

M12/X-Coded Adapters



Introduction

Traditionally Industrial network connectivity such as PLC devices to drives, HMI runs on RS-232 and RS-485 protocols. These protocols required connectivity and cabling that had limitations in the bandwidth, distance and scalability. Industrial Ethernet provides a comprehensive alternative to the traditional schemes while providing the flexibility to run protocols like Profinet, Profibus, EtherCAT etc. Industrial connectivity would require robust and rugged connectivity and cabling solutions unlike office connectivity where the requirements are less stringent. Hence newer forms of circular connector such as M12 are more suitable for Industrial environments whereas an RJ45 solution is the solution used for office environments.



Migration to Higher Speeds (X-coded connectors)

Also the migration to Ethernet allows for increased bandwidth in speeds from a few Kb/s to Gb/s to 10 Gb/s. Delivering these speeds would require good installation practices and certification after the installation. WireXpert now provides a comprehensive way of certifying Industrial Ethernet environments not just at 100 Mbps but also Gigabit Ethernet and 10G Ethernet to support the IEC 61076-2-109 standard which would use the four pair Ethernet.



Ordering Information

WX-4500-FA

WireXpert Copper Cable Certifier Kit

WX_AD_M12CH_KIT

Kit for channel testing with M12 interface comprising of:
2 x M12 channel adapters WX_AD_M12CH
2 x 4 Positions test cords WX_AC_M12CH_CORD_TERA

WX_AD_M12XCH_KIT

Kit for channel testing with M12 C-coded interface comprising of:
2 x M12 channel adapters WX_AD_M12XCH
2 x 8 Positions test cords WX_AC_M12XCH_CORD_TERA

Testing Industrial Ethernet deployments

M12 Connectivity

M12 is a circular connector which allows 2 pair connectivity supporting a 100 Mbps transmission rate between the switch and the HMI device or a drive.



Vis-à-vis a traditionally Ethernet cable, this would amount to using pairs 12 and 36. On WireXpert you could set the tester up for this configuration by going into the custom cable menu and selecting a 2-pair test configuration.

X-Coded Connectivity

For running a 10Gbps on Industrial Ethernet 2 pairs would not be sufficient and will require an X-Coded connector, also circular but will use all 4 pairs of Ethernet cabling. This is similar to a CAT 6A, ClassEA operation but using more ruggedized connectivity, X-Coded Connectors.



HYBRID Connectivity

It is not uncommon to find Hybrid connectivity where one end is an RJ45 and the other end is M12 or X-Code. This is typically the case when the users would install an Enterprise switch and would re-use it for Industrial Networks. WireXpert supports testing this configuration as well using the Hybrid M12 test adapters.

Test Limits

One of the most commonly used test limit is Profinet and WireXpert inherently supports this limit. This limit can be selected from the custom limit menu before performing the Autotest.

ASIA / PACIFIC

Psiber Data Pte Ltd, Singapore

Phone: +65 6569 6019
 asiasales@psiber-data.com

AMERICAS

Softing North America, Inc.

Phone: +1 (978) 499 9650
 wirexpert@softing.com

EUROPE / M. EAST / AFRICA

GERMANY, Munich

Psiber Data GmbH,
 Phone: +49 (89) 8913 6060
 info@psiber-data.com

FRANCE, Paris

Psiber Data France,
 Phone: +33 (660) 970910
 infofr@psiber-data.com

ITALY, Milano

Psiber Italia, Monza,
 Phone: +39 (039) 284 4287
 info@psiber.it

UNITED KINGDOM, Faygate

Psiber Data Ltd.,
 Phone: +44 (1293) 852 306
 info@psiber-data.co.uk