

Ethernet Communications Modules

ETHERNET COMMUNICATIONS MODULE

H2-ECOM100 \$423.00



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. Distances can be greatly extended with Ethernet/Fiber media converters like the SE-MC2U-ST. Fiber optic cables virtually eliminate electrical noise problems. Use repeaters to extend distances and expand the number of nodes.

Stride Ethernet switches are compatible with the ECOM modules. See the Communications Products section for information on these items.

H2-ECOM100 IBox communications instructions

Over 40 Communications IBox instructions are available when using the H2-ECOM100 with a D2-250-1 or D2-262 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 modules

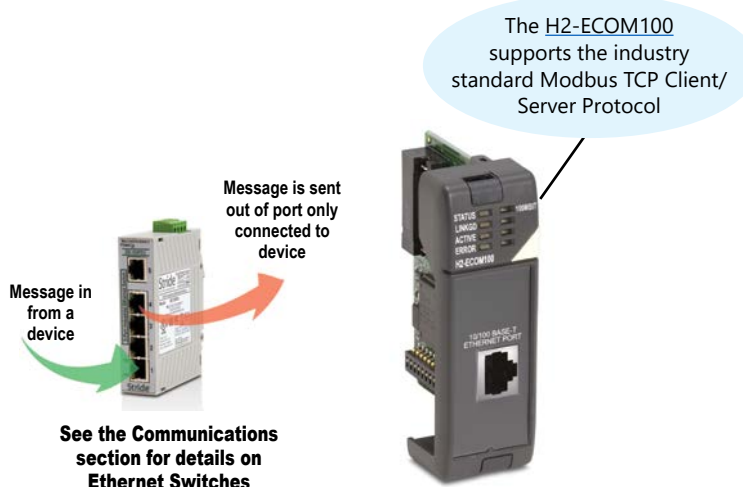
See the following page for example Communications IBox instructions.

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 (H2-ECOM100)
- Embedded Web Server: HTTP(Unsecure)
- Ethernet Protocols: HTML (Unsecure) configuration
- 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 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 to 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.



Specifications	H2-ECOM100
Communications	10/100Base-T Ethernet
Data Transfer Rate	100 Mbps max.
Link Distance	100 meters (328ft)
Ethernet Port	RJ45
Ethernet Protocols	TCP/IP, IPX, Modbus TCP, DHCP, HTML (unsecure)configuration, Embedded Web Server: HTTP(unsecured) configuration
Power Consumption	300mA @ 5VDC
Manufacturer	Host Automation Products, L.L.C.

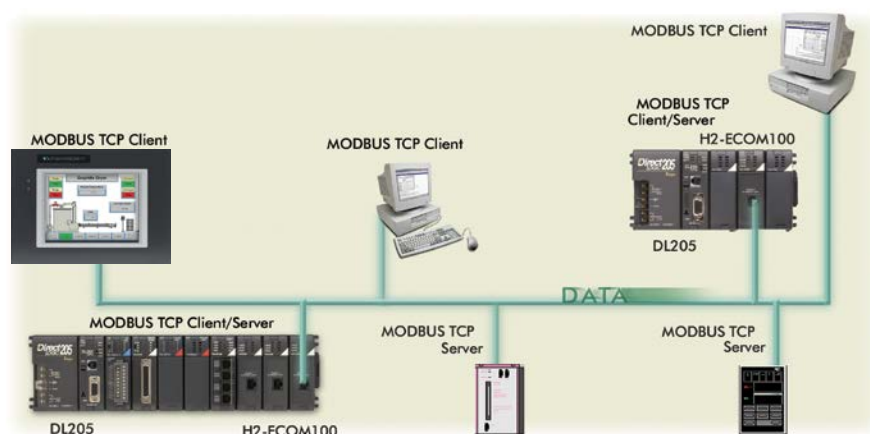
* KEPServerEX may be purchased from Kepware and will support any existing applications. (<https://www.kepware.com/en-us/products/kepserverex>)

Ethernet Communications Modules

Modbus TCP support

The H2-ECOM100 supports the industry standard Modbus TCP Client/Server protocol in addition to the standard IP and IPX protocols. This allows the DL205 PLC with an H2-ECOM100 module to serve as a client (Client) or as a server (Server) on a Modbus TCP Ethernet network. The H2-ECOM100 can actively issue Modbus commands to other nodes or devices on the Modbus TCP network or simply respond to connected Modbus TCP clients.

Modbus TCP 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 (H2-ECOM100, all H2 series ECOMs and all DirectSOFT versions). If you're using DirectSOFT programming software, a D2-262 PLC and an H2-ECOM100, you can use fill-in-the-blank IBox instructions to simplify your communications programming. The H2-ECOM100 supports the ECOM100 Configuration IBox for use with the ECRX and ECWX IBox instructions to read/write to other ECOM(100)s. All H2 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 D2-262 and a supporting version of DirectSOFT is 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	

ECOM100 Send Email IBox

ECOM100 Send Email		IB-711
EMAIL		
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	

H2-ECOM100 has e-mail capability!

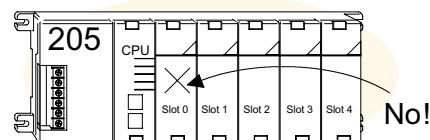
The H2-ECOM100 Send Email (EMAIL) IBox instruction allows the module to behave as an e-mail client and send an SMTP request to your SMTP Server to send a specified e-mail message to the e-mail addresses in the in IBox's To: field. The Body: field allows you to embed real-time data in your e-mail message. The D2-262 CPU and a supporting version of DirectSOFT 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. 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.

Choose your slot

The ECOM modules plug into any I/O slot (excluding slot 0) of any local DL205 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.



Note: Use D2-262 CPU with the ECOM modules. The D2-CM bases do not support the ECOM modules.



Power Requirements

These charts help determine your power requirements

This section shows the amount of power supplied by each of the base power supplies and the amount of power consumed by each DL205 device. The Power Consumed charts list how much INTERNAL power from each power source is required for the DL205 devices. Use this information when calculating the power budget for your system.

In addition to the internal power sources, the DL205 bases offer a 24 VDC auxiliary power supply with external power connections. This auxiliary power supply can power external devices.

Use ZIPLinks to reduce power requirements

If your application requires a lot of relay outputs, consider using the ZIPLink AC or DC relay output modules. These modules can switch high current (10A) loads without putting a load on your base power budget. Refer to the Terminal Blocks and Wiring Solutions section in this catalog for more information.

This logo is placed next to the I/O modules that are supported by the ZIPLink connection systems. See the I/O module specifications at the end of this section.



Power Consumed		
Device	5V(mA)	24V Auxiliary
Operator Interface		
C-more Micro-Graphic	210	0

Power Supplied			
Device	Price	5V(mA)	24V Auxiliary
Bases			
D2-03B-1	\$200.00	2600	300
D2-03BDC1-1	\$249.00	2600	None
D2-04B-1	\$217.00	2600	300
D2-04BDC1-1	\$274.00	2600	None
D2-06B-1	\$268.00	2600	300

Power Consumed		
Device	5V(mA)	24V Auxiliary
CPUs		
D2-262	336	0
DC Input Modules		
D2-08ND3	50	0
D2-16ND3-2	100	0
D2-32ND3	25	0
D2-32ND3-2	25	0
AC Input Modules		
D2-08NA-1	50	0
D2-08NA-2	100	0
D2-16NA	100	0
Input Simulator Module		
F2-08SIM	50	0
DC Output Modules		
D2-04TD1	60	20
D2-08TD1	100	0
D2-08TD2	100	0
D2-16TD1-2	200	80
D2-16TD2-2	200	0
F2-16TD1P	70	50
F2-16TD2P	70	50
D2-32TD1	350	0
D2-32TD2	350	0
AC Output Modules		
D2-08TA	250	0
F2-08TA	250	0
D2-12TA	350	0
Relay Output Modules		
D2-04TRS	250	0
D2-08TR	250	0
F2-08TR(S)	670	0
D2-12TR	450	0
Combination In/Out Module		
D2-08CDR	200	0

Power Supplied			
Device	Price	5V(mA)	24V Auxiliary
Bases			
D2-06BDC1-1	\$304.00	2600	None
D2-06BDC2-1	\$279.00	2600	300
D2-09B-1	\$333.00	2600	300
D2-09BDC1-1	\$360.00	2600	None
D2-09BDC2-1	\$359.00	2600	300

Power Consumed		
Device	5V(mA)	24V Auxiliary
Analog Modules		
F2-04AD-1	100	5
F2-04AD-2	110	5
F2-08AD-1	100	5
F2-08AD-2	100	5
F2-02DA-1	40	60 (note 1)
F2-02DA-2	40	60
F2-02DAS-1	100	50 / channel
F2-02DAS-2	100	60 / channel
F2-08DA-1	30	50 (note 1)
F2-08DA-2	60	140
F2-4AD2DA	60	80 (note 1)
F2-8AD4DA-1	35	100 (note 1)
F2-8AD4DA-2	35	80 (note 1)
F2-04RTD	90	0
F2-04THM	110	60
Specialty Modules		
D2-CTRINT	50*	0
D2-CM / D2-EM	100/130	0
H2-CTRIO2	275	0
D2-DCM	300	0
H2-EBC100	300	0
H2-ECOM100	300	0
F2-CP128	235	0
Remote I/O		
H2-ERM100, (-F)	300, (-F: 450)	0
Programming Devices		
D2-HPP	200	0
* Requires external 5VDC for outputs		
Note 1: Add an additional 20 mA per output loop.		



Dimensions and Installation

Understanding the installation requirements for your DL205 system will help ensure that the DL205 products operate within their environmental and electrical limits.

Plan for safety

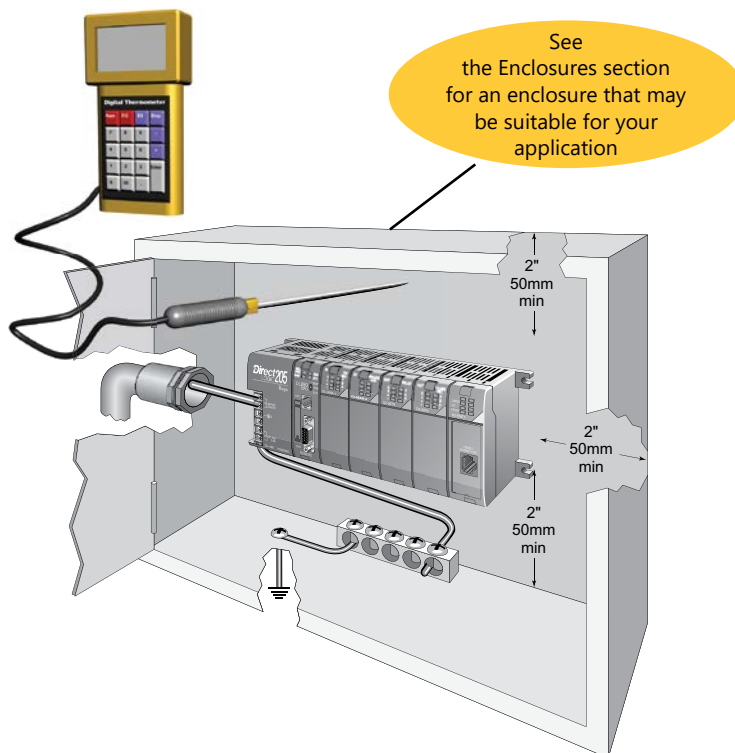
This catalog should never be used as a replacement for the user manual. The user manual, D2-USER-M (downloadable online), contains important safety information that must be followed. The system installation should comply with all appropriate electrical codes and standards.

Environmental specifications

The Environmental Specifications table at the right lists specifications that apply globally to the DL205 system (CPUs, bases, and I/O modules). Be sure that the DL205 system is operated within these environmental specifications.

Base dimensions and mounting

Use the diagrams below to make sure the DL205 system can be installed in your application. To ensure proper airflow for cooling purposes, DL205 bases must be mounted horizontally. It is important to check these dimensions against the conditions required for your application. For example, it is recommended that approximately 3" of space is left in front PLC surface for ease of access and cable clearances. Also, check the installation guidelines for recommended cabinet clearances.



Environmental Specification	Rating
Storage Temperature	-4°F to 158°F (-20°C to 70°C)
Ambient Operating Temperature	32°F to 131°F (0°C to 55°C)
Ambient Humidity	30% to 95% relative humidity (non-condensing)
Vibration Resistance	MIL STD 810C, Method 514.2
Shock Resistance	MIL STD 810C, Method 516.2
Noise Immunity	NEMA (IC33-304)
Atmosphere	No corrosive gases

Base	A	B	C	D
D2-03B-1, D2-03BDC1-1	6.77" 172mm	6.41" 163mm	5.8" 148mm	7.24" 184mm
D2-04B-1, D2-04BDC1-1	7.99" 203mm	7.63" 194mm	7.04" 179mm	8.46" 215mm
D2-06B-1, D2-06BDC1-1, D2-06BDC2-1	10.43" 265mm	10.07" 256mm	9.48" 241mm	10.90" 277mm
D2-09B-1, D2-09BDC1-1, D2-09BDC2-1	14.09" 358mm	13.74" 349mm	13.14" 334mm	14.56" 370mm

