

ACT100 Control Logic Card

ACT100
120/240 VAC
Actuators



Application

The ACT100 Control Logic card is designed for use in single phase AC voltage or DC voltage Dresser Natural Gas Solutions Andco electric actuators, utilizing either an internal potentiometer or quadrature linear encoder technology for precise positioning of rotary or linear actuators.

This card also facilitates Modbus 485 communication network use, and allows for two wire, single-channel monitoring and control of up to 256 devices. The ACT100 is powered by 10 VDC to 24 VDC supervisory voltage, with a maximum current limit of 30mA at 24 VDC. Automatic Calibration is provided which eliminates the need for loop tuning, and can be initiated either locally or by remote command. All operating parameters can be set as registers in the Modbus communications map. Four supervisory inputs which can be used for travel and/or auxiliary limit switch settings, or for force open/close signals for ESD applications.

Features

- Modbus* 485 communications capabilities
- DeviceNet* communication (optional)
- 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 2-wire Modbus-485 communication network includes supervisory power
- Robust communication, up to 500m cable length
- Pluggable terminal strips for easy field installation
- Direct mounting within the actuator
- Login function
- Unit can be pulled by Modbus even when it is driven by analog signals

- 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
- Enable/disable Modbus locally or remotely

Specifications

Actuator

Voltage 120/240VAC 1 ϕ
24VAC
24VDC

Current 10A (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 120 Ω balanced line

Position

Resolution 12 bit (1 part in 4096)
Accuracy 0.1% full scale
Potentiometer 1000 Ω typical (500 to 10k Ω)

Environment

Temperature -40°C to +90°C (-40°F to +203°F)
Relative Humidity 0 to 95% non-condensing

Dimensions

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

Approvals

Certifications UL/CSA

Typical Applications

- Blending of bulk materials
- Petroleum products and other liquids flow control
- Closed loop actuator control

Accessories

mBA085 Bus Arbiter:

Connects a maximum of 100 ACT100s, on up to 8 drops, to a RS232 Modbus Master RS232 process controller. Includes redundant power supply input and drop fault alarms.

Commands, Process Values and Configurable Parameters

Commands:

Seek To Position	Seek Tolerance
Full Open	Open Limit Tolerance
Full Close	Close Limit Tolerance
Stop	Calibrate To
Calibrate	Max Load
Remote Reset	Idle Load
Default Parameter Reload	Com Fault Position
Parameter Protect On	Jog Move Tolerance
Parameter Protect Off	Load Zero Offset (optional)
	Load Span (optional)

Process Values:

Current Position	Command Fault Time
Average Load	Com Fault Timeout
Peak Load (optional)	Jog Wait Time
Idle Load (optional)	Jog Open Time
Raw Position	Run Load Fault Time (optional)
Raw Load (optional)	Idle Load Fault Time (optional)
Last Seek Value	Serial Port Speed
Current Jog On Time	Minimum Jog On Time
Log Time Interval	Maximum Jog On Time

Configurable Parameters:

Zero Offset	Pseudo Limit Options
Span	Force Options
	Seek Options
	Modbus Address

*Modbus is a trademark of MODICON, Inc.

*DeviceNet is a trademark of Open DeviceNet Vendor Association, Inc

Industrial Products Group

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