

Yaskawa Network Communication Options												
Market	Protocol	P5	G5	G5 HHP	J7	V7	V74X	V7N	E7U	F7U	G7U	P7U
Industrial	Profibus	n/a	CM061	CM061	n/a	CM067	CM067	n/a	n/a	CM061	CM061	CM061 [Not Tested]
	DeviceNet	CM054 CM055	CM053 CM059	n/a	n/a	CM052	CM052	Built-in	n/a	CM056 CM059	CM057 CM059	CM058
	Ethernet Modbus TCP/IP	n/a	CM090	n/a	n/a	Future [CM091]	Future [CM091]	n/a	n/a	CM090	CM090	CM090 [Future]
	Modbus Plus	n/a	CM071	CM071	n/a	n/a	n/a	n/a	n/a	CM071	CM071	CM071 [Future]
General Purpose	Modbus RTU	Built-in RS-232 [CM086 for RS-485]	Built-in RS-232 [CM085 for RS-485]	Built-in RS-232 [CM085 for RS-485]	DS094 for RS-232 DS095 for RS-485	Built-in	Built-in	n/a	Built-in	Built-in	Built-in	Built-in
Commercial	Metasys N2	CM043	n/a	n/a	n/a	n/a	n/a	n/a	Built-in	n/a	n/a	Future Software Option
	Apogee FLN	CM045	n/a	n/a	n/a	n/a	n/a	n/a	Built-in	n/a	n/a	Future Software Option
	LonWorks	CM047	CM048	n/a	n/a	n/a	n/a	n/a	CM048	CM048	CM048	CM048

Yaskawa Network Communication Options Comparison											
Market	Protocol	Information	Network Topology*	Physical Media**	Max. Devices	Maximum Distance***	Transmission Speed	Bus Addressing	Media Access	Termination	Reference Source
Industrial	Profibus-DP	www.profibus.com	Bus	Twisted-pair	32 nodes/seg (126 max)	1200m-9.6kbps 100m-12Mbps	9.6 kbps - 12 Mbps	Master/Slave	Token passing with polling	Yes	Profibus Technology and Application [Profibus]
	DeviceNet	www.odva.org	Bus (Trunk/Drop)	Twisted-pair	64 nodes	500m-125kbps 250m-250kbps 100m-500kbps	125, 250, 500 kbps	Master/Slave Peer-to-Peer	CSMA/BA	Yes	Planning and Installation Manual [ODVA]
	Ethernet Modbus TCP/IP	www.modbus.org	Star	Cat 3, 5, 5e	1024 segments (1 n/seg - star)	100m	10 Mb/s 100 Mb/s	Peer-to-Peer	CSMA/CD	No	IEEE802.3-2002 [IEEE]
	Modbus Plus	www.modbus.org	Bus (Trunk/Drop)	Twisted-pair	32 nodes/seg (64 max)	450m/seg	1 Mbps	Peer-to-Peer	Token Passing	Yes	Modbus Plus Network Planning and Installation Guide [Modicon/Schneider]
General Purpose	Modbus RTU	www.modbus.org	Bus (Trunk/Drop)	Twisted-pair	32 nodes/seg (247 max)	1000m-9.6kbps	9.6-19.2 kbps (others allowed)	Master/Slave	Polling	Yes	Modbus over Serial Line Specification and Implementation Guide V1.0 [Modbus.org]
Commercial	Metasys N2	www.jci.com/Metasys/	Bus	Twisted-pair	255 ^{††}	Follow RS-485 guidelines (approx 1200m) ^{††}	9.6 kbps	Master/Slave	Polling	Yes	Protocol information private.
	APOGEE FLN	www.sbt.siemens.com	Bus	Twisted-pair	3 segs of 32 ^{††} (96 max)	Follow RS-485 guidelines (approx 1200m) ^{††}	4.8 kbps	Master/Slave	Polling	Yes	Protocol information private.
	LonWorks	www.echelon.com	Bus, 'Free'	Twisted-pair	64 nodes	2200m - 78kbps 125m - 1.25Mbps	600 bps - 1.25 Mbps	Master/Slave Peer-to-Peer	CSMA/CA	Yes	Introduction to the LonWorks System [Echelon]

*Topologies available with the physical layer used by YEA

**Media types supported by YEA option cards

***Maximum distances are dependent on number of nodes, cable type, topology, etc.

^{††}No definitive information source found. Information not dependable.

Disclaimer: Yaskawa Electric America does not provide network training. This information is only intended as a guideline and should not be used as reference material.

