

Non-spring-return Syncube Actuators ME-4343 for low CV valve assemblies



Spartan PD continues to be an innovative force in the HVAC industry by introducing the new Modulating actuator, the ME4343 with Flush sequence (self-cleaning capabilities). This modulating, 0-10Vdc, direct acting actuator has several built in features which are extremely useful for low flow requirements.

Upon power up, the ME4343 performs a self test and span adjustment that identifies the fully closed position. The actuator will control over the full 0-10Vdc input range with a reduced valve body stem travel. This utilizes a portion of the flow characteristic with very low rated CV at 0Vdc. At these small Cv values problems can occur where slush and debris in the water plug the valve. With the ME4343 actuator, every time the controller calls for full heat with the 0Vdc signal, the valve will move to a fully open position (purging CV) for 5 seconds, opening the valve plunger and clearing the debris. It will then return to the pre-set low rated CV position.

The range of special low CV (MM) cartridges are available to fit in to all Spartan Peripheral Devices zone valve bodies.

Description

Spartan Syncube actuators drive 2-, 3- and 4-port control valves with a unique, patented, non-spring-return movement having five robust moving parts. The compact movement has a life expectancy in excess of 500,000 cycles (1,000,000 strokes) or 1,500,000 corrections. The reversible, brushless, synchronous, electric motor maintains accurate positioning and provides creep-free control with extreme accuracy.

The actuators all ride high and clear of pipes, insulation (lagging) and heat, yet the overall height above the actuator remains low.

Take note that the actuator should never be attached to the valve if its stem has been electrically driven down for fear of damaging the operating mechanism inside. Actuators shipped separately from the factory are always delivered stem up.

General Features:

A blue/semi-clear case allowing viewing of the moving parts or an opaque cream white case are both available. In both cases, a top mounted position indicator is available for viewing or for feeling its rise and fall (useful in dark, cramped places such as ceiling spaces and/or inside fan coil cabinets, etc.).

Stroke is 0.160" (4mm) nominal, (5mm max) and 30" (750mm) of cable is provided. The preferred mounting positions are upright or at a 45° angle.

The **ME-4343** microprocessor controlled actuator uses a LED pickup for precise positioning and for end of travel automatic shutoff. On start up, an automatic calibration sequence takes place with the unit running from open to closed during which the two ends of travel are programmed, compensating for tolerance imbalance between actuator and valve stem. The microprocessor also operates to shut the motor down at end-of-travel, and to transmit a 1-5Vdc signal (0 volts indicates loss of power) on the 4th wire for position transmission to remote BAS systems.



General Actuator Specifications

Mounting yoke: glass filled nylon based, high temperature composite to brass fixing ring.

Ambient temperature: 5°C to +50°C; 40°F to 120°F non-condensing

Cover: off white ABS or clear-blue 'K' resin as required.

Gearing: total reduction 1200 revolutions to 4mm linear.

Motor: synchronous reversible brushless

Output cable: optional 18ga Plenum cable, or PVC coated copper 20ga wire.

Output force: nominal 48 lbs, (214N)

Enclosure: IP51 (IP54 optional in vertical installation)

Input voltage: 1 watt, 24 Vac, 60/50 Hz, +10% -5% all versions

Consumption: 45mA, 1VA

Output Signal: 1-5Vdc - 33 KΩ impedance

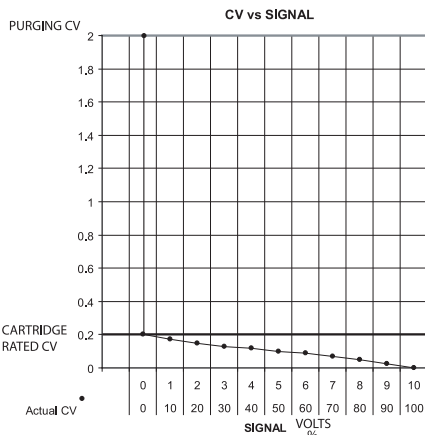
Input Signal: 0-10Vac or 10-0Vdc - 100 Kohms impedance

Position indication: top mounted stem position height both visual and touch sensitive. Clear case unit gearing is also visible through the cover.

Direct/Reverse acting: install jumper J1 to reverse action from 0-10Vdc to 10-0Vdc

Agency approval: Conforms to CE/ROHS requirements
Class 2 as per UL/CSA

Maximum valve close-off: 60psi (4bar)



Example of a controlling low-rated CV and flush purging sequence.

Example of a valve plunger position in a EPO.2MM cartridge.

