INDUSTRIAL ETHERNET CABLE TESTING
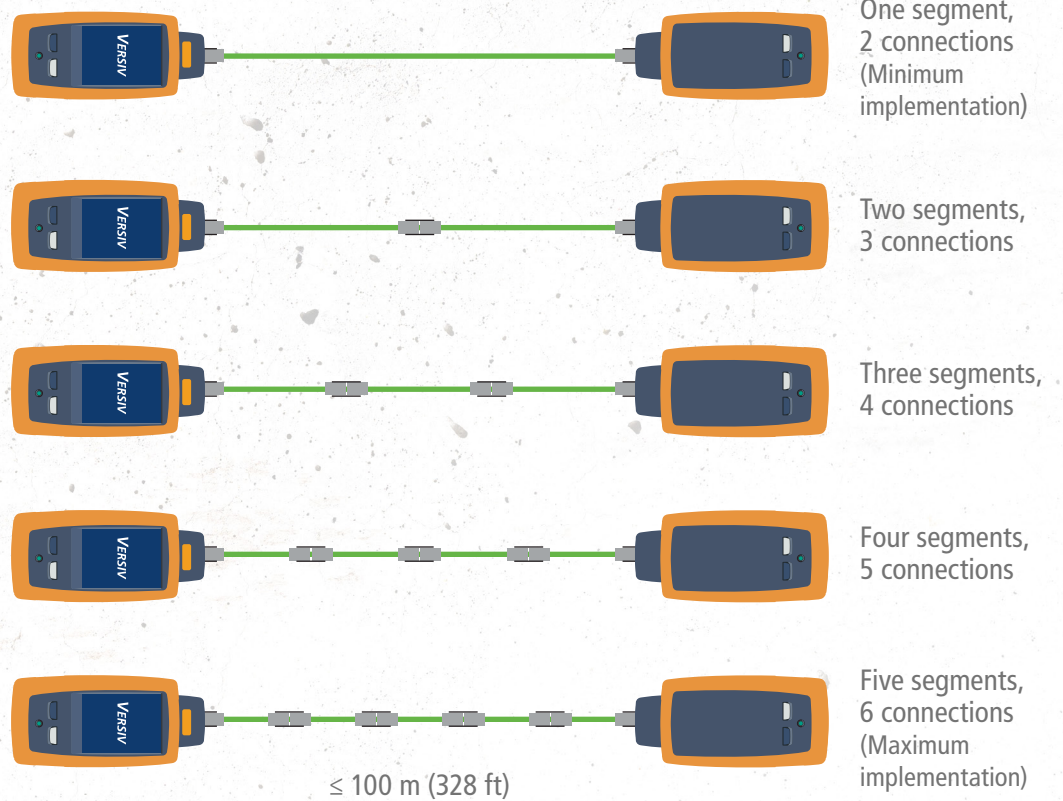
Maximize Your Industrial Ethernet Uptime

Common connector types
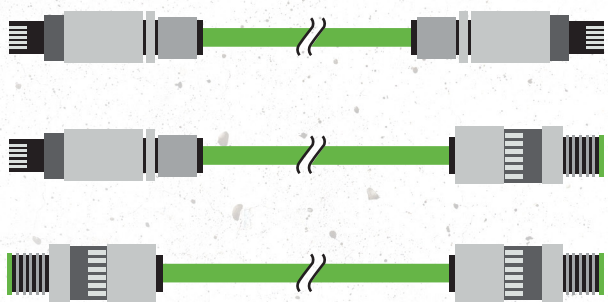
M12 D-code

4   3
1   2

M12 X-code

5   4
6   3
7   2
8   1

RJ45 2 Pair   RJ45 4 Pair

1 2 3   6   1 2 3 4 5 6 7 8
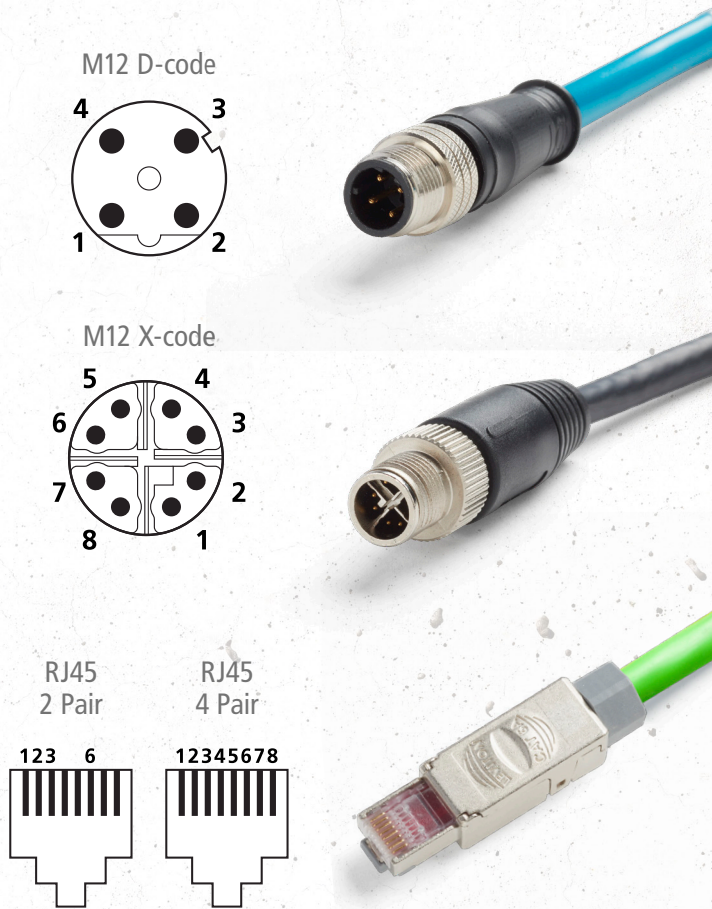
Industrial cable topologies

Standard Industrial Ethernet cabling can contain 2 connections to 6 connections

One segment, 2 connections (Minimum implementation)

Two segments, 3 connections

Three segments, 4 connections

Four segments, 5 connections

Five segments, 6 connections (Maximum implementation)

≤ 100 m (328 ft)

Industrial Ethernet connectors

#	TIA-1005 and ISO 11801-3				PROFINET	
	RJ45 4 Pair	RJ45 2 Pair	M12-X	M12-D	RJ45 2 Pair	M12-D
1	white/orange	white/orange	white/orange	white/orange	yellow	yellow
2	orange	orange	orange	white/green	orange	orange
3	white/green	white/green	white/green	orange	white	white
4	blue		blue	green		blue
5	white/blue		white/blue			
6	green	green	green		blue	
7	white/brown		white/brown			
8	brown		brown			

Cabling testing methods

Permanent Link Test
Typically not suited for Industrial Ethernet tests

Minimum implementation (2 connectors)

Maximum implementation (6 connectors)

Channel Test
Excludes first and last connector which may be field terminated and of primary interest

End to End Test
Includes all connectors/universally applicable

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