






General Information	Quick Selection Guide	page 9-2
	Introduction	page 9-3
Ethernet Media	Cordsets & Patchcords	
	Cable Spools	page 9-4
	Cordsets & Patchcords	page 9-5
	Field Attachable RJ45 Connectors	page 9-9
	IDC M12 D-Code Connectors	page 9-11
	M12 to RJ45 Bulkhead Connectors	page 9-13
Indexes	Cat. No. Index	page 13-1
	Comprehensive Product Index	page 14-1

Quick Selection Guide

					
	Cable Spools	Cordsets & Patchcords	Field Attachable RJ45 Connectors	IDC M12 D-Code Connectors	M12 to RJ45 Bulkhead Connector
Description	<ul style="list-style-type: none"> Unshielded raw ethernet cable spools 	<ul style="list-style-type: none"> Cable with connector on one end or both ends 	<ul style="list-style-type: none"> Insulation Displacement Connectors (IDC) 	<ul style="list-style-type: none"> Insulation Displacement Connector (IDC) 	<ul style="list-style-type: none"> M12 to RJ45 bulkhead adaptor
Features	<ul style="list-style-type: none"> Cable spools for custom applications 	<ul style="list-style-type: none"> 2 pair and 4 pair cables Riser PVC, high flex, Plenum PVC 	<ul style="list-style-type: none"> Easy to assemble 	<ul style="list-style-type: none"> Easy to assemble 	<ul style="list-style-type: none"> Easy transition from inside the cabinet (IP20) to On-Machine (IP67)
Available Models	<ul style="list-style-type: none"> Riser PVC, 4 pair High Flex, 2 pair High Flex, 4 pair Plenum PVC, 4 pair 	<ul style="list-style-type: none"> M12 D-code to M12 D code M12 D-code to flying leads RJ45 to RJ45 RJ45 to flying leads M12 to RJ45 	<ul style="list-style-type: none"> RJ45 IDC connector RJ45 crimp connector with boot Crimp tool kit 	<ul style="list-style-type: none"> M12 IDC female shielded M12 IDC male shielded and unshielded 	<ul style="list-style-type: none"> M12 to RJ45 bulkhead adaptor, female M12 to female RJ45
Additional Info	<ul style="list-style-type: none"> See page 9-4 	<ul style="list-style-type: none"> See page 9-5 	<ul style="list-style-type: none"> See page 9-9 	<ul style="list-style-type: none"> See page 9-11 	<ul style="list-style-type: none"> See page 9-13



Description

As ethernet becomes increasingly utilized in industrial control, survival of physical media in rugged or harsh environments is becoming a necessity. The high speed of network protocol allows it to be used in applications where other networks fall short. EtherNet/IP™ uses both standard ethernet and TCP/IP technologies and an open application layer protocol called the Control and Information Protocol (CIP). This is the same application layer used in DeviceNet™ and ControlNet™ networks.

Rockwell Automation Cat5e ethernet cables are designed to supply a reliable network connection in harsh surroundings. By optimizing the balance of twisted pair conductors inside a robust Thermoplastic Elastomer (TPE)

jacket, data is protected from noise, chemicals and mechanical issues to M₃I₃C₃E₃ environmental protection levels. The cable is available in RJ45 patchcords for IP20 applications or in four-pin D-coded M12 patchcords for IP67 applications where high vibration, fluids and other contaminants can threaten the reliability of a network.

M12 D-code field attachable insulation displacement connectors (IDC) are available in both shielded and unshielded housings with male or female connectors. Male eight-pin RJ45 connectors are available in both a crimp termination and a toolless IDC connector for custom cabling.

Rockwell Automation M12 to RJ45 bulkhead connectors provide an

elegant transition for network architecture from an IP20 setting to an IP67 environment. The adaptor can be used to connect remote junction boxes or implement an On-Machine™ solution with Armor™ I/O products.

The Rockwell Automation ethernet media portfolio provides reliable connectivity to maintain network integrity and prevent costly downtime from troubleshooting.

M12 patchcords can be used with the following sensing products:

- 48 MS MultiSight™ vision sensors
- 54RF, 55RF, and 56RF RFID ethernet control interfaces



Specifications

Certifications	UL Listed and CEC
Cable Type	Unshielded 2- and 4-pair, Cat 5e
Operating Temperature [C (F)]	-40...+75° (-40...+167°)
Conductor Material	Tinned copper stranded
Bend Radius	Ten million cycles at 20 x dia., min. (TPE cable)
Data Rate	Up to 1 Gb/s

Description

Rockwell Automation Cat5e unshielded cables are designed to supply a reliable network connection in harsh surroundings. The high speed data rate provides more data to be transferred within a shorter period of time. By optimizing balance of twisted pair conductors inside a robust thermoplastic elastomer (TPE) jacket, data is protected from noise, chemicals, and mechanical issues to M₃L₃C₃E₃ environmental protection levels. Two and four pair TPE robotic flex cable is available for flex applications, reaching 10 million cycles, as well as a riser PVC cable for standard applications and a plenum PVC cable for air duct applications. All ethernet media components are designed to perform at TIA 568-B.2 and ODVA ethernet standards. Bulletin 1585 ethernet cables are optimized UTP cables, which can be used in place of STP for many applications. Therefore, ground potential differences, which may cause problems in shielded cabling systems, are eliminated.

Cable and Color Code

Two-Pair	Four-Pair												
<table border="1"> <tr><td>White/Orange</td></tr> <tr><td>White/Green</td></tr> <tr><td>Orange</td></tr> <tr><td>Green</td></tr> </table>	White/Orange	White/Green	Orange	Green	<table border="1"> <tr><td>White/Orange</td></tr> <tr><td>Orange</td></tr> <tr><td>White/Green</td></tr> <tr><td>Blue</td></tr> <tr><td>White/Blue</td></tr> <tr><td>Green</td></tr> <tr><td>White/Brown</td></tr> <tr><td>Brown</td></tr> </table>	White/Orange	Orange	White/Green	Blue	White/Blue	Green	White/Brown	Brown
White/Orange													
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Orange													
Green													
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Orange													
White/Green													
Blue													
White/Blue													
Green													
White/Brown													
Brown													

Features

- Four- and eight-conductor styles
- Unshielded cable types, Cat 5e
- 24 AWG conductors
- Twisted pairs maintain signal balance through cable to provide high noise immunity
- Designed to ODVA EtherNet/IP specifications and ISO IEC 24702
- Suitable for high noise environments M₃L₃C₃E₃
- Riser PVC cables used for general purpose environments
- TPE robotic cable used for flex applications, transmission-tested to 10 million cycles
- Plenum PVC cable used for air duct applications
- TPE cable meets channel transmission performance to 10 million flexes

Product Selection

Jacket Material	No. of Conductors	Nominal Outer Diameter [mm (in.)]	Jacket Color	Color Code	Cable Rating	Cat. No.
Robotic TPE	4	5.6 (0.22)	Teal	White/Orange, Orange, White/Green, Green	Weld splatter, sunlight and oil resistant; UL CM; cUL CM; Standard TIA 568-B, high flex rated	1585-C4TB-S
			Teal	White/Orange, Orange, White/Green, Green, White/Blue, Blue, White/Brown, Brown		1585-C8TB-S
			Red			1585-C8VB-S
Plenum	8	5.84 (0.23)	Red	UL CMP; cUL CMP; Standard TIA 568-B	1585-C8MB-S	
Riser PVC			Teal	UL CMR; CMG; cUL CMG; Standard TIA 568-B	1585-C8PB-S	

① Replace symbol with 100 (100 m), 300 (300 m), or 600 (600 m) for standard cable lengths.



4-Pin M12 D Code Cordset

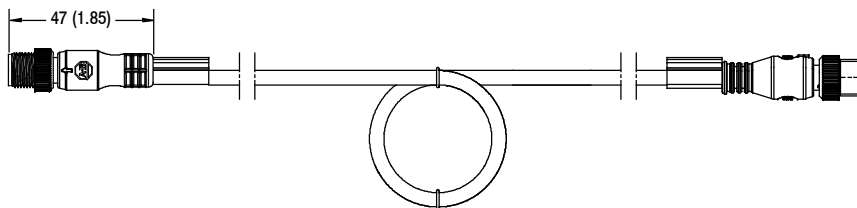
Features

- Over molded housing suitable for IP67 applications and harsh industrial environments where extreme vibration, shock, chemicals and temperature are found.
- Flex-rated cable (cable must be tied down and not flexed within six inches of the connector)
- Single-ended cordsets can be custom terminated with one of several field attachable connectors
- Designed to ODVA EtherNet/IP™ specifications and ISO IEC 24702, IEC 61918
- Twisted pairs maintain signal balance through cable to provide high noise immunity and return loss
- Suitable for noise environments M₃I₃C₃E₃

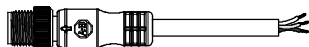
Specifications

Mechanical	
Coupling Nut Material	Nickel-plated brass
Housing Material	Polyurethane (PUR)
Contact Material	Gold-plated brass
Cable Type	Unshielded teal TPE, 4-conductor, stranded tinned wire, Industrial Cat5e, UL Listed, weld splatter, sunlight and oil-resistant
Cable Diameter [mm (in.)]	5.84 (0.23)
Bend Radius	10x diameter, min.
Electrical	
Cable Rating	Standard TIA 568-B, flex rated, 24 AWG: UL, CM, cULus and CM
Environmental	
Enclosure Type Rating	IP67
Operating Temperature [C (F)]	-40...+75° (-40...+167°)

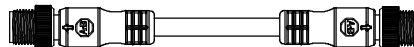
Approximate Dimensions [mm (in.)]



Dimensions are approximate. Illustrations are not drawn to scale.



Example of Cordset



Example of M12 to M12 Patchcord



Example of M12 to RJ45 Patchcord

Ethernet M12 D-Code Media

Cordsets & Patchcords

Pinout

Color Code	Face View Pinout		Face View RJ45 Pinout	
	4-Pin		8-Pin	
	<p>Female</p>	<p>Male</p>	<p>8 7 6 5 4 3 2 1</p>	
A	1 White-Orange 2 White-Green	3 Orange 4 Green	1 White/Orange 2 Orange 3 White/Green 4 Blue 5 White/Blue 6 Green 7 White/Brown 8 Brown	TxData + TxData - Recv Data + Unused Unused Recv Data - Unused Unused

Product Selection

M12 Cordset

First End Connector	Second End Connector	Cable	Cat. No.
Male M12 D-Code, Straight	Flying Leads	4-Conductor, Teal TPE, Flex Rated	1585D-M4TB- ❶

M12 Patchcord

First End Connector	Second End Connector	Cable	Cat. No.
Male M12 D-Code, Straight	Male M12 D-Code, Straight	4-Conductor, Teal TPE, Flex Rated	1585D-M4TBDM- ❶
Male M12 D-Code, Right Angle	Male M12 D-Code, Right Angle	4-Conductor, Teal TPE, Flex Rated	1585D-E4TBDE- ❶
Male M12 D-Code, Straight	Male M12 D-Code, Right Angle	4-Conductor, Teal TPE, Flex Rated	1585D-M4TBDE- ❶
Male M12 D-Code, Straight	Female M12 D-Code, Straight	4-Conductor, Teal TPE, Flex Rated	1585D-M4TBDF- ❶

M12 to RJ45 Patchcord

First End Connector	Second End Connector	Cable	Cat. No.
Male M12 D-Code	RJ45	4-Conductor, Teal TPE, Flex Rated	1585D-M4TBJM- ❶

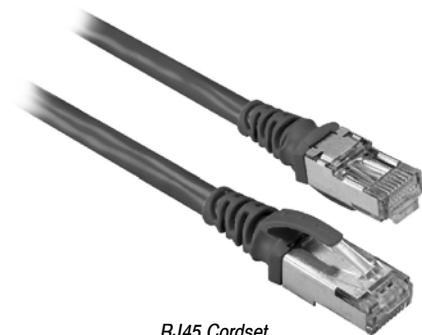
Accessories

Description	Channel Bandwidth	Cat. No.
RJ45 Insulation Displacement Connector (IDC)	Cat. 6	1585J-M8CC-H ❷
RJ45 Crimp Connector with Boot	Cat. 5e	1585J-M8CC-C ❸

❶ Replace symbol with 1 (1 m), 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths.

❷ Qty. = 1 piece.

❸ Qty. = 50 pieces.



RJ45 Cordset

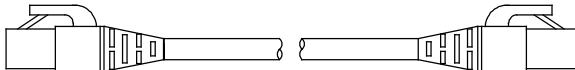
Specifications

Certifications	UL Listed
Connectors	RJ45 male to RJ45 male, Cat 6
Cable Type	Unshielded 4- and 8-conductor, 24 AWG, Industrial Cat5e
Bend Radius	10x diameter, min.
Enclosure Type Rating	IP20
Nominal Outer Diameter [mm (in.)]	5.84 (0.23)
Operating Temperature [C (F)]	-20...+60° (-4...+140°)

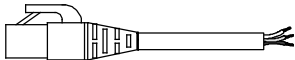
Features

- Flex rated TPE, PVC, and Plenum cables for various applications
- Teal or red cable jacket
- Rugged strain relief and hitch mechanism to maintain network integrity
- Suitable for noise environments
M₃l₃C₃E₃

Approximate Dimensions [mm (in.)]



Dimensions are approximate. Illustrations are not drawn to scale.



Example of Cordset

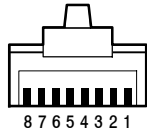


Example of Patchcord

Ethernet RJ45 Media

Cordsets & Patchcords

Pinout

Face View RJ45 Pinout	
8-Pin	
	
1 White/Orange	TxData +
2 Orange	TxData -
3 White/Green	Recv Data +
4 Blue	Unused
5 White/Blue	Unused
6 Green	Recv Data -
7 White/Brown	Unused
8 Brown	Unused

Product Selection

Cordset 

Cable Type	Cable Rating	Cat. No.
4-conductor, teal robotic TPE	UL CM; cULus CM; Standard TIA 568-B	1585J-M4TB- 1

1 Replace symbol with 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths.

Patchcords 

Cable Type	Cable Rating	Cat. No.
8-conductor, teal riser PVC	UL CMR, CMG; cULus CMG; Standard TIA 568-B	1585J-M8PBJM-1
8-conductor, teal flex-rated robotic TPE	Weld splatter, sunlight and oil resistant; UL CM; cULus CM; Standard TIA 568-B, flex rated	1585J-M8TBJM- 1
4-conductor, teal flex-rated robotic TPE		1585J-M4TBJM- 1
8-conductor, red flex-rated robotic TPE		1585J-M8VBJM- 1
8-conductor, red plenum	UL CMP; cULus CMP; Standard TIA 568-B	1585J-M8MBJM- 1

1 Replace symbol with 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths.

Crossover Patchcords 

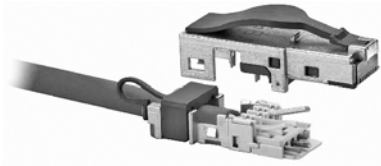
Cable Type	Cable Rating	Cat. No.
8-conductor, teal riser PVC	UL CMR, CMG; cULus CMG; Standard TIA 568-B	1585J-M8PBJM- 1X

1 Replace symbol with 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths.

Accessories

Description	Cat. No.
RJ45 Insulation Displacement Connector (IDC)	1585J-M8CC-H
RJ45 Crimp Connector with Boot	1585J-M8CC-C 2

2 Qty. = 50 pieces.



RJ45 Insulation Displacement Connector (IDC)



RJ45 Crimp

Specifications

Certifications	UL Listed
Connectors	RJ45 male
Enclosure Type Rating	IP20
Operating Temperature [C (F)]	-20...+60° (-4...+140°)

Features

IDC Connector

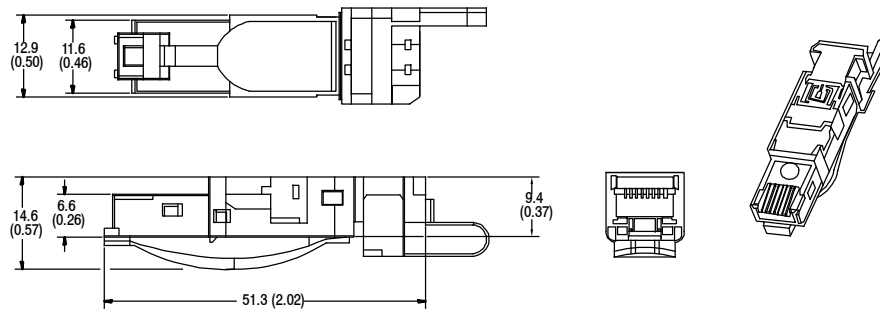
- Up to 8 conductors
- 26...22 AWG conductors
- 360° shielding
- Re-use IDC connector up to five times
- No tools or conductor stripping required
- Cat. 6

Crimp Connector

- Up to 8 conductors
- 26...24 AWG
- Standard crimp connector with rugged boot
- Cat. 5e

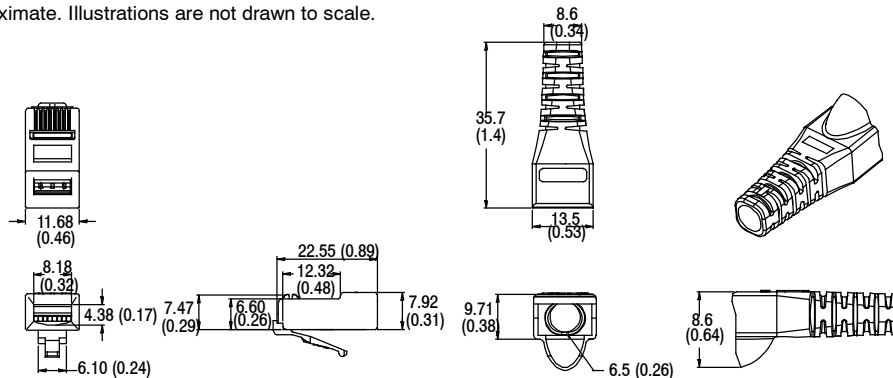
Approximate Dimensions [mm (in.)]

RJ45 Insulation Displacement Connector (IDC)



RJ45 Crimp Connector

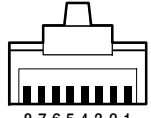
Dimensions are approximate. Illustrations are not drawn to scale.



Ethernet RJ45 Media Accessories

Field Attachable RJ45 Connectors

Pinout

Face View RJ45 Pinout	
8-Pin	
	
1 White/Orange	TxData +
2 Orange	TxData -
3 White/Green	Recv Data +
4 Blue	Unused
5 White/Blue	Unused
6 Green	Recv Data -
7 White/Brown	Unused
8 Brown	Unused

Product Selection

Description	Electrical Connection	Housing Material	Insulation Material	Contact Material	Channel Bandwidth	Cat. No.
RJ45 Insulation Displacement Connector (IDC)	—	Diecast Zinc	Plastic	Gold-plated copper alloy	Cat. 6	1585J-M8CC-H①
RJ45 crimp connector with boot	150V, 1.5 A	Clear Polycarbonate			Cat. 5e	1585J-M8CC-C②
Crimp tool kit (crimper, cable stripper, cutter, conductor separator)						1585A-JCRIMP

- ① Qty. = 1 pieces.
- ② Qty. = 50 piece.



Field Attachable

Specifications

Mechanical	
Coupling Nut	Zinc die-cast
Connector Shell Material	Zinc die-cast or polyamide
Contacts	Gold-plated brass
Maximum IDC Installation	10 times
Conductor Outside Diameter	Unshielded: 26 AWG-22 AWG: 1.0...1.6 mm (0.04...0.063 in.); Shielded 24 AWG-22 AWG: 1.2...1.6 mm (0.04...0.063 in.)
Electrical	
Assembly Rating	32V, 4 A
Environmental	
Enclosure Type Rating	IP67
Operating Temperature [C (F)]	-25...85° (-13...185°)
Installation Temperature [C (F)]	-5...50° (23...185°)

Features

- Field installable with no hand tools needed
- Straight male or female shielded versions
- Allows easy modification of existing cable installations
- Insulation displacement technology for secure and reliable installation
- Metal body unit excellent in shielding applications

Approximate Dimensions [mm (in.)]

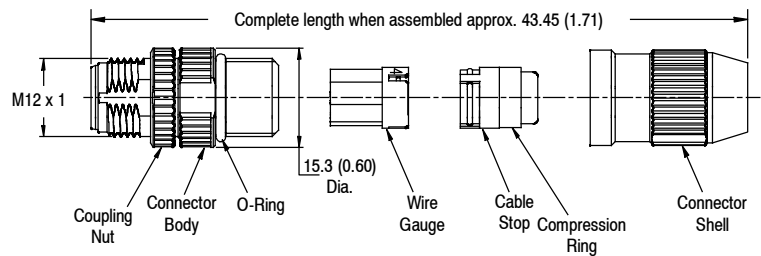
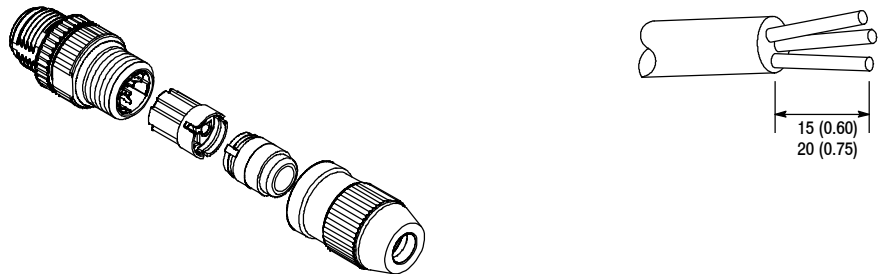


Figure A

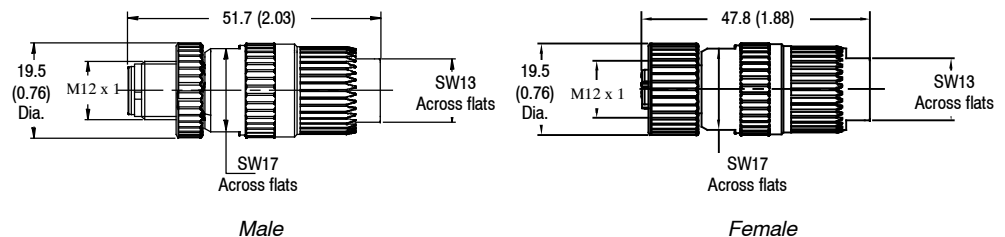

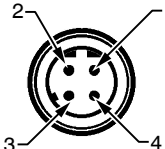


Figure B

Network Media
Ethernet M12 Media
 Insulation Displacement Connectors

Pinout and Color Code

Face View M12 Pinout		
4-Pin		
Color Code	 <p>Female</p>	 <p>Male</p>
	A	1 White-Orange 2 White-Green

Product Selection

Pin Count	Connector Body	Cable Jacket Diameter [mm (in.)]	Wire Size	Assembly Rating	Dimensions	Cat. No.	
						Straight Female	Straight Male
4-Pin	Polyamide Small body unshielded	4.0...5.1 (0.16...0.20)	26...22 AWG	32V 4 A	Figure A	—	1585D-M4DC-H
	Zinc die-cast Large body shielded	5.5...7.2 (0.22...0.28)	24...22 AWG		Figure B	1585D-F4DC-SH	1585D-M4DC-SH



EtherNet M12 to RJ45 Adaptor

Specifications

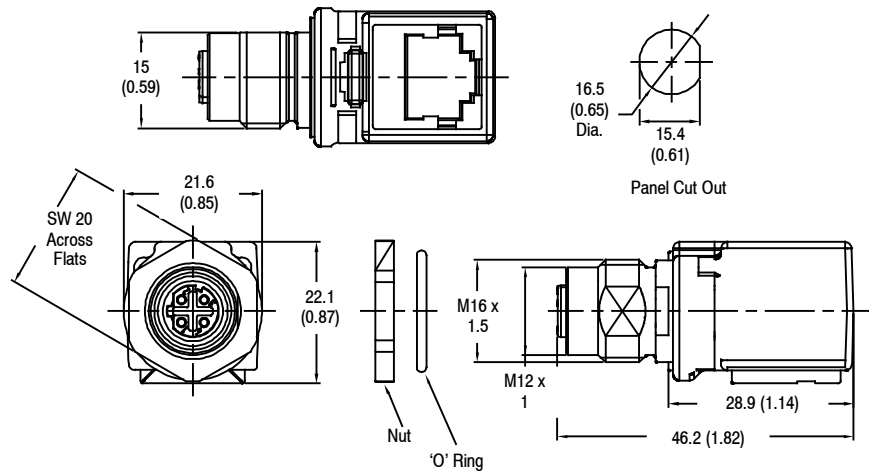
Electrical Ratings	32V 4 A
Receptacle Shell	Nickel-plated brass
Contacts	Brass with nickel plating
Wire Insulation	Oil-resistant PVC, 22 AWG stranded copper, 300V, UL Recognized
Enclosure Type Rating	IP67, 1200 psi (8270 kPa) washdown
Operating Temperature [C (F)]	-20...+85° (-4...+185°)
Certifications	UL Recognized for Canada and USA

Features

- M12 to RJ45 bulkhead
- Fluoroelastomer o-ring
- Convenient transition from IP67 ethernet to IP20

Approximate Dimensions [mm (in.)]

Ethernet Adaptor M12 Female to RJ45 Female Right Angle



Product Selection

Description	Connector Body	Panel Mount Threads	Assembly Rating	Cat. No.
Female M12 Receptacle to RJ45 Female Adaptor Right Angle	Polyamide and Brass with Nickel Plating	PG 9	22 AWG 32V 4 A	1585A-DD4JD

