

Technical Data

The following pages contain performance and specification details for the Rotork CK range of actuators.

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Motor duty ratings

Isolating and modulating duties subject the actuator to different operating loads and mechanical wear trends. For this reason CK range includes CK Standard for isolating duty and CKR for modulating duty applications. Atronik or Centronik controls can be added to either actuator type to create CKA, CKRA, CKc and CKRC.

Motor duty ratings are in compliance with EN 15714-2 and IEC 60034-1 for all CK range actuators. Further information about actuator outputs and duty cycles is available in the motor classification section on page 39.

Isolating duty actuator model designations to EN 15714-2 Class A & B

- CK 30 – CK 500
- CKA 30 - CKA 500
- CKc 30 – CKc 500

Modulating duty actuator model designations to EN 15714-2 Class C

- CKR 30 – CKR 500
- CKRA 30 - CKRA 250
- CKRC 30 – CKRC 500

Operating environments

Rotork actuators are designed for use worldwide in non-hazardous water, power and industrial applications. Focus on making the CK range resistant to the most adverse environments has resulted in exceptional IP68 (8 m / 96 hrs) protection. A good level of environmental protection, wide operating temperature range and extended service intervals provide a versatile actuator suitable for most applications.

Colour

The standard colour is a pale blue - RAL5024. Other colours are available on request, please contact Rotork for more information.

Enclosure protection IP68

Rotork CK range actuators are supplied as standard with IP68 enclosure protection in compliance with EN 60529. The IP68 rating provides protection up to 8 metres submersion for a maximum of 96 hours. Up to 10 operations can be performed whilst the actuator is submerged at the maximum immersion depth. Adequate cable glands must be used to maintain the IP68 integrity of the CK range actuator enclosure. Glands are not supplied as standard with CK actuators. In order to maintain IP68 enclosure integrity during service down time periods, an optional CK socket field parking housing can be used to cover unmated module faces.

Lubrication

CK range actuators are factory filled for life with premium quality gear oil selected for the application. Standard oil is automotive grade, easily available worldwide. Oil lubrication out-performs grease over a wide temperature range and allows installation in any orientation. It has none of the problems associated with grease such as separation at elevated temperatures and "tunneling" at lower temperatures, where grease is thrown away from rotating components creating a void or tunnel in the grease around components that require lubrication. Standard oil is automotive grade SAE80EP. Low temperature oil is MOBIL SHC624. Food grade oil is Hydra Lube GB Heavy.

Corrosion protection

Corrosion protection is a vital part of a reliable actuation solution to ensure a long service life is achieved for the product. All CK range actuator finishes are tested in accordance with Rotork 1,000 hour cyclic salt spray test procedure which is the most realistic and arduous test cycle applicable. The test combines cyclic salt spray, drying and humidity at elevated temperatures on complete factory built actuators. This procedure is designed to test the finish coatings and the various substrate materials, fixings and interfaces on an actuator. Substrate materials and finishes are selected to provide maximum corrosion resistance combined with good adhesion.

Corrosivity category	CK paint solution	Exterior environment	Interior environment
C1	Standard RAL5024 powder coat (P1)	N/A	Heated buildings with clean atmospheres e.g. offices, shops, schools and hotels.
C2		Atmospheres with low levels of pollution, e.g. rural areas.	Unheated buildings where condensation may occur, e.g. depots and sports halls.
C3		Urban and industrial atmospheres, moderate SO2 pollution, e.g. city centres and coastal areas with low salinity.	Production rooms with high humidity and some air pollution, e.g. food processing plants, laundries, breweries and dairies.
C4	Standard RAL5024 powder coat plus offshore coating on ferrous materials (P2)	Industrial and coastal areas with moderate salinity, e.g. coastal ship and boatyards.	Areas with permanently aggressive atmospheres, e.g. chemical plants and swimming pools.
C5-M (Marine)		Coastal and offshore areas with high salinity, e.g. offshore rigs and boats.	Areas with extremely aggressive atmospheres containing high humidity, salinity and pollutant concentration, e.g. cooling towers and boats.
C5-I (Industrial)	Full offshore coating on all materials (PX)	Industrial areas with high humidity and aggressive atmospheres, e.g. water treatment plants and power stations.	Areas with extremely aggressive atmospheres containing high humidity and high pollutants, e.g. chemical plants and boiler houses.

The above table details paint protection levels based on high durability (>15 years) as per ISO12944-2.

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Ambient temperatures

CK range actuators can accommodate a variety of operating temperature requirements that will ensure successful actuation in the harshest non-hazardous environments. The optional low temperature CK build involves replacement seals, lubrication and bearings. Values shown in the below table apply to all variants of CK range actuators including Atronik and Centronik control modules.

Type	Version	Temperature range	
		Operating temperature	Storage temperature
Multi-turn isolating duty 3-phase CK actuators	Standard	-30 to +70 °C (-22 to +158 °F)	-40 to +80 °C (-40 to +176 °F)
	Optional	-40 to +60 °C (-40 to +140 °F)	-60 to +80 °C (-76 to +176 °F)
Multi-turn isolating duty 1-phase CK actuators	Standard	-25 to +70 °C (-13 to +158 °F)	-40 to +80 °C (-40 to +176 °F)
Multi-turn modulating duty 3-phase CK actuators	Standard	-30 to +70 °C (-22 to +158 °F)	-40 to +80 °C (-40 to +176 °F)
	Optional	-40 to +60 °C (-40 to +140 °F)	-60 to +80 °C (-76 to +176 °F)

Actuator Fixings

Frame Size		Unit	CK 30 & CK 60		CK 120	CK 250 & CK 500
Type 'A' Coupling	Flange size (ISO5210)	-	F07	F10	F10	F14
	Flange size (MSS SP -102)	-	FA07	FA10	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.

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Multi-turn CK range actuator performance

Isolating duty CK, CKA & CKc – 3-phase

The following data is valid for actuators with 3-phase AC motors operated with a Class A & B (EN15714-2) / S2 – 15 minutes (IEC60034-1) duty rating. For further details of the actuator electrical specification, refer to the applicable CK electrical data sheet.

Size	Torque				RPM (at 50 Hz)	RPM (at 60 Hz)	Hand Wheel Ratio	Actuator Output Flange	
	Maximum		Operational					ISO 5210	MSS SP-102
	Nm	lbf.ft	Nm	lbf.ft					
CK 30	30	22	10	7	9, 12, 18, 24, 36, 48, 72, 96, 144	11, 14, 21, 29, 43, 57, 86, 115, 173	10:1	F07/F10	FA07/FA10
	25	18			192	230			
CK 60	60	44	20	15	9, 12, 18, 24, 36, 48, 72, 96, 144	11, 14, 21, 29, 43, 57, 86, 115, 173	10:1	F07/F10	FA07/FA10
	50	37			192	230			
CK 120	120	89	40	30	9, 12, 18, 24, 36, 48, 72, 96, 144	11, 14, 21, 29, 43, 57, 86, 115, 173	10:1	F10	FA10
	100	74			192	230			
CK 250	250	184	83	61	9, 12, 18, 24, 36, 48, 72, 96, 144	11, 14, 21, 29, 43, 57, 86, 115, 173	10:1	F14	FA14
	200	148			192	230			
CK 500	500	369	167	123	9, 12, 18, 24, 36, 48, 72, 96*, 144*	11, 14, 21, 29, 43, 57, 86, 115*, 173*	20:1	F14	FA14
	400	295			192*	230*			

Note: Torque rating is maximum torque setting in both directions. Stall torque will be an average of 1.4 to 2.0 times this value depending on speed and voltage.

Note: Due to the effects of inertia and drive nut wear, 144 & 192 RPM speeds are not recommended for direct mounted gate valve applications.

* CK and CKc actuators only.

Isolating duty CK, CKA & CKc – 1-phase

The following data is valid for actuators with 1-phase AC motors operated with a Class A & B (EN15714-2) / S2 – 15 minutes (IEC 60034-1) duty rating. For further details of the actuator electrical specification, refer to the applicable CK electrical data sheet.

Size	Torque				RPM (at 50 Hz)	RPM (at 60 Hz)	Hand Wheel Ratio	Actuator Output Flange	
	Maximum		Operational					ISO 5210	MSS SP-102
	Nm	lbf.ft	Nm	lbf.ft					
CK 30	30	22	10	7	18, 24, 36, 48, 72, 96, 144	21, 29, 43, 57, 86, 115, 173	10:1	F07/F10	FA07/FA10
	25	18			192	230			
CK 60	60	44	20	15	18, 24, 36, 48, 72, 96, 144	21, 29, 43, 57, 86, 115, 173	10:1	F07/F10	FA07/FA10
	50	37			192	230			
CK 120	120	89	40	30	18, 24, 36, 48, 72, 96, 144*	21, 29, 43, 57, 86, 115, 173*	10:1	F10	FA10
	100	74			192*	230*			
CK 250	250	184	83	61	18, 24, 36, 48	21, 29, 43, 57	10:1	F14	FA14

* 110V and 115V is not available for this actuator size and speed combination.

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Regulating / Modulating duty CKR, CKRA & CKRC – 3-phase 25%

The following data table is valid for actuators with 3-phase AC motors operated with a Class C (EN15714-2) / S4 – 25% (IEC 60034-1) duty rating. For further details of the actuator electrical specification, refer to the applicable CK electrical data sheet.

Size	Torque				Max. Starts	RPM (at 50 Hz)	RPM (at 60 Hz)	Hand Wheel Ratio	Actuator Output Flange	
	Maximum		Modulating						ISO 5210	MSS SP-102
	Nm	lbf.ft	Nm	lbf.ft						
CKr 30	30	22	15	11	600	9, 12, 18, 24, 36, 48, 72, 96	11, 14, 21, 29, 43, 57, 86, 115	10:1	F07/F10	FA07/FA10
CKr 60	60	44	30	22	600	9, 12, 18, 24, 36, 48, 72, 96	11, 14, 21, 29, 43, 57, 86, 115	10:1	F07/F10	FA07/FA10
CKr 120	120	89	60	44	600	9, 12, 18, 24, 36, 48, 72, 96	11, 14, 21, 29, 43, 57, 86, 115	10:1	F10	FA10
CKr 250*	250	184	120	89	600	9, 12	11, 14	10:1	F14	FA14
					600	18, 24	21, 29			
					600	36, 48	43, 57			
					400	72, 96	86, 115			
CKr 500*	500	369	200	148	600	9, 12	11, 14	20:1	F14	FA14
					600	18, 24	21, 29			
					600	36, 48	43, 57			
					400	72, 96	89, 115			

* CKRA 250 is only available from 9 - 14 rpm. CKRA 500 is not available.

Regulating / Modulating duty CKR & CKRC – 3-phase 50%

The following data table is valid for actuators with 3-phase AC motors operated with a Class C (EN15714-2) / S4 – 50% (IEC 60034-1) duty rating. For further details of the actuator electrical specification, refer to the applicable CK electrical data sheet.

Size	Torque				Max. Starts	RPM (at 50 Hz)	RPM (at 60 Hz)	Hand Wheel Ratio	Actuator Output Flange	
	Maximum		Modulating						ISO 5210	MSS SP-102
	Nm	lbf.ft	Nm	lbf.ft						
CKr 30	30	22	10	7	1200	9, 12, 18, 24, 36, 48, 72, 96	11, 14, 21, 29, 43, 57, 86, 115	10:1	F07/F10	FA07/FA10
CKr 60	60	44	20	15	1200	9, 12, 18, 24, 36, 48, 72, 96	11, 14, 21, 29, 43, 57, 86, 115	10:1	F07/F10	FA07/FA10
CKr 120	120	89	45	33	1200	9, 12, 18, 24, 36, 48, 72, 96	11, 14, 21, 29, 43, 57, 86, 115	10:1	F10	FA10
CKr 250	250	184	90	66	1200	9, 12	11, 14	10:1	F14	FA14
					900	18, 24	21, 29			
					600	36, 48	43, 57			
					400	72, 96	86, 115			
CKr 500	500	369	180	133	1200	9, 12	11, 14	20:1	F14	FA14
					900	18, 24	21, 29			
					600	36, 48	43, 57			
					400	72, 96	89, 115			

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Supply voltages / mains frequencies

Compatible power supplies for CK range actuators are shown below. Not all actuator versions or sizes are available with all motor types or voltages/frequencies. For detailed information please refer to the separate electrical data sheets.

3-phase AC Isolating Duty

Voltages	Frequency
[V]	[Hz]
220, 240, 380, 400, 415, 440, 500	50
220, 240, 380, 440, 460, 480, 600	60

1-phase AC Isolating Duty

Voltages	Frequency
[V]	[Hz]
110, 115, 220, 230, 240	50
110, 115, 220, 230, 240	60

3-phase AC Modulating Duty

Voltages	Frequency
[V]	[Hz]
220, 240, 380, 400, 415, 440	50
220, 240, 380, 440, 460, 480	60

Permissible power supply tolerances for voltage and frequency

For all CK range actuators:

- Voltage tolerance $\pm 10\%$
- Frequency $\pm 5\%$
- Maximum starting Volt drop - 15%

Vibration resistance

According to EN 60068-2-6

Type	Level
Plant induced vibration	2g RMS total for all vibration within the frequency range 10 to 1,000 Hz
Shock	5g peak acceleration
Seismic	2g over a frequency range of 1 to 50 Hz if it is to operate during and after the event
	5g over a frequency range of 1 to 50 Hz if it is only required to maintain structural integrity

Noise level

The noise level originated by the multi-turn CK actuator range does not exceed 70 dB(A) at a distance of 1 m under normal operating conditions.



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Design life

According to EN15714-2:2009

An actuator start is any operation that requires the motor to start movement in either direction. If the motor is already moving and a command to operate in the same direction is applied this will not count as a start.

Actuators for isolating duty

Type	Design life rating
CK, CKa, CKc	500,000 output turns, seating at rated torque, 33% rated torque through stroke

Actuators for modulating duty – 25%

Type	Design life rating
CKR, CKRa, CKRc	1,200,000 starts* at a minimum of 50% rated torque, minimum 1% stroke movement

Actuators for modulating duty – 50%

Type	Design life rating
CKR, CKRc	1,200,000 to 1,800,000 starts* at a minimum of 30% rated torque, minimum 1% stroke movement

* Number of starts determined by actuator output torque as per EN15714-2: 2009.

Motor classification

Type of duty according to IEC 60034-1/EN 15714-2

Type	3-phase AC	1-phase AC
CK 30 – CK 500	S2 – 15 min, S2 – 30 min / Classes A, B	S2 – 15 min / Classes A, B
CKa 30 – CKa 500	S2 – 15 min, S2 – 30 min / Classes A, B	S2 – 15 min / Classes A, B
CKc 30 – CKc 500	S2 – 15 min, S2 – 30 min / Classes A, B	S2 – 15 min / Classes A, B
CKR 30 – CKR 500*	S4 – 25%, S4 – 50% / Class C	–
CKRa 30 – CKRa 250*	S4 – 25% / Class C	–
CKRc 30 – CKRc 500*	S4 – 25%, S4 – 50% / Class C	–

Information on motor duty type is subject to the following conditions: nominal supply voltage, +40 °C (+104 °F) ambient temperature and average load of 33% rated torque.

* High speed CKR, CKRa & CKRc actuators have a reduced duty cycle to reduce wear on the actuator drive train. Please refer to the multi-turn CK range actuator performance data for details of duty cycle restrictions.

Rated values for motor protection

As standard, thermo switches are used for motor protection against excessive heat rise. When an Atronik or Centronik control module is equipped, the motor protection signals are processed internally to initiate an alarm status within the actuator. This will prevent further operation until the thermo switch has reset within the correct operating band. Signals in the CK and CKR must be analysed with external controls.

Mounting position

CK range actuators (with or without control module) can be operated without restriction in any mounting orientation.

Switch mechanism control

Valve travel limit span

	Possible valve travel (turns)	
	Mechanical switch mechanism	Digital switch mechanism
Standard	1,500	8,000
Optional	15,000	–

Mechanical switch mechanism

The mechanical switch mechanism is internally wired to accommodate an external control system. The terminals used for various functions are specified in the actuator wiring diagram and terminal plan. All connections are via the Rotork plug and socket system for simple actuator site integration. Mechanical switch mechanism is compatible with Atronik and Centronik control modules.

Digital switch mechanism – CKc & CKRc only

The digital switch mechanism is designed to measure position and torque with encoder technology. The position and torque values are then transmitted via CAN bus to the attached Centronik control module for further processing. Position and torque limit switches are digitally set through the integral Centronik software. Digital switch mechanism is only compatible with Centronik control modules.

Mechanical Switch Mechanism (MSM)

Position and torque limit switches

Selection	Description	Contact type
Standard – 4 switches	2 position switches - 1 for each direction 2 torque switches - 1 for each direction	Each 4-wire switch has a NO and NC contact, sealed to IP67
Optional – 6 switches	4 position switches - 2 for each direction (standard plus additional switches) 2 torque switches - 1 for each direction	Each 4-wire switch has a NO and NC contact, sealed to IP67
Optional – 6 switches	2 position switches - 1 for each direction 4 torque switches - 2 for each direction (standard plus additional switches)	Each 4-wire switch has a NO and NC contact, sealed to IP67
Optional – 8 switches	4 position switches - 2 for each direction (standard plus additional switches) 4 torque switches - 2 for each direction (standard plus additional switches)	Each 4-wire switch has a NO and NC contact, sealed to IP67

Electrical rating				Switch details		
Switch voltage	30 V	125 V	250 V	Functionality	Contact type	Contact material
AC inductive load (cos Ø > 0.8)	5 A	5 A	5 A	4 wire - Lever action	2 snap action contacts	Silver
DC resistive load	0.5 A	0.5 A	0.5 A			

Blinker contact for movement indication

Electrical rating				Blinker transmitter details		
Switch voltage	30 V	125 V	250 V	Functionality	Contact type	Contact material
AC inductive load (cos Ø > 0.8)	5 A	5 A	5 A	2 wire – Rotation of indented cam	1 snap action contact	Silver
DC resistive load	0.5 A	0.5 A	0.5 A			

Additional Indication Drive (AID)

Intermediate position switches

Electrical rating				Switch details		
Switch voltage	30 V	125 V	250 V	Functionality	Contact type	Contact material
AC inductive load (cos Ø > 0.8)	5 A	5 A	5 A	2 wire – Lever action	1 snap action contact	Silver
DC resistive load	0.5 A	0.5 A	0.5 A			

Intermediate position indication

Precision potentiometer	
Linearity	≤ 2 %
Power	0.5 W
Resistance (standard)	5 kΩ
Resistance (optional)	1 kΩ, 10 kΩ

Electronic remote position transmitter (CPT)	
Connection	3/4 wire
Signal range	4-20 mA
Power supply	24 VDC, ±15 % smoothed

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Digital Switch Mechanism (DSM)

Operating features	
Position measurement	Multiple gear assembly (1 driving gear and 3 measurement gears) sensing position using hall effect sensor technology
Torque measurement	Single direct drive gear assembly sensing torque using hall effect sensor technology

Wiring connections

Plug and socket

Rotork Plug & Socket connector			
Detail	Motor contacts	Protective earth	Control contacts
Max. no. of contacts	3	1	52
Designation	1, 2, 3	PE	4-56
Max. rated current	20 A	-	5 A
Customer connection type	Screw	Ring Tag	Screw
Max. cross section	6 mm ²	M4 Ring Tag	2.5 mm ²
Pin socket carrier material	Polyamide	Polyamide	Polyamide
Contact material	Brass	Brass	Brass – Tin Plated

Conduit entries

Terminal housing conduit entry thread details	
Metric threads (standard)	1 x M20 x 1.5p, 1 x M25 x 1.5p, 1 x M32 x 1.5p
NPT – threads (option)	2 x ¾" NPT, 1 x 1¼" NPT

Optional terminal housing conduit entry thread details	
Metric threads	1 x M20 x 1.5p, 2 x M25 x 1.5p, 1 x M32 x 1.5p
NPT – threads	1 x ¾" NPT, 2 x 1" NPT, 1 x 1¼" NPT
Blank casting	Subject to third party machining

Disconnect module terminal housing conduit entry thread details	
Metric threads	2 x M25 x 1.5p, 4 x M20 x 1.5p
NPT – threads	2 x 1" NPT, 4 x ¾" NPT

Atronik control module

Electrical features	
Digital input signals	
Standard	24 VDC; OPEN, STOP/MAINTAIN, CLOSE, ESD
Intermediate position set point control	
Optional analogue input	4-20 mA , 0-5 V, 0-10 V
Output signals	
Standard monitor relay	1 potential free change over contact, maximum 24 VDC, 2 A / 250 VAC, 0.5 A
Standard S1-S2 relays	2 output contacts with user defined trigger conditions, potential free contacts, normally open (N/O) contact form, maximum 24 VDC, 2 A / 250 VAC, 0.5 A
Optional S3-S6 relays	4 additional output contacts with user defined trigger conditions, potential free contacts, normally open (N/O) contact form, maximum 24 VDC, 2 A / 250 VAC, 0.5 A
Intermediate position feedback	
Optional analogue output	4-20 mA
Local controls	
Standard local controls	Lockable local selector switch: LOCAL, STOP, REMOTE Operation switch: OPEN, CLOSE
Optional vandal resist	Physical lockable cover - preventing access to controls and indication.

Centronik control module

Electrical features	
Digital input signals	
Standard	24 VDC; OPEN, STOP/MAINTAIN, CLOSE, ESD, OPEN INTERLOCK, CLOSE INTERLOCK
Option	115 VAC; OPEN, STOP/MAINTAIN, CLOSE, ESD, OPEN INTERLOCK, CLOSE INTERLOCK
Intermediate position set point control	
Optional analogue input	4-20 mA, 0-5 V, 0-10 V, 0-20 V
Output signals	
Standard monitor relay	1 potential free change over contact, maximum 30 VDC / 150 VAC, 5 A
Standard S1-S4 relays	4 output contacts with user defined trigger conditions, potential free contacts, configurable contact form, maximum 30 VDC / 150 VAC, 5 A
Optional S5-S8 relays	4 additional output contacts with user defined trigger conditions, potential free contacts, configurable contact form, maximum 30 VDC / 150 VAC, 5 A
Intermediate position feedback	
Optional analogue output	4-20 mA
Intermediate torque feedback	
Optional analogue output	4-20 mA (requires DSM)
Local controls	
Standard local controls	Lockable local selector switch: LOCAL, STOP, REMOTE Operation/Navigation switch: OPEN/+, CLOSE/-
Optional vandal resist	Software setting (fixed LOCAL or REMOTE) - selector position ignored. Physical lockable cover - preventing access to controls and display.
Back up supply	
Auxiliary power supply option	Maintain power to Centronik control module on loss of main power supply. Nominal 24 VDC, 1 A (switching inrush 8 A max). 3 mA draw with mains power, 100 mA draw without mains power. Customer supply is not available whilst the Centronik is powered by the auxiliary source.
Speed control	
Interrupter Timer	Timer feature to pulse movement over a portion of travel - configurable travel, direction, on and off pulse duration.

Approvals

CK range electric actuators have been designed to meet the following approval procedures:

BS and DIN standards

CK range actuators comply with BS EN 15714-2, Industrial valves - Actuators - Part 2: Electric actuators for industrial valves - Basic requirements.

LVD compliance

CK range actuators comply with 2006/95/EC, safety requirements for electrical equipment for measurement, control and laboratory use: General requirements, to demonstrate compliance with this directive.

The following installation assumptions are used to derive the requirements:

- Pollution Degree 2
- Category II Overvoltage Installation Locations
- Actuator installed up to 2,000 metres

EMC compliance

CK range actuators comply with 2004/108/EC, Electrical equipment for measurement, control and laboratory use.

Machinery directive

CK range actuators are supplied with a declaration of incorporation for Machinery directive 2006/42/EC. According to the LVD and EMC directives, the actuators are labelled with the CE mark:



CSA

CK range actuators are approved by CSA. Refer to certificate 70021797.

Manual handwheel operation

Handwheel size and mechanical advantage are generally designed in accordance with standard EN 12570 to give the most efficient compromise of force and turns for emergency operation. Handwheels and adaptations can be provided to meet AWWA specifications.

Actuator drive couplings

The CK range features a removable base and coupling for all sizes. All base dimensions and couplings comply with EN ISO 5210 or MSS SP 102.

NAMUR 107 compatibility

CK actuators equipped with the Centronik module provide feedback for alarm statuses in accordance with NAMUR 107 guidelines.



Failure – the actuator has experienced a failure condition and may not respond to remote control commands.



Function check – the actuator settings are being adjusted and is therefore unavailable for operation.



Out of specification – the actuator will recognise a process condition that does not match the configured setting value. Operation can commence during this alarm state.



Maintenance required – the actuator must be examined by a service technician to evaluate maintenance requirements. Operation can commence during this alarm state.



Functions

CK and CK_R actuators may require additional external wiring to achieve functions listed below.

Actuator model	CK & CK _R	CKA & CK _{RA}	CKc & CK _{Rc}
Control module	None	Atronik	Centronik
Protection features			
Automatic phase rotation correction		Standard	Standard
Valve overload torque protection	Standard – wiring	Standard	Standard
Control circuit current protection		Standard	Standard
Motor thermal protection	Standard – wiring	Standard	Standard
Heater	Standard	Standard	Standard
Control functions			
Manual operation	Standard	Standard	Standard
Configurable seating action	Standard – wiring	Standard – switch	Standard – software
Positioner (analogue control)		Option	Option
Loss of signal action		Option	Option
Stop at intermediate position	Option	Standard	Standard
Interrupter Timer			Option
Configurable ESD action		Standard	Standard
Torque limit by-pass	Standard – wiring	Standard – switch	Standard – software
Network interface control		Option	Option
Monitoring functions			
Phase failure detection		Standard	Standard
Phase sequence detection		Standard	Standard
Manual operation detection		Standard	Standard
Motion detection	Standard	Standard	Standard
Network interface feedback		Option	Option
Signal loss detection		Option	Option
Local position limit feedback	Option	Standard	Standard
Local intermediate position feedback	Option	Standard	Standard
Remote position limit feedback	Standard	Standard	Standard
Remote intermediate position feedback	Option	Option	Option
NAMUR NE107 status categories			Standard
Data logging and analysis			
Attribute event recording			Standard
Time-stamped event recording			Option
Asset management information			Standard
Asset management analysis data			Option
Electronic Bluetooth device ID			Option

Client Support and Site Services



Rotork actuators are recognised as the best in the world for reliability and safety in the most demanding applications. To maintain this hard-earned leadership position, Rotork is committed to helping clients to maximise the continuous, fault-free operation and working life of all their actuators.

With established operations and worldwide service centres we are able to offer same-day or next-day service to all our customers. Our Rotork factory trained engineers have skills in both multi-purpose and industry specific applications and carry with them spare parts and specialist test equipment. Our operations utilise a documented Quality Management system established in accordance with ISO9001.

Rotork aims to be your number one choice for taking care of fault diagnosis, service repairs, scheduled maintenance and system integration needs.

Rotork has expertise and specialist knowledge of every aspect of flow control.

Our service solutions increase plant efficiency and reduce maintenance costs.

Workshop services return equipment to as-new condition.

