

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

TRICONEX

4119A

ENHANCED INTELLIGENT COMMUNICATION MODULE

Selected official pages follow this cover with source pagination retained.

REFERENCE PACKAGE

Source: Planning and Installation Guide for Tricon v9-v10 Systems

OFFICIAL MANUFACTURER DOCUMENT

Assembly 9700077-012

Enhanced Intelligent Communication Module (EICM)

The Enhanced Intelligent Communication Module (EICM) enables a Tricon controller to communicate with Modbus devices (masters or slaves), with a TriStation PC, and with a printer. A single Tricon High-Density controller supports up to two EICM modules which reside in one logical slot. This arrangement provides a total of six Modbus ports, two TriStation ports, and two printer ports. (The hot-spare feature is not available for the EICM, though you *can* replace a faulty EICM while the controller is online.)

Each EICM has four serial ports and one parallel port which can operate concurrently. The four serial ports are uniquely addressed and support either the Modbus or TriStation interface. Modbus communication can be performed in either RTU or ASCII mode. The parallel port provides a Centronics interface to a printer.

Each EICM supports an aggregate data rate of 57.6 kilobits per second, which means the total data rate for all four ports must be less than or equal to 57.6 kilobits per second.

Any standard Modbus device can communicate with a Tricon controller using the EICM provided that aliases are assigned to the tagnames (points) used in the control program. For more information, see the *TriStation Developer's Guide*.

For additional information, see the *Communication Guide for Tricon v9-v10 Systems* and [Replacing EICMs](#) on page 226.

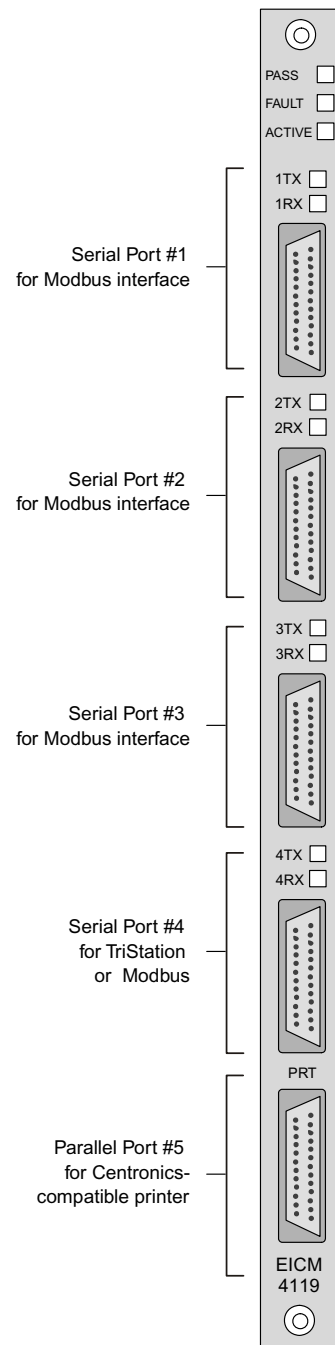


Figure 66 EICM Front Panel

4119 and 4119A Specifications

This table lists the specifications for model 4119 and 4119A EICM.

Table 61 4119 and 4119A EICM Specifications

Feature	Specification
Serial port	RS-232, RS-422 or RS-485, isolated to 500 VDC
Parallel ports	Centronics, isolated to 500 VDC
Protocol	TriStation, Modbus
Modbus function supported: 01	Read Coil status
Modbus function supported: 02	Read input status
Modbus function supported: 03	Read holding registers
Modbus function supported: 04	Read input registers
Modbus function supported: 05	Modify coil status
Modbus function supported: 06	Modify Register content
Modbus function supported: 07	Read exception status
Modbus function supported: 08	Loopback diagnostic test
Modbus function supported: 15	Force multiple coils
Modbus function supported: 16	Preset multiple registers
Communication speed	1200, 2400, 9600 or 19,200 baud
Status indicator: Module status	Pass, Fault, Active
Status indicator: Port activity	TX (Transmit) – 1 per port RX (Receive) – 1 per port
Status indicator: Logic power	< 10 watts

Table 74 I/O and Communication Module Slot Keys (*continued*)

Model	Module Name	Top Key	Bottom Key
3624	24 VDC Supervised Digital Output (TMR)	005	004
3625	24 VDC Supervised or Non-Supervised Digital Output (TMR)	006	007
3664/3674	24 VDC Digital Output (Dual)	006	007
3636R	Relay Output, N0 (SIMPLEX)	006	002
3700	0-5 VDC Analog Input (TMR)	003	004
3700A	0-5 VDC Analog Input (TMR)	003	006
3701	0-10 VDC Analog Input (TMR)	003	003
3703E	0-5, 0-10 VDC Isolated Analog Input (TMR)	005	006
3704E	0-5, 0-10 VDC High Density Analog Input (TMR)	006	008
3706A	Non-Isolated Thermocouple Input (TMR)	003	002
3708E	Isolated Thermocouple Input (TMR)	005	007
3720	0-5 VDC Single-Ended Analog Input (TMR)	006	008
3721	0 to 5 or -5 to +5 VDC Differential Analog Input (TMR)	003	004
3805E/H	4-20 mA Analog Output (TMR)	003	008
3806	6 outputs @ 4-20mA, 2 outputs @ 8-320 mA, Analog Output (TMR)	003	008
3807	-60 to +60 mA BiPolar Analog Output (TMR)	003	008
4119	Enhanced Intelligent Communication (EICM)	001	003
4119A	Enhanced Intelligent Communication (EICM)	001	003
4200-3	Primary RXM Multi-Mode Fiber-Optic Module Set	002	003
4201-3	Remote RXM Multi-Mode Fiber-Optic Module Set	002	003
4210-3	Primary SRXM Single-Mode Fiber-Optic Module Set	002	003
4211-3	Remote SRXM Single-Mode Fiber-Optic Module Set	002	003
4329, 4329G	Network Communication (NCM) and NCMG (GPS)	001	003
4351, 4351A, 4351B, 4352, 4352A, 4352B, 4353, 4354	Tricon Communication Module (TCM)	001	003
4409	Safety Manager Module (SMM)	001	003
4509E	Hiway Interface Module (HIM)	001	004
4609	Advanced Communication Module (ACM)	001	003

EICM Pin-Outs and Cable Information

This section includes pin-out information for these EICM cables and connections:

- [TriStation PC to EICM Cable Pin-Outs on page 268](#)
- [EICM Serial Port Pin-Out and Signal Information on page 268](#)
- [EICM Modbus Network Pin-Out and Wiring Diagrams on page 272](#)
- [EICM Cables for RS-422 Modbus Connections on page 274](#)
- [EICM Printer Cable Pin-Outs on page 277](#)
- [EICM to Honeywell DHP Cable Pin-Outs on page 278](#)

TriStation PC to EICM Cable Pin-Outs

A TriStation 1131 PC can be connected by using an RS-232 cable with a 25-pin connector on the EICM (P2) end and a 25-pin or 9-pin connector on the PC (P1) end. The maximum length of an RS-232 cable is 50 feet (15 meters). You can extend the length of an RS-232 connection by using modems. Shield Ground must be connected to pin 1 on the PC end.

Table 110 TriStation PC (P1) to EICM (P2) Cable Pin-Outs

PC Female Connector P1 25 Pins	PC Female Connection P1 9 Pins	PC Signal	EICM Female Connector P2 25 Pins	EICM Signal
2	3	TXD	3	RTX
3	2	RDX	2	TXD
7	5	Signal Ground	7	Signal Ground
4	7	RTS	5	CTS
5	8	CTS	4	RTS
6	6	Not used	20	DTR
20	4	DTR	6	Not used
1		(Shield Ground)		

EICM Serial Port Pin-Out and Signal Information

This section describes pin-out and signal information for the ICM and EICM serial ports.

This section includes:

- [Models 4119 and 4119A Tricon EICM Serial Port Pin-Outs on page 269.](#)
- [RS-232 Signal Descriptions on page 270.](#)
- [RS-422 Signal Description on page 271.](#)

EICM Models 4119 and 4119A Pin-Outs

This table describes serial port pin-outs for EICM models 4119 and 4119A.

Table 111 Models 4119 and 4119A Tricon EICM Serial Port Pin-Outs

Pin	Signal	Direction	Designator	Interface
1	Shield (ground)			
2	Transmit Data	Output	TXD	RS-232
3	Receive Data	Input	RXD	RS-232
4	Request to Send	Output	RTS	RS-232
5	Clear to Send	Input	CTS	RS-232
6	Not used			
7	Signal Ground			
8	Data Carrier Detect	Input	DCD	RS-232
9	Not used			
10	Not used			
11	Not used			
12	Not used			
13	Not used			
14	Transmit Data, Inverted	Output	SD-B	RS-422
15	Transmit Data	Output	SD-A	RS-422
16	Not used			
17	Not used			
18	Not used			
19	Not used			
20	Data Terminal Ready	Output	DTR	RS-232
21	Receive Data, Inverted	Input	RD-B	RS-422
22	Receive Data	Input	RD-A	RS-422
23	Not used			
24	Not used			
25	+5 VDC through 1 K Ω			RS-422