

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 *DirectSOFT* 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 support 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 *KEPDirect* I/O Server to link to your favorite HMI/SCADA, data historian, MES or ERP software to *DirectLOGIC* PLCs. Our *LookoutDirect* HMI and our *DataWorx* data collection software include ECOM drivers. *DirectSOFT* Programming Software can be used to monitor or update the program in any *DirectLOGIC* 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

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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 communications IBox instructions are available when using the H4-ECOM100 with a DL450 PLC and *DirectSOFT5* 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.

Ethernet Communication Modules

PLC Overview

DL05/06 PLC

DL105 PLC

DL205 PLC

DL305 PLC

DL405 PLC

Field I/O

Software

C-more HMIs

Other HMI

AC Drives

Motors

Steppers/Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pushbuttons/Lights

Process

Relays/Timers

Comm.

TB's & Wiring

Power

Circuit Protection

Enclosures

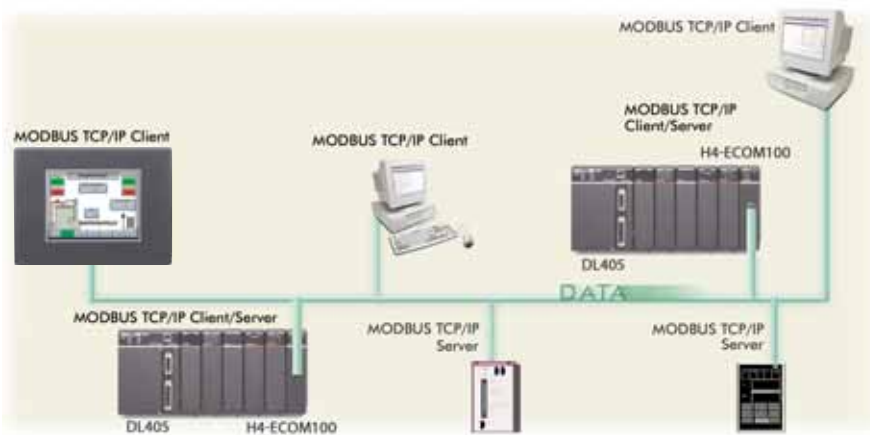
Appendix

Part Index

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 *DirectSOFT* versions). If you're using our new *DirectSOFT5* 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 Config		IB-710
ECOM100 #	K0	
Slot	K1	
Status	V400	
Workspace	V400	
Msg Buffer (65 WORDs)	V400	

ECOM100 Read Network *IBox*

ECOM100 RX Network Read		IB-740
ECRX		
ECOM100 #	K0	
Workspace	V400	
Slave ID	K0	
From Slave Element (Src)	C0	
Number Of Bytes	K1	
To Master Element (Dest)	TA0	
Success	C0	
Error	C0	

Choose your slot

The ECOM modules plug into any I/O slot of any local DL405 I/O base. 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.

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 *IBox's* To: field. The **Body**: field allows you to embed real-time data in your e-mail message. The DL450 CPU and *DirectSOFT5* are required to use the *IBox* instructions.

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 *DirectSOFT* Programming Software.

ECOM100 Send EMail *IBox*

ECOM100 Send EMail		IB-711
ECEMAIL		
ECOM100 #	K0	
Workspace	V400	
Success	C0	
Error	C1	
Error Code	V400	
To	steve@work.com	
Subject	Machine Offline	
Body	"Machine #" V5010:B "went offline at" _time:24 "on" _date.us	