DL05/06 Ethernet Communications Modules

Ethernet Communication Modules

H0-ECOM100 $321.00

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 Modbus TCP Client/Server Protocol
- HTML (unsecure) configuration
- Embedded Web Server: HTTP (unsecure)
- Free SDK for custom drivers
- Easy setup

The Ethernet Communication (ECOM) Module represents 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 Client. Any PLC can initiate communications with any other PLC. Link your PLCs with PCs using industry standard Modbus TCP protocol connected through standard cables, hubs, and repeaters. Or, use KEPServerEX* I/O Server to link your favorite HMI/SCADA, data historian, MES or ERP software to DirectLOGIC PLCs. DirectSOFT Programming Software can be used to monitor or update the program in any DirectLOGIC PLC on the network.

** KEPSeverEX may be purchased from Kepware and will support any existing applications. (https://www.kepware.com/en-us/products/kepserverex)*

Simple connections

Use Category 5 UTP cables which can be run up to 100 meters between nodes. Use repeaters to extend distances and expand the number of nodes.

Choose your slot

The H0-ECOM100 module plugs into any option module slot of any DL05 PLC or DL06 PLC. 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.

Specifications	H0-ECOM100
Communications	10/100 BaseT Ethernet
Data Transfer Rate	100 Mbps
Link Distance	100 meters
Ethernet Port	RJ45
Ethernet Protocols	TCP/IP, IPX, Modbus TCP/IP DHCP, HTML (unsecure) configuration
Embedded Web Sever	***HTTP (unsecure)***
Power Consumption	300 mA @ 5 VDC
Manufacturer	Host Automation Products, LLC

CPU	Firmware Required	DirectSOFT Required
DL05	ECOM100: Version 4.90 or later ECOM (retired): Version 4.60 or later	Version 3.0c or later
DL06	ECOM100: Version 1.80 or later ECOM (retired): Version 1.40 or later	Version 4.0, Build 16 or later

H0-ECOM100 IBox communications instructions

Over 40 Communications IBox instructions are available when using the H0-ECOM100 with a DL05/06 PLC and DirectSOFT6 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.

The H0-ECOM100 supports the Industry Standard Modbus TCP Client/Server Protocol

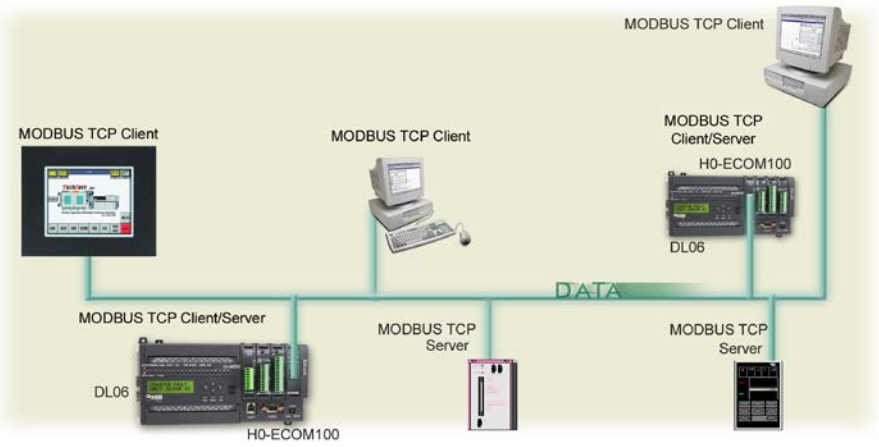
See the Communications section for details on Stride Ethernet Switches

DL05/06 Ethernet Communications Modules

Modbus TCP support

The H0-ECOM100 supports the industry standard Modbus TCP Client/Server protocol in addition to the standard IP and IPX protocols. This allows the DL06/06 PLC with an H0-ECOM100 module to serve as a client (Client) or as a server (Server) on a Modbus TCP Ethernet network. The H0-ECOM100 can actively issue Modbus commands to other nodes or devices on the Modbus TCP network or simply respond to connected Modbus TCP clients.

ModbusTCP communications architecture



PLC-to-PLC communications

PLC-to-PLC or PLC to a Modbus TCP device communications can be accomplished using standard Read from Network (RX) and Write to Network (WX) instructions (all DL05/06 PLCs, all H0 series ECOMs and all DirectSOFT versions). If you're using our DirectSOFT6 programming software, a DL05 or DL06 PLC and an H0-ECOM100, you can use fill-in-the-blank IBox instructions to simplify your communications programming. The H0-ECOM100 supports the ECOM100 Configuration IBox for use with the ECRX and ECWX IBox instructions to read/write to other ECOM100s. All H0 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 DirectSOFT5 or later is required). The Communications IBox instructions execute with built-in interlocking to greatly simplify communications programming.

ECOM100 Configuration IBox

ECOM100 Config	
ECOM100	IB-710
ECOM100 #	K0
Slot	K1
Status	V2000
Workspace	V2100
Msg Buffer (65 WORDs)	V2000

ECOM100 Read Network IBox

ECOM100 RX Network Read	
ECRX	IB-740
ECOM100 #	K0
Workspace	V2200
Slave ID	K0
From Slave Element (Src)	C0
Number Of Bytes	K1
To Master Element (Dest)	V2000
Success	C0
Error	C0

H0-ECOM100 has e-mail capability!

The H0-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. DirectSOFT5 or later is required to use the IBox instructions.

NetEdit3 software

NetEdit3 Software is installed with DirectSOFT and it can be downloaded on the AutomationDirect.com website. 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	
ECEMAIL	IB-711
ECOM100 #	K0
Workspace	V2200
Success	C0
Error	C1
Error Code	V2100
To	docteam@work.com
Subject	Team Busy
Body	
"Machine #" V5010:B "went offline at" _time:24 "on" _date:us	

Power Budgeting for the DL06

The DL06 has four option module slots. To determine whether the combination of modules you select will have sufficient power, you will need to perform a power budget calculation.

Power supplied

Power is supplied from two sources: the internal base unit power supply and, if required, an external supply (customer furnished). The D0-06xx (AC powered) PLCs supply a limited amount of 24 VDC power. The 24 VDC output can be used to power external devices.

For power budgeting, start by considering the power supplied by the base unit. All DL06 PLCs supply the same amount of 5 VDC power. Only the AC units offer 24 VDC auxiliary power.

Be aware of the trade-off between 5 VDC power and 24 VDC power. The amount of 5 VDC power available depends on the amount of 24 VDC power being used, and the amount of 24 VDC power available depends on the amount of 5 VDC power consumed. Determine the amount of internally supplied power from the table to the right.

Power required by base unit

Because of the different I/O configurations available in the DL06 family, the power consumed by the base unit itself varies from model to model. Subtract the amount of power required by the base unit from the amount of power supplied by the base unit. Be sure to subtract 5 VDC and 24 VDC amounts.

Power required by option modules

Next, subtract the amount of power required by the option modules you are planning to use. Again, remember to subtract both 5 VDC and 24 VDC.

If your power budget analysis shows surplus power available, you should have a workable configuration.

DL06 Power Supplied by Base Units

Part Number	5 VDC (mA)	24 VDC (mA)
D0-06xx	1500 mA	300 mA
	2000 mA	200 mA
D0-06xx-D	1500 mA	none

DL06 Base Unit Power Required

Part Number	5 VDC (mA)	24 VDC (mA)
D0-06AA	800 mA	none
D0-06AR	900 mA	none
D0-06DA	800 mA	none
D0-06DD1	600 mA	280 mA*
D0-06DD2	600 mA	none
D0-06DR	950 mA	none
D0-06DD1-D	600 mA	none
D0-06DD2-D	600 mA	none
D0-06DR-D	950 mA	none

* Only if auxiliary 24 VDC power is connected to V+ terminal.

DL06 Power Consumed by Other Devices

Part Number	5 VDC (mA)	24 VDC (mA)
D0-06LCD	50 mA	none
D2-HPP	200 mA	none
DV-1000	150 mA	none
C-more Micro-Graphic	210 mA	none

Power Budgeting Example

Power Source		5 VDC power (mA)	24 VDC power (mA)
D0-06DD1 (select row A or B)	A	1500 mA	300 mA
	B	2000 mA	200 mA
Current Required		5 VDC power (mA)	24 VDC power (mA)
D0-06DD1		600 mA	280 mA*
D0-16ND3		35 mA	0
D0-10TD1		150 mA	0
D0-08TR		280 mA	0
F0-4AD2DA-1		100 mA	0
D0-06LCD		50 mA	0
Total Used		1215 mA	280 mA
Remaining	A	285 mA	20 mA
	B	785 mA	note 1

* Auxiliary 24 VDC used to power V+ terminal of D0-06DD1 sinking outputs.

Note 1: If the PLC's auxiliary 24 VDC power source is used to power the sinking outputs, use power choice A, above.

DL05/06 Power Consumed by Option Modules

Part Number	5 VDC (mA)	24 VDC (mA)
D0-07CDR	130 mA	none
D0-08CDD1	100 mA	none
D0-08TR	280 mA	none
D0-10ND3	35 mA	none
D0-10ND3F	35 mA	none
D0-10TD1	150 mA	none
D0-10TD2	150 mA	none
D0-16ND3	35 mA	none
D0-16TD1	200 mA	none
D0-16TD2	200 mA	none
F0-04TRS	250 mA	none
F0-08NA-1	5 mA	none
F0-04AD-1	50 mA	none
F0-04AD-2	75 mA	none
F0-08ADH-1	25 mA	25 mA
F0-08ADH-2	25 mA	25 mA
F0-04DAH-1	25 mA	150 mA
F0-08DAH-1	25 mA	220 mA
F0-04DAH-2	25 mA	30 mA
F0-08DAH-2	25 mA	30 mA
F0-2AD2DA-2	50 mA	30 mA
F0-4AD2DA-1	100 mA	40 mA
F0-4AD2DA-2	100 mA	none
F0-04RTD	70 mA	none
F0-04THM	30 mA	none
D0-DEVNETS	45 mA	none
H0-CTRIO2	250 mA	none
H0-ECOM100	300 mA	none
F0-08SIM	1 mA	none
D0-DCM	250 mA	none
F0-CP128	150 mA	none
F0-08SIM	1 mA	none