Meters

Expro ActiveSONAR Modbus 4-20mA Interface

A Modbus to 4-20mA converter module is available for Expro ActiveSONAR™ flow meter applications which require a 4-20mA current loop interface.

This is a DIN rail mounted module that can be installed in the customer's equipment cabinet or control room. The unit communicates from one to 16 ActiveSONAR flow meters and provides a dedicated 4-20mA current output for each.

To use the converter module, all ActiveSONAR flow meters need to be wired in a daisy-chain multidrop topology on a single RS-485 bus. This bus is connected to the Modbus serial communications port on the module. The module polls each meter sequentially, at a one second scan interval per meter and outputs the current measurement reading to the appropriate 4-20mA analog current output.
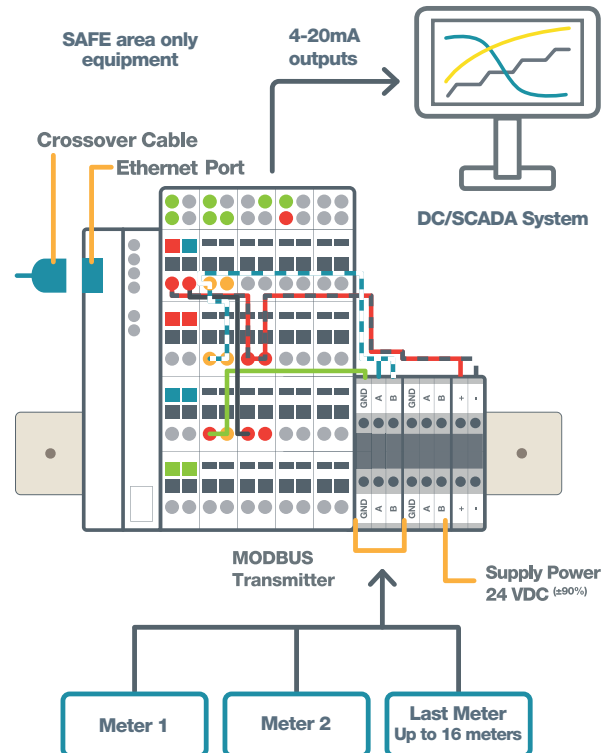
Each meter's 4-20mA current loop would be wired to the customer's DCS/Scada system for data acquisition, display, and logging. The 4-20mA outputs can be scaled to represent whatever flow range is appropriate for the application.

Standard Configuration Features

- Standard DIN rail mounted module – mounts in the customer equipment cabinet
- One module can handle one to 16 ActiveSONAR flow meters
- Independent 4-20mA current output for each flow meter
- ActiveSONAR flow meters connected to the converter via single daisy-chain RS-485 serial bus
- 4-20mA outputs power the current loop – customer input should be passive (unpowered)
- 4-20mA signals scalable to match application flow rates
- Ethernet port for module configuration (Modbus setup, 4-20mA scaling, etc)
- Requires 12 VDC power for operation

Bespoke Configuration Options

- The base unit is two flow meters/two output channels – expandable to 16 flow meters/16 output channels in increments of two channels

SAFE area only equipment

4-20mA outputs

Crossover Cable

Ethernet Port

DC/SCADA System

MODBUS Transmitter

Supply Power 24 VDC (±90%)

Meter 1

Meter 2

Last Meter Up to 16 meters

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Technical specifications

Parameter	Specifications	Comments
Input voltage range/power	+24VDC +/-10% / 6W (250mA) typical	Power consumption shown for 4-channel model
Storage temperature	-25°C to +85°C (-13°F to 185°F)	
Operating temperature	0°C to +55°C (32°F to 131°F)	
Humidity	0% to 95% RH, non-condensing	
IP rating	IP20	Requires enclosure
4-20mA analog outputs	2 to 16	Increments of 2
RS-485 Modbus serial ports	1x multidrop	For Expro ActiveSONAR™ meter communications
Ethernet ports	1x	For configuration only
Dimensions (h x w x d)	100 mm x 305 mm x 72 mm (3.9" x 12.0" x 2.8") 100 mm x 400 mm x 72 mm (3.9" x 15.8" x 2.8") 100 mm x 476 mm x 72 mm (3.9" x 18.8" x 2.8")	2/4-channel models 6/8/10-channel models 12/14/16-channel models
Mounting	DIN rail	Mounts inside customer equipment cabinet

4-20mA analog outputs

Range	4-20mA	
Maximum load impedance	500 Ohms	
Resolution	16 bits	
Accuracy	+/-0.05% of full scale (at 25°C)	

Modbus RS-485 serial

RS-485 port type	2-wire, half-duplex	
Modbus type	Master	
Termination	110 Ohm shunt	
Max baud rate	38,400	
Format	RTU	
Safety certification	UL508, CE	When mounted in an appropriate enclosure
Hazardous area certification	T4 ATEX: II 3 GD Ex nA nL IIC T4 US, CAN: Class I Div 2, Group ABCD	When mounted in an appropriate enclosure, and wired per hazardous area standards

Note: Other sizes and configurations are available to meet most applications, for more information contact your local Expro representative or email
meters@exprogroup.com