

IQT Range

quarter-turn electric valve
intelligent technology actuators

rotork®



Rotork's IQ intelligent valve actuator range just got better - Introducing the new IQT Range.

Rotork's tried and tested range of IQ intelligent electric valve actuators is now further enhanced - retaining legendary features such as Rotork's unique double sealing system and 'non-intrusive' infrared commissioning capability by the addition of the IQT dedicated quarter-turn actuator.

The IQT (IQ quarter-turn) is the result of ongoing commitment to product development at the leading edge of new technology. The Rotork IQ now delivers a complete range of actuators suitable for most quarter and multi-turn applications that require control and indication flexibility, offering end users ever higher standards of performance build quality and overall value.

IQT offers a range of powerful features unparalleled in valve actuation including:

- Direct drive quarter-turn
- Three phase, direct current and single phase actuators
- Full turn IQTF version
- Modulating IQTM version
- On-board data logger included as standard
- IrDA compatible for local and remote actuator analysis via InSight PC software
- Clear, user friendly controls and indication
- Simplified torque and position control for increased reliability
- Rationalised electronics - "system on a chip" technology
- Comprehensive control and flexibility



Established leaders in Actuation Technology

Publication E115E
issue 12/03



Evolution of the IQ actuator

Experience has proved that uncompromising attention to sealing against the effects of environment has made the greatest contribution to MOV reliability. In 1960 Rotork lead the field by introducing 'O' ring sealed, watertight enclosures and in the 1970s by developing "double sealing" to protect the electrical enclosure. In the 1990s by combining Rotork's long established motor and gearing designs with the latest electronics and infra red technology and with local controls that did not penetrate the electrical enclosure, Rotork produced the IQ, the world's first non intrusive actuator. With infra red setting, Rotork's unique double sealing, simple "trouble shooting" via help screens and non intrusive design the IQ became the world leader in actuation technology.

With bus compatibility and the optional Datalogger the IQ fully deserved it's reputation as the "intelligent" actuator.

In 2003 the IQ continues to offer all the key benefits which made it a world leader

The IQT range

All the features of the IQ are now available in a direct drive, quarter turn actuator—offering the highest standards in comprehensive control, access to real time diagnostics and bus compatibility.

Whatever the environment, whatever the duty the IQ has become a byword for reliability. Design simplicity, double sealing with a watertight enclosure coupled with infra-red set-up and comprehensive protection systems have come together to make the IQ range the world leader in reliable valve operation.

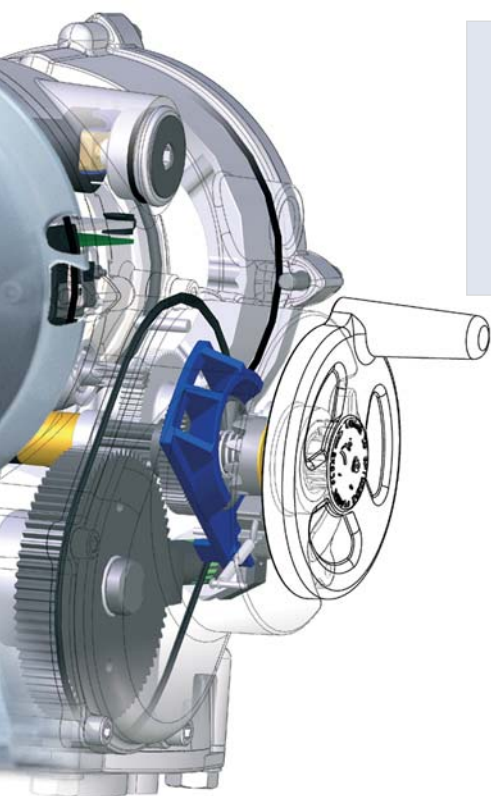


IQT quarter-turn performance

Actuator	Torque		Operating time		Couplings (Spindle acceptance)	
	Max Nm	Min Nm	90° Min	90° Max	Bore & key max mm	Square AF max mm
IQT 125	125	50	5	20	22 (F05)*, 28 (F07)*, 42 (F10)	14 (F05)*, 19 (F07)*, 32 (F10)
IQT 250	250	100	8	30	28 (F07)*, 42 (F10)	19 (F07)*, 32 (F10)
IQT 500	500	200	15	60	42 (F10)	32 (F10)
IQT 1000	1000	400	30	120	60 (F14)	41 (F14)
IQT 2000	2000	800	60	120	60 (F14)	41 (F14)

* = Optional flange sizes F05, F07, F10 base type must be specified at time of order.

For imperial data and base sizes, please see publication E110E. Couplings are supplied blank for machining by valve maker.



Remote Diagnosis - IRDA™

The IQT utilises IrDA™ communication for fast, safe, non-intrusive and standardised data exchange. Actuator set-up configuration can be analysed and if required changed. As every IQT includes an on board data logger, operational data such as valve torque profiles, actuator events and statistics can be downloaded for detailed investigation. Data logger information can also be relayed to a user site base via an IrDA™ compatible PDA (weatherproof and intrinsically safe versions are available). After analysis, any changes to the actuator set-up configuration can be relayed back to the actuator.

IQ-Insight PC software is a graphical user interface allowing all IQT set-up configuration and data logger



information to be reviewed analysed and reconfigured. By using a PDA running IQ Pocket-Insight, data can be uploaded from the actuator and later downloaded to a PC.

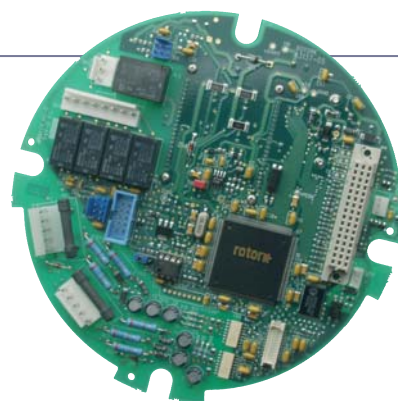
Bus connectivity

In addition to offering full compatibility with Pakscan, IQT actuators can be specified to interface seamlessly to many other fieldbus digital control systems. Open fieldbus protocols such as Profibus, Foundation Fieldbus, DeviceNet and Modbus are all available within the IQT actuator control option range.

This is achieved simply and cost effectively through fitting an appropriate Rotork manufactured circuit board module inside the actuator's electrical housing - normally at the time of

production. Module commissioning and setup is carried out using a combination of the IQ Setting Tool and the network commissioning tools used for the chosen protocol.

An internally mounted Pakscan field unit is used for remote control and status indication over a fault tolerant two wire serial link. The system has loop distances of up to 20 km without repeaters and host communications using Modbus protocol. System variables are programmable over the infra-red data link.



Rotork IQ and IQT actuators are fully compatible with the following fieldbus communication systems:

DeviceNet
CONFORMANCE TESTED

PROFI
PROCESS FIELD BUS
BUS

FOUNDATION

Modbus

standard specification

Mechanical

European - Hazardous Area

EExd IIB T4. ATEX (94/9/EC) II 2GD:
CENELEC Norm EN50014 and EN50018.
Temperature -20°C to +70°C (-4°F to +158°F).
*Option -30°C to +70°C (-22°F to +158°F).
*Option -40°C to +70°C (-40°F to +158°F).
*Option -50°C to +40°C (-58°F to +104°F).

EExd IIC T4. ATEX (94/9/EC) II 2GD:
CENELEC Norm EN50014 and EN50018.
Temperature -20°C to +70°C (-4°F to +158°F).

EExde IIB T4. ATEX (94/9/EC) II 2GD:
CENELEC Norm EN50014, EN50018 and EN50019.
Temperature -20°C to +70°C (-4°F to +158°F).
*Option -30°C to +70°C (-22°F to +158°F).
*Option -40°C to +70°C (-40°F to +158°F).
*Option -50°C to +40°C (-58°F to +104°F).

EExde IIC T4. ATEX (94/9/EC) II 2GD:
CENELEC Norm EN50014, EN50018 and EN50019.
Temperature -20°C to +70°C (-4°F to +158°F).

International - Hazardous Area

IEC. Exd IIB T4:
IEC60079-0 and IEC60079-1 for Exd IIB T4.
Temperature -20°C to +60°C (-4°F to +140°F).

IEC. Exd IIC T4:
IEC60079-0 and IEC60079-1 for Exd IIC T4.
Temperature -20°C to +60°C (-4°F to +140°F).

USA - Hazardous Area

FM. Class 1, Division 1, Groups C, D, E, F, G hazardous areas:
Factory Mutual - Explosionproof to NEC Article 500.
Temperature -30°C to +60°C (-22°F to +140°F).
*Option -40°C to +60°C (-40°F to +140°F).
*Option -50°C to +40°C (-58°F to +104°F).
*Alternative for Group B hazardous area.
Temperatures as for Groups C and D.

Canada - Hazardous Area

CSA EP. Class 1, Division 1, Groups C and D hazardous areas:
Canadian Standard Association - Explosionproof.
Temperature -30°C to +70°C (-22°F to +158°F).
*Option -50°C to +40°C (-58°F to +104°F).
*Alternative for Group B hazardous area.
Temperatures as for Groups C and D.

International - Non Hazardous

WT: Standard watertight,
BS EN 60529 :1992, IP68, 7 metres/72 hrs.
Temperature -30°C to +70°C (-22°F to +158°F).
*Option -40°C to +70°C (-40°F to +158°F).
*Option -50°C to +40°C (-58°F to +104°F).

US - Non Hazardous

NEMA 4, 4X and 6:
Temperature -30°C to +70°C (-22°F to +158°F).
*Option -40°C to +70°C (-40°F to +158°F).
*Option -50°C to +40°C (-58°F to +104°F).

Canada - Non Hazardous

CSA WT: Canadian Standard Association - Watertight. Wiring and components complying with CSA Enclosure 4 and 4X:
Temperature -30°C to +70°C (-22°F to +158°F).
*Option -40°C to +70°C (-40°F to +158°F).
*Option -50°C to +40°C (-58°F to +104°F).

Rotork can supply actuators to national standards not listed above. For details please contact Rotork.

Electrical

Power supplies

IQT actuators are suitable for operation with the following three phase, three wire power supplies:

50Hz
200, 220, 240, 380, 400, 415, 440, 480, 500, 550, 660 and 690 volts

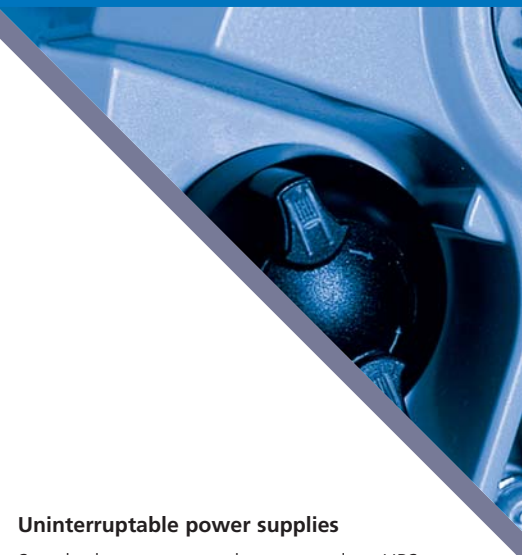
60Hz
200, 208, 220, 230, 240, 380, 400, 440, 460, 480, 575, 590, 600, 660 and 690 volts

The required nominal operating voltage must be specified at time of order.

Actuator performance is guaranteed with a voltage tolerance +/-10% and frequency tolerance +/-5Hz. Actuators are capable of starting and running up to speed with a maximum 15% volt drop.

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Uninterruptable power supplies

Standard actuators can be operated on UPS systems providing the above specified tolerances are not exceeded and waveforms, harmonics, spikes etc. adhere to recognised supply standards such as EN50160. For more information refer to publication E130E.

Power supply options

IQT single phase

Available for standard single-phase voltages:
50Hz: 110, 115, 120, 220, 230 and 240 volts
60Hz: 100, 110, 115, 120, 208, 220, 230 and 240 volts

IQT DC

Available for the following DC supplies:
IQT: 24 volts

Non-standard voltages

Actuators can be supplied to operate on power supply voltages other than those quoted above. Please apply to Rotork.

Non standard tolerances

Where voltage and/or frequency variations may be experienced outside those quoted above, or where operation under large volt drop conditions may be required please apply to Rotork.

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As part of a process of on-going product development, Rotork reserves the right to amend and change specifications without prior notice.

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