D.C. Analog - EASC SCC-05

Application

The SCC-05 EASC (Electric Actuator Smart Controller) card is a cost-effective means for accurate and precise positioning control of RCS actuators utilizing an analog input signal. The EASC "One-Switch" setup system eliminates the need for external meters, dip switches, trimming potentiometers, or a display screen on the module. Simply set the full open and full closed positions, and the microprocessor technology does the rest. For control applications requiring an input-only control requirement, the SCC-05 provides excellent performance and a variety of standard features suitable for today's challenging automation and control requirements.

Features

Mounts internally in RCS actuator models: MAR-10, MAR-50, MAR-90, MAR-100, MAR-160, MAR-250, MAR-800 & all SurePowr models.

- Simple single switch setup allows complete control of controller configuration
- One step selection of input/output ranges including 4-20 mAdc, 1-5 Vdc, 2-10 Vdc and 0-10 Vdc, or virtually any custom range required
- "Learns while it runs" tuning makes configuration simple
- Selectable fail options
- Intelligent positioning reduces motor cycling, increases motor life and extends the actuator duty
- Optional Modbus RTU remote control over a RS-485 network. Complete access to all controller functions from your factory automation system
- Quick disconnect terminal strips facilitate fast and easy actuator maintenance and troubleshooting
- Always wires the same; no need to determine rotation direction during installation; rotation is selected at setup
- Robust power switching components, designed specifically for actuator motors, virtually eliminate field failures

Specifications

Power Requirements
Model SCC05-115/230 A:
Single phase, 115 or 230 VAC 50/60 Hz. (Jumper selectable)

Input Command Signal
Menu selectable factory defaults:

— 4-20 mADC

— 1 -5 VDC

— 2-10 VDC

— 0-10 VDC

Infinite adjustment during System

Signal Impedance
Input: 250Ω current, 200KΩ voltage

Power Output
Solid state, isolated from the input command signal and rated at:

— 5 amps continuous at 115 VAC
— 5 amps continuous at 230 VAC

All ratings assume the EASC is mounted on the actuator base plate

Sensitivity
Full scale sensitivity adjustable from 0% to 9%

Dead Band
Automatic deadband system with manual override.

Zero Span Adjustment
Simple setup, just set the fully closed position and fully open positions and input calibration is automatically adjusted.

Split Range
Settable within the span range using at least 1.5VDC or 3mA of input.

Remote Control
Optional Modus RTU control of all controller functions over a RS-485 multi-drop network

Ambient Temperature
-40°F (with heater) to +150°F (-40°C to +65°C)

Action on Loss of Command Signal
Factory default:

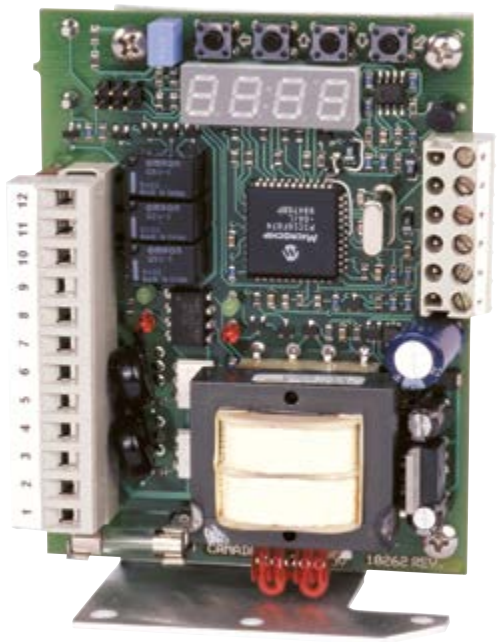
— Fail in last position (no movement)
— For a setting of ZERO input signal, the system fails to minimum
signal position

Additional settings available at setup:

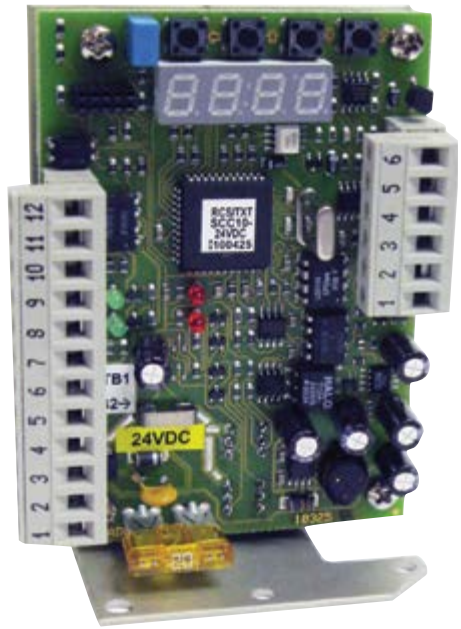
— Fail open (maximum signal value)
— Fail closed (minimum signal value)
— Fail to a preset position

Size
3.5 x 1.63 x 4 in.

D.C. Analog - EASC SCC-10



Models
SCC10-15/230V 115 or 230 Volt A.C. Actuators
SCC10-24 VAC 24 Volt A.C. Actuators



Model
SCC10-24 VDC 12 or 24 Volt D.C. Actuators

EASC (Micro-Processor Based Analog Controller)

The Electric Actuator Smart Controller (EASC SCC-10) card provides accurate positioning control of electric motor actuators using an analog input signal. Setup and calibration is greatly simplified using microprocessor based technology. There are no dip switches to set or trim pots to adjust. Setup is quick and easy using the EASC menu viewed on an LED display. No external meters are required, even for potentiometer setup. Once the initial menu settings are chosen, the EASC performs a self-calibration routine, applying the menu selections to actual actuator performance. Calibration values are then stored in permanent non-volatile memory.

Profibus D.P.

Model
DPC-100 12 or 24 Volt D.C. Actuators

Model
DPC-120 115 Volt A.C. Actuators

Features

- Two wire control reduces installation and start up time compared to multi-cable wiring
- Automatic calibration cuts down on start up time
- No deadband eliminates need for field adjustment.
- On line configuration of 36 operational parameters using generic Profibus software
- Low power consumption; does not require ventilation
- Electronic overload protection with built-in current monitoring
- LED indicators for input, outputs and communication channel
- Automatic calibration with local pushbutton or remote command
- Dynamic breaking eliminates overshooting
- Robust power switching components, designed specifically for actuator motors, virtually eliminates field failures

Specifications

Power Supply
DPC-100: 24/12 VDC
DPC-120: 120 VAC

Communication Interface
Profibus Standard

Protocol
Profibus DP (Distributed Process)

Feedback
Potentiometer 1000 Ohms/Optical Encoder

Position Input Accuracy
1.0% full scale standard, Maximum 0.1%

Temperature
-40°C to +70°C (-40°F to +158°F)

Relative Humidity
0 to 90% non-condensing

Dimensions
DPC-100: 4.0 x 1.5 x 2.5 in.
DPC-120: 4.25 x 1.75 x 3.75 in..

The DPC-100 & DPC-120 provide the following status and fault signals:

Valve full closed
Valve full open
Percentage of open
Valve seeking position
Motor running
Valve closing
Valve opening
Motor thermostat tripped
Incomplete travel
Valve opening or closing manually
Valve jammed/current limiting
Motor still energized after stop or end of travel
Controller self-test (detects problems)
Communication failure
Average running current load
Peak running current load
Idle current load

Devicenet™

Models
DNET115 115 Volt A.C. Actuators

Application

For on/off or positioning control of motorized valves. DeviceNet™ is a type of communication network that allows up to 63 field devices to be linked together with a singe five-conductor cable. DeviceNet™ is a product of Allen-Bradley and is an open, non-proprietary, bus network. Typically, a DeviceNet™ system is used with the Allen-Bradley PLC5 and SLC series of programmable logic controllers. A standard DeviceNet™ Scanner interface is available for both types. Devices in the field are connected via a drop line to a 5 conductor trunk-line that is then routed to the scanner card.

Features

- Provides open/stop/close or positioning control with limit switch status feedback
- Provides instantaneous motor reversal protection
- Command and end-of-travel verification alarm
- Conforms to ODVA standard
- Easy-to-see LED indicators for all control outputs, status inputs and diagnostic alarm
- ESD functions for 'go open', 'stay put', or 'go closed'

Specifications

Hardware Specifications
Supply Power: 2W @ 24VDC
Operating Temperature: -20°C – 70°C
Storage Temperature: -40°C – 80°C
Humidity: 90% Non Condensing
Solid State Outputs: (2) Isolated 600VAC 15A
Digital Inputs: (8) Dry Contacts
Analog Inputs: (2) Channels (see below)
Processor: Temic 89C51CC01
RAM: 1K
Flash: 32K
EEPROM: 32K

Serious Interfaces
One CAN 2.0 port.

Network Communication Protocols
Module Supports DeviceNet™ Group 2 Slave.

Analog Inputs Specification
Resolution: 10bit
Accuracy: 1% of FS.
Linearity: 1% of FS.
Temperature Drift: 2% of FS.
Range: 0 to 5V or 0-20mA input for AI1
1-5K Potentiometer for the Position Feedback.

Technical Summary of DeviceNet™
Network Size: Up to 64 nodes (including scanner)

Network Length: Up to 1,640 ft. at 125 Kbps.

Data Packets: 0-8 bytes

Bus Topology: Trunkline/Dropline

Cable: 5-Conductor cable (2 for power, 2 for communication, and 1 for ground).

Thick Trunk Lines: Belden 3082A or 3083A

Thin Drop Lines: Belden 3084A or 3085A

Drop Lines: Max. drop length is 20 ft. with cumulative drop length of 512 ft.

Repeaters: Not currently, but expected in future revisions of specifications.

Input/Output Listing

Digital Input Status:

Bit 0	Communication Loss
Bit 1	Reserved
Bit 2	Loss of Position Signal
Bit 3	Motor Stall
Bit 4	Limit Calibration Incorrect
Bit 5	Thermostat Trip
Bit 6	Manual Operation
Bit 7-15	Reserved

Digital Output Command:

Bit 0	Open Command
Bit 1	Close Command
Bit 2	Stop Command
Bit 3	ESD Command
Bit 4-7	Future

Environmental
Temperature Range:
Storage: -40°C to +90°C
Operating: -20°C to +80°C

Humidity Range:
5% to 95% at 25°C non-condensing

Vibration:
IEC 6B-2-6 1G @ 40-50 Hz., 0.012p-p @ 10-40 Hz.

Modbus

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.

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

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)

Mountain Controls

www.mountaincontrols.com

COPPUS®
Air Movers

- Portable Ventilators
- Fans & Blowers
- Welding Fume Exhausters
- Ducts

POWERS PROCESS CONTROLS
Quality...Our Commitment

- Control Valves – Globe Type
- Temperature Regulators
- Self-Contained Temperature Controllers

MARSH®

- Pressure Gauges
- Thermometers
- Needle Valves and Diaphragm Seals

BELLOFRAM®
Precision Controls

- Precision Air Regulators
- Air, Gas, Steam & Water Regulators
- Vacuum and Backpressure Regulators
- I/P and E/P Transducers

RCS

- Electric Actuators
- Modulating Controllers
- Spring Return – SURE
- Mounting to your valves.

A-T Controls, Inc.

- Electric Actuators
- Spring Return Electric Actuators

G C VALVES

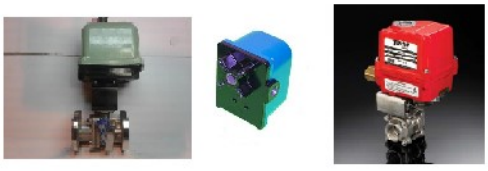
- Solenoid Valves
- Water – Air – Hot Water – Steam
- Pilot Valves

MOORE INDUSTRIES WORLDWIDE

- Process Controllers
- Multi-Loop Process Indicators with Switches

SVF Flow Controls, Inc.

- Ball Valves – 3-piece
- Pneumatic Actuators
- Electric Actuators
- Specialty Valves



Custom Actuator Solutions

- Electric actuators mounted and tested to the valve of your choice.
- Custom lightweight actuators for compact solutions

Mountain Controls

www.mountaincontrols.com

Salt Lake City, UT 84109
Phone: 801-487-8795

Seattle, WA 98125
Phone: 206-316-2330

info@mountaincontrols.com