

# Armstrong® Emech™ Digital Control Valves

Emech, digital hardware that is faster, simpler, smarter with one goal in mind, unparalleled performance in industrial applications.

Emech digital control valves are available for steam/water and hot/cold water industrial service.

The unique range of Emech multi-patented ceramic disc/stainless steel disc rotary 3 port mixing and 2 port control valves, when combined with the Emech digital actuator delivers superior closed-loop performance in terms of speed, precision and reduced mechanical wear when compared to traditional mixing and control valve systems.

The mixing valve system is a highly optimized temperature control system with patented valve disc system, swirl mixing action, high speed in valve sensing, with embedded PID control of a 100% duty cycle rated stepper motor digital actuator.

A series of digital flow control valves are also available, which when combined with the Emech actuator and sensing technology forms a system providing superior temperature control to a range of industry standard processes, through its high speed and software configurable control dynamics.

## Actuator Features

- Electric Stepper Motor Control
- 100% Duty Cycle rated for continuous control
- Planetary lifetime lubricated, low backlash gearbox
- High speed 1.3 second quarter-turn response
- Precise positioning achieving 0.03° valve seat placement
- Software configurable PID control for individual application loop tuning and special modes via RS232
- Two operating modes: Stand alone control via onboard keypad or Remote control via external 4-20mA
- 4-20mA input and output ports
- Additional auxiliary switch control available
- Epoxy powder-coated aluminum NEMA 4 enclosure
- Two sizes:
  - G1.2 model 310 in.lb torque :24vDC 3Amp
  - G1.3 model 885 in.lb torque :24vDC 5Amp

## Disc Set\*/Valve Features

- Shear action rotary movement of valve seats
- CF8M (316) stainless steel valve
- Minimal torque requirement
- Minimal wear
- Corrosion Resistant valve seats
  - \*ceramic valve seats used in F2/F3 series valves, bubble tight seal hard faced steel valve seats used in F4/F5/F8 series valves
- One piece rotary spindle design
- Top entry maintenance and simple seals / o-rings
- Pressure rated to 145psi , designed to ASME B16.34
- Mechanical valve mounting to ISO5211,5210



## F3 Series Hot/Cold water 3 port mixing systems

Size range: ¾", 1", 1 ½", 2"  
Flow rates @ 29psi (dP): Ranging from 44-257 Gpm  
Minimum mixing flow: Ranging from 0.9-20Gpm  
Cv: Ranging from 8.1 – 47.5

## F4 Series Hot/Cold 3 port mixing system

Size range: 3"  
Flow rate @ 29psi (dP): 778 Gpm  
Minimum mixing flow: 53 Gpm  
Cv: 144

## F8 Series Hot/Cold 3 port mixing system

Size range: 4"  
Flow rate @ 29psi (dP): 1734 Gpm  
Minimum mixing flow: 105 Gpm  
Cv: 324

## F5 Series Steam/Water 3 port mixing systems

Size range: 1", 1 ½", 2"  
Minimum mixing flow: Ranging from 4 – 20 Gpm  
Cv: Ranging from 8.0 – 26.6

## F2 Series 2 port control valves

Size range: ¾", 1", 1 ½", 2"  
Flow rates @ 29psi (dP): Ranging from 88-449 Gpm  
Cv: Ranging from 16.2 – 82.8