

Single Pair Ethernet verses Other Protocols

Protocol	Cable Length	Bit Rate	Compatible with Power Delivery	Number of Conductors	Connector
BASE-T Ethernet: 10/100/1000/2.5G/5G/10GBASE-T	100 m	10 Mbps to 10 Gbit, full duplex	Yes, up to 90 W	4 to 8	RJ45
10BASE-T1L	1000 m (2.4 V) with up to 10 joints (terminal boxes)	10 Mbit, full duplex	Yes, up to 60 W via SPoE	2	LC style IDC connector or terminal screw
10BASE-T1S	25m	10 Mbit, half duplex/full duplex	Yes (point-to-point only) via SPoE	2	LC style IDC connector or terminal screw
PROFIBUS PA	1200 m	31.25 kbps, bus, half duplex	Yes	2	M12, terminal screw
Modbus RTU and Other RS-485 Protocols	1200 m (up to approximately 185 kbps, at 375 kb 300 m, at 500 kb, 200 m)	Typically, 19.2 kbps, bus, half duplex	No	2	DB9, M12
CAN (DeviceNet)	500 m	125 kbps, half duplex	No (on separate wires)	4	Custom tap, M12, terminal screw
	100 m	500 kbps, half duplex			
I/O Link	20 m	Max 230.4 kbps, half duplex	No	2	M12
4 mA to 20 mA	>10 km	-/-	Yes, 36 mW	2	Screw
HART	>1500 m	1200 bps, bus, half duplex	Yes, 36 mW	2	Screw