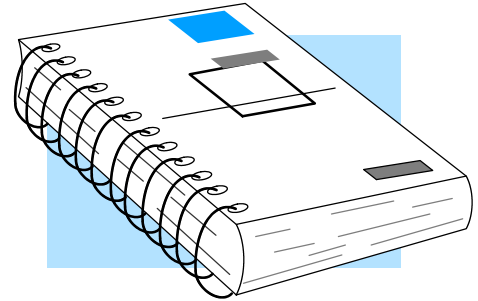# Introduction

1

In This Chapter. . . .

— Manual Overview
— ECOM Module Introduction
— Frequently Asked Questions

Manual Overview

The Purpose of this Manual

This manual describes how to use the **Ethernet Communication (ECOM) Modules.** You will find information about:

- Setting up the ECOM module
- Network layouts
- PC-to-PLC communications
- PLC-to-PLC communications
- RLL programming examples
- Maintenance and troubleshooting

Other Reference Materials

Other *Direct*LOGIC™ manuals may be useful for your application.

User Manuals

• DL05 User Manual	part number	D0–USER–M
• DL06 User Manual	part number	D0–06USER–M
• DL205 User Manual	part number	D2–USER–M
• DL405 User Manual	part number	D4–USER–M
• *Direct*SOFT User Manual	(with part number PC–PGMSW v2.3 or later)	
• KEP*Direct* for PLCs	(with part number DA–KEPPLC–M)	

Who Should Read this Manual

If you need a high-speed communications link between your *Direct*LOGIC PLC and PCs or other *Direct*LOGIC PLCs and you understand the basics of installing and programming PLCs, this is the right manual for you. This manual gives you the information you need to set up and install a communication link to an ECOM module.

Quality Technical Manuals and Technical Support

We strive to make our manuals the best in the industry. We rely on your feedback to let us know if we are reaching our goal. If you cannot find the solution to your particular application, or, if for any reason you need additional assistance, please call us at **770–844–4200.** Our technical support group is glad to work with you in answering your questions. They are **available weekdays from 9:00 a.m. to 6:00 p.m. Eastern Time**. You can also contact us on the **web** at:

http://www.automationdirect.com

If you have a comment or question about any of our products, services, or manuals please fill out and return the 'Suggestions' card that came with this manual.

Conventions Used

When you see the "light bulb" icon in the left–hand margin, the paragraph to its immediate right will give you a **special tip**.
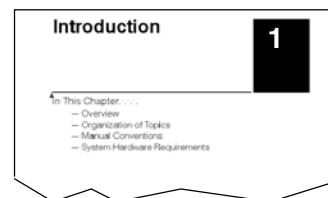The word **TIP:** in boldface will mark the beginning of the text.

When you see the "notepad" icon in the left–hand margin, the paragraph to its immediate right will be a **special note**.
The word **NOTE:** in boldface will mark the beginning of the text.

When you see the "exclamation mark" icon in the left–hand margin, the paragraph to its immediate right will be a **warning**. This information could prevent injury, loss of property, or even death (in extreme cases).
The word **WARNING:** in boldface will mark the beginning of **boldface** text.

Key Topics for Each Chapter

The beginning of each chapter will list the key topics that can be found in that chapter.

Introduction   1

In This Chapter. . . .
— Overview
— Organization of Topics
— Manual Conventions
— System Hardware Requirements

ECOM Module Introduction

Several Ethernet Communication (**ECOM**) modules are currently available for use with DL05/06, DL205 and DL405 PLC systems. The ECOM modules are shown below. These modules provide a low-cost, high-speed Ethernet link for PLC systems. The modules are easy to set up and install on 10/100BaseT (twisted pair, copper wire) or 10BaseFL (fiber optic) Ethernet networks.

LEDs on the face of each module give vital information about the status of the module and the communication link. The 10/100BaseT modules use standard RJ45 modular connectors, and the 10BaseFL modules use ST style bayonet connectors.

DL05/06 ECOM Modules	DL205 ECOM Modules	DL405 ECOM Modules
H0-ECOM	H2-ECOM	H4-ECOM
H0-ECOM100	H2-ECOM100	H4-ECOM100
	H2-ECOM-F	H4-ECOM-F

H0/H2/H4–ECOM100 modules shown

NOTE: If you are using a D0–06LCD in your DL06 PLC, the date code for the display unit must be 032A_ or later to be compatible with the H0 series ECOM modules.

ECOM Communication Possibilities

You can use the ECOM modules to share data between two or more *Direct*LOGIC PLCs or between *Direct*LOGIC PLCs and personal computers. The H0/H2/H4–ECOM100 additionally allows client/server communications with other Ethernet devices using the MODBUS TCP protocol. Communication between PLCs/MODBUS TCP devices is accomplished by using the Read/Write (RX/WX) instructions which are available in the *Direct*SOFT Programming Software Users Manual. Chapters 4 and 5 explain the use of the RX/WX instructions.

You can also use a personal computer running *Direct*SOFT Programming Software to program your PLCs over the Ethernet network. It is just like programming through the programming port on the CPU, but with the convenience of doing it from a single location.

Use catalog number PC–DSOFT5 to program the complete *Direct*LOGIC family of PLCs (the DL105 and DL305 series are the only PLCs that cannot be programmed over Ethernet). Chapter 2 will indicate the CPUs which can be used with the ECOM modules.

NOTE: We recommend using a dedicated network for your PLC control applications. For more information see Chapter 2, Setup and Installation.

PCs running our KEP**Direct** for PLCs software can establish Ethernet links for exchanging information with **Direct**LOGIC 05/06/205/405 PLCs.

Your Network PC   You can use a personal computer equipped with a 10/100BaseT or 10BaseFL network adapter card and NetEdit3 software to configure the ECOM module over the network. You can also use NetEdit3 for troubleshooting certain communication problems. The NetEdit3 utility is included with this manual and is available for download at **http://www.automationdirect.com**.

Frequently Asked Questions

Q. How can I speed up my ECOM communications?

A. Try shortening the scan time of the PLC (the PLC allows only one ECOM transaction per scan).

Q. What causes "Task code error response" with extended E353 error?

A. Error is from the PLC and means "timeout in the background communications". Error is due to a backplane communication problem (ECOM, DCM, etc.).

Q. Can an ECOM be configured to talk through a gateway?

A. Yes. You configure the gateway to reroute traffic to and from the ECOM via port 7070 (hex).

Q. When using a DL205 with an ECOM, is there a way to turn on the PLC outputs from a computer using a non-Windows operating system?

A. Host Engineering has what is called an Ethernet SDK (software developers kit) which can normally be downloaded (free) from their website. However, this will be useless for your system, but to accommodate your operating system, you can fill out a form located on the Host Engineering website and request the source code for the Ethernet SDK. This is necessary so that Host Engineering will know who is using their source code. The source code can then be recompiled to work on your system.

With the SDK recompiled for your system, you can use CCM (i.e. **Direct**NET) protocol to turn on PLC outputs by simply knowing the memory types and ranges as required for syntax.

The request form and details about the SDK can be found on the Host Engineering homepage (www.hosteng.com). Once there, click on "EBC/ECOM/EDRV" under "S/W Developer Kits" in the left-hand column.

Q. What is the fastest way to get data from PLC to PLC?

A. Install ECOM in both PLCs and use the RX/WX commands is the quickest way to do this. It is much faster that using serial communication.

Q. Can the ECOM do a broadcast message to multiple slave devices?

A. No.

Q. Can the MAC address be changed?

A. The MAC address is burned into ROM on the module and is set just before it leaves the factory. There is no logical way for any protocol to change this address. Host Engineering's range for Ethernet (MAC) addresses is 00.E0.62.xx.xx.xx.