Innovation in actuation.

Keystone EPI-2 Quarter Turn Electric Actuators
Control your low-torque quarter turn valves and dampers more effectively, even in the largest plants.
A WORLD OF EXPERIENCE

Keystone has been a leading supplier of valves and actuators for more than 50 years. Now part of Emerson we are one of the few manufacturers with a global presence offering our customers a comprehensive selection of standard as well as specially designed valve and actuation products. The range includes electric and pneumatic actuators, all available with a full complement of accessories suitable for a wide range of applications.

Our state-of-the-art manufacturing facilities combine lean manufacturing principles with continuous quality auditing and a zero harm work ethic, allowing us to maintain the highest standards of product reliability and quality. Local sales offices and after sales support teams situated in 32 countries worldwide ensure we are on hand to meet the day-to-day flow control requirements of your plant or process.

Our network of smart and configuration centres, sales representatives, distributors and agents offices provides local spares inventory, product support and training for each market, with access to our global support services, design, engineering and manufacturing expertise where required.
EPI-2
COMPACT ELECTRIC ACTUATOR

AN INNOVATIVE DESIGN
The EPI-2 is a compact multi-voltage actuator which contains all the advanced features you need to provide effective control of low-torque quarter turn valves and dampers in even the largest and most complex plants.

With its compact, lightweight design, it is the most innovative all-in-one actuator available. Not only does it include a whole range of essential design features as standard but also the opportunity to incorporate Bluetooth™ wireless connectivity.

EFFICIENT AND FLEXIBLE
The EPI-2 is simple to install, set up and commission. Its efficient, balanced construction ensures easy installation onto small valves with minimal stress in the pipework and low operating loads on valve shafts. It is powered by an innovative motor, which is duty rated at 100% for on/off applications and automatically adapts to a wide range of voltages in DC or AC.

Its electronic-mechanical design incorporates innovative features that provide maximum flexibility for voltage supply, operating speeds and torque options.

ECONOMICAL AND RELIABLE
And it’s an economical actuator both to install and to run. With a single cable size suitable for all actuator models, installation costs are kept low and the motor’s very low power consumption ensures that running costs are minimized.

A constantly-engaged manual override, with a hand wheel which doesn’t rotate during motor operation, is included as standard.

Each single function and parameter in the actuator control, setting and diagnostics is available locally or remotely.

ADVANCED COMMUNICATION
With the optional Bluetooth wireless technology enabled, all configuration operations can be undertaken non-intrusively via your PDA or PC. Direct access to the EPI-2 is then also available for predictive/preventative maintenance information including valve position, actuator speed, output torque, faults and status.

The EPI-2 can be upgraded easily to provide network system connectivity for DeviceNet and Profinet protocols.

TECHNICAL SPECIFICATIONS
POWER SUPPLY
Single phase from:
24 to 48 V at 50/60 Hz
100 to 240 V at 50/60 Hz
Direct current:
24 to 48 V
100 to 240 V
Three phase:
208 to 240 V AC
380 to 480 V AC
500 to 575 V AC

TORQUE OUTPUT
35 to 2000 Nm
309 to 17,700 lb.in.

OPERATION TIMES
From 15 to 180s

AMBIENT TEMPERATURE
Standard range:
-25°C to +70°C -13°F to 158°F
Extended temperature ranges available

DUTIES
On / Off, inching or modulating
The EPI-2 compact electric actuator has all the features of much larger, heavier actuators incorporated into its neat design. In addition, a variety of simple-to-install optional modules enables enhancements to suit specific duties.

**A SIX MODEL RANGE**
The standard actuator is suitable for on/off, inching or modulating service (with the optional OM1 card) and there are six models in the range, for operating torques up to 2,000 Nm /17,700 lb.in. Each has inherent options for various voltages, motor supply and speeds and configurable operating times that vary from 15 to 180 seconds. The EPI-2’s nominal output torque value is constant along the entire stroke.

**EASY CONFIGURATION**
Each actuator is equipped with 2 rotary switches on the logic board to configure each function, including position, torque, open/close speed and output contacts. Each option has additional switches for its specific configuration.

**FLEXIBLE VALVE CONNECTION**
The base plate is interchangeable to enable simple connection to all types of valves. The shaft drive is via an insert bush to provide dimensions to EN ISO 5211, those of all main standard drive shafts and all the different flange standards.

**PRECISE TORQUE CONTROL**
Torque is set via user-friendly rotary switches located inside the control enclosure. Torque control is active in both directions with independent setting 50%, 75% and 100% of nominal value.

**SIMPLE WIRING**
To enable field wiring without removing the actuator’s control cover, the terminal board is in a separate compartment with 4 threaded cable entries to accept incoming wiring for power and controls.

**INDUSTRIES**
- OFFSHORE PLATFORMS
- OIL & GAS- PIPELINES AND STORAGE
- OIL REFINERIES
- LNG
- PETROCHEMICALS
- CHEMICALS
- PHARMACEUTICALS
- POWER GENERATION
- MINING
- WATER PIPELINES
- WATER TREATMENT
CLEAR LOCAL INDICATION
Position indication is via a ‘window-type’ local indicator on the top of the cover, as standard. A ‘Beacon’-type indicator is offered as an option.

RELIABLE CONDENSATION PROTECTION
To prevent condensation, a 10 W heater is situated within the unit and powered from the motor power supply. It is activated automatically by an internal thermostat when the control enclosure temperature drops below 10°C.

UNIQUELY ADAPTABLE MOTOR
The electric motor is designed to accept single phase input voltages from 24 V to 48 V and 100 V to 240 V DC or AC at 50 and 60 Hz and provides flexibility for a broad range of applications. It enables the EPI-2 simply to be connected to the local power supply and will adapt automatically to the appropriate power rating. An over temperature device to protect the motor and electronics is included.

Three phase motors with power supply from 208 to 575 VAC at 50 or 60 Hz are available as an option.

ROBUST AND LIGHTWEIGHT
The EPI-2 has a lightweight anodized die-cast aluminium body with sintered alloy steel epicyclical gearing lubricated with grease. Output drives are in cast iron.

OVER-TEMPERATURE PROTECTION
An over-temperature device to regulate the temperature inside the control enclosure is included in the control group.

ACCURATE TRAVEL CONTROL
Mechanical stops at the base of the enclosure provide +/- 10° over/under travel in each direction for a 70° minimum and 110° maximum angular stroke.

SMOOTH AND RELIABLE
All metal, self-locking epicyclical internal gearing ensures a smooth and reliable operation.

OUTPUT CONTACTS
4 latched contacts for open and close status, 1 output contact for monitor (loss of power, torque alarm, high temperature alarm, travel alarm, position sensor, hardware malfunction, local Interface malfunction, local selector in LOCAL), 1 output contact for blinker/local selector indication. [Local selector feature only with OM3 installed]
A BROAD RANGE
OF ADDITIONAL OPTIONS

EPI-2 actuators offer a broad range of optional additional modules that are simple to apply and enhance the standard models for specific services.

**OM1 - I/O additional module:**
- Analog position input 4-20 mA or 0-10 V DC
- Analog position output 4-20 mA or 0-10 V DC
- Information about loss of input signal and Bluetooth failure is available on MONITOR relay output contact.
- Local selector position alarm (with OM3 installed)
- 4 additional SPST output contacts to be set independently at 10 points along the stroke. Contacts are configurable (make or break)
- Optional Bluetooth interface

**OM3 - Local interface**
With local/remote selector, OP/CL pushbuttons and 2 LEDs for local indication. Available in weatherproof version only.

**OM13: 3-wire module:**
110/240 V AC, 3-wire control module for open/close.

**BUS COMMUNICATION - NETWORK INTERFACES**
Connection to a bus system is very easy; simply plug the interface card into the actuator enclosure and set all the parameters through the configuration software from your Bluetooth™ PC/PDA.

The following open bus protocols are available:
- **OM9**: Profinet DPV0/V1
- **OM11**: DeviceNet
For applications outside those covered by the standard range, the company has the facilities, unrivalled experience and engineering expertise that enable it to create custom-made solutions to meet specific needs. Working closely with customers and end-users, tailor made solutions can be engineered to cover the most stringent applications and operating conditions.