Ethernet Communication Modules

Ethernet Communications Module

H4-ECOM <--->
H4-ECOM100 <--->
H4-ECOM-F <--->

Overview

Ethernet Communications Modules offer features such as:

- High-speed peer-to-peer networking of PLCs
- Fast updates with *Direct*SOFT Programming Software
- High-performance access for Human Machine Interface (HMI), ERP, MES or other Windows-based software
- Industry standard ModbusTCP/IP Client/Server Protocol (H4-ECOM100)
- Free SDK for custom drivers
- Easy setup

The Ethernet Communication (ECOM) Modules represent a price breakthrough for high-speed peer-to-peer networking of PLCs. No longer are you forced to designate a single PLC to be the network master. Any PLC can initiate communications with any other PLC. Link your PLCs with PCs using industry standard Modbus TCP/IP protocol connected through standard cables, hubs, and repeaters. Or, use our **KEP***Direct* I/O Server to link to your favorite HMI/SCADA, data historian, MES or ERP software to *Direct*LOGIC PLCs. Our Lookout*Direct* HMI and our DataWorx data collection software include ECOM drivers. *Direct*SOFT Programming Software can be used to monitor or update the program in any *Direct*LOGIC PLC on the network.

Simple connections

Use Category 5 UTP cables or 62.5/125 ST-style fiber optic cables depending on the requirements of your application. Inexpensive UTP cables can be run up to 100 meters between nodes, and fiber optic cables can be run up to 2,000 meters. Fiber optic cables virtually eliminate electrical noise problems. Use repeaters to extend distances and expand the number of nodes.

Our HA-TADP (10/100Base-T) PC network adapter card is compatible with the ECOM modules. See the Communications Products section in this catalog for information on the adapter card.

ECOM starter kit

The H4-ECOM-START gives you everything you need to make your first Ethernet network simple to build. It contains an H4-ECOM module and instruction manual, a network adapter card (PCI) for your PC, a crossover cable, and a Software Product Showcase Demo CD. The CD contains demo versions of our software products that support the ECOM Modules. See the Software Products section in this catalog for information on the available software packages.

Specifications	H4-ECOM	H4-ECOM100	H4-ECOM-F
Communications	10Base-T Ethernet	10/100Base-T Ethernet	10Base-FL Ethernet
Data Transfer Rate	10Mbps max.	100Mbps max.	10Mbps max.
Link Distance	100 meters (328 ft)	100 meters (328 ft)	2,000 meters (6,560 ft)
Ethernet Port	RJ45	RJ45	ST-style fiber optic
Ethernet Protocols	TCP/IP, IPX	TCP/IP, IPX, MODBUS TCP/IP, DHCP, HTML configuration	TCP/IP, IPX
Power Consumption	530mA @ 5VDC	300mA @ 5VDC	670mA @ 5VDC
Manufacturer	Host Automation Products, L.L.C.		

H4-ECOM100

The H4-ECOM100 supports the Industry Standard Modbus TCP/IP Client/Server Protocol

H4-ECOM100 *IBox* communications instructions

Over 25 new communications *IBox* instructions are available when using the H4-ECOM100 with a DL450 PLC and *Direct*SOFT5 programming software. These easy-to-use instructions allow you to:

- Enable/disable module DHCP
- Read/write module IP, Gateway and Subnet Mask addresses
- Read/write module ID, Name and Description
- Send E-mail messages
- Read/Write PLC memory to networked Hx-ECOM100 modules
- Read/Write PLC memory to networked Hx-ECOM(-F) modules

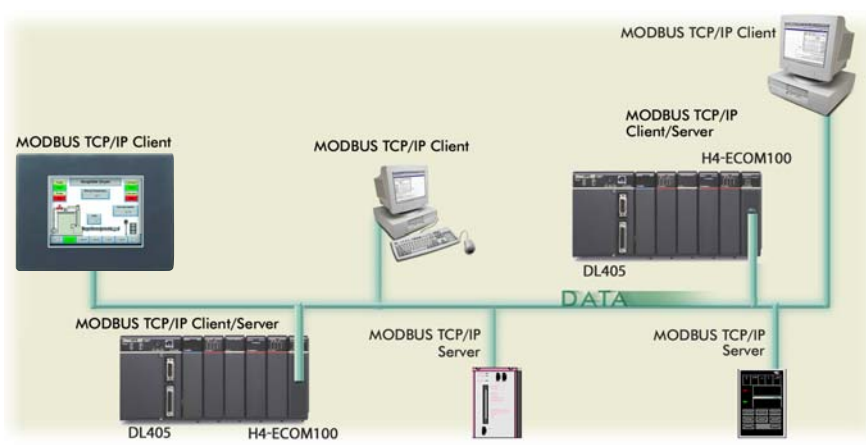See the following page for example communications *IBox* instructions.

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Modbus TCP/IP support

The H4-ECOM100 supports the industry standard Modbus TCP/IP Client/Server protocol in addition to the standard IP and IPX protocols. This allows the DL405 PLC with an H4-ECOM100 module to serve as a client (master) or as a server (slave) on a Modbus TCP/IP Ethernet network. The H4-ECOM100 can actively issue Modbus commands to other nodes or devices on the Modbus TCP/IP network or simply respond to connected Modbus TCP/IP clients.

Modbus TCP/IP communications architecture

PLC-to-PLC communications

PLC-to-PLC or PLC to a Modbus TCP/IP device communications can be accomplished using standard Read from Network (RX) and Write to Network (WX) instructions (DL430/440/450, all H4 series ECOMs and all *Direct*SOFT versions). If you're using our new *Direct*SOFT5 programming software, a DL450 PLC and an H4-ECOM100, you can use fill-in-the-blank *IBox* instructions to simplify your communications programming. The H4-ECOM100 supports the ECOM100 Configuration *IBox* for use with the ECRX and ECWX *IBox* instructions to read/write to other ECOM(100)s. All H4 series ECOM modules support the NETCFG Configuration *IBox* for use with the NETRX and NETWX *IBox* instructions to read/write to other ECOM modules (remember DL450/DSOFT5 required). The communications *IBox* instructions execute with built-in interlocking to greatly simplify communications programming.

ECOM100 Configuration *IBox*

ECOM100 Read Network *IBox*

NetEdit3 software

NetEdit3 Software ships free with the ECOM User Manual. Use NetEdit3 to configure the ECOM modules for your network. Flexible addressing allows you to use your choice of protocols and identifying methods. Assign each module a number or a name or both. You don't have to use an IP address, but you can if it's necessary for your network. NetEdit3 uses two protocols for PC-to-PLC communications: IPX and TCP/IP. The NetEdit3 screen displays all identifiers and troubleshooting information for each module on the network. You can use NetEdit3 to adjust parameters for PLC-to-PLC communications by clicking on Advanced Settings. The network identifiers can also be changed from *Direct*SOFT Programming Software.

Choose your slot

The ECOM modules plug into any I/O slot of any local DL405 I/O base, including expansion bases when using the DL450 CPU**. The module maintains identification data, descriptive information, and communication parameters for PLC-to-PLC communications in flash memory. Disconnect power before installing or removing any PLC module.

Note* *All H4 ECOMs require base numbers ending with -1)*

H4-ECOM100 has e-mail capability!

The H4-ECOM100 Send EMail (ECEMAIL) *IBox* instruction will allow the module to behave as an e-mail client and send an SMTP request to your SMTP Server to send a specified e-mail message to the e-mail addresses in the in *IBox's* **To:** field. The **Body:** field allows you to embed real-time data in your e-mail message. The DL450 CPU and *Direct*SOFT5 are required to use the *IBox* instructions.

ECOM100 Send EMail *IBox*