Ethernet Remote I/O Client Modules

Overview

The Ethernet Remote Client H2-ERM100 connects D2-250-1 and D2-262 CPU systems to Server I/O over a high-speed Ethernet link.

Need a lot of I/O?

Each ERM module can support up to 16 additional H2-EBC100 systems, 16 Terminator I/O EBC systems (T1H-EBC100), or 16 fully expanded H4-EBC systems. Of course, combinations are fine, too. The ERM also supports Edrives. See the Drives section for details.

Note: Applications requiring an extremely large number of T1H-EBC100 analog I/O or H4-EBC 16-channel analog I/O, could exceed the buffer capacity of a single H2-ERM100 module. In these cases, an additional H2-ERM100 may be required.

Simple connections

Specifications	H2-ERM100
Communications	10/100BaseT Ethernet
Data Transfer Rate	100 Mbps
Link Distance	100m (328ft)
Ethernet Port	RJ45
Ethernet Protocols	TCP/IP, IPX, Modbus TCP/IP, DHCP, HTML configuration
Power Consumption	300mA @ 5VDC
Manufacturer	Host Automation Products, L.L.C.

The ERM connects to your control network using Category 5 UTP cables for cable runs up to 100 meters. Distances can be greatly extended with Ethernet/Fiber media converters like the SE-MC2U-ST.

The PLC, ERM and EBC Server modules work together to update the remote I/O points. These three scan cycles are occurring at the same time, but asynchronously. Critical I/O points that must be monitored every scan are best placed in the CPU base.

Networking ERMs with other Ethernet devices

It is highly recommended that a dedicated Ethernet remote I/O network be used for the ERM and its Servers. While Ethernet networks can handle a large number of data transactions, and normally handle them very quickly, heavy

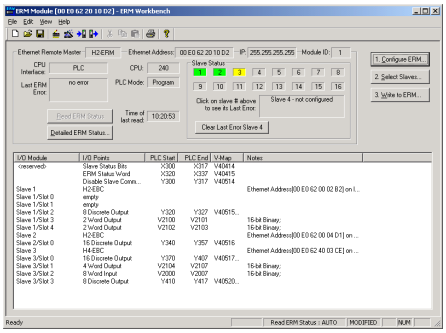
Ethernet traffic can adversely affect the reliability of the Server I/O and the speed of the I/O network. Ensure ERM networks, multiple ERM networks and ECOM/office networks are isolated from one another.

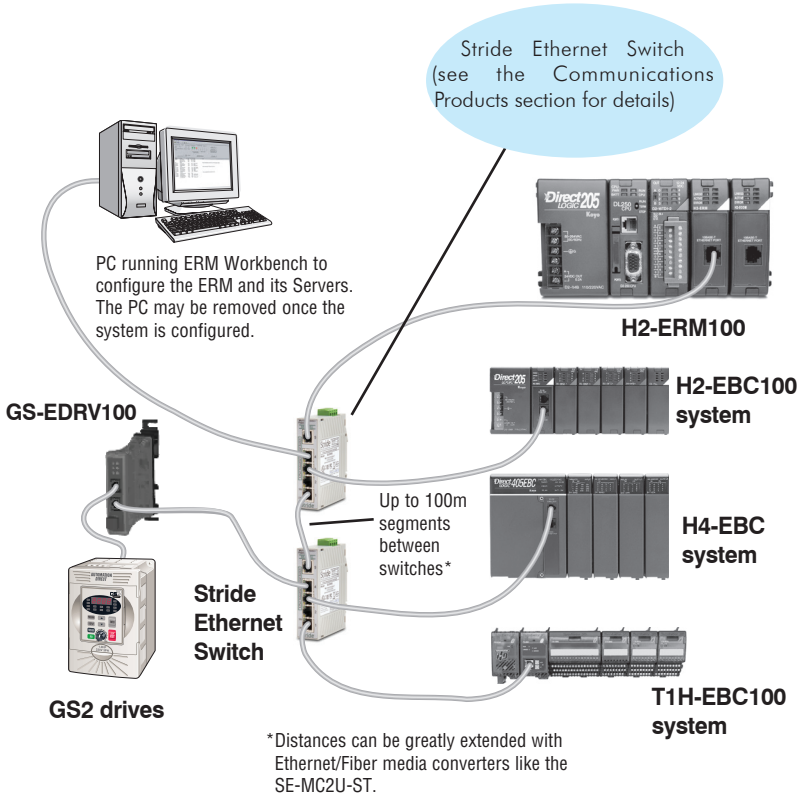
Software configuration

ERM Workbench is a software utility that must be used to configure the ERM and its remote Ethernet Servers. ERM Workbench supports two methods of configuring the ERM I/O network:

- ERM Workbench PLC Wizard greatly simplifies the configuration procedure when a PLC is used as the CPU interface.
- ERM Workbench configures the I/O network and allows access to all ERM(100) I/O network parameters.

ERM Workbench Software





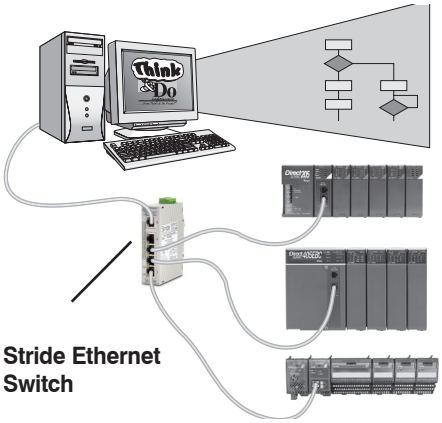
Ethernet Base Controller Modules

Specifications	H2-EBC100
Communications	10/100Base-T Ethernet
Data Transfer Rate	Up to 100Mbps
Link Distance	100 meters (328 ft)
Ethernet Port	RJ45
Ethernet Protocols	Do-more Ethernet remote I/O, Modbus TCP/IP, TCP/IP, UDP/IP, IPX
Serial Port	RJ12, K-sequence, ASCII IN/OUT, Modbus RTU, provides 5V 220mA
Max. Discrete I/O	256
Max. Analog I/O	64
Power Consumption	300mA

Use EBCs for PC-based control and for H*-ERM100 remote I/O Servers

The H2-EBC100 Ethernet Base Controller module provide a low-cost, high-performance Ethernet link between DL205 I/O and your PC-based control system or DL205/DL405 CPUs using the H*-ERM100 module for remote I/O. The H2-EBC100 can also be used to connect your DL205 I/O to a Modbus TCP/IP client (Client). The H2-EBC100 supports industry standard 10/100BaseT Ethernet communications. EBC modules offer:

- Lower cost on your ***Direct***LOGIC I/O system compared to competitive I/O
- Virtually unlimited number of I/O points
- Deterministic I/O updates on dedicated networks
- Fast I/O updates (<1ms per base)
- On board serial port for possible operator panel, ASCII In/Out, etc. (serial port not supported when used with ERM module)



Stride Ethernet Switch

Software developers

For programmers developing custom drivers for our I/O, we offer a free Ethernet Software Development Kit (SDK). The SDK, developed and offered by Host Automation Products, L.L.C., provides a simplified API for interfacing with the H2-EBC100. The software interface libraries are provided for WIN32, WIN16, and DOS operating systems. The source code is available to developers under a non-disclosure agreement. Visit the technical support link at our Web site, or go to www.hosteng.com for more information.

Off-the-shelf solutions

You can purchase PC-based control software that is ready to use with the H2-EBC100 module. PC-based control packages are equipped with compatible I/O device drivers, program development tools, and run-time environments. For a single-source integrated PC-based control solution that ships with everything you need to make your PC into an industrial controller, see the PC-based Control section of this catalog . Most of the software packages listed below allow you to connect serial devices, such as barcode readers, to the H2-EBC100's serial port.

```
READ I/O
int HEIReadIO
                (
                HEIDevice *pDevice,
                                Byte *pBuffer,
                                WORD BuffSize
                );
WRITING I/O
int HEIWriteIO
                (
                HEIDevice *pDevice,
                                BYTE *pData,
                                WORD SizeofData,
                                BYTE *pReturnData,
                                WORD *pSizeofReturn
Data
                );
```

The chart below identifies vendors that have PC-based Control products ready to control DirectLOGIC I/O, or have products to be released in the immediate future.

Easy to use, reliable and fast

The H2-EBC100 module plugs into the CPU slot of any DL205 I/O base and supports all DL205 discrete and analog I/O modules, the H2-SERIO(-4) and H2-CTRIO2 specialty modules. All EBC modules can be configured using NetEdit3, a free Windows software utility. The H2-EBC100 also supports HTML configuration.

Vendor	Product	Web Address
KEPware	KEPServerEX	www.kepware.com
Wonderware	InControl	www.wonderware.com
MDSI	OpenCNC	www.mdsi2.com

The D2-INST-M installation and I/O Manual covers information about DL205 I/O modules, power budgeting, and installation and wiring. This catalog does not cover CPU-slot controllers.

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 *ZIP*Links to reduce power requirements

If your application requires a lot of relay outputs, consider using the ***ZIP***Link 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 *ZIP*Link 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		2600	300
D2-03BDC1-1		2600	None
D2-04B-1		2600	300
D2-04BDC1-1		2600	None
D2-06B-1		2600	300

Power Consumed		
Device	***5V(mA)***	***24V Auxiliary***
CPUs		
D2-250-1	330	0
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		2600	None
D2-06BDC2-1		2600	300
D2-09B-1		2600	300
D2-09BDC1-1		2600	None
D2-09BDC2-1		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 F2-02DAS-2	100 100	50 / channel 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.