

rotork® Controls

The IQT (IQ quarter-turn) is the result of ongoing commitment to product development at the cutting edge of new technology.

The IQT *Pro* is a direct drive, quarter-turn actuator with simple commissioning and troubleshooting – offering not only the highest standards in comprehensive control, but also access to real time diagnostics and comprehensive bus compatibility.

- Direct drive quarter-turn
- Three-phase, direct current and single-phase actuators
- Multilingual text display for status and setup
- 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
- Comprehensive control and flexibility
- Approved for use in SIL application

The Rotork IQT *Pro* delivers a complete range of actuators suitable for all quarter-turn valve applications requiring control and indication flexibility. It offers end users ever higher standards of performance, build quality and overall value.

Simple Commissioning

The Rotork IQT *Pro* provides simple, safe and rapid non-intrusive commissioning with infrared control. Actuator settings such as torque levels, position limits, control and indication functions can be accessed and adjusted using the supplied “point and shoot” Setting Tool *Pro*. This intrinsically safe (IS) tool is unique to Rotork and allows for non-intrusive actuator set-up in any environment, power on or off.

Simple Troubleshooting

The large digital position display clearly indicates real time valve position from a distance. In addition to this, active valve, control, actuator status and alarm text messages are displayed on the easy to read back-lit display. Using the Setting Tool *Pro* real-time torque against position profiles and actuator configuration can be accessed during commissioning, adjustment or local valve performance monitoring. The onboard data logger records operational, alarm and valve torque profile data providing valuable information on valve and plant operating performance and conditions.

Redefining Flow Control



IQT Range

Quarter-turn electric valve
intelligent technology actuators



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IQT Quarter-Turn Actuators



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IQT

IQT *Pro* actuators are direct drive quarter-turn electric actuators which can be used for isolation or regulating duties of up to 60 starts per hour. IQT *Pro* actuators are watertight or watertight and explosionproof depending upon specification.

Torque output from 50 Nm (37 lbf.ft) to 2,000 Nm (1,476 lbf.ft).

Fail Safe – IQTFS

The IQT Failsafe actuator provides valve failsafe operation by utilising power from an internal battery during AC supply mains failure. Under normal supply conditions the actuator operates from the site's AC electrical supply. On loss of this supply the actuator automatically switches over to receive power from a 24 VDC supply allowing control of the valve to the failsafe position.

For detailed information see PUB002-014.

Modulating – IQTM

The modulating version of the IQT has solid state motor switching and includes fast response remote control circuits for rapid response to control signals. The IQTM is suitable for up to 1,200 starts per hour.

Full-turn – IQTF

The IQTF provides extended output rotation for part-turn valve types requiring more than 90° for operation. Typical valves include 180° and 270° diverter valves and multiport manifolds requiring bi-directional 360° operation. The IQTF actuator has a low output speed for increased positional accuracy.

The IQTF may also be utilised for low-turn, multi-turn applications where slow operation is required.

For detailed information see PUB002-006.

Naval & Marine – IQTN

The IQTN has been developed to meet the specialist demands of naval & marine applications within a standard package.

Retaining all the features of the IQT *Pro* the IQTN has a shorter electronics cover for confined on-board spaces and an anti-shock base.

For detailed information see PUB002-012.

Special Designs

With our extensive product range and engineering knowledge Rotork can provide solutions for all applications.

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IQT Quarter-Turn Performance

Actuator	Torque		Operating Time		Couplings (Spindle Acceptance)**	
	Max. (Nm)	Min. (Nm)	90° Min. (secs)	90° Max. (secs)	Bore & key Max. (mm)	Square AF Max. (mm)
IQT125	125	50	5	20	22 (F05)*, 28 (F07)* 42 (F10)	14 (F05)*, 19 (F07)* 32 (F10)
IQT250	250	100	8	30	28 (F07)*, 42 (F10)	19 (F07)*, 32 (F10)
IQT500	500	200	15	60	42 (F10)	32 (F10)
IQT1000	1,000	400	30	120	60 (F12, F14)*	41 (F12, F14)*
IQT2000	2,000	800	60	120	60 (F14)	41 (F14)

* Optional output flanges F05, FA05, F07 and FA07 use a base adapter plate or different base for F14/FA14. Required base type must be specified.

** Couplings are supplied blank for machining by valve maker.

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 Setting Tool *Pro* and the network commissioning tools used for the chosen protocol.

When Pakscan is specified, 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 infrared data link.

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

DeviceNet
CONFORMANCE TESTED



Modbus



IQT Standard Specification

Mechanical

Non-Hazardous Area Enclosures

IP68 – 7 metres/72 hours

IEC 60529 (1989-11)

BS EN 60529 (1992)

NEMA (US)

CSA (Canadian)

Hazardous Area Enclosures

ATEX EN60079

Factory Mutual FM3615 (US)

CSA C22.2 No 30-M (Canadian)

For further details see publication
PUB002-010.

Electrical

Power Supplies

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

50 Hz

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

60 Hz

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 +/-5 Hz. Actuators are capable of starting and running up to speed with a maximum 15% volt drop.

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 PUB002-018.

Power Supply Options

IQT Single-Phase

Available for standard single-phase voltages:

50 Hz: 110, 115, 120, 220, 230 and 240 volts

60 Hz: 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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for more information on
this product range



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sales and service network is
available on our website.

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Controls

Electric Actuators and Control Systems

Fluid Systems

Fluid Power Actuators and Control Systems

Gears

Gearboxes and Gear Operators

Instruments

Precision Control Instruments

Site Services

Projects, Services and Retrofit

As part of a process of on-going product development, Rotork reserves the right to amend and change specifications without prior notice. Published data may be subject to change. For the very latest version release, visit our website at www.rotork.com

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