

The Actuator Control Module (ACM) provides precise control of the linear high-speed actuator on the Phoenix Controls venturi valve within the Critical Spaces Control Platform (CSCP).

The ACM is mounted on the Phoenix Controls venturi valve and houses the characterization data of the venturi valve and when commanded (via network or local input) drives the valve to position with one second speed of response from command change. The ACM optionally couples with a differential pressure sensor or differential pressure switch signal to better control dynamic fan static control throughout a facility.

The ACM can be used as a standalone network device, analog controller, or when used in conjunction with other Phoenix Venturi valves and the Programmable BACnet controller (PBC) for zone balance, comfort control, occupancy, emergency management, and pressurization control.

The ACM provides a less than one second actuation response time that can adjust airflow to any change in the critical environment when used in conjunction with I/O devices such as Sash Sensors, Fume Hood Displays, and room temperature controls. The ACM can also be programmed to operate at a slower speed than one second if desired.

The Actuator Control Module has an optional Fail-Safe Module (FSM) that allows the valve to be moved to a pre-programmed position (Full Open, Full Closed, or anywhere in between) in the event of a power failure to keep the critical environment safe for the occupants and vital material inside. The Fail-Safe Module can be ordered as an option on valves or as an add-on later and has a simple plug-and-play connection.

The ACM is installed on all high-speed Phoenix Controls valves in the Critical Spaces Control Platform. When ordered, the optional FSM comes as a pre-configured factory installed module for the ACM.



ACTUATOR CONTROL MODULE (ACM) FEATURES

- Modern design.
- Supports high-speed linear actuation (actuation speed can be slowed down when desired).
- Provides accurate airflow within +/- 5% of setpoint at all flow positions.
- BACnet MS/TP communications.
- Optional Differential Pressure sensor or Differential Pressure switch.
- Optional Fail-Safe Module (FSM) connects via Touch-Flake connection.
- Two additional UIOs (Universal Input/Output) for general purposes.
- Manual override control on faceplate with knob.
- LED flow position indicator (indicates shut-off to full-open).
- Can be used as a standalone valve controller (analog or BACnet MS/TP control).

FAIL-SAFE MODULE (FSM) FEATURES

- Configurable fail-safe state for high-speed operation. Valves can be fail-open, fail-closed, or fail-to-any position.
- Factory mounted or field upgradable.
- Plug-and-play with ACM.
- LED on ACM shows state of FSM.

SPECIFICATIONS

Power

- 24 VAC \pm 15% at 16 VA, 50/60 Hz
- 50 VA Max

Communications

- BACnet MS/TP
- Baud Rates: Up to 115200 bits/second

Operating Temperature

- ACM: 32°F to 122°F (0° to 50°C)
- FSM: 32°F to 122°F (0° to 50°C)

Storage Temperature

- ACM: -40°F - 158°F (-40°C to 70°C)
- FSM: -40°F - 158°F (-40°C to 70°C)

Operating and Storage Humidity

Range of 5 - 95% RH, non-condensing

Platform

MCU core processor

- Core: Arm Cortex-M7 MCore™ Platform
- Frequency: up to 528 MHz (for industrial chip)

Input/Outputs

- ACM utilizes a 24VDC Actuator Output, 24VAC main input, external DP sensor interface, two UIO interfaces, Vpot interface, and RS485 communications port
- Provides 2 UIO

Pressure Monitoring

- The ACM provides a dedicated input for a differential pressure sensor or switch.
- Optional when ordering: a factory-mounted 0-5 in wc (0-1244 pa) pressure transducer or a low pressure differential pressure switch.

Dimensions

- ACM: 4.31" × 4.70" × 2.32" (109.5 mm × 119.4 mm × 59 mm)
- FSM: 4.70" × 1.55" × 1.91" (119.4 mm × 39.5 mm × 48.6 mm)
- Combined: 5.86" × 4.70" × 2.32" (149 mm × 119.4 mm × 59 mm)

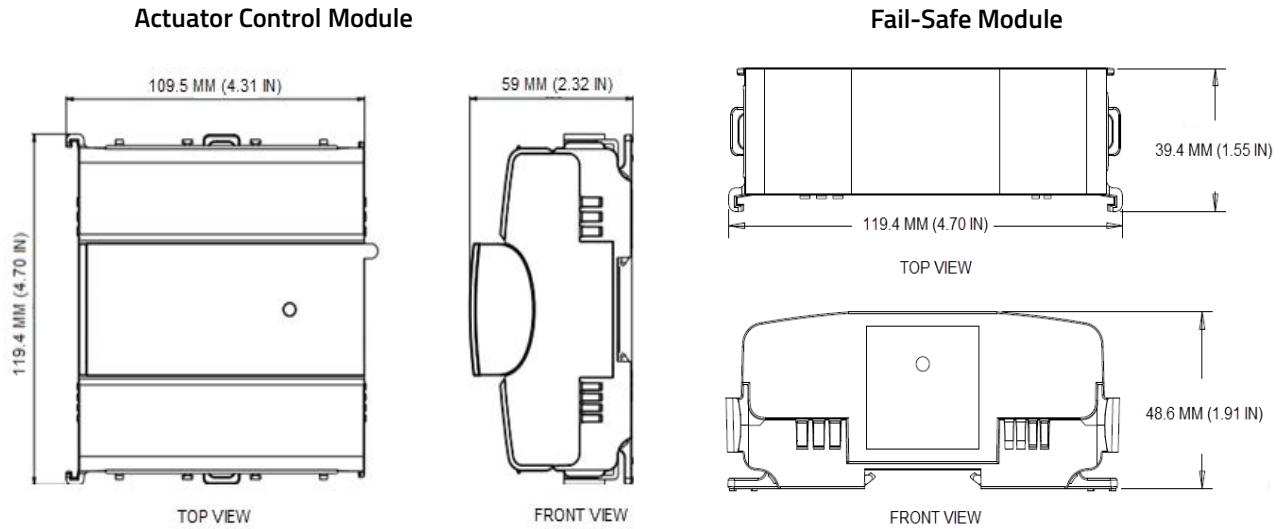
Weight

- ACM: .65 lbs (295.8 grams)
- FSM: .21 lbs (95.7 grams)

Mounting

- The ACM is suitable for mounting in fuse boxes conforming with standard DIN43880 and having a slot height of maximum 1.77 in (45 mm). It is suitable for panel rail mounting on 1.38 in (35 mm) standard panel rail (both horizontal and vertical rail mounting possible). The ACM is used for the purpose of building HVAC control.
- The FSM is suitable for mounting in fuse boxes with standard DIN43880 and having a slot height of maximum 1.77 in (45 mm). It is suitable for panel rail mounting on 1.38 in (35 mm) standard panel rail (both horizontal and vertical rail mounting possible). The FSM is required to mount to the ACM using the touch-flake connection.

DIMENSIONS



ACM PINOUT DESCRIPTIONS

Connector	Interface	Pinout
P10	Main Power Input	Pin 1: EGND Pin 2: V0 Pin 3: +24VAC
P20	Actuator Output	Pin 4: M1 Pin 5: M2
P30	DP Sensor	Pin 13: Not Used Pin 14: +3V3 Pin 15: GND Pin 16: Analog Input
P60	RS485	Pin 24: D- Pin 25: D+ Pin 26: COM (GND)
P70	UIO 1, UIO 2	Pin 27: UIO_1 Pin 28: GND Pin 29: UIO_2 Pin 30: GND
P80	Vpot	Pin 31: 5V Pin 32: VPOT Pin 33: GND

FSM PINOUT DESCRIPTIONS

Location	Description
Right-side power touch-flake Pin 1	Vin for charging supercaps
Right-side power touch-flake Pin 2	GND
Right-side power touch-flake Pin 3	Vout for discharging supercaps

INTEGRATION POINTS

For information about integration points, see the Part 6 - Integration Points section in the Phoenix Controls ACM and FSM Guide Specification (MKT-0527).

ORDERING DETAILS

The ACM is purchased as part of a complete Phoenix Venturi Exhaust (PVE) or Phoenix Venturi Supply (PVS) valve. For ordering information, see the Phoenix Controls CSCP Venturi Valves Datasheet (MKT-0525).

REGULATORY COMPLIANCES



WEEE Directive 2012/19/EC

Waste Electrical and Electronic Equipment Directive

At the end of the product life dispose of the packaging and product in a corresponding recycling center. Do not dispose of the unit with the usual domestic refuse. Do not burn the product.

Certificates: CE, FCC, ICES, UL/cUL, RoHS3, REACH, Prop 65

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