

Modbus



Features

- High resolution position input for up to 0.1% accuracy
- 4-120/240VAC inputs for open and closed limit switches and 2 general purpose inputs
- Simple 4-wire Modbus-485 communication network includes supervisory power
- Robust communication, up to 500m cable length
- Plugable terminal strips for easy field installation
- Direct mounting within the actuator
- Low power consumption; does not require ventilation
- Electronic overload protection with built-in current monitoring optional
- High power outputs can directly drive small motors
- LED indicators on inputs, outputs and communication channel
- Automatic calibration using local push button or remote command
- Multi-vendor PLC support through the standard Modbus communication module

Typical Applications

- Blending of bulk materials
- Petroleum products and other liquids flow control
- Level control for maintaining process supply

Application

The Modbus is an application specific controller, designed for positioning electric actuators using rotary feedback. Typical devices include rotary and linear actuators. Feedback may be via a potentiometer or a quadrature optical encoder. Controller outputs can drive small electric motors or motor starters directly.

A Modbus-485 communication network allows up to 100 devices on a single channel. The Modbus is powered by 24VDC and provides four supervisory inputs, configurable as limit switches or force open/close signals.

Automatic calibration is provided which requires no loop tuning. All operating parameters can be set as registers in the Modbus communications map.

Specifications

Actuator

Voltage	120/240VAC 1Ø
Current	4A (2 minute 25% duty-cycle)
Fuse	GMA 4 replaceable

Supervisory

Voltage	10 to 25VDC
Current	30mA @ 24VDC

Auxiliary Inputs

Voltage	120/240VAC
Current	min 10mA / max 20mA

Communication

Standard Modbus-RS485 differential	
Distance	500m (1,640ft.)
Input Load	12K ohm, standard
Termination	120Ω balanced line

Position

Resolution	12 bit (1 part in 4096)
Accuracy	0.1% full scale
Potentiometer	1000Ω typical (500 to 10kΩ)
Quadrature	
Optical Encoder	1000 to 4096 pulses

Environment

Temperature	-40°C to +70°C (-40°F to +158°F)
Relative Humidity	0 to 95% non-condensing

Dimensions

Length	96mm (3.75 in)
Width	70mm (2.75 in)
Height	36mm (1.40 in)



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