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's Cat5e ethernet cable was 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 $M_3I_3C_3E_3$ 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's M12 to RJ45 bulkhead connector provides 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.

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

M12 and RJ45 Cables   Ethernet Family Products

1585 D - M 4 T B D M – 1

Family Line:
1585 = Ethernet

Product Type:
D = Micro Style QD, (D-code QD)
J = RJ45 Connector

First End Descriptor:
M = Straight Male

**Number of Pins
Or Conductors**

Cable Type:
T = TPE Cable, Teal, Unshielded
P = PVC Cable, Teal, Unshielded
V = TPE Cable, Red, Unshielded
M = PVC Cable, Red, Unshielded Plenum Rated

Wire Size:
B = 24AWG

Second End Descriptor:
Blank = No connector
M = Straight Male

Length (overall length):
Blank = Meters (0M3 = 0.3M, 1=1M)

Second End Termination:
Blank = Cable
D = Micro Style QD, (D-code QD)
J = RJ45 Connector

M12 Field Attachable - Accessories

1585 D - M 4 D C – H

Family Line:
1585 = Ethernet

Product Type:
A = Accessories
D = Micro Style QD, (D-code QD)
J = RJ45 Connector

First End Descriptor:
M = Straight Male
F = Straight Female

**Number of Pins
Or Conductors**

Cable Type:
D=4-6mm (.157'-.236')

Wire Size:
C = 22AWG

Special Characteristics:
H = Unshielded
SH = Shielded

RJ45 Accessories

M12 to Rj45 Bulkead Adapter
1585A-DD4JD

IDC Connector
1585J-M8CC-H

Crimp Connector
1585J-M8CC-C

Updated 02/11/2008

*4-Pin M12 D Code Cordset*

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, sun light and oil resistant
Cable Diameter—mm (in)	5.84 (0.23)
Electrical	
Cable Rating	Standard TIA 568-B, flex rated, 24 AWG: UL, CMA, CMX, cUL and CMG
Environmental	
Enclosure Type Rating	IP67
Operating Temperature—C (F)	-40°…+75° (-40°…+167°)

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 6 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 $M_3I_3C_3E_3$
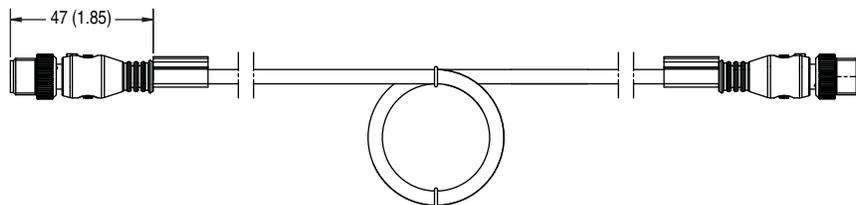
Approximate Dimensions—mm (in)

47 (1.85)

Dimensions are approximate. Illustrations are not drawn to scale.

Example of Cordset

Example of Patchcord

Pinout

Face View Pinout	RJ45 Pinout
4-Pin	8-Pin

1 White/Orange
2 White/Green
3 Orange
4 Green

1	White/Orange	2	TxData +
2	Orange	2	TxData -
3	White/Green	3	RecvData +
4	Blue	1	Unused
5	White/Blue	1	Unused
6	Green	3	RecvData -
7	White/Brown	4	Unused
8	Brown	4	Unused

8 7 6 5 4 3 2 1

Product Selection

| First End Connector	Second End Connector	Cable	Cat. No.
Male M12 D Code	Male M12 D Code	4-Conductor, Teal TPE, Flex Rated	1585D-M4TBDM-∗
Male M12 D Code	Flying Leads		1585D-M4TB-∗

∗ Replace symbol with 0M3 (0.3 m), 0M6 (0.6 m), 1 (1 m), 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths.
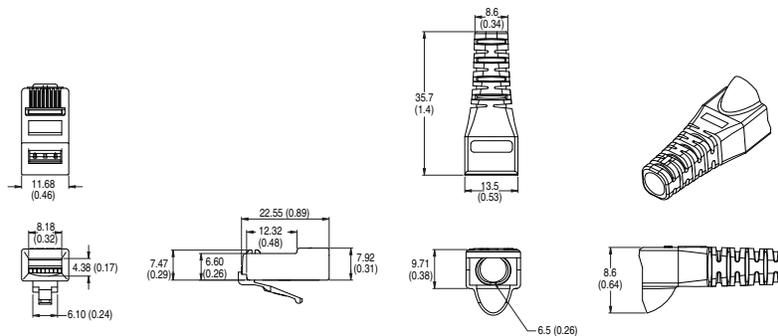
Accessories

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

❄ Qty. = 50 pieces

1585J-M8CC-H Dimensions—mm (in)

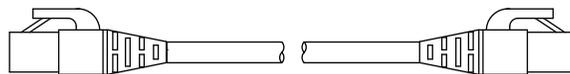
1585J-M8CC-C Approximate Dimensions—mm (in)

Allen-Bradley
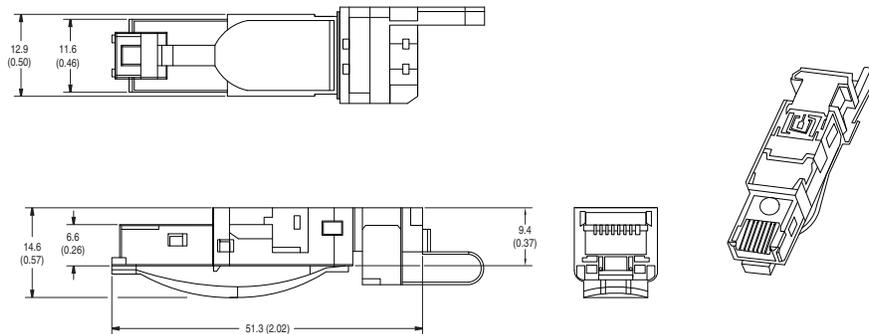
RJ45 Cordset

Specifications

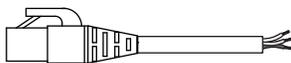| Certifications	UL listed
Connectors	RJ45 Male to RJ45 Male, Cat 6
Cable Type	Unshielded 4- and 8-conductor, 24 AWG, Industrial Cat5e
Enclosure Type Rating	IP20
Nominal Outer Diameter	5.84 mm (0.23 in)
Operating Temperature—C (F)	-20°…+60° (-4°…+140°)

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 environments $M_3I_3C_3E_3$

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

1	White/Orange	▯	2	TxData +
2	Orange	▮	2	TxData -
3	White/Green	▯	3	RecvData +
4	Blue	▮	1	Unused
5	White/Blue	▯	1	Unused
6	Green	▮	3	RecvData -
7	White/Brown	▯	4	Unused
8	Brown	▮	4	Unused

8 7 6 5 4 3 2 1

Product Selection

Cordset

Cable Type	Cable Rating	Cat. No.
4-Conductor, Teal Robotic TPE	UL CMG, CMX; cUL CMG; Standard TIA 568-B	1585J-M4TB-∗

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

Patchcords

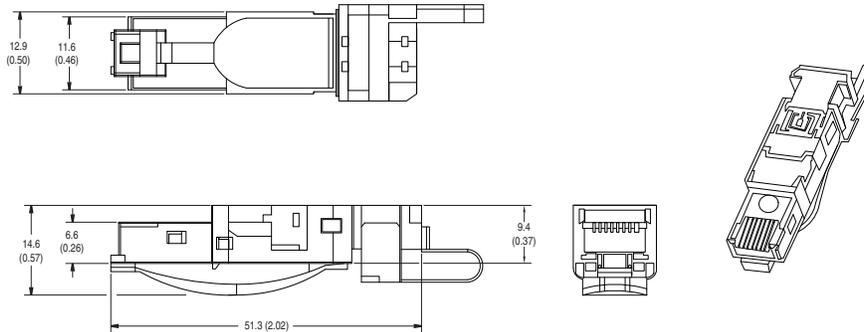| Cable Type	Cable Rating	Cat. No.
4-Conductor, Teal Robotic TPE	Weld splatter, sun light and oil resistant; UL CMG, CMX; cUL CMG; Standard TIA 568-B, flex rated	1585J-M4TBJM-∗
8-Conductor, Teal Robotic TPE		1585J-M8TBJM-∗
8-Conductor, Red Robotic TPE		1585J-M8VBJM-∗
8-Conductor, Teal Riser PVC	UL CMR, CMX; cUL CMG; Standard TIA 568-B	1585J-M8PBJM-∗
8-conductor, Red Plenum	UL CMP; cUL CMP; Standard TIA 568-B	1585J-M8MBJM-∗

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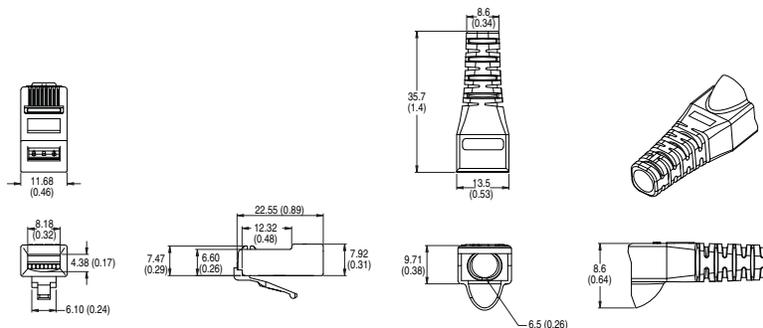
Accessories

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

❋ Qty. = 50 pieces

1585J-M8CC-H Approximate Dimensions—mm (in)

1585J-M8CC-C Approximate Dimensions—mm (in)

Visit our website: www.ab.com/catalogs

Allen-Bradley
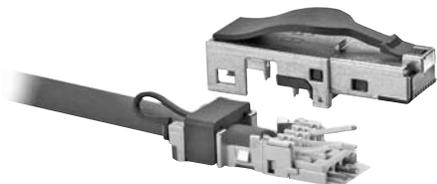
RJ45 Insulation Displacement Connector (IDC)

RJ45 Crimp

Specifications

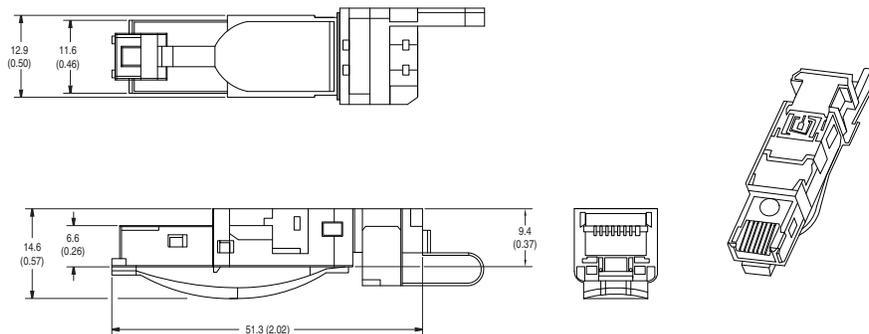| Certifications	UL recognized
Enclosure Type Rating	IP20
Operating Temperature—C (F)	-40...+85° (-40...+185°)

Features

IDC Connector

• 26-22 AWG Conductors
• 360° Shielding
• Re-use IDC Connector Up to Five Times
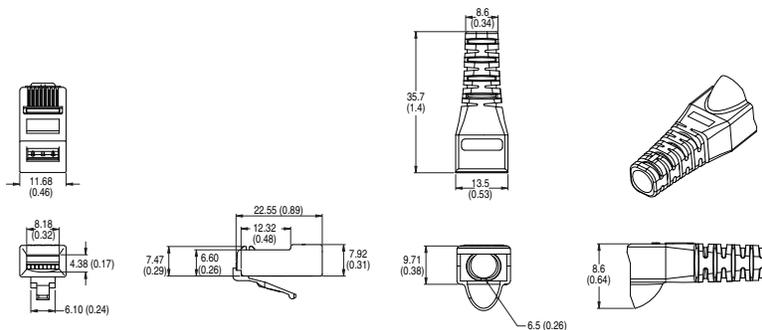• No Tools or Conductor Stripping Required
• Cat. 6

Crimp Connector

• 26…24 AWG
• Standard Crimp Connector with Rugged Boot
• Cat. 5e

Approximate Dimensions—mm (in)
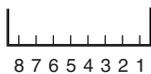
RJ45 Insulation Displacement Connector (IDC)

12.9 (0.50)   11.6 (0.46)

14.6 (0.57)   6.6 (0.26)   9.4 (0.37)

51.3 (2.02)

RJ45 Crimp Connector

8.6 (0.34)

35.7 (1.4)

11.68 (0.46)

13.5 (0.53)

8.18 (0.32)   4.38 (0.17)

22.55 (0.89)

12.32 (0.48)

7.47 (0.29)   6.60 (0.26)   7.92 (0.31)

9.71 (0.38)   8.6 (0.64)

6.10 (0.24)

6.5 (0.26)

Dimensions are approximate. Illustrations are not drawn to scale.

Pinout

1	White/Orange		2	TxData +
2	Orange		2	TxData -
3	White/Green		3	RecvData +
4	Blue		1	Unused
5	White/Blue		1	Unused
6	Green		3	RecvData -
7	White/Brown		4	Unused
8	Brown		4	Unused

8 7 6 5 4 3 2 1

Product Selection

Description	Electrical Connection	Housing Material	Insulation Material	Contact Material	Channel Bandwidth	Cat. No.
RJ45 Insulation Displacement Connector (IDC)	—	Diecast Zinc	Plastic	Copper Alloy	Cat. 6	1585J-M8CC-H
RJ45 Crimp Connector with Boot	150V, 1.5 A	Clear Polycarbonate			Cat. 5e	1585J-M8CC-C ❋

❋ Qty. = 50 pieces

Allen-Bradley

M12 EtherNet

Field Attachable

Specifications

Mechanical	
Coupling Nut	Zinc die-cast
Connector Shell Material	Zinc die-cast or polyamide
Contacts	Gold-plated palladium nickel
Maximum IDC Installation	10 times
Conductor Outside Diameter	Unshielded: 26 AWG–22 AWG: 1.0…1.6 mm (0.04…0.063) 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 Temp.—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
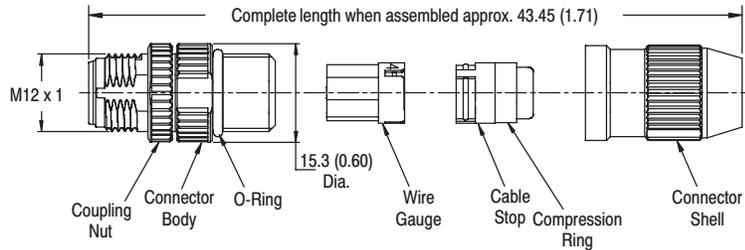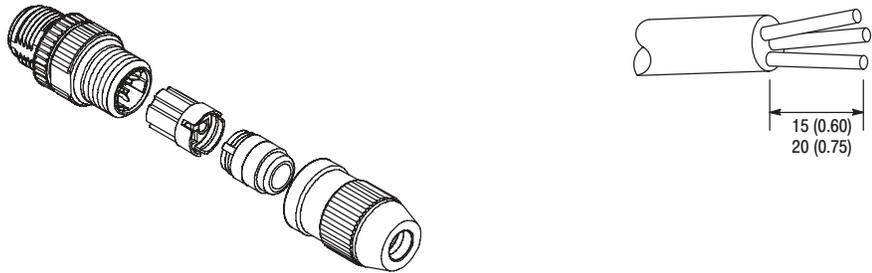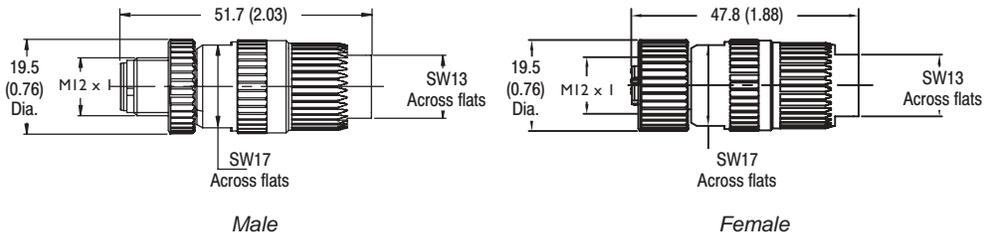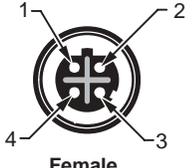- Metal body unit excellent in shielding applications

Dimensions—mm (in)

15 (0.60)
20 (0.75)

Complete length when assembled approx. 43.45 (1.71)

M12 x 1

15.3 (0.60) Dia.

Coupling Nut · Connector Body · O-Ring · Wire Gauge · Cable Stop · Compression Ring · Connector Shell

Figure A

51.7 (2.03)

19.5 (0.76) Dia. · M12 x 1 · SW13 Across flats · SW17 Across flats

Male

47.8 (1.88)

19.5 (0.76) Dia. · M12 x 1 · SW13 Across flats · SW17 Across flats

Female

Figure B

Pinout and Color Code

Color Code	Face View Pinout	
	4–Pin	
	Female	**Male**
A	1 Yellow 2 White	3 Orange 4 Blue

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 Media

4-Pin, M12 Receptacle & M12 to RS45 Adaptor

M12 Ethernet


4-Pin M12 EtherNet Receptacle

EtherNet M12 to RS45 Adaptor

Features

- 22 AWG conductors
- Female receptacle
- 4-pin D-coded M12 configuration
- Viton® o-ring
- M12 to RS45 bulkhead

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 Protection	IP 67, 1200 psi (8270 kPa) washdown
Operating Temperature—C (F)	−20…+85° (−4…+185°)
Approvals	UL recognized for Canada and USA

Dimensions—mm (in)

Ethernet Receptacle Female

Ethernet Adaptor M12 Female to RJ45 Female Right Angle
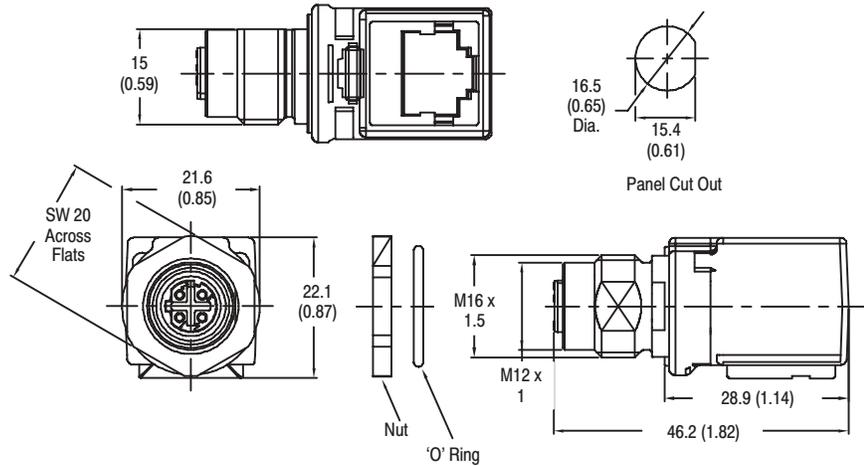
Product Selection

Description	Connector Body	Panel Mount Threads	Wire Color	Assembly Rating	Cat. No.
EtherNet M12 Female Receptacle	Brass with Nickel Plating	M16 x 1.5	I Yellow 2 White 3 Orange 4 Blue	22 AWG 32V 4 A	**1585D–D4AC9–0M5**
Female M12 Receptacle to RJ45 Female Adaptor Right Angle	Polyamide and Brass with Nickel Plating	PG 9	—		**1585A–DD4JD**

Specifications

Certifications	UL listed and CEC
Cable Type	Unshielded 2- and 4-pair, Cat5e
Operating Temperature [C (F)]	-40…+75 (-40…+167)
Conductor Material	Tinned copper stranded
Bend Radius	Ten million cycles at 20 x diameter (TPE cable)
Data Rate	Up to 1 Gb/s

Description

Rockwell Automation's Cat5e unshielded cable is 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 $M_3I_3C_3E_3$ 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 above TIA 568-B.2 and ODVA ethernet standards. Rockwell Automation's 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.

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 and return loss
- Designed to ODVA EtherNet/IP™ specifications and ISO IEC 24702
- Suitable for high noise environments $M_3I_3C_3E_3$
- 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

Cable and Color Code

Two-Pair	Four-Pair

Two-Pair color code:
- White/Orange
- White/Green
- Orange
- Green

Four-Pair color code:
- White/Orange
- Orange
- White/Green
- Blue
- White/Blue
- Green
- White/Brown
- Brown

Product Selection

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

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