

Ethernet Media

Bulletin Numbers 1585, 1585A, 1585BP, 1585BT, 1585BX, 1585BZ, 1585D, 1585J

Topic	Page
Summary of Changes	2
Introduction	2
Cable Spools	3
Unshielded Twisted Pair	3
Shielded Twisted Pair (Foil and Braided Shield)	4
600V Ethernet Cable	5
Cordsets and Patchcords	6
RJ45	6
RJ45 Gigabit	7
RJ45 Red	8
M12 Flex-rated	9
M12 Receptacle Flex-rated	11
M12 X-code Flex-rated Gigabit	12
M12 Red	13
Patchcords and Field Attachable	14
Die-cast Zinc RJ45 Connector, Variant 1	14
Thermoplastic RJ45 Connector, Variant 1	16
Field Attachable	18
RJ45 Connector	18
M12 Insulation Displacement Connectors (IDC)	20
M12 to RJ45 Bulkhead Connector	22



Summary of Changes

This publication contains updated nominal outer diameter specifications on pages [6](#), [7](#), [8](#), [9](#), [11](#), [12](#), and [13](#).

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Industrial Ethernet Media Brochure, publication 1585-BR001	Provides an overview of Ethernet Media products that Rockwell Automation offers.

You can view or download publications at <http://www.rockwellautomation.com/global/literature-library/overview.page>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Introduction

As Ethernet is increasingly used 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 that is called the Control and Information Protocol (CIP). This application layer is the same as used in DeviceNet™ and ControlNet™ networks.

Rockwell Automation® Cat 5e Ethernet cables are designed to supply a network connection with excellent reliability 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 adapter 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 connectivity with excellent reliability to maintain network integrity and reduces costly downtime from troubleshooting.

Cable Spools

Unshielded Twisted Pair

Features

- 4- and 8-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 M₃I₃C₃E₃
- Riser PVC cables are used for general-purpose environments
- TPE robotic cable is used for flex applications, transmission-tested to 10 million cycles
- Plenum PVC cable is used for air duct applications
- TPE cable meets channel transmission performance to 10 million flexes



Unshielded Ethernet Cable Spool

Specifications

Attributes	Bulletin 1585
Certifications	UL Listed and CEC
Cable Type	Unshielded 2- and 4-pair, Cat 5e
Conductor Material	Tinned copper stranded
Bend Radius	10 million cycles at 20 x diameter (TPE cable)
Data Rate	Up to 1 GB/s
Operating Temperature	-40...+75 °C (-40...+167 °F)
Voltage	300V

Cable and Color Code

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