



Keeping the World Flowing for Future Generations

Technologically innovative while incorporating proven engineering, Rotork watertight CK range actuators are suitable for all actuation applications in non-hazardous locations.

Rotork has developed CK range actuators to provide a state-of-the-art product to the valve industry. The CK product range includes standard multi-turn actuators without controls (CK), actuators with simple Atronik controls (CKA) and actuators with intelligent Centronik controls (CKc).

Rotork has an international network of offices and distributors to support our customers. Rotork's service includes sales, commissioning and long-term maintenance support.

The CK range can be held in stock at Rotork centres located around the world. These centres provide support and service backup for the full range of Rotork products.

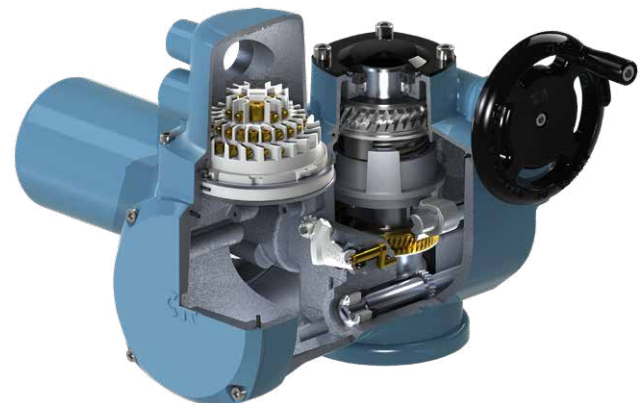
- Multi-turn output torque up to 6,750 Nm (4,979 lbf.ft)
- Part-turn facility available using an IW gearbox
- Oil bath lubrication for extended life and mounting in any orientation
- Fast and efficient maintenance due to plug and socket connections
- Built-in redundancy using independent torque and position sensing
- IP68 8m / 96 hrs - double-sealing as standard
- User-friendly commissioning and configuration
- Safe motor-independent handwheel operation
- Backed by Rotork Site Services



CK range

Multi-turn electric valve actuators

- CK** Standard isolating duty actuator
- CKR** Standard modulating duty actuator
- CKA** Atronik isolating duty
- CKRA** Atronik regulating / modulating duty
- CKC** Centronik isolating duty actuator
- CKRC** Centronik modulating duty actuator



CK features

Rotork actuators have been developed with 60 years of experience in actuation solutions and comply with global safety standards. Our valve actuation products range from simple actuators to advanced electronic control systems.

We have the experience, know-how and product range to supply any valve actuation solution. Our products are designed to provide competitive, cost effective, safe, reliable and efficient valve operation.

IP68 watertight construction

An IP68 (8m for 96 hours) rating according to EN 60529 is achieved using spigot and O-ring joints for actuator covers and between modules.

Modular design

The major components of the CK range are modular; speed changes, control package upgrades and indication outputs can be altered to suit the user's exact requirements. CK actuators can be adapted to meet user specification quickly and efficiently to achieve fast turnarounds and quick delivery.

Temperature range options

The standard range is rated for -30 to +70 °C (-22 to +158 °F). Low temperature options available between -40 and +60 °C (-40 to +140 °F) with a change of lubricant and bearings.

International standards

CK range products fully comply with international design standards, actuator standards ISO 22153, EN ISO 5210, MSS SP 102 and manual handwheel operation standard EN12570.

Plug and socket connection

Power, control and indication wiring is connected into a plug located in the terminal cover allowing simple mechanical connection/disconnection of the actuator. Plug and socket connections between actuator modules provide a simple connection platform for adaption and field upgrades.

Double-sealing

Actuator internal electronics and customer termination are double sealed to preserve the IP68 enclosure protection even while the actuator terminal housing is removed.

Torque protection and position limits

CK range actuators are supplied with a mechanical switch mechanism (MSM) that enables mechanical configuration of the torque and position limits. In addition to the MSM, Centronik equipped actuators are compatible with a digital switch mechanism that transmits torque and position from an absolute encoder as a fully digital signal.



CK & CK_R actuators

Comprising electric motor, drive gearing, independent handwheel drive, torque and position limit control & indication with plug and socket field wiring correction. The CK range provides the right solution for users with centralised motor control centres or for high temperature and sustained vibration applications.

CK_A & CK_{RA} actuators

CK_A actuators include the Atronik control module. Atronik provides reliable motor starter with modest integral controls to meet the standard requirements of site specification. Simple status indication and DIP switch configuration ensure quick commissioning and installation on site.

CK_C & CK_{RC} actuators

The addition of the Centronik module to the CK provides intelligent, integral control for use with all site control systems. It permits the use of hardwired, fieldbus or analogue control & indication, offering cost-effective implementation with centralised control systems. Centronik actuators allow valvemaker/integrator testing with just the power supply, using local control with no extra wiring or motor control gear required. Non-intrusive, password protected configuration may be carried out using open/close selector switches or by using the optional Rotork Setting Tool, over the infrared or optional *Bluetooth*® interfaces. The Centronik display provides position indication, status and alarms for operation plus simple menu driven configuration screens.

Power supply phase correction

All 3-phase power supplies for the Atronik and Centronik range include automatic phase correction to rectify incorrect power cable connection. This is an integral feature to prevent damage to the actuator and improve the ease of commissioning and will ensure correct travel direction when receiving operation commands.

CK features

Insight 2 software

For Bluetooth enabled CK & CK_{RC} actuators, the actuator setting configuration and data log files can be extracted to the Rotork Setting Tool. The file can then be uploaded to a PC running Rotork Insight 2 software for analysis and asset management. Alternatively, a Bluetooth enabled PC running Insight 2 can connect with the actuator directly in the field.

Insight 2 software is free to download from www.rotork.com

Motor

High starting torque – low inertia motors are available for 1-phase and 3-phase supplies. The motor module is detachable and can be replaced without draining internal lubricant.

Robust drive gearing

A simple single stage worm-and-wheel gear drive runs in an oil bath for effective lubrication within the specified temperature range, in any orientation. The standard oil is an automotive grade widely available throughout the world. Food grade and low temperature lubricants are available when specified.

Hand operation

The handwheel drive is independent of the motor drive and is selected with a lockable hand/auto lever acting on a slow speed clutch for safe operation. When the motor runs, the actuator automatically returns to motor drive.

Network communication

Atronik (CK_A & CK_{RA}) and Centronik (CK_C & CK_{RC}) actuators are compatible with most industry standard fieldbus systems.

Detachable bases

Thrust base types are separate to the gearcase allowing easy installation. Should the actuator be removed, the base can be left on the valve to maintain its position. All base dimensions and couplings conform to attachment standards ISO 5210 or MSS SP 102.



CK actuators plus Rotork second stage gearboxes

Field service

Rotork understands the value of prompt and reliable support for actuators in the field. We cater for installation, commissioning, servicing or emergencies.

With over 1,000 service technicians employed by Rotork, we have the necessary worldwide infrastructure to fully support our customer's needs. Original OEM parts are used to ensure the continued reliability of our actuators in the field. A full 12 month warranty is provided for all the work performed by our service network.

- Installation and commissioning of actuators to ensure correct configuration for the application
- Actuator upgrades including addition of new modules and fieldbus options
- System commissioning to ensure actuators function and integrate correctly with site control systems
- Detailed inspection, maintenance and service of actuators
- Emergency call-out service
- Preventive maintenance programmes and service contracts available
- Rotork field technicians are factory trained and experienced in all industry applications

Pakscan™
PROFI
BUS



Modbus®
HART
COMMUNICATION PROTOCOL



CK range selection chart

| | | | | |
|-------------|--|--|--|---|
| CK | Standard isolating duty | Motor, switch mechanism and drivetrain | | |
| CKR | Standard regulating / modulating duty | | | |
| CKA | Atronik isolating duty | Motor, switch mechanism and drivetrain | Integral starter and electrical protection | |
| CKRA | Atronik regulating / modulating duty | | | |
| CKC | Centronik isolating duty | Motor, switch mechanism and drivetrain | Integral starter and electrical protection | Intelligent display, asset management and datalogging |
| CKRC | Centronik regulating / modulating duty | | | |

CK range performance summary

| Size | Torque | | Speed | Power supply | Duty |
|-------------|----------|---------|----------|--------------|------------|
| | Nm | lbf.ft | rpm | | |
| CK 30 - 500 | 12 - 500 | 9 - 369 | 9 - 230 | 3-phase AC | Isolating |
| CK 30 - 250 | 12 - 250 | 9 - 184 | 18 - 230 | 1-phase AC | Isolating |
| CK 30 - 500 | 12 - 500 | 9 - 369 | 9 - 115 | 3-phase AC | Modulating |

Please refer to PUB111-001 for full performance information.

Actuator fixings

| Frame Size | Unit | CK 30 & CK 60 | CK 120 | CK 250 & CK 500 | | |
|--------------------------|-----------------------------|---------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Type 'A' coupling | Flange size (ISO5210) | - | F07 | F10 | F14 | |
| | Flange size (MSS SP -102) | - | FA07 | FA10 | FA14 | |
| | Stem acceptance rising* | mm (in) | 26 (1) | 34 (1 ¹ / ₃) | 40 (1 ⁵ / ₈) | 57 (2 ¹ / ₄) |
| | Maximum axial thrust | kN (lbf) | 40 (8,992) | 40 (8,992) | 70 (15,737) | 160 (35,969) |
| | Stem acceptance non-rising* | mm (in) | 20 (3/4) | 26 (1) | 32 (1 ¹ / ₄) | 45 (1 ³ / ₄) |
| Type 'B' coupling | Type 'B1' (Fixed bore) | mm (in) | 28 (1 ¹ / ₈) | 42 (1 ⁵ / ₈) | 42 (1 ⁵ / ₈) | 60 (2 ³ / ₈) |
| | Type 'B3' (Fixed bore) | mm (in) | 16 (5/8) | 20 (3/4) | 20 (3/4) | 30 (1 ¹ / ₈) |
| | Type 'B4' (Blank)* | mm (in) | 20 (3/4) | 30 (1 ¹ / ₈) | 30 (1 ¹ / ₈) | 45 (1 ³ / ₄) |

* This coupling type requires machining to match the valve or gearbox stem. Dimensions given for this coupling are maximum values.

Supply voltages

| Single-phase supply | | | | | | | | | | |
|---------------------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Duty | Isolating | | | | | | | | | |
| 50 Hz | 110 | 115 | 115 | 220 | 230 | 240 | 240 | 240 | 240 | 240 |
| 60 Hz | 110 | 115 | 115 | 220 | 230 | 240 | 240 | 240 | 240 | 240 |

| Three-phase supply | | | | | | | | | | |
|--------------------|--------------------------|-----|-----|-----|-----|-----|-----|-----|-----------|-----|
| Duty | Isolating and modulating | | | | | | | | Isolating | |
| 50 Hz | 220 | 240 | 380 | 400 | 415 | 440 | - | - | 500 | - |
| 60 Hz | 220 | 240 | 380 | - | - | 440 | 460 | 480 | - | 600 |

Note: Voltage tolerance ± 10%. Frequency tolerance ± 5%. Maximum volt drop - 15%.

For a full catalogue please visit www.rotork.com or contact our office listed below.

A full listing of the Rotork sales and service network is available on our website.

www.rotork.com

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rotork®

Electric Actuators and Control Systems
Fluid Power Actuators and Control Systems
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