EC710 - Intelligent addressable modbus gateway

The modbus gateway is part of the InfraLINK range of network infrastructure components from partners.

All of the modbus gateways feature a robust hardware platform with high performance CPU and UART for fast communications without loss of data. The LonWorks to modbus address mapping is pre-loaded and ready for use with the Easicheck system interface board.

The EC710 modbus gateway has 3 communications ports for LonWorks, serial and programming connections. The serial port is capable of either RS232 or RS485 (2-wire) communications.

Features and benefits

- High speed host processor with LonWorks Neuron communications co-processor
- Echelon Smart Transceiver for better immunity from magnetic and high frequency common mode noise
- Robust high speed UART for serial communications
- Compact design for easy installation
- 6 multi function LED indicators for instant status diagnostics
- Saves time by allowing simple integration with 3rd party modbus BMS system
- Easy to install
- Din rail mounted

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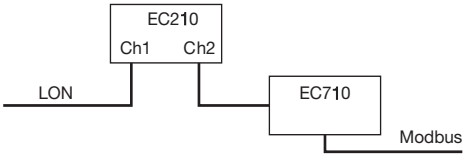
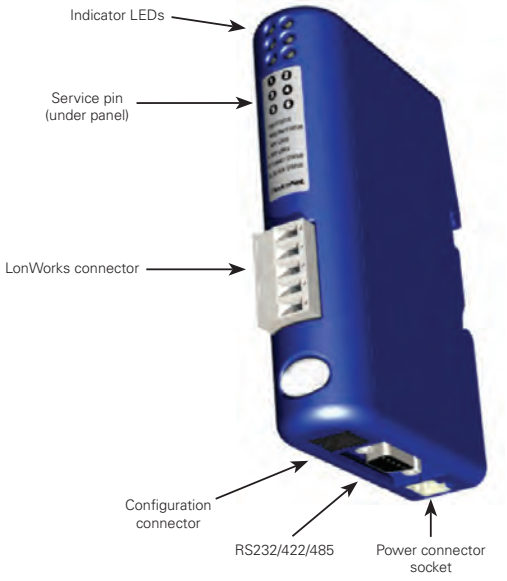
Standard connections



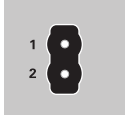
Installation



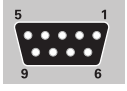
LED No.	Description	Colour	State	Function
1	LON Service	Green	Flashing Green	Unconfigured.
			Off	Configured
			Solid Green	Applicationless
2	LON Wink	Red	Off	Normal state
			Flashes Red	A Wink command is received
3	Not used	-		
4	Module Status	Green/Red	Solid Green	The module is working ok.
			Flashes Red	Software error, try a reset.
			Solid Red	Hardware error
5	Module Activity	Green/Red	Solid Red	No Modbus activity for 5 secs.
			Solid Green	After receiving a correct Modbus message
6	Config Error	Green/Red	Solid Green	Config good
			Flashes Red	No Config

Technical specification

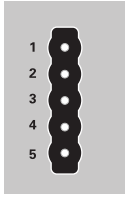
Code	EC710
Description	Modbus Gateway - LonWorks Transceiver FT-X1 (Smart Transceiver), TP/FT-10 (use on free topology twisted pair channel)
Specification	
Baudrate	78 kbit/s
Connections	1 x 2-pole wieland connector
Supply voltage / Mains connector	24V dc ± 10% 50Hz
Current consumption	Max 280mA on 24V dc (typically 100mA)
Serial communications	Modbus RTU slave
Transceiver	RS232 / 422 (4-wire) / 485 (2-wire)
Baud rate	Configurable up to 57.6 kbits/s
Connector	DSUB-9 female connector
Environmental	
Operating temperature	0°C to + 55°C non operating temperature -5°C to +85°C Physical
Dimensions (L x H x W)	120mm x 27mm x 75mm
Weight	150g
Ingress protection	IP20
EMC certification	CE marked



Pin	Description
1	+24V dc
2	GND



Pin	Description	RS232	RS422	RS485
1	+5V	✓	✓	✓
2	RS232 Rx	✓		
3	RS232 Tx	✓		
4	Not connected			
5	Ground	✓	✓	✓
6	RS422Rx +		✓	
7	Rs422 Rx -		✓	
8	RS485 + / RS422 Tx +		✓	✓
9	RS485 - / RS422 Tx -		✓	✓



Pin	Description
1	Shield
2	-
3	-
4	Net B
5	Net A

Default serial parameters:

Transceiver: RS232, TX, RX, GND (Note NULL modem cable plus gender changer required for PC connection).

Communications: 9600 bits per second, 8 data bits, 1 stop bit, no parity.

Note: A PC configuration tool is available to change serial parameters.

Register name	Length (bytes)	Modbus type	Modbus address
Control registers			
Command *	2	Holding (16-bit)	1
Event timer	2	Holding (16-bit)	2
Event count **	2	Input (16-bit)	26
Buffer overflow ***	2	Input (16-bit)	24
Easicheck Event Registers (each event has been split into a number of individual Modbus registers):			
Command or Status	2	Input (16-bit)	1
Packet Type	2	Input (16-bit)	2
Panel Address	2	Input (16-bit)	3
Event Code	2	Input (16-bit)	4
Device Address or Group Number	2	Input (16-bit)	5
Current Reading	2	Input (16-bit)	6
Device Type or Voltage Reading	2	Input (16-bit)	7
High or Low Current	2	Input (16-bit)	8
Location Text	31	Input (16-bit)	9-23

* Command (holding reg. 1)Usage 0,1,2 = not used, 3 = reset

** Event count (input reg. 26) Increments by one, each time a new event is presented on the Modbus event registers. A BMS system can look for a change of value (COV) on this register as a signal to read the event registers.

*** Buffer overflow (Input Reg. 24) increments when the message queue in the Eaton LonWorks BMS interface is full while a new event arrives from a Easicheck panel. This can happen when events occur at a rate faster then the event timer for a prolonged time.

Note: The value of the event timer (Holding Reg. 2) is a 16-bit interger of 0-65535, where 1 = 0.1 seconds.

Catalogue numbers

Description	Code
Modbus gateway	EC710

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