

Modbus/TCP Adapter for CP1 and CJ2M PLCs

CP1W-MODTCP61

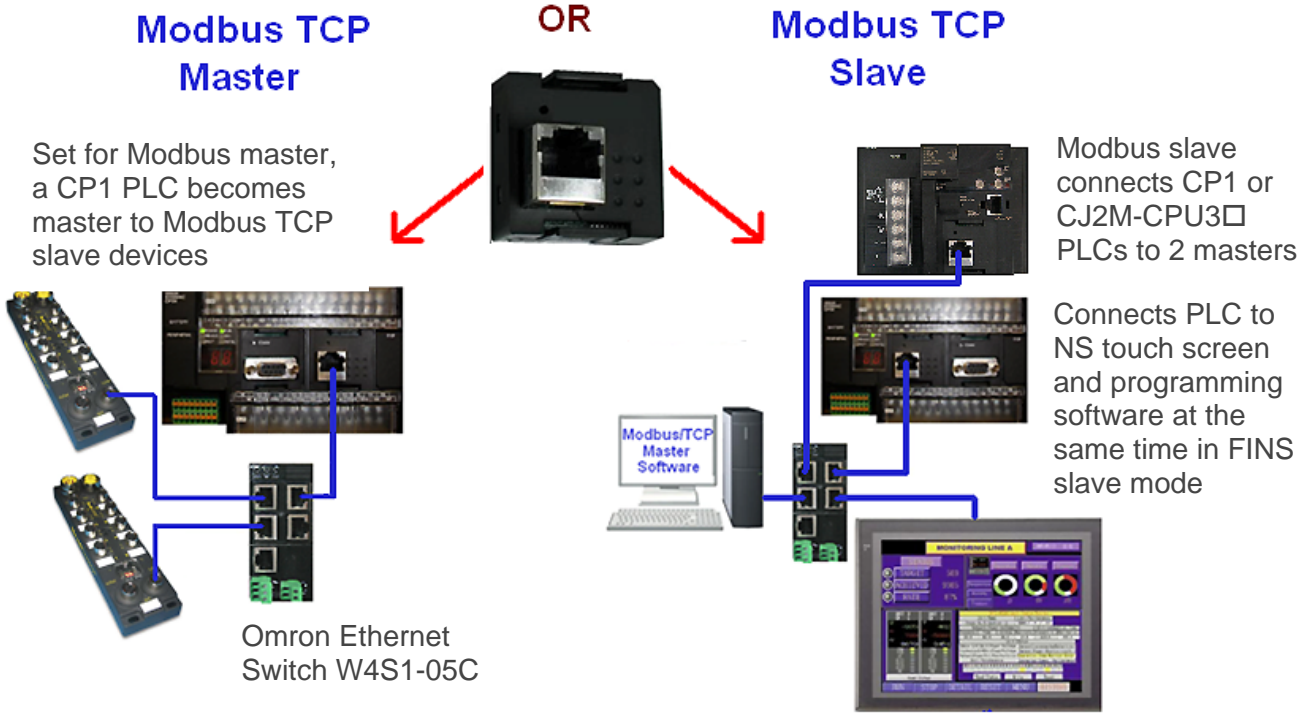
Versatile Modbus/TCP Interface Offers Selectable Master/Slave Mode

Exchange data over EtherNet/IP using the popular Modbus TCP protocol. This low-cost communications adapter can be set to operate as a Modbus master or slave, simplifying automation system design. Machine builders find these plug-in adapters easily match a CP1 or CJ2M PLC to their customers' choice of network.

- **Modbus TCP master/client mode** – Control Modbus TCP slave devices such as I/O, drives, etc. from the PLC
- **Modbus TCP slave/server mode** – Allows CP1 and CJ2M-CPU3 PLC slave to connect to 2 Modbus masters and up to 4 FINS UDP connections
- **Automatic handshaking with Omron FINS devices in slave mode** – Program the CP1L/H over Ethernet and simultaneously communicate with an HMI and/or SCADA software system to the same CP1L/H while being a Modbus TCP slave.
- **Easy to Install** – Adapter plugs into the option board slot on a CP1 or CJ2M PLC.



System Configuration



Key Features and Benefits

Modbus TCP Master or Slave	This unit can be a master or a slave – but not both at the same time.
Modbus TCP Slave supports up to 4 connections	Can be a slave to up to 2 Modbus masters and up to 4 FINS UDP connections.
Modbus TCP Master	Uses the PLC “Modbus RTU Easy Master” function to create commands to the slave devices.
Ethernet FINS	Allows connection to four devices at once: PLC, HMI, SCADA, and CX-One for programming.
Web browser setup	Ease of setup
Supports Ethernet Gateway setup	Remote (Internet) based access possible.

Limitations

No FINS routing	The requesting device must be on the same FINS network as the device it wants to talk to.
Modbus TCP Master	This mode is not applicable to the CJ2M-CPU3□ series PLCs.

Specification

CP1W-MODTCP61	CP1 Ethernet Adapter
Type	10/100Base-TX
Applicable PLCs	CP1L-L14/L20/M30/M40/M60, CP1H-X/XA/Y, CJ2M-CPU3□
Transmission distance	100m (distance between any node to switch)
Number of units mounted	One as master and one as slave
Communication method	Ethernet FINS UDP, Modbus TCP
Maximum connections per device	254
Maximum command size	998 coils or 125 registers per read/write
Current IP Address	D1200, D1201 (D1200=1 st & 2 nd Octets in hex, D1201=3 rd & 4 th Octets in hex)
Default IP Address	192.168.250.11
Web Page IP Address setup	http://192.168.250.11 (default)

The module supports the following Modbus Commands:

01 – Read Coil Status	02 – Read Input Status	03 – Read Holding Status
04 – Read Input Registers	05 – Force Single Coil	06 – Preset Single Register
0F – Force Multiple Coils	10 – Preset Multiple Registers	

In Modbus Slave Mode:

The coil commands access CIO memory 1000.00 to 1199.15 (3200 coils)

The channel commands access DM memory D1000 to D1199 (200 registers)

In Modbus Master Mode:

Set to Modbus Master, the adapter uses the “Modbus RTU Easy Master” function in the PLC to create commands to the slave device. The command is setup in D32200 to D32249. The response will be in D32250 to D32299.

Related Products

Software

CX-One version 4 contains the Network Configurator for EtherNet/IP. CXONE-AL01C-V4 is the part number for a single license copy on CD.

Ethernet Switches

Omron's W4S1 Industrial Ethernet Switches are compatible with Ethernet, EtherNet/IP, Profinet networks. They prioritize EtherNet/IP packet delivery by using Quality of Service [QoS] to ensure high-speed delivery of control data. The QoS function is enabled with a simple DIP switch instead of complex software settings. Available in 3- and 5-port models.



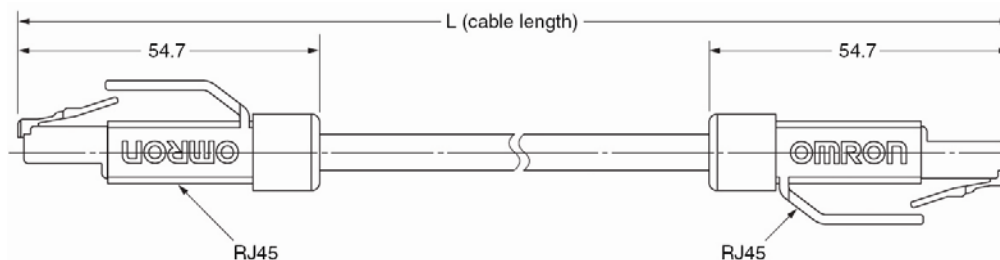
- Reliable, uninterrupted communication for the Factory Automation environment
- Compact size and easy installation - DIN rail mounting, 24 V DC power supply; measures 90 H x 25 or 48 W x 78 D mm

Description	Model
3 port switch with QOS	W4S1-03B
5 port switch with QOS	W4S1-05B
5 port switch with QOS, SW-LSI, and Broadcast Storm Detection	W4S1-05C

Ethernet Cables

Omron offers a line of shielded high quality industrial cables for inside and outside the control panel.

- Cables are shielded to protect against EMI
- RJ45 connectors – both ends
- cULus approval markings on cable



Description	Connector type	Cable length L (meters)	Model
Double-ended Ethernet Cable with Straight Connectors	RJ45/RJ45 on both ends	0.3	XS5W-T421-AMD-K
		0.5	XS5W-T421-BMD-K
		1	XS5W-T421-CMD-K
		2	XS5W-T421-DMD-K
		3	XS5W-T421-EMD-K
		5	XS5W-T421-GMD-K
		10	XS5W-T421-JMD-K
		15	XS5W-T421-KMD-K

Reference Documentation

Description	Media	Publication number
CP1L/CP1H Ethernet Adapter Application and Setup Guide	PDF	SG_CP1_MODTCP61
CP1L/H Series Brochure	PDF	R08I
CP1H Operation Manual	PDF	W450
CP1L/CP1H Programming Manual	PDF	W451
CP1L Operation Manual	PDF	W462
CJ/CS EtherNet/IP Operation Manual	PDF	W465
CJ2 Hardware Manual	PDF	W472
CJ2 Software Manual	PDF	W473
W4S1 Ethernet Switch Brochure	PDF	V227

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