

SUPERIOR INDUSTRIAL PROCESS CONTROL

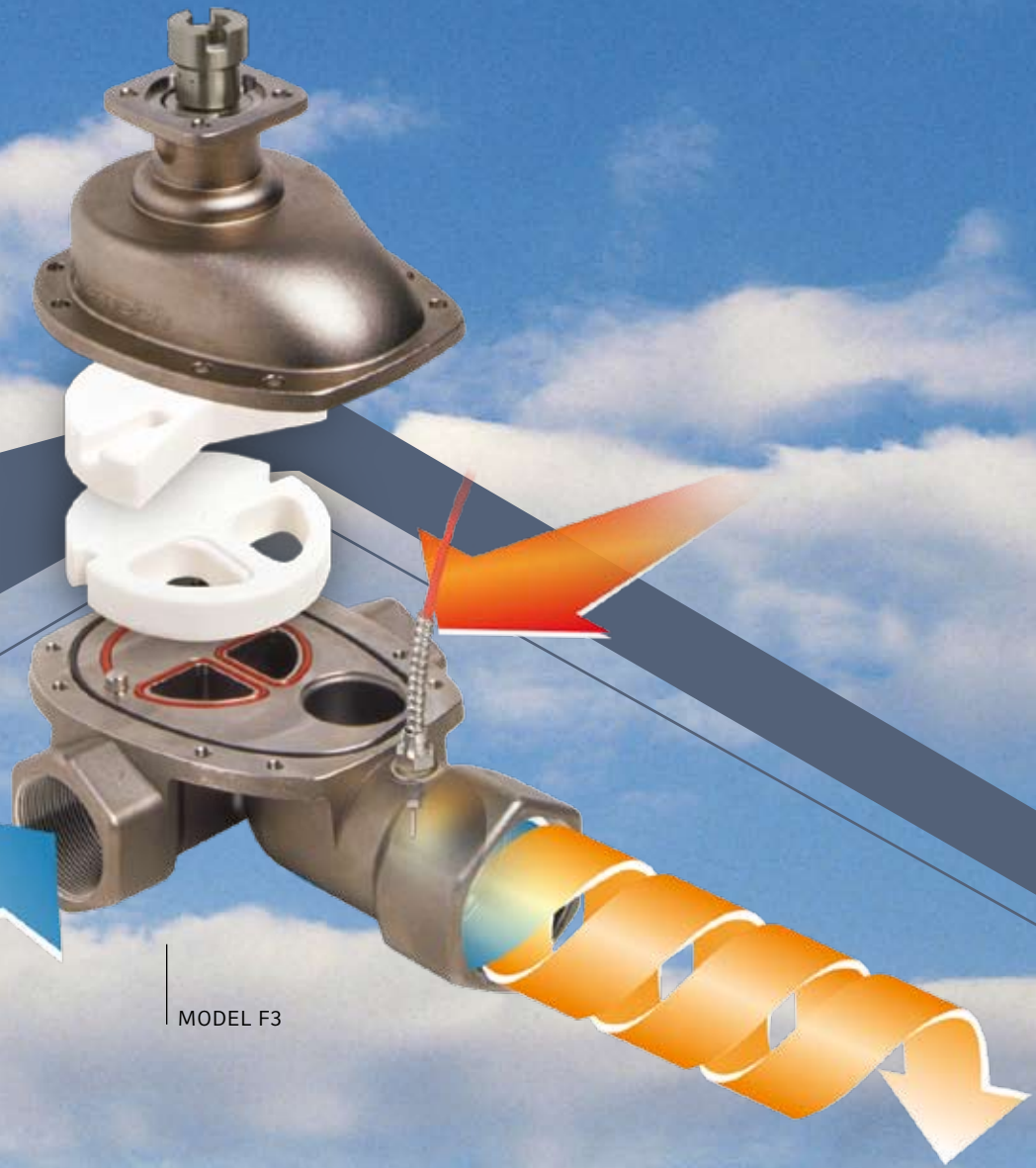




Emech is a recognized global partner to many industry-leading customers, delivering REAL WORLD RETURNS through the use of its patented technology to control process variance ensuring increased production yield and reduced utility consumption.

Through smart use of its control technology Emech provides the product and means to deliver value throughout your industrial processes.





MODEL F3

FROST & SULLIVAN

Process Control
Technology Innovation of the Year Award

"Awarded for its demonstrated technology innovation and its application expertise across target industries across the world, Emech™ Control is the worthy recipient of this award. Customers have testified to improved end-product quality, savings in water utilization, reduction in energy costs, and less down time"

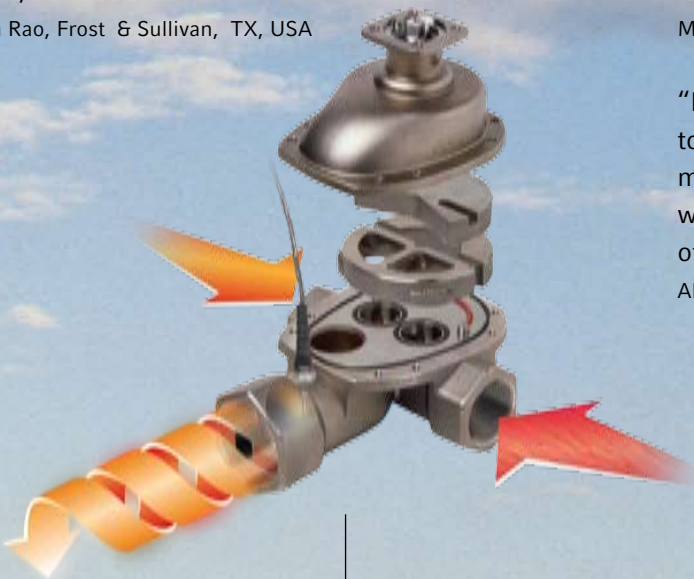
Sath Rao, Frost & Sullivan, TX, USA

"The world's resources are increasingly constrained. Water shortages will be a key constraint to growth in many countries. Innovation in technology, regulation and the use of resources will be central to creating a world that can both drive robust economic growth and sustain environmental demands."

McKinsey & Co - 2006 Top 10 Global Trends to Watch (#7)

"By maintaining process variables as near as possible to the setpoint, improved valve performance allows manufacturers to increase production and reduce waste. Reducing process variability lies at the heart of maximizing profitability."

ARC USA: Automation Research Council Report 2001



MODEL F5



PRECISION REDEFINED



**HARDWARE THAT IS FASTER,
SMARTER & SIMPLE,
WITH ONE GOAL IN MIND
UNPARALLELED PERFORMANCE
IN REAL WORLD SITUATIONS.**

With partnerships around the world Emech technology assists customers in achieving previously unobtainable levels of performance in their industrial processes.

The Emech™ actuator uses the advantages of fast and precise stepper motor technology encased in a robust epoxy coated aluminum casing.

ACTUATOR FEATURES

- Electric stepper motor control
- 100% duty cycle rated
- High speed 1.3 second quarter-turn response
- Precise positioning achieving 0.03° disc placement with each step
- Integrated manual override
- Software configurable PID control for individual control applications
- Integrated closed loop controller
- Two operating modes: Stand alone local control or remote control via external 4-20 mA signal
- 4-20mA input & output
- Additional auxillary switching control available

DISC* SET FEATURES

- Shear action movement
- Minimal torque requirement
- Minimal wear
- Corrosion resistant

* ceramic discs used in F2/F3 model valves,
hard faced steel used in F4/F5 model valves

VALVE FEATURES

- One spindle rotary design
- Top entry maintenance
- Patented swirl-mix
- Integrated temperature probe
- No balancing valves required
- ISO 5211, 5210 actuator flange mounting

BENEFITS

- Easy maintenance
- No external PLC/Probe/Controller required
- Provide accuracy to $\pm 0.9^{\circ}\text{F}$ (0.5°C)
- Reduced 'hunting'
- Can achieve temperature mix at unequal pressures up to 20:1





Water and Energy costs may seem hidden in relation to other costs in industrial processes, but they can be actively managed and reduced.

Reducing variability helps maximize profitability. While typically half the use of resources in plants and facilities are fixed there is a tremendous benefit to be had from actively managing and reducing the variances in heating, distributing and using water in plant processes.

Reductions in use of 15-20% can be achieved through benefiting from the technological edge that the Emech product provides, simply improving processes and reducing variance.

By maintaining process variables as near as possible to the set point, Emechs superior valve performance allows manufacturers to run their plants closer to constraints, thereby increasing production and yield.

COMPARE THE NEW EMECH™ STANDARD AGAINST TRADITIONAL SYSTEMS » EMECH IS SIMPLY MORE ADVANCED



The revolutionary Emech valve system offers a new standard of accuracy to manufacturing and process industries.

Emech technology is proven throughout the food and beverage, pharmaceutical and industrial sectors. With applications ranging from primary product processing through to high tech goods manufacturing, customers have experienced the Emech value proposition of improved yield combined with a reduction in utilities and maintenance costs.



Emech closed loop control on Komax™ static mixer

MEAT PROCESSING

"We can control water temperature to <math><1^{\circ}\text{F}</math>, saving energy as well as increasing our yield"

Roger Schreiner, Excel Corporation, Fort Morgan, CO

"The Emech system has provided considerable benefits to our plant. We installed a trial unit to improve the accuracy of set-point water temperature. Since this installation we have now expanded to four systems. We now experience reduced operator downtime, improvement in product consistency and increase in our yield."

Darren Olsen, Slaughter Division Manager, Miller Blue Ribbon Beef

"We're using a 3" valve and the control is within a staggering 1° to 2°F . It's the most accurate mixing valve system I've ever seen"

Trevor Dandy, Excel Corporation, High River, AB

LEATHER PROCESSING & TANNING

"This system adds value to the world-wide tanning industry, reducing water and heating costs as well as improving product quality"

John C Crowther, Swystem Logic GmbH.

BREWING

"Its more advanced than anything I've seen over many years of brewing in the UK"

Colin Paige, Wellington Brewing Company

PHARMACEUTICAL MANUFACTURING

"We needed rapid two to three second response time and 100% accuracy at all times. The Emech™ system has proved to be ideal for our application"

David Naidu, PSM Healthcare



WORKFORCE SOLUTIONS



Manufactured to meet the highest possible standards in our ISO9001:2000 accredited facility, every Emech system is designed, built and tested to provide maximum performance with minimum maintenance.



MODEL F2

Material selection using CF8M (316) stainless steel on our valve bodies along with shear action discs constructed from ceramic or nickel chrome stainless steel, and seal kits suitable for the application provide a solution that is both corrosion resistant and are built to perform with minimal wear.

MEAT PROCESSING

“The installation was quick and easy and now providing exceptional results. The electro-mechanical actuator will give many years of reliable service”

Daren Box, Cargill Meat Solutions, Wichita KS

BREWING

“Being able to sense, mix and measure hot and cold water temperature instantly in a very compact package is sophisticated technology”

Dave O’Carroll, Lion Breweries

MAXIMIZE PERFORMANCE

Environmental Impact

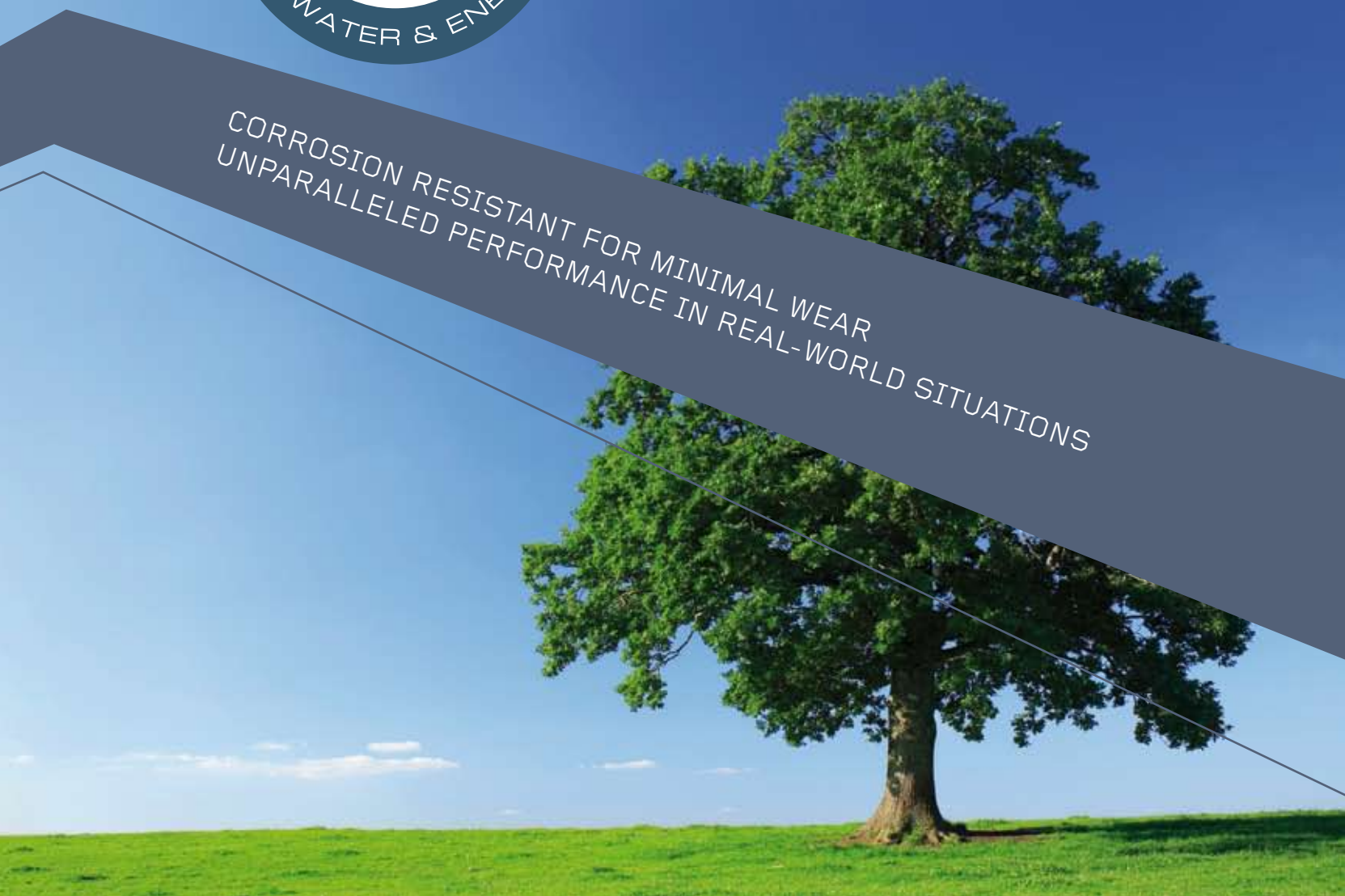
Water has been used in industry as a medium of great convenience for transport, heat transfer and sanitation. Over the past 25 years, the cost of this convenient medium has increased more rapidly than any other cost. In the past twenty-five years labor rates have increased by three to four times, fuel costs by four to five times and water and wastewater treatment costs by five to ten times. There is little a manufacturer can do to prevent these increases, however, costs can be reduced by using Emech systems to use less water and energy and save on maintenance.

Emech is one of a growing number of companies that are attempting to assist manufacturers to meet consumer and regulatory demands ensuring their manufacturing processes have as little impact on the environment as possible.



MODEL F2 with optional flange connections and third party pneumatic actuator

CORROSION RESISTANT FOR MINIMAL WEAR
UNPARALLELED PERFORMANCE IN REAL-WORLD SITUATIONS





DELIVERING ONLINE ASSISTANCE TO MATCH THE QUALITY OF OUR PRODUCTS

Certified ISO 9001 by



ON-LINE WEB SUPPORT:

- Automated Valve Sizing Report
- Technical details and specifications
- Application diagrams
- Installation, Operation & Maintenance manuals
- FAQ and Trouble shooting guide
- Warranty registration

GLOBAL DISTRIBUTOR SUPPORT:

- USA
- Europe
- Asia
- Australia
- New Zealand

24/7 FREECALL CUSTOMER SUPPORT:

- New Zealand: 0800 893 070
- Australia: 1800 029 876
- USA: 1866 583 9248
- Malaysia: 1800 81 2074
- Philippines: 1800 111 41803
- Thailand: 001 800 611 2962

| | | | | | | |
|--|----------------------------|-------------|-------|-------|---------|-------|
| Flow Control & Isolation System Specifications | Nominal Valve Size | Inch | ¾" | 1" | 1½" | 2" |
| | | Metric (mm) | 20mm | 25mm | 40mm | 50mm |
| | Inlet/Outlet Size | Inch | ¾"x¾" | 1"x1" | 1½"x1½" | 2"x2" |
| | | Metric (mm) | 20x20 | 25x25 | 40x40 | 50x50 |
| | Pressure Rating | psi @ 212F | 145 | 145 | 145 | 145 |
| | | bar @ 100C | 10 | 10 | 10 | 10 |
| | Flow Co-efficient - Mixing | Cv | 16.2 | 27.9 | 45.9 | 82.8 |
| | Kv | 14.1 | 24.3 | 42.5 | 72 | |
| Flow at given pressure drop (dP) across the valve | Gpm @ 29 psi | 88 | 150 | 264 | 449 | |
| | Lpm @ 2 bar dP | 332 | 573 | 1002 | 1697 | |
| Valve Series | | F2 | | | | |

| | | | | | | | | |
|---|---|----------------|-------|--------|---------|--------|-------|---------|
| Water Mixing System Specifications | Nominal Valve Size | Inch | ¾" | 1" | 1½" | 2" | 3" | 4" |
| | | Metric (mm) | 20mm | 25mm | 40mm | 50mm | 80mm | 100mm |
| | Inlet/Outlet Size | Inch | ¾"x1" | 1"x1¼" | 1½"x1½" | 2"x2½" | 3"x3" | 4"x4" |
| | | Metric (mm) | 20x25 | 25x32 | 40x40 | 50x65 | 80x80 | 100x100 |
| | Pressure Rating | psi @ 212F | 145 | 145 | 145 | 145 | 110 | 110 |
| | | bar @ 100C | 10 | 10 | 10 | 10 | 7.6 | 7.6 |
| | Flow Co-efficient - Mixing | Cv | 8.1 | 12.5 | 19.6 | 47.5 | 144 | 324 |
| | | Kv | 7 | 10.9 | 17 | 41.3 | 125 | 280 |
| | Flow at given pressure drop (dP) across the valve | Gpm @ 29 psi | 44 | 68 | 106 | 257 | 778 | 1734 |
| | | Lpm @ 2 bar dP | 165 | 257 | 401 | 973 | 2946 | 4666 |
| Nominal Minimum Mixing Flow for temperature control | Gpm | 0.9 | 4 | 6 | 20 | 53 | 105 | |
| | Lpm | 4 | 18 | 26 | 70 | 200 | 400 | |
| Valve Series | | F3 | | | F4 | F8 | | |

| | | | | | |
|---|----------------------------|-------------|--------|---------|--------|
| Steam-Water Mixing System Specifications | Nominal Valve Size | Inch | 1" | 1½" | 2" |
| | | Metric (mm) | 25mm | 40mm | 50mm |
| | Inlet/Outlet Size | Inch | 1"x1¼" | 1½"x1½" | 2"x2½" |
| | | Metric (mm) | 25x32 | 40x40 | 50x65 |
| | Pressure Rating | psi @482F | 145 | 145 | 145 |
| | | bar @ 250C | 10 | 10 | 10 |
| | Flow Co-efficient - Mixing | Cv | 8 | 13.3 | 26.6 |
| | | Kv | 6.8 | 11.9 | 23 |
| Flow at given pressure drop (dP) across the valve | Gpm @ 29 psi | 42 | 74 | 143 | |
| | Lpm @ 2 bar dP | 160 | 280 | 542 | |
| Nominal Minimum Mixing Flow for temperature control | Gpm | 4 | 6 | 20 | |
| | Lpm | 18 | 26 | 70 | |
| Valve Series | | F5 | | | |





MIXING WITH A DIFFERENCE . ABSOLUTE PRECISION

DISTRIBUTOR CONTACT

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