

F02 SERIES ELECTRIC ACTUATORS

A WORLD OF EXPERIENCE

Biffi has been a leading manufacturer of valve actuators for more than 50 years. As one of the few manufacturers with a global presence, we can offer our customers a comprehensive selection of standard as well as specially designed actuation products. The range includes electric, pneumatic, hydraulic, direct gas, gas-hydraulic, compact and subsea actuators. All our actuators are 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.

Biffi's commitment to the highest ethical standards in our daily business practices towards our workers, the environment and the wider community, is recognized by the achievement of the following certifications:

ISO 9001 - Quality management system

SA 8001 - Social accountability standard

ISO 14001 - Environmental management system

BS OHSAS 18001 - Occupational health and safety assessment

F02

COMPACT ELECTRIC ACTUATOR

AN INNOVATIVE DESIGN

The F02 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 F02 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 is based on the advanced and proven ICON 2000 technologies, incorporating 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 F02 is then also available for predictive/preventative maintenance information including valve position, actuator speed, output torque, faults and status.

The F02 can be upgraded easily to provide network system connectivity for DeviceNet and ProfibusDP 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

POSITION INDICATOR

MOTORS

INTERNAL SENSORS

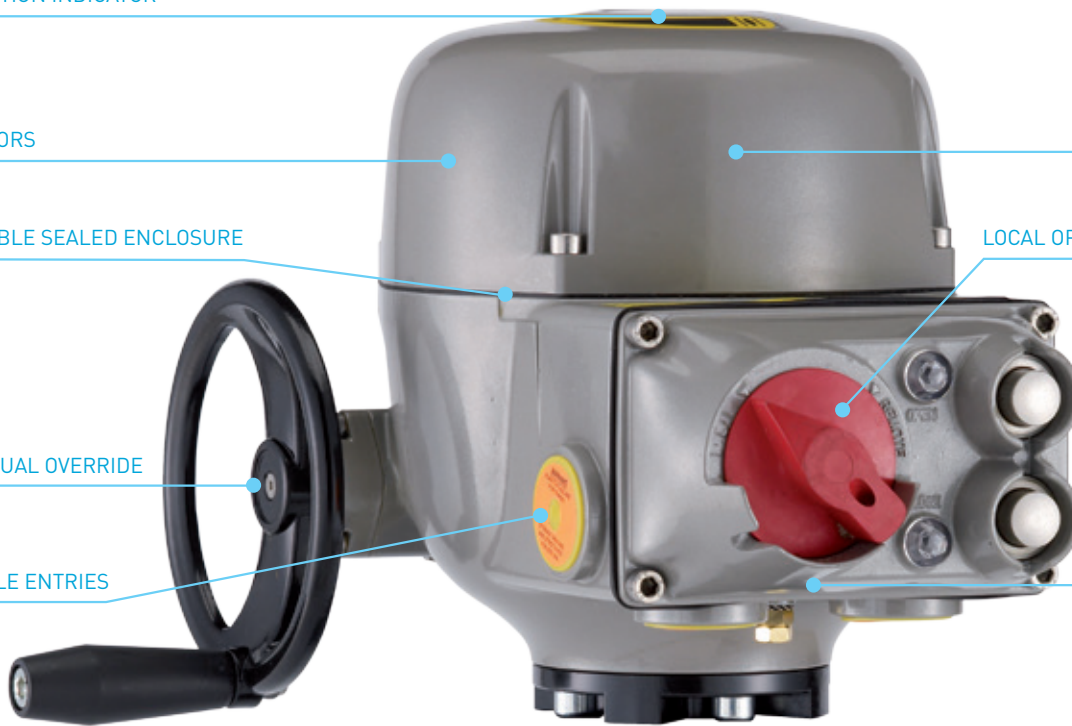
DOUBLE SEALED ENCLOSURE

LOCAL OPERATOR INTERFACE

MANUAL OVERRIDE

CABLE ENTRIES

TERMINAL BLOCK



DESIGNED FOR PRACTICALITY

The F02 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 F02'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

ENGINEERED FOR PERFORMANCE

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 F02 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 F02 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

F02 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.

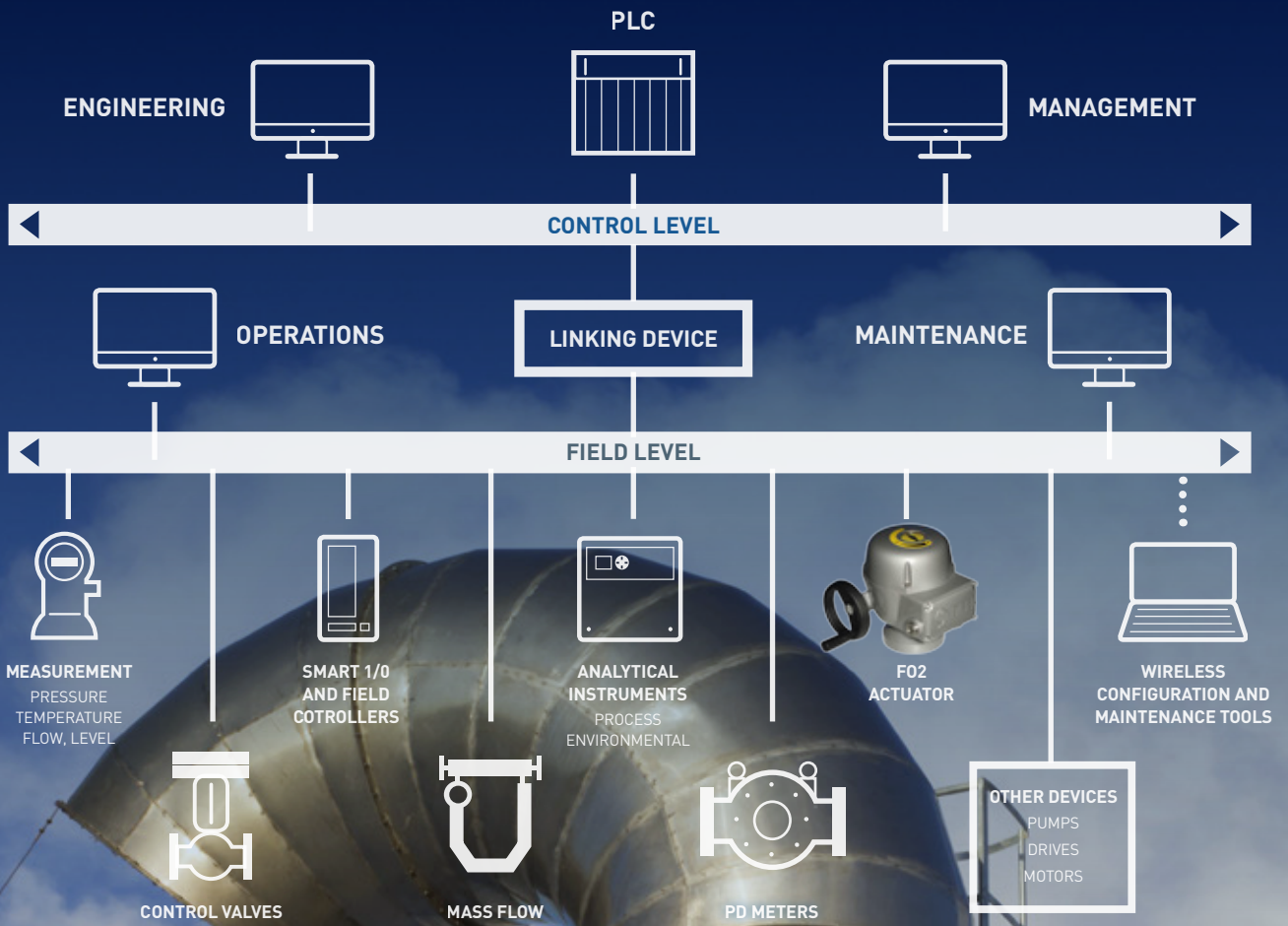
BUS COMMUNICATION - NETWORK INTERFACES

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: Profibus DPV0/V1

OM11: DeviceNet



EXCEPTIONAL INTEGRATION CAPABILITY

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.



Biffi reserve the the right to change product designs and specifications without notice.

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