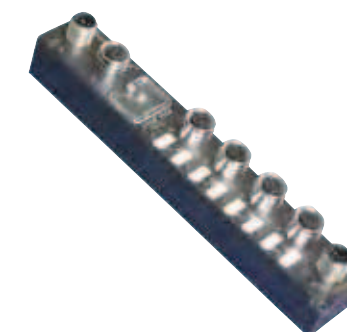
Power Type	Input/Output	Engineering No.	Standard Order No.	
M12 5 Pole	NPN	8I	TBDPB-880N-B84	112038-0019
		6I/2O	TBDPB-862N-B84	112038-0017
		4I/4O	TBDPB-844N-B84	112038-0015
	PNP	8I	TBDPB-880P-B84	112038-0021
		6I/2O	TBDPB-862P-B84	112038-0018
		4I/4O	TBDPB-844P-B84	112038-0016
		8O	TBDPB-808P-B84	112038-0014

Ordering Information

Brad® HarshIO IP67 PROFIBUS Module – 30mm M12



Brad® PROFIBUS HarshIO Modules



Connectivity		
PROFIBUS: 1x Male M12 5P B-Code 1x Fem. M12 5P B-Code	Inputs/Outputs: 4x Female M12 5P A-Code Dual IO signal per port Inputs 24V max. 140mA Outputs 24V max. 1,4A Ultra-Lock® compatible	Power: 1x Male M12 5 Pole Voltage: 24V Input & Output, max. 4 Ampere

Power Type	Input/Output	Engineering No.	Standard Order No.	
M12 5 Pole	NPN	8I	TBDPB-480N-B8U	112038-0009
		6I/2O	TBDPB-462N-B8U	112038-0007
		4I/4O	TBDPB-444N-B8U	112038-0005
	PNP	8I	TBDPB-480P-B8U	112038-0011
		6I/2O	TBDPB-462P-B8U	112038-0008
		4I/4O	TBDPB-444P-B8U	112038-0006
		8O	TBDPB-408P-B8U	112038-0003

All Brad® IP67 HarshIO Modules with Micro-Change® (M12) ports accept both threaded cordsets and the new Brad® Ultra-Lock® Connection System, the fastest, easiest and most secure connection ever.



Ultra-Lock® technology is designed for higher performance and reliability to eliminate downtime, increase productivity and lower costs.

Plug & Play PROFIBUS infrastructure to interconnect IP67 devices based on B-Code M12 standard connectors. Designed with PUR jacket material for better chemical and oil resistance, low-resistance contact design and 360° shielded head design to reduce RFI/EMI.

Ordering Information

Brad® PROFIBUS Single-Ended M12 Cordsets



PROFIBUS Shielded PUR Cable				
Length	Male Straight		Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
5m	B05S06PP4M050	120098-0104	B05S07PP4M050	120098-0111
10m	B05S06PP4M100	120098-0107	B05S07PP4M100	120098-0112
20m	B05S06PP4M200	120098-8053	B05S07PP4M200	120098-8054
30m	B05S06PP4M300	120098-0108	B05S07PP4M300	120098-8055



PROFIBUS Shielded PUR Cable				
Length	Female Straight		Female 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
5m	B05S00PP4M050	120098-0087	B05S01PP4M050	120098-0095
10m	B05S00PP4M100	120098-0089	B05S01PP4M100	120039-0136
20m	B05S00PP4M200	120039-0122	B05S01PP4M200	120098-8056
30m	B05S00PP4M300	120098-0222	B05S01PP4M300	120098-8057

Brad® PROFIBUS Double-Ended M12 Cordsets

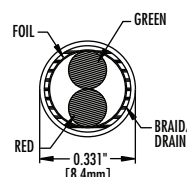


PROFIBUS Shielded PUR Cable				
Length	Female to Male Straight		Female to Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1m	BB5S30PP4M010	120098-0006	BB5S33PP4M010	120098-0029
2m	BB5S30PP4M020	120098-0007	BB5S33PP4M020	120098-0031
5m	BB5S30PP4M050	120098-0010	BB5S33PP4M050	120098-0033
10m	BB5S30PP4M100	120098-0014	BB5S33PP4M100	120098-0035
15m	BB5S30PP4M150	120098-0160	BB5S33PP4M150	120098-8050
20m	BB5S30PP4M200	120098-0017	BB5S33PP4M200	120098-8051
30m	BB5S30PP4M300	120098-0019	BB5S33PP4M300	120098-8052

Brad® PROFIBUS Infrastructure Components

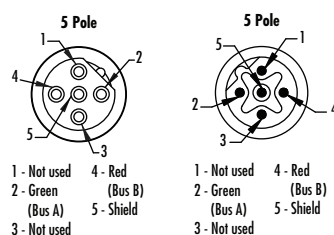


PROFIBUS Cable Specification



PROFIBUS Twisted Pair AWG22 (0,34mm²) cable
 Conductors: 2x Red and Green
 Jacket Material: Purple PUR
 Voltage Rating: 300V
 Operating Temperature: -40 to +60°C
 C-Track compatible (3M cycles)
 Bend radius: 10x cable diameter
 Approvals: UL, CSA

PROFIBUS M12 B-Code Connector Pinout (front view)



Ordering Information

Brad® PROFIBUS M12 Receptacles



PROFIBUS Shielded PUR Cable				
Length	Male		Female	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
2m	BR5U76PP4M0203	120099-0015	BR5U70PP4M0203	120099-0007
4m	BR5U76PP4M0403	120099-0016	BR5U70PP4M0403	120099-0009

Brad® PROFIBUS M12 Field Attachables



Male		Female	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
BA5S06-32	120100-0002	BA5S00-32	120100-0001

Brad® PROFIBUS IP20 Bus Terminators



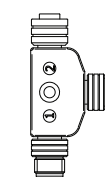
Desc.	With Diagnostic		Without Diagnostic	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
Straight	MA9D00-42	120103-5001	—	—
90°	PA9D01-42	120103-0001	PA9S01-42	120103-0005
45°	PA9D0B-42	120103-0003	—	—

Brad® PROFIBUS Accessories

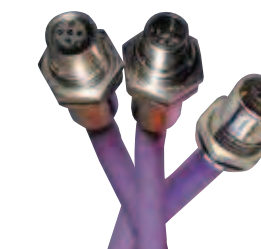
PROFIBUS M12 Male Terminator	
Engineering No.	Standard Order No.
B05S06PP4M050	120098-0104



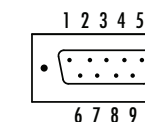
PROFIBUS M12 Bus Tee	
Engineering No.	Standard Order No.
B05S06PP4M050	120098-0104



Brad® PROFIBUS Infrastructure Components

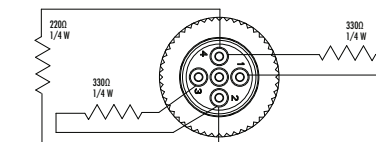


PROFIBUS Terminator Resistor Wiring

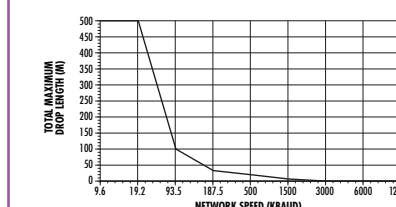
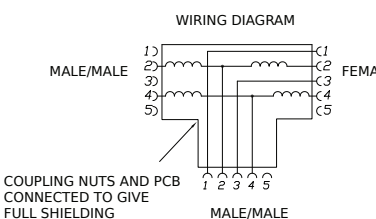


- 1 - Not used
- 2 - Not used
- 3 - Red (Bus B)
- 4 - Not used
- 5 - Not used
- 6 - Not used
- 7 - Not used
- 8 - Green (Bus A)
- 9 - Not used

PROFIBUS Terminator Resistor Wiring



PROFIBUS Tee Wiring



IP67 rated digital IO modules for harsh environments are designed for direct machine mount applications with DeviceNet communication capabilities.

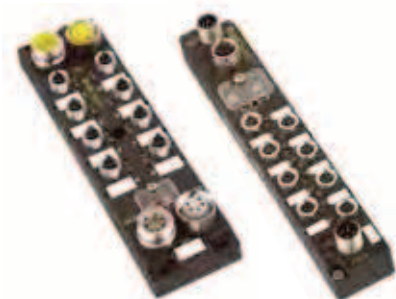
Specifications

DeviceNet Slave Supports ADR and Quick-Connect
 Auto baud: all baud rates up to 500k Baud
 Address Settings: 1 – 99 by 2 rotary switches
 Operating Temperature: -25 to +70°C
 Storage Temperature: -40 to +90°C
 Approvals: CE, UL, ODVA Certification

User manual and ESD files to download under:
www.molex.com (select Brad Automation Products Support Center)



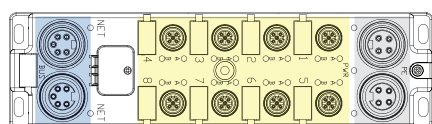
Brad® DeviceNet HarshIO Modules



Brad® HarshIO IP67 DeviceNet Modules
 60mm and 30mm

Ordering Information

Brad® HarshIO IP67 DeviceNet Module – 60mm M12

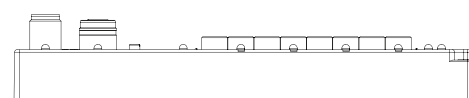
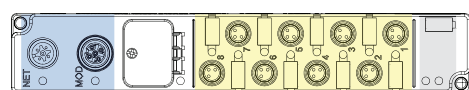


Connectivity

DeviceNet: 1x Male 7/8" 5 Poles 1x Female 7/8" 5 Poles	Inputs/Outputs: 8x Female M12 5 Poles A-code Dual IO signal per port Inputs 24V max. 140mA Outputs 24V max. 1A	Power: 1x Male 7/8" 4 Poles 1x Female 7/8" 4 Poles Voltage: 24V Input & Output, max. 8 Amps
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Power Type	Input/Output	Engineering No.	Standard Order No.	
7/8" 4 Pole	NPN	16I	TCDDN-8D0N-10U	112092-0019
		8I/8O	TCDDN-888N-11U	112092-0020
	PNP	16I	TCDDN-8D0P-10U	112092-0010
		8I/8O	TCDDN-888P-11U	112092-0009

Brad® HarshIO IP67 DeviceNet Module – 30mm M8



Connectivity

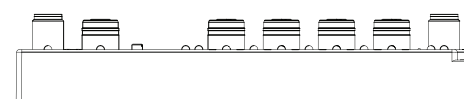
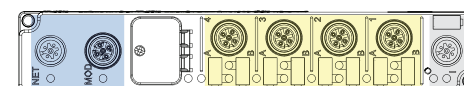
DeviceNet: 1x Male M12 5 Poles A-code 1x Female M12 5 Poles A-code	Inputs: 8x Female M8 3 Poles Single IO signal per port Inputs 24V max. 140mA	Power: 24V Input via DeviceNet bus power
---	---	--

Power Type	Input/Output	Engineering No.	Standard Order No.	
DeviceNet Bus Power	NPN	8I	TBDDN-880N-804	112092-0022
	PNP	8I	TBDDN-880P-804	112092-0008

Brad® DeviceNet HarshIO Modules

Ordering Information

Brad® HarshIO IP67 DeviceNet Module – 30mm M12



Connectivity

DeviceNet: 1x Male M12 5 Poles A-code 1x Female M12 5 Poles A-code	Inputs/Outputs: 4x Female M12/ Ultra-Lock 5P A-code Dual IO signal per port Inputs 24V max. 140mA Outputs 24V max. 1A	Power: 1x Male M12 5 Pole Voltage: 24V Input & Output, max. 4 Ampere
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Power Type	Input/Output	Engineering No.	Standard Order No.	
M12 5 Pole	NPN	8I	TBDDN-480N-80U	112092-0018
		4I/4O	TBDDN-444N-88U	112092-5004
	PNP	8I	TBDDN-480P-80U	112092-0007
		4I/4O	TBDDN-444P-88U	112092-0006

Brad® DeviceNet Diagnostic Tools Accessories

Power Tees			
Male to Female		Female to Male	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
DN3020PM-1	130035-0060	DN3020PM-3	130035-0061

NetMeter			
Standalone		Kit	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
DN-MTR	112008-0013	DN-MTR-KIT	112008-0014

eNetMeter			
eNetMeter with NetAlytix		Portable eNetMeter	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
SST-ENM-SKT	112008-0012	SST-ENM-PTU	112008-0016



Brad® Network Diagnostics Tools

Leading-edge diagnostic tools for DeviceNet industrial networks use high-speed data sampling to predict system faults for avoiding plant automation down times. Molex diagnostic tools minimize system downtime resulting from network failure and help anticipate potential problems with live network validation and troubleshooting. Quickly identify problems relating to network power, data errors and excessive bandwidth consumption and isolate and diagnose the fault source. Molex diagnostic tools also help certify new DeviceNet industrial network installations and speed DeviceNet maintenance and repairs. Molex offers a number of DeviceNet diagnostic tools including Netmeter™, eNetmeter™, and NetAlytix™ software.

Plug & Play infrastructure to interconnect DeviceNet IP67 devices based on Mini-Change 7/8" standard connectors.

DeviceNet Mini-Change® Infrastructure Components



Ordering Information

Brad® DeviceNet Mini-Change® Single-Ended 5 Pole Cordsets



Length	Female Straight		Female 90°		Male Straight		Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1m	DN10A-M010	130024-0073	DN90A-M010	130024-0133	DN01A-M010	130024-0028	DN09A-M010	130024-0059
3m	DN10A-M030	130024-0078	DN90A-M030	130024-0136	DN01A-M030	130024-0032	DN09A-M030	130024-0061
5m	DN10A-M050	130024-0080	DN90A-M050	130024-0137	DN01A-M050	130024-0034	DN09A-M050	130024-0064

Brad® DeviceNet Mini-Change® Double-Ended 5 Pole Cordsets



Length	Female to Male Straight		Female to Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1m	DN11A-M010	130025-0054	DN99A-M010	130025-0197
3m	DN11A-M030	130025-0067	DN99A-M030	130025-0200
5m	DN11A-M050	130025-0073	DN99A-M050	130025-0202
10m	DN11A-M100	130025-0085	-	-
15m	DN11A-M150	130025-0092	-	-
20m	DN11A-M200	130025-0097	-	-
30m	DN11A-M300	130025-0108	-	-

Brad® DeviceNet Mini-Change® 5 Pole Receptacles



Length	Male Receptacle		Female Receptacle	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
.5m	DN5100-M005	130039-0297	DN5000-M005	130039-0283
1m	DN5100-M010	130039-0299	DN5000-M010	130039-0284
2m	DN5100-M020	130039-0300	-	-
3m	DN5100-M030	130039-0301	-	-

Ordering Information

Brad® DeviceNet Mini-Change® 5 Pole Field Attachable Connectors



Male		Female	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1A5006-34DN	130034-0006	1A5000-34DN	130034-0005

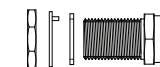
Brad® DeviceNet Mini-Change® 5 Pole Terminators



Male		Female	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
DN100L	130039-0371	DN150L	130039-0072
DN100	130039-0370	DN150	130039-0376

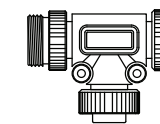
Brad® DeviceNet Mini-Change® 5 Pole Receptacle Pass-Thru, Male to Female

Engineering No.	Standard Order No.
1R5030	130013-0541



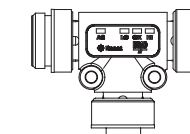
Brad® DeviceNet Mini-Change® 5 Pole Passive Tee

Engineering No.	Standard Order No.
DN3020	130035-0057



Brad® DeviceNet Mini-Change® 5 Pole Power Monitor Tee w/LED Functionality

Male to Female		Female to Male	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
DN3020PM-1	130035-0060	DN3020PM-3	130035-0061



Brad® DeviceNet Trunk Bulk Cable

Length	Engineering No.	Standard Order No.
100m	DN00A-T100	130039-0369

DeviceNet Mini-Change® Infrastructure Accessories



Plug & Play infrastructure to interconnect DeviceNet IP67 devices based on M12 standard connectors.

DeviceNet Micro-Change® M12 Infrastructure Components



Ordering Information

Brad® DeviceNet Micro-Change® M12 Single-Ended 5 Pole Cordsets



PVC Cable								
Length	Male Straight		Male 90°		Female Straight		Female 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1m	DND02A-M010	130027-0012	DND03A-M010	130027-0037	DND20A-M010	130027-0048	DND30A-M010	130027-0075
3m	DND02A-M030	130027-0015	DND03A-M030	130027-0040	DND20A-M030	130027-0050	DND30A-M030	130027-0077
5m	DND02A-M050	130027-0017	DND03A-M050	130027-0041	DND20A-M050	130027-0052	DND30A-M050	130027-0079

Brad® DeviceNet Micro-Change® M12 Double-Ended 5 Pole Cordsets



PVC Cable				
Length	Female to Male Straight		Female to Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1m	DND11A-M010	130025-0287	DND33A-M010	130028-0104
3m	DND11A-M030	130025-0292	DND33A-M030	130028-0110
5m	DND11A-M050	130025-0295	DND33A-M050	130028-0113

Brad® DeviceNet Micro-Change® M12 5 Pole Receptacles



Length	Male Receptacle		Female Receptacle	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
12"	81612	130031-0026	81611	130031-0023

Ordering Information

Brad® DeviceNet Micro-Change® M12 5 Pole Field Attachable Connectors



Male Straight		Female Straight	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
8A5006-32DN	130034-0008	8A5000-32DN	130034-0007

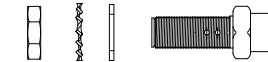
Brad® DeviceNet Micro-Change® M12 5 Pole Terminators



Male		Female	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
DND100L	120039-0001	DND150L	120039-0003
DND100	130039-0382	DND150	130039-0385
DND101	130039-0125	DND151	130039-0386

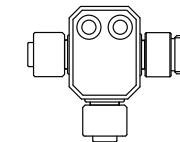
Brad® DeviceNet Micro-Change® M12 5 Pole Receptacle Pass-Thru, Male to Female

Engineering No.	Standard Order No.
8R5L30	120070-0237



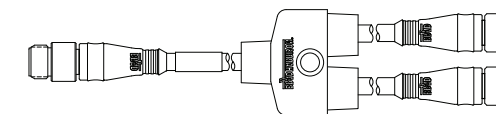
Brad® DeviceNet Micro-Change® 5 Pole Passive Tee

Engineering No.	Standard Order No.
MICT555	130035-0090



Brad® DeviceNet Splitter

Engineering No.	Standard Order No.
DNYG001	130039-0396



Brad® DeviceNet Micro-Change® Bulk Cable

Length	Engineering No.	Standard Order No.
100m	DND00A-T100	130039-0381

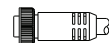
DeviceNet Micro-Change® M12 Infrastructure Accessories



Plug & Play 3 Pole power distribution infrastructure to interconnect IP67 devices based on the 7/8" standard connectors also called Mini-Change®.

Ordering Information

Brad® Mini-Change® Single-Ended 3 Pole Cordsets



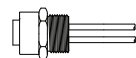
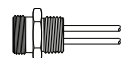
3 Pole Mini-Change® Auxiliary Power TPE Cable		
Female Straight		
Length	Engineering No.	Standard Order No.
5m	103000K13M050	130006-9041
10m	103000K13M100	130006-0419
20m	103000K13M200	130006-9042
30m	103000K13M300	130006-9043

Brad® Mini-Change® Double-Ended 3 Pole Cordsets



3 Pole Mini-Change® Auxiliary Power TPE Cable		
Female to Male Straight		
Length	Engineering No.	Standard Order No.
1m	113030K13M010	130010-0487
2m	113030K13M020	130010-0488
3m	113030K13M030	130010-0489
5m	113030K13M050	130010-0491
10m	113030K13M100	130010-5001
15m	113030K13M150	130010-0495
20m	113030K13M200	130010-5002

Brad® Mini-Change® 3 Pole Receptacles



3 Pole Mini-Change® Auxiliary Power PVC Wires				
Male Receptacle			Female Receptacle	
Length	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1m	1R3006A20M010	130013-0223	1R3000A20M010	130013-0111
2m	1R3006A20M020	130013-0224	1R3000A20M020	130013-0112

Description	Engineering No.	Standard Order No.
Gasket for Receptacle, 1/2"	00-5087	130180-0059
Locknut for Receptacle, 1/2" 14NPT	30-1100	130184-0031

Brad® Mini-Change® 7/8" Auxiliary Power Infrastructure Components



Mini-Change® 3 Pole Power Cable Specification

3 Pole 16 AWG cable for 120VAC power distribution

Conductors: 3 x 16 AWG (1.5mm²) Black, White, Green/Yellow

Jacket Material: Yellow TPE, flame retardant, weld slag and oil resistant

Voltage Rating: 600V

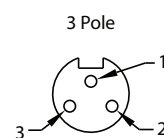
Operating Temperature: -20°C to +105°C

C-Track and Torsion Flex rated (10M cycles)

Bend radius: 10x cable diameter

Approvals: UL Listed

Mini-Change® 3 Pole Female Connector Pinout (Front view)



1. Green/Yellow
2. Black
3. White

Ordering Information

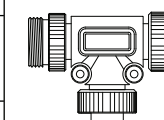
Brad® Mini-Change® 3 Pole Field Attachable Connector



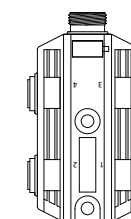
Male		Female	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1A3006-34	130017-0011	1A3000-34	130017-0004

Brad® Mini-Change® 3 Pole Tees

Mini-Change® Tee	
Engineering No.	Standard Order No.
61056	130018-0217

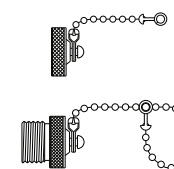


Mini-Change® Distribution Box		
Description	Engineering No.	Standard Order No.
4 Ports	ACAUX4000	130060-0067
6 Ports	ACAUX8000	130060-0068



Brad® Mini-Change® Accessories

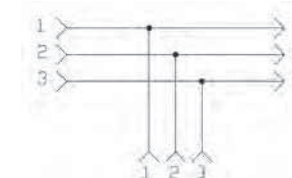
Mini-Change® Caps		
Description	Engineering No.	Standard Order No.
Int. Thread	65-0086	130201-1111
Ext. Thread	65-0085	130201-1109



Brad® Mini-Change® 7/8" Auxiliary Power Infrastructure Components



3 Pole Mini-Change® Tee, Y-Splitter and Distribution Box Wiring



Note:

Further technical information, datasheet or drawing can be downloaded from the Molex® website using the Standard Order part number listed.

Plug & Play 4 Pole power distribution infrastructure to interconnect IP67 devices based on the 7/8" standard connectors also called Mini-Change®.

Ordering Information

Brad® Mini-Change® Single-Ended 4 Pole Cordsets



4 Pole Mini-Change® Auxiliary Power TPE Cable				
	Male Straight		Female Straight	
Length	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
5m	104001K12M050	130006-9046	104000K12M050	130006-0895
10m	104001K12M100	130006-9047	104000K12M100	130006-0897
20m	104001K12M200	130006-9048	104000K12M200	130006-9044
30m	104001K12M300	130006-9049	104000K12M300	130006-9045

Brad® Mini-Change® Double-Ended 4 Pole Cordsets



4 Pole Mini-Change® Auxiliary Power TPE Cable				
	Female to Male Straight		Female to Male 90°	
Length	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1m	114030K12M010	130010-0864	114033K12M010	130010-0982
2m	114030K12M020	130010-0865	114033K12M020	130010-1744
3m	114030K12M030	130010-0866	114033K12M030	130010-1745
5m	114030K12M050	130010-0868	114033K12M050	130010-1747
10m	114030K12M100	130010-0873	114033K12M100	130010-1905
15m	114030K12M150	130010-0877	114033K12M150	130010-1907
20m	114030K12M200	130010-0882	114033K12M200	130010-1908

Brad® Mini-Change® 4 Pole Receptacles



4 Pole Mini-Change® Auxiliary Power PVC Wires				
	Male Receptacle		Female Receptacle	
Length	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1m	1R4006A39M010	130013-0377	1R4000A39M010	130013-0300
2m	1R4006A39M020	130013-0378	1R4000A39M020	130013-0301

Description	Engineering No.	Standard Order No.
Gasket for Receptacle, 1/2"	00-5087	130180-0059
Locknut for Receptacle, 1/2" 14NPT	30-1100	130184-0031

Brad® Mini-Change® 7/8" Auxiliary Power Infrastructure Components



Mini-Change® 4 Pole Power Cable Specification

4 Pole 16 AWG cable for 24V power distribution

Conductors: 4 x 16 AWG (1.5mm²) Black, Blue, Brown, White

Jacket Material: Yellow TPE, flame retardant, weld slag and oil resistant

Voltage Rating: 600V

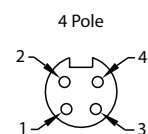
Operating Temperature: -20°C to +105°C

C-Track and Torsion Flex rated (10M cycles)

Bend radius: 10x cable diameter

Approvals: UL Listed

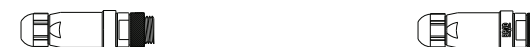
Mini-Change® 4 Pole Female Connector Pinout (Front view)



1. Brown
2. White
3. Blue
4. Black

Ordering Information

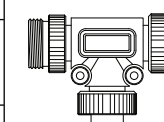
Brad® Mini-Change® 4 Pole Field Attachable Connector



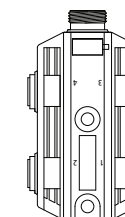
Male		Female	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1A4006-34	130017-0020	1A4000-34	130017-0015

Brad® Mini-Change® 4 Pole Tees

Mini-Change® Tee	
Engineering No.	Standard Order No.
DNETAUXPT	130035-0085

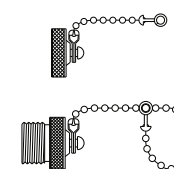


Mini-Change® Distribution Box		
Description	Engineering No.	Standard Order No.
4 Ports	DNAUX4000	130060-0065
6 Ports	DNAUX8000	130060-0066



Brad® Mini-Change® Accessories

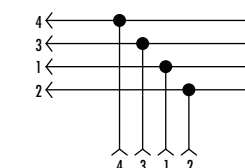
Mini-Change® Caps		
Description	Engineering No.	Standard Order No.
Int. Thread	65-0086	130201-1111
Ext. Thread	65-0085	130201-1109



Brad® Mini-Change® 7/8" Auxiliary Power Infrastructure Components



4 Pole Mini-Change® Tee, Y-Splitter and Distribution Box Wiring



Note:

Further technical information, datasheet or drawing can be downloaded from the Molex® website using the Standard Order part number listed.

Plug & Play 5 Pole power distribution infrastructure to interconnect IP67 devices based on the 7/8" standard connectors also called Mini-Change®.

Ordering Information

Brad® Mini-Change® Single-Ended 5 Pole Cordsets



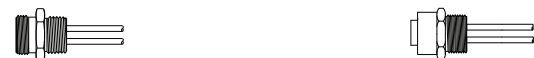
5 Pole Mini-Change® Auxiliary Power TPE Cable				
	Male Straight		Female Straight	
Length	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
5m	105006K13M050	130006-9050	105000K13M050	130006-0051
10m	105006K13M100	130006-9051	105000K13M100	130006-0052
20m	105006K13M200	130006-9052	105000K13M200	130006-2321
30m	105006K13M300	130006-9053	105000K13M300	130006-2323

Brad® Mini-Change® Double-Ended 5 Pole Cordsets



5 Pole Mini-Change® Auxiliary Power TPE Cable				
	Female to Male Straight		Female to Male 90°	
Length	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1m	115030K13M010	130010-0102	115033K13M010	130010-0118
2m	115030K13M020	130010-0103	115033K13M020	130010-0119
3m	115030K13M030	130010-0104	115033K13M030	130010-0120
5m	115030K13M050	130010-0105	115033K13M050	130010-0121
10m	115030K13M100	130010-0106	115033K13M100	130010-0122
15m	115030K13M150	130010-1640	115033K13M150	130010-1959
20m	115030K13M200	130010-1843	115033K13M200	130010-1960

Brad® Mini-Change® 5 Pole Receptacles



5 Pole Mini-Change® Auxiliary Power PVC Wires				
	Male Receptacle		Female Receptacle	
Length	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1m	1R5006A20M010	130013-0511	1R5000A20M010	130013-0425
2m	1R5006A20M020	130013-0512	1R5000A20M020	130013-0426

Description	Engineering No.	Standard Order No.
Gasket for Receptacle, 1/2"	00-5087	130180-0059
Locknut for Receptacle, 1/2" 14NPT	30-1100	130184-0031

Brad® Mini-Change® 7/8" Auxiliary Power Infrastructure Components



Mini-Change® 5 Pole Power Cable Specification

5 Pole 16 AWG cable for 24V power distribution

Conductors: 5 x 16 AWG (1.5mm²) White, Red, Green/ Yellow, Orange, Black

Jacket Material: Yellow TPE, flame retardant, weld slag and oil resistant

Voltage Rating: 600V

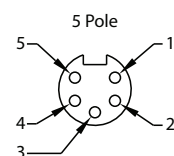
Operating Temperature: -20°C to +105°C

C-Track and Torsion Flex Rated (10M Cycles)

Bend radius: 10x cable diameter

Approvals: UL Listed

Mini-Change® 5 Pole Female Connector Pinout (Front view)



1. White
2. Red
3. Green/Yellow
4. Orange
5. Black

Ordering Information

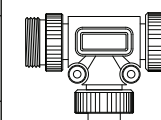
Brad® Mini-Change® 5 Pole Field Attachable Connector



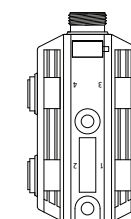
Male		Female	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1A5006-34	130017-0029	1A5000-34	130017-0023

Brad® Mini-Change® 5 Pole Tees

Mini-Change® Tee	
Engineering No.	Standard Order No.
PBAPT	120101-0001

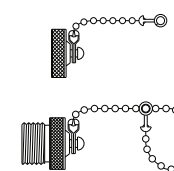


Mini-Change® Distribution Box		
Description	Engineering No.	Standard Order No.
4 Ports	DN4000	130036-0005
6 Ports	DN6000	130036-0008



Brad® Mini-Change® Accessories

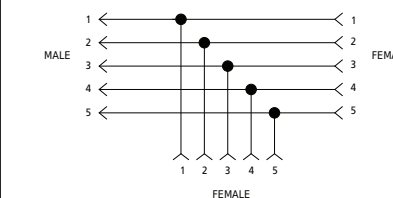
Mini-Change® Caps		
Description	Engineering No.	Standard Order No.
Int. Thread	65-0086	130201-1111
Ext. Thread	65-0085	130201-1109



Brad® Mini-Change® 7/8" Auxiliary Power Infrastructure Components



5 Pole Mini-Change® Tee, Y-Splitter and Distribution Box Wiring



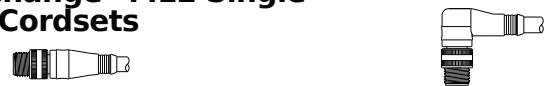
Note:

Further technical information, datasheet or drawing can be downloaded from the Molex® website using the Standard Order part number listed.

Plug & Play 5 Pole power distribution infrastructure to interconnect IP67 devices based on the A-Code M12 standard connectors.

Ordering Information

Brad® Micro-Change® M12 Single-Ended 5 Pole Cordsets



A09 PVC Cable				
Length	Male Straight		Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
5m	805006A09M050	120065-0528	805007A09M050	120065-1727
10m	805006A09M100	120065-0533	805007A09M100	120065-2123
20m	805006A09M200	120065-9219	805007A09M200	120065-9227
30m	805006A09M300	120065-9220		
K03 TPE Cable				
5m	805006K03M050	120065-2151	805007K03M050	120065-2161
10m	805006K03M100	120065-2153	805007K03M100	120065-2163
20m	805006K03M200	120065-9222	805007K03M200	120065-9229
30m	805006K03M300	120065-9223		



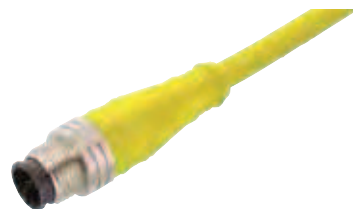
A09 PVC Cable				
Length	Female Straight		Female 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
5m	805000A09M050	120065-0479	805001A09M050	120065-1701
10m	805000A09M100	120065-0487	805001A09M100	120065-1706
20m	805000A09M200	120065-1823	805001A09M200	120065-9216
30m	805000A09M300	120065-0498		
K03 TPE Cable				
5m	805000K03M050	120065-1370	805001K03M050	120065-1722
10m	805000K03M100	120065-1373	805001K03M100	120065-2155
20m	805000K03M200	120065-9212	805001K03M200	120065-9218
30m	805000K03M300	120065-9213		

Brad® Micro-Change® M12 Auxiliary Power 5 Pole Receptacles



PVC Wires				
Length	Male		Female	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
2m	8R5006A18M020	120070-0258	8R5000A18M020	120070-0507
3m	8R5006A18M030	120070-0261	8R5000A18M030	120070-8179

Brad® Micro-Change® M12 Auxiliary Power Infrastructure Components



A09 PVC M12 Cable Specification

For use in packaging machines and production lines, in static or less demanding environments.

Conductors: 5 x 22 AWG

(Black, Brown, Blue, White, Grey)

Jacket Material: Yellow PVC

Voltage Rating: 300V, Max 4 Amps

Operating Temperature: -30 to +80°C

Diameter 5 pole 5,5 \pm 0,2 mm

Approvals: UL, CSA

K03 TPE M12 Cable Specification

For use in machine tools, metal cutting production with harsh fluid, mechanical or continuous flex requirements.

Conductors: 5 x 18 AWG

(Black, Brown, Blue, White, Grey)

Jacket Material: Yellow TPE

Voltage Rating: 300V, Max 4 Amps

Operating Temperature: -30 to +80°C

Bending Cycles: 10 Mio with 10 x D (60°C)

Diameter 5 pole 7,0 \pm 0,2 mm

Approvals: UL PLTC-ER, CSA FT4

Ordering Information

Brad® Micro-Change® M12 Auxiliary Power Double-Ended 5 Pole Cordsets



A09 PVC Cable				
Length	Female to Male Straight		Female to Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
1m	885030A09M010	120066-0427	885033A09M010	120066-1634
2m	885030A09M020	120066-0429	885033A09M020	120066-1416
3m	885030A09M030	120066-0431	885033A09M030	120066-1417
5m	885030A09M050	120066-0434	885033A09M050	120066-0460
10m	885030A09M100	120066-0440	885033A09M100	120066-8733
15m	885030A09M150	120066-0442	—	—
20m	885030A09M200	120066-0443	—	—
K03 PUR Cable				
1m	885030K03M010	120066-1034	885033K03M010	120066-1421
2m	885030K03M020	120066-1035	885033K03M020	120066-1422
3m	885030K03M030	120066-1036	885033K03M030	120066-1423
5m	885030K03M050	120066-1038	885033K03M050	120066-1425
10m	885030K03M100	120066-1043	885033K03M100	120066-8734
15m	885030K03M150	120066-1044	—	—
20m	885030K03M200	120066-1770	—	—

Brad® Micro-Change® M12 5 Pole Field Attachable



Type	Male		Female	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
PG9	8A5006-31	120071-0045	8A5000-31	120071-0041
PG11	8A5006-32	120071-0047	8A5000-32	120071-0043

Brad® Micro-Change® M12 5 Pole Accessories



5 Poles M12 Y-Splitter	
Engineering No.	Standard Order No.
0812-05EMF-00001	120068-0137

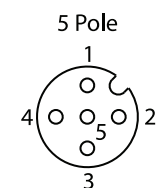
5 Poles M12 Tee	
Engineering No.	Standard Order No.
0812-051FJ-00000	120068-8009

Brad® Micro-Change® M12 Auxiliary Power Infrastructure Components



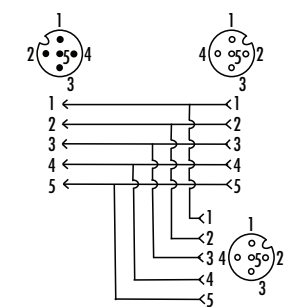
Micro-Change® A-Code M12 5 Pole Auxiliary Power Connector on the IO modules. Female Pinout

(Front view):



1. Brown – Module Power V-
2. White – Output Power V-
3. Blue – Ground
4. Black – Ground
5. Grey – Protective Earth

Micro-Change® M12 5 Pole Tee and Y-Splitter Wiring



IP67 rated passive IO module for harsh environments are designed to concentrate the sensor/actuator signals into one unique home run cable for a better mechanical infrastructure wiring on the machine.

Specifications

IP67 Molded PBT Housing, color Yellow
 Single or Dual Input/Output signal per port
 Indicating LED for Power and sensor trigger
 PNP Version (available also in NPN version)
 Electrical: 10-30V DC max. & 12.0A max. (4.0A max. per port)
 Approvals: UL, CSA, IP67, NEMA 6

Ordering Information

Brad® M12 Distribution Boxes with PUR Home Run Cable



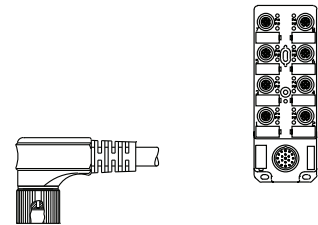
IO Type	Length	4 Ports		8 Ports	
		Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
Single IO	5m	BTY400P-FBP-05	120114-8011	BTY800P-FBP-05	120114-8022
	10m	BTY400P-FBP-10	120114-8012	BTY800P-FBP-10	120114-8023
Dual IO	5m	BTY405P-FBP-05	120114-0039	BTY805P-FBP-05	120114-0089
	10m	BTY405P-FBP-10	120114-0040	BTY805P-FBP-10	120114-0090

Brad® M12 Distribution Boxes with Field Attachable Terminals



IO Type	4 Ports		8 Ports	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
Dual IO	BTY403P-FBA	120114-0029	BTY803P-FBA	120114-0082

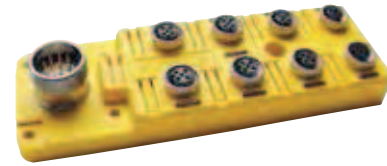
Brad® M12 Distribution Boxes with M23 Connector and Home Run Cable



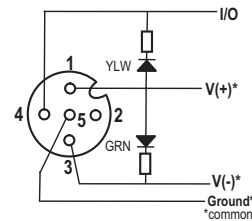
IO Type	8 Ports	
	Engineering No.	Standard Order No.
Single IO	BTY801P-FBC	120114-0066
Dual IO	BTY803P-FBC	120114-0084

Length	Single IO Home Run Cable (12p/11 wires)		Dual IO Home Run Cable (19p/19 wires)	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
10m	K02101P80M100	120094-0125	K03001B20M100	120094-5009
15m	K02101P80M150	120094-8038	K03001B20M150	120094-5031

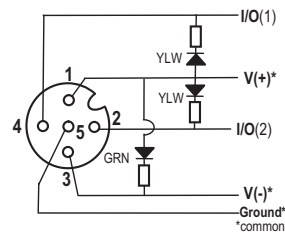
Brad® Sensor/Actuator Distribution Boxes



Micro-Change® M12 Single IO Connector Wiring



Micro-Change® M12 Dual IO Connector Wiring



Ordering Information

Brad® M8 Distribution Boxes with Side Mount PUR Home Run Cable

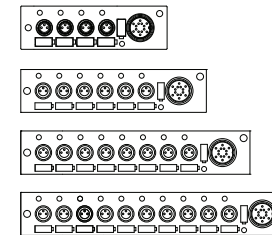


IO Type	Length	4 Ports		6 Ports	
		Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
Single IO	5m	BEY401P-FBP-05	120113-0006	BEY601P-FBP-05	120113-0011
	10m	BEY401P-FBP-10	120113-0007	BEY601P-FBP-10	120054-0026

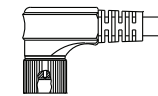


IO Type	Length	8 Ports		10 Ports	
		Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
Single IO	5m	BEY801P-FBP-05	120113-0014	BEYA01P-FBP-05	120113-0002
	10m	BEY801P-FBP-10	120113-0015	BEYA010-FBC-10	120054-0091

Brad® M8 Distribution Boxes with M16 Connector and Home Run Cable



Ports	Single IO Distribution Box with M16 connector	
	Engineering No.	Standard Order No.
4	BNY401P-FBC	120113-0023
6	BNY601P-FBC	120113-0026
8	BNY801P-FBC	120113-0029
10	BNYA01P-FBC	120113-0020

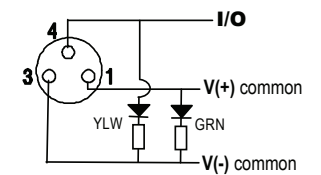


Block	M16 Single IO Home Run Cable 10 Meter	
	Engineering No.	Standard Order No.
4 Ports	L04301M78M100	130023-0063
6 Ports	L04201M78M100	130023-0059
8 Ports	L04101M78M100	130023-0055
10 Ports	L04A01M78M100	130023-0068

Brad® Sensor/Actuator Distribution Boxes



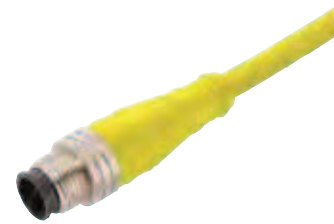
Nano-Change® M8 Single IO Connector Wiring



Note:
 Further technical information, datasheet or drawing can be downloaded from the Molex® website using the ordering part number.

Brad® Micro-Change® M12 connectivity is a ready-to-use solution based on the A-Code M12 standard with IP67/68 rating to wire a wide range of sensors and actuators from proximity switches to rotary encoders in harsh environments.

Brad® Micro-Change® M12 Sensor/Actuator Connectivity



Ordering Information

Brad® Micro-Change® M12 Single-Ended Cordsets



A09 PVC Cable									
Poles	Length	Female Straight		Female 90°		Male Straight		Male 90°	
		Engineering No.	Standard Order No.	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
3	1m	803000A09M010	120065-0128	803001A09M010	120065-1443	803006A09M010	120065-0198	803007A09M010	120065-1495
	2m	803000A09M020	120065-0129	803001A09M020	120065-1444	803006A09M020	120065-0200	803007A09M020	120065-1497
	5m	803000A09M050	120065-0139	803001A09M050	120065-1451	803006A09M050	120065-0203	803007A09M050	120065-1499
	10m	803000A09M100	120065-0148	803001A09M100	120065-1457	803006A09M100	120065-0207	803007A09M100	120065-9208
4	1m	804000A09M010	120065-0252	804001A09M010	120065-1550	804006A09M010	120065-0411	804007A09M010	120065-1661
	2m	804000A09M020	120065-0255	804001A09M020	120065-1551	804006A09M020	120065-0414	804007A09M020	120065-1662
	5m	804000A09M050	120065-0265	804001A09M050	120065-1558	804006A09M050	120065-0419	804007A09M050	120065-1666
	10m	804000A09M100	120065-0277	804001A09M100	120065-1567	804006A09M100	120065-0425	804007A09M100	120065-1669
5	1m	805000A09M010	120065-0470	805001A09M010	120065-9215	805006A09M010	120065-0522	805007A09M010	120065-9226
	2m	805000A09M020	120065-0471	805001A09M020	120065-1697	805006A09M020	120065-0523	805007A09M020	120065-1724
	5m	805000A09M050	120065-0479	805001A09M050	120065-1701	805006A09M050	120065-0528	805007A09M050	120065-1727
	10m	805000A09M100	120065-0487	805001A09M100	120065-1706	805006A09M100	120065-0533	805007A09M100	120065-2123

K05/K03 TPE Cable

3	1m	803000K05M010	120065-2217	803001K05M010	120065-2218	803006K05M010	120065-2219	803007K05M010	120065-9209
	2m	803000K05M020	120065-1108	803001K05M020	120065-1489	803006K05M020	120065-1114	803007K05M020	120065-1501
	5m	803000K05M050	120065-1110	803001K05M050	120065-1491	803006K05M050	120065-1117	803007K05M050	120065-1503
	10m	803000K05M100	120065-1112	803001K05M100	120065-1493	803006K05M100	120065-1119	803007K05M100	120065-1505
4	1m	804000K05M010	120065-1120	804001K05M010	120065-1638	804006K05M010	120065-2082	804007K05M010	120065-9210
	2m	804000K05M020	120065-1121	804001K05M020	120065-1639	804006K05M020	120065-1129	804007K05M020	120065-1691
	5m	804000K05M050	120065-1124	804001K05M050	120065-1642	804006K05M050	120065-1131	804007K05M050	120065-1693
	10m	804000K05M100	120065-1126	804001K05M100	120065-1644	804006K05M100	120065-1133	804007K05M100	120065-1695
5	1m	805000K03M010	120065-9211	805001K03M010	120065-9217	805006K03M010	120065-9221	805007K03M010	120065-9228
	2m	805000K03M020	120065-1367	805001K03M020	120065-1720	805006K03M020	120065-1374	805007K03M020	120065-2159
	5m	805000K03M050	120065-1370	805001K03M050	120065-1722	805006K03M050	120065-2151	805007K03M050	120065-2161
	10m	805000K03M100	120065-1373	805001K03M100	120065-2155	805006K03M100	120065-2153	805007K03M100	120065-2163

Ordering Information

Brad® Micro-Change® M12 Double-Ended Cordsets



A09 PVC Cable					
Poles	Length	Fem. To Male Straight		Fem. 90° To Male Straight	
		Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
4	.6m	884030A09M006	120066-0262	884031A09M006	120066-1261
	1m	884030A09M010	120066-0266	884031A09M010	120066-1262
	2m	884030A09M020	120066-0271	884031A09M020	120066-1265
	3m	884030A09M030	120066-0277	884031A09M030	120066-1268
	5m	884030A09M050	120066-0284	884031A09M050	120066-1273
5	.6m	885030A09M006	120066-0297	884031A09M100	120066-1280
	1m	885030A09M010	120066-0426	885031A09M006	120066-8730
	2m	885030A09M020	120066-0427	885031A09M010	120066-1389
	3m	885030A09M030	120066-0429	885031A09M020	120066-1391
	5m	885030A09M050	120066-0431	885031A09M030	120066-1392
4	.6m	885030A09M100	120066-0434	885031A09M050	120066-1394
	1m	885030A09M100	120066-0440	885031A09M100	120066-1396
	2m	884030K05M020	120066-0689	884031K05M020	120066-0378
	3m	884030K05M030	120066-0690	884031K05M030	120066-0379
	5m	884030K05M050	120066-0692	884031K05M050	120066-0381
5	.6m	884030K05M100	120066-0695	884031K05M100	120066-0546
	1m	885030K03M010	120066-1033	885031K03M006	120066-8731
	2m	885030K03M020	120066-1034	885031K03M010	120066-1046
	3m	885030K03M030	120066-1035	885031K03M020	120066-1047
	5m	885030K03M050	120066-1036	885031K03M030	120066-1048
5	10m	885030K03M100	120066-1038	885031K03M050	120066-1050
	10m	885030K03M100	120066-1043	885031K03M100	120066-8732

Brad® Micro-Change® M12 Front Mount Receptacles



Wires with PVC Insulation					
Poles	Mount Thread	Male		Female	
		Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
4	PG9	8R4006A18A120	120070-0184	8R4000A18A120	120070-0173
	M14x1	8R4A06A18A120	120070-0385	8R4A00A18A120	120070-0114
5	PG9	8R5006A18A120	120070-0252	8R5000A18A120	120070-5206
	M14x1	8R5A06A18A120	120070-8180	8R5A00A18A120	120070-0201

Brad® Micro-Change® M12 Sensor/Actuator Connectivity



A09 PVC M12 Cable Specification

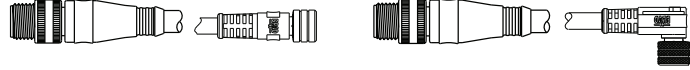
For use in packaging machines and production lines, in static or less demanding environments.
 Conductors: 3 x 22, 4 x 22 or 5 x 22 AWG
 (Black, Brown, Blue, White, Grey)
 Jacket Material: Yellow PVC
 Voltage Rating: 300V, Max 4 Amps
 Operating Temperature: -30 to +80°C
 Diameter 3 pole 4,8 ±0.3 mm
 Diameter 4 pole 5,1 ±0.3 mm
 Diameter 5 pole 5,5 ±0.3 mm
 Approvals: UL, CSA

K05/K03 TPE M12 Cable Specification

For use in machine tools, metal cutting production with harsh fluid, mechanical or continuous flex requirements.
 Conductors: 3 x 22, 4 x 22 or 5 x 18 AWG
 (Black, Brown, Blue, White, Grey)
 Jacket Material: Yellow TPE
 Voltage Rating: 300V, Max 4 Amps
 Operating Temperature: -30 to +80°C
 Bending Cycles: +10 million with 10 x D (60°C)
 Diameter 3 pole 5,0 ±0.2 mm
 Diameter 4 pole 5,2 ±0.2 mm
 Diameter 5 pole 7,0 ±0.2 mm
 Approvals: UL PLTC-ER, CSA FT4

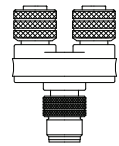
Ordering Information

Brad® Micro-Change® M12 Cordsets to M8 Sensors

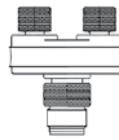


A10 PVC Cable					
		M12 Male Straight to M8 Female Straight		M12 Male Straight to M8 Female 90°	
Poles	Length	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
3	.6m	483030A10M006	120087-0306	483031A10M006	120087-8584
	1m	483030A10M010	120087-0309	483031A10M010	120087-0330
	2m	483030A10M020	120087-0312	483031A10M020	120087-0331
	5m	483030A10M050	120087-0317	483031A10M050	120087-0333
4	.6m	484030A10M006	120087-8585	484031A10M006	120087-8586
	1m	484030A10M010	120087-0353	484031A10M010	120087-0628
	2m	484030A10M020	120087-0354	484031A10M020	120087-0518
	5m	484030A10M050	120087-0356	484031A10M050	120087-0362
K05 TPE Cable					
3	.6m	483030K05M006	120087-0491	483031K05M006	120086-8553
	1m	483030K05M010	120087-0492	483031K05M010	120087-0497
	2m	483030K05M020	120087-0493	483031K05M020	120087-0498
	5m	483030K05M050	120087-0496	483031K05M050	120086-8554
4	.6m	484030K05M006	120086-8555	484031K05M006	120086-8558
	1m	484030K05M010	120028-1315	484031K05M010	120086-8559
	2m	484030K05M020	120086-8556	484031K05M020	120086-8560
	5m	484030K05M050	120086-8557	484031K05M050	120086-8561

Brad® Micro-Change® M12 Y-Splitters & Adapters



Y-Splitter			
1x M12 Male to 2x M12 Female			
Poles	Engineering No.	Standard Order No.	
4	81590	120068-0229	
5	081205EMF00000	120068-0139	



Y-Splitter			
1x M12 Male to 2x M8 Female			
Poles	Engineering No.	Standard Order No.	
4	080804EMF00000	120089-0031	



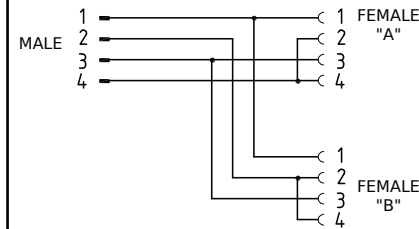
Adapter Connector			
1x M12 Male to 1x M8 Female			
Poles	Engineering No.	Standard Order No.	
3	483030	120033-0002	
4	484030	120033-0001	

Brad® Micro-Change® M12 Sensor/Actuator Connectivity

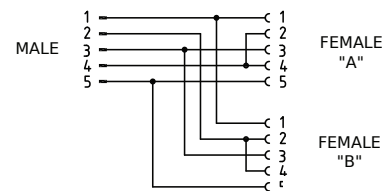


Y-Splitter Wiring Schematic

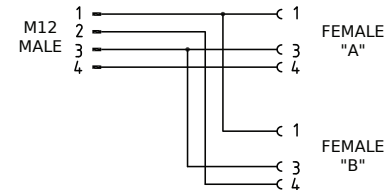
M12 to M12 4 Pole



M12 to M12 5 Pole

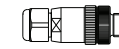


M12 to M8 4 Pole

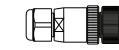


Ordering Information

Brad® Micro-Change® M12 Field Attachable Connectors



		Male Straight		Male 90°	
Poles	Max. Wire Size	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
4	3.3-6.6	8A4006-31	120071-0038	8A4007-31	120071-0040
	4.1-8.1	8A4006-32	120071-0039	8A4007-32	120071-5011
5	3.3-6.6	8A5006-31	120071-0045	8A5007-31	120071-0049
	4.1-8.1	8A5006-32	120071-0047	8A5007-32	120071-0071



		Female Straight		Female 90°	
Poles	Max. Wire Size	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
4	3.3-6.6	8A4000-31	120071-0035	8A4001-31	120071-0037
	4.1-8.1	8A4000-32	120071-0036	8A4001-32	120071-5010
5	3.3-6.6	8A5000-31	120071-0041	8A5001-31	120071-0044
	4.1-8.1	8A5000-32	120071-0043	8A5001-32	120071-0070

Brad® Micro-Change® M12 Closure Caps



Plastic Closure Cap

To Cover Male		To Cover Female	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
—	120308-0680	—	120358-0030



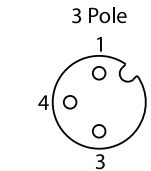
Rubber Closure Cap with Leash

To Cover Male		To Cover Female	
Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
—	120076-5046	—	120076-5047

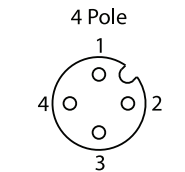
Brad® Micro-Change® M12 Sensor/Actuator Connectivity



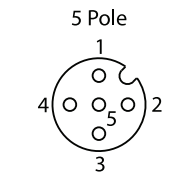
Micro-Change® M12 Connector Pinout



1 - Brown 4 - Black
3 - Blue



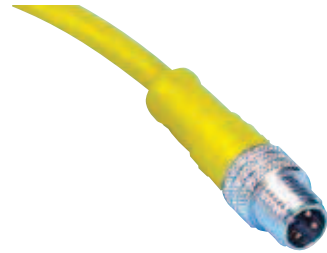
1 - Brown 3 - Blue
2 - White 4 - Black



1 - Brown 4 - Black
2 - White 5 - Gray
3 - Blue

Brad® Nano-Change® M8 connectivity provides a rugged and space-saving solution to wire a wide range of sensors and actuators from proximity switches to rotary encoders in harsh environments.

Brad® Nano-Change® M8 Sensor/Actuator Connectivity



Ordering Information

Brad® Nano-Change® M8 Single-Ended Cordsets



A10 PVC Cable									
Poles	Length	Female Straight		Female 90°		Male Straight		Male 90°	
		Engineering No.	Standard Order No.	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
3	1m	403000A10M010	120086-0100	403001A10M010	120086-0118	403006A10M010	120086-0131	403007A10M010	120086-0031
	2m	403000A10M020	120086-0102	403001A10M020	120086-0119	403006A10M020	120086-0132	403007A10M020	120086-0139
	5m	403000A10M050	120086-0107	403001A10M050	120086-0122	403006A10M050	120086-0134	403007A10M050	120086-0141
	10m	403000A10M100	120086-0111	403001A10M100	120086-0124	403006A10M100	120086-0135	403007A10M100	120086-0142
4	1m	404000A10M010	120086-0143	404001A10M010	120086-0174	404006A10M010	120086-0182	404007A10M010	120086-0051
	2m	404000A10M020	120086-0144	404001A10M020	120086-0175	404006A10M020	120086-0183	404007A10M020	120086-0186
	5m	404000A10M050	120086-0147	404001A10M050	120086-0178	404006A10M050	120086-0185	404007A10M050	120086-0188
	10m	404000A10M100	120086-0155	404001A10M100	120086-0180	404006A10M100	120086-0577	404007A10M100	120086-0605
K05 TPE Cable									
3	1m	403000K05M010	120086-0508	403001K05M010	120086-0614	403006K05M010	120086-8520	403007K05M010	120086-8524
	2m	403000K05M020	120086-0338	403001K05M020	120086-0350	403006K05M020	120086-8521	403007K05M020	120086-8525
	5m	403000K05M050	120086-0340	403001K05M050	120086-0351	403006K05M050	120086-8522	403007K05M050	120086-8526
	10m	403000K05M100	120086-0342	403001K05M100	120086-0352	403006K05M100	120086-8523	403007K05M100	120086-8527
4	1m	404000K05M010	120086-8529	404001K05M010	120086-8531	404006K05M010	120086-8534	404007K05M010	120086-8538
	2m	404000K05M020	120086-0369	404001K05M020	120086-8532	404006K05M020	120086-8535	404007K05M020	120086-8539
	5m	404000K05M050	120086-0370	404001K05M050	120086-0377	404006K05M050	120086-8536	404007K05M050	120086-8540
	10m	404000K05M100	120086-0371	404001K05M100	120086-0378	404006K05M100	120086-8537	404007K05M100	120086-8541

Ordering Information

Brad® Nano-Change® M8 Double-Ended Cordsets



A10 PVC Cable					
Poles	Length	Female to Male Straight		Fem. 90° to Male Straight	
		Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
3	.6m	443030A10M006	120087-0071	443031A10M006	120087-0242
	1m	443030A10M010	120087-0074	443031A10M010	120087-0243
	2m	443030A10M020	120087-0078	443031A10M020	120087-0245
	5m	443030A10M050	120087-0081	443031A10M050	120087-0248
4	.6m	444030A10M006	120087-0092	444031A10M006	120087-8583
	1m	444030A10M010	120087-0093	444031A10M010	120087-0103
	2m	444030A10M020	120087-0095	444031A10M020	120087-0104
	5m	444030A10M050	120087-0098	444031A10M050	120087-0107
K05 TPE Cable					
4	.6m	443030K05M006	120086-8544	443031K05M006	120086-8545
	1m	443030K05M010	120087-0235	443031K05M010	120087-0485
	2m	443030K05M020	120087-0236	443031K05M020	120087-0486
	5m	443030K05M050	120087-1000	443031K05M050	120086-8546
5	.6m	444030K05M006	120086-8547	444031K05M006	120086-8549
	1m	444030K05M010	120087-0999	444031K05M010	120086-8550
	2m	444030K05M020	120086-8548	444031K05M020	120086-8551
	5m	444030K05M050	120087-0992	444031K05M050	120086-8552

Brad® Nano-Change® M8 Front Mount Receptacles



Wires with PVC Insulation					
Poles	Mount Thread	Male		Female	
		Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
3	M8x0.5	4R3P06A27C300	120090-0020	4R3P00A27C300	120090-0016
4	M8x0.5	4R4P06A27C300	120090-0032	4R4P00A27C300	120090-0029

Brad® Nano-Change® M8 Sensor/Actuator Connectivity



A10 PVC M8 Cable Specification

For use in packaging machines and production lines in static or less demanding environments.

Conductors: 3 x 24 or 4 x 24 AWG (Black, Brown, Blue, White)

Jacket Material: Yellow PVC

Voltage Rating: 300V, Max 4 Amps

Operating Temperature: -30 to +80°C

Diameter 3 pole 4,2 ±0,3 mm

Diameter 4 pole 4,6 ±0,3 mm

Approvals: UL, CSA

K05 TPE M8 Cable Specification

For use in machine tools, metal cutting production with harsh fluid, mechanical or continuous flex requirements.

Conductors: 3 x 22 or 4 x 22 AWG (Black, Brown, Blue, White)

Jacket Material: Yellow TPE

Voltage Rating: 300V, Max 4 Amps

Operating Temperature: -30 to +80°C

Bending Cycles: +10 million with 10 x D (60°C)

Diameter 3 pole 5,0 ±0,2 mm

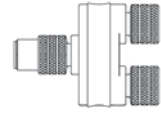
Diameter 4 pole 5,2 ±0,2 mm

Approvals: UL PLTC-ER, CSA FT4

Ordering Information

Brad® Nano-Change® M8 Y-Splitters & Adapters

Y-Splitter		
	1x M8 Male to 2x M8 Female	
Poles	Engineering No.	Standard Order No.
4	080804LMF00000	120089-0033



Adapter Connector		
	1x M8 Male to 1x M12 Female	
Poles	Engineering No.	Standard Order No.
3	853030	120017-0004
4	854030	120017-0003

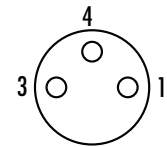


Note:
M8 male connector thread is fixed. To connect only with M8 female connectors.

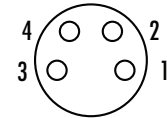
Brad® Nano-Change® M8 Sensor/Actuator Connectivity



Nano-Change® M8 Connector Pinout (front view)



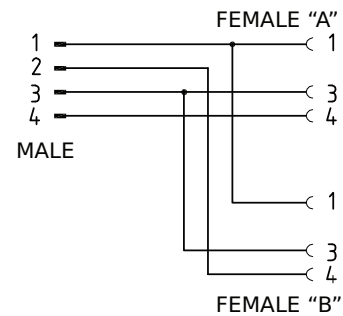
1 - Brown 4 - Black
3 - Blue



1 - Brown 3 - Blue
2 - White 4 - Black

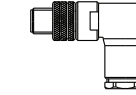
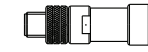
Y-Splitter Wiring Schematic

M8 to M8 4 Pole



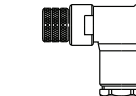
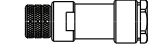
Ordering Information

Brad® Nano-Change® M8 Field Attachable Connectors



Poles	Max Wire Size	Male Straight		Male 90°	
		Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
3	3.5-5mm	N03MA03124	120091-0004	N03MA04124	120091-0006
4	3.5-5mm	N04MA03124	120091-0010	N04MA04124	120091-0012

Brad® Nano-Change® M8 Sensor/Actuator Connectivity



Poles	Max Wire Size	Female Straight		Female 90°	
		Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
3	3.5-5mm	N03FA03124	120091-0001	N03FA04124	120091-0003
4	3.5-5mm	N04FA03124	120091-0007	N04FA04124	120091-0009

Brad® Nano-Change® M8 Closure Caps



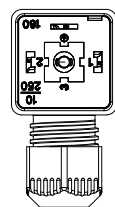
Plastic Closure Cap

To Cover Female	
Engineering No.	Standard Order No.
—	120308-0677

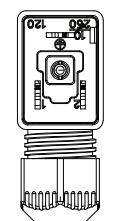
The mPm® DIN valve connectors conform to the industry standard of electrical connectors EN 175301-803, which are commonly used with solenoid valves. The new generation of Molex® DIN connectors provides unsurpassed sealing performance, easier assembly and mounting and lower applied costs.

Ordering Information

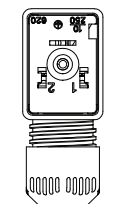
Brad® mPm® Field Attachable DIN Valve Connectors



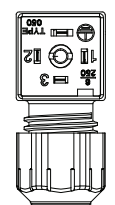
Form A External Thread		
Description	Engineering No.	Standard Order No.
Non-Electronic	C28200N2RSN	121201-0034
With Electronic	S28200TC422RSN	121207-0358



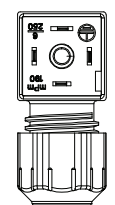
Form Industrial External Thread		
Description	Engineering No.	Standard Order No.
Non-Electronic	C22200N2RSN	121202-0012
With Electronic	S22200TC422RSN	121208-0230



Form B External Thread		
Description	Engineering No.	Standard Order No.
Non-Electronic	C92200N2TSN	121203-0009
With Electronic	S92200TC422TSN	121209-0197



Form C External Thread		
Description	Engineering No.	Standard Order No.
Non-Electronic	C25200N2TSN	121204-0010
With Electronic	S25200TC422TSN	121210-0332



Form Micro External Thread		
Description	Engineering No.	Standard Order No.
Non-Electronic	C29200N2TSN	121205-0012
With Electronic	S29200TC422TSN	121211-0332

Brad® mPm® DIN Valve Connectors



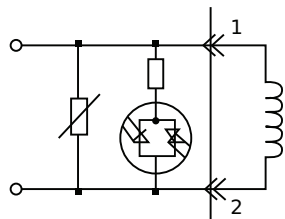
Circuit C4 Schematics

Bipolar yellow LED and VDR to protect supply and switch.

Available voltage rating on C4 circuit:

12, 24, 48, 115 and 230 V AC-DC

12, 24 and 115V AC-DC (for type 192 only)



Note:

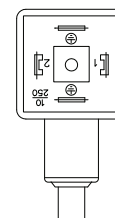
The mPm® DIN valve connectors are available in various version, Pole count, housing and electronics. For further information consult our website or automation catalog or your local sales support.

Further technical information, datasheet or drawing can be downloaded from the Molex® website using the ordering part number.

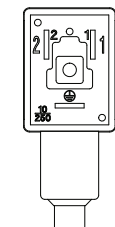
The mPm® connectors with molded-in cable are suitable for use with most types of solenoid. They offer a fast and efficient method of connection resulting in greatly reduced installation time and costs.

Ordering Information

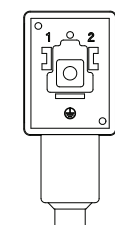
Brad® mPm® DIN Valve Connectors Over Molded to M12 Male Connector



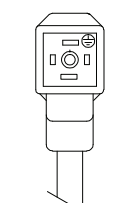
DIN Valve Connector, FORM A, C4 Circuit, Ground Pos H6/H12				
Length	Male Straight		Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
.6m	E850B0P12M006	121036-0192	E850B2P12M006	121036-0208
1m	E850B0P12M010	121036-0193	E850B2P12M010	121036-0209
1.5m	E850B0P12M015	121036-0194	E850B2P12M015	121036-0821
3m	E850B0P12M030	121036-0356	E850B2P12M030	121036-0211



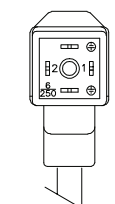
DIN Valve Connector, FORM Industrial, C4 Circuit, Ground Pos H6				
Length	Male Straight		Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
.6m	F850B0P12M006	121036-0352	F850B2P12M006	121036-0505
1m	F850B0P12M010	121036-0255	F850B2P12M010	121036-0506
1.5m	F850B0P12M015	121036-0822	F850B2P12M015	121036-0823
3m	F850B0P12M030	121036-0257	F850B2P12M030	121036-0824



DIN Valve Connector, FORM B, C4 Circuit, Ground Pos H6				
Length	Male Straight		Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
.6m	D850B0P12M006	121036-0056	D850B2P12M006	121036-0828
1m	D850B0P12M010	121036-0825	D850B2P12M010	121036-0829
1.5m	D850B0P12M015	121036-0826	D850B2P12M015	121036-0830
3m	D850B0P12M030	121036-0827	D850B2P12M030	121036-0831



DIN Valve Connector, FORM C, C4 Circuit, Ground Pos H6/H12				
Length	Male Straight		Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
.6m	H850B0P12M006	121036-0295	H850B2P12M006	121036-0832
1m	H850B0P12M010	121036-0296	H850B2P12M010	121036-0305
1.5m	H850B0P12M015	121036-0471	H850B2P12M015	121036-0833
3m	H850B0P12M030	121036-0440	H850B2P12M030	121036-0834



DIN Valve Connector, FORM Micro, C4 Circuit, Ground Pos H6/H12				
Length	Male Straight		Male 90°	
	Engineering No.	Standard Order No.	Engineering No.	Standard Order No.
.6m	G850B0P12M006	121036-0406	G850B2P12M006	121036-0836
1m	G850B0P12M010	121036-0277	G850B2P12M010	121036-0621
1.5m	G850B0P12M015	121036-0835	G850B2P12M015	121036-0837
3m	G850B0P12M030	121036-0481	G850B2P12M030	121035-0270

Brad® mPm® DIN Valve Connectors



Cable Specification

Conductors: 3x0,5mm² PUR
(Brown, Blue, Green/Yellow)

Jacket Material: Black PUR

Voltage Rating: 300V

Operating Temperature:
-5 to +90°C (flexing)
-30 to +90°C (static)
Diameter: 5,5 ±0,3 mm

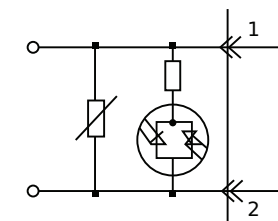
Circuit C4 Schematics

Bipolar yellow LED and VDR to protect supply and switch.

Available voltage rating on C4 circuit:

12, 24, 48, 115 and 230 V AC-DC

12, 24 and 115V AC-DC (for type 192 only)



Note:

The mPm® DIN valve over molded cordsets are available in various versions, Pole count, housing, cable, lengths and electronics. For further information consult our website or automation catalog or your local sales support.

Further technical information, datasheet or drawing can be downloaded from the Molex® website using the ordering part number.

Get more insights at: molex.com/industry/industrial.html