rotork®

Keeping the World Flowing
for Future Generations

ELC Range

Electric linear control valve actuators

User-friendly, cost-effective and reliable electric valve actuators for precision process control.

Rotork Group

Rotork is a market-leading global provider of mission-critical flow control and instrumentation solutions for the industrial actuation and flow control markets. These include oil and gas, water and wastewater, power, chemical, process and industrial applications.

Customers rely on us for innovative, high quality and dependable solutions for managing the flow of liquids, gases and powders. We help customers around the world to improve efficiency, reduce emissions, minimise their environmental impact and assure safety.

Our reliability record is second to none. Our products are designed with safety and performance at their core and are put through vigorous testing and certified to international standards. Our products are certified for use in the world's most dangerous and hazardous areas.

Partnering with us provides the following:

- Assured safety and reliability
- Industry leading accuracy and efficiency
- Proven technology that works with all network control systems
- Product range with solutions to suit every application
- Assistance with plant planning, development and maintenance through our local support services
- We have innovative research and development centers throughout the world

Contents

Compact, lightweight and cost-effective
Rotork solution to suit your application

- Proven reliable design
- Microprocessor-controlled with automatic self-calibration on startup
- Input and output signals are independently reversible
- Input signal freely adjustable 3-point or analogue
- Manual override for emergency operation
- Wear-free position measuring system
- Adjustable deadband
- Wire break recognition in 2-10 VDC and 4-20 mA operation
- Cover-mountable in 4 positions, 90°, no screws required
- Fault recognition in continuous operation (in case of valve blockage)
- Backed by Rotork Service

As one of the world's leading manufacturers of actuation products, Rotork has built up an enviable reputation as the supplier of reliable and durable equipment.

With over 60 years of valve automation experience, Rotork has evolved a design of uncompromising reliability. The ELC range of actuators are designed to provide a user-friendly and reliable Rotork solution for small linear valves.

Performance Data

230 VAC

Type		ELC 55	ELC 55Y	ELC 100	ELC 160	ELC 220
Actuating time [1]	s/mm	9 · 5*	N/A	12 · 9* · 4 · 1.9	6 · 4*	3
Actuating thrust	kN	0.6		1	1.6	2.2
Stroke	mm	max. 20		max. 20	max. 30	max. 30
Power supply	VAC	230 ±10%		230 ±10%		
Frequency	Hz	50/60 ±5%		50/60 ±5%		
Power consumption	VA	7		12	12	12
Input signal [2]		3-point - -		3-point 0(2)...10 VDC 77 kOhm 0(4)...20 mA 0.51 kOhm		
Output signal [2]		0...10 VDC max. 8 mA min. 1200 Ohm		0...10 VDC max. 8 mA min. 1200 Ohm		
Hysterisis [3]	V	0.3		0.15 · 0.5	0.05 · 0.15 · 0.3 · 0.5	
Enclosure protection		IP54 in automatic mode IP30 in manual operation		IP54		
Resolution electric	VDC	0.04		0.04		
Resolution mechanical	mm	0.06		0.095	0.05	0.05
Operating mode		S3 ED 50% 1200 s/h		S3 ED 50% 1200 s/h		S3 ED 30% 1200 s/h
End position switch-off		Load-dependent		Load-dependent		
Ambient temperature		0 to +60 °C		0 to +60 °C		
Weight	kg	1.5		2.5	3.2	3.2

Type		ELC 500	ELC 500	ELC 1000	ELC 1500	ELC 2500
Actuating time [1]	s/mm	0.6 · 0.4*	5 · 3.5*	1	2	0.5
Actuating thrust	kN	4	5	10	15	25
Stroke	mm	max. 60	max. 60	max. 80	max. 80	max. 100
Power supply	VAC	230 ±10%				230 +6% -10%
Frequency	Hz	50/60 ±5%				
Power consumption	VA	63	25	63	63	max. 500 VA, power rating 250 VA, standby power consumption <10 VA
Input signal [2]		3-point 0(2)...10 VDC 77 kOhm 0(4)...20 mA 0.51 kOhm				
Output signal [2]		0...10 VDC max. 8 mA, min. 1200 Ohm				
Hysterisis [3]	V	0.05 · 0.15 · 0.3 · 0.5				
Enclosure protection		IP54				IP65
Resolution electric	VDC	0.04				0.01
Resolution mechanical	mm	0.12	0.04	0.05	0.05	0.15
Operating mode		S3 ED 30% 1200 s/h	S3 ED 50% 1200 s/h	S3 ED 30% 1200 s/h		S3 ED 50% 1200 s/h
End position switch-off		Load-dependent				
Ambient temperature		0 to +60 °C				-10 to +60 °C
Weight	kg	9.5	8.6	11.5	11.5	24

Notes: 1. Actuating time freely adjustable, presetting is marked with *
2. Invertible input and output signal
3. Adjustable to pre-defined values

Performance Data

24 VAC/VDC

Type		ELC 55	ELC 55Y	ELC 100	ELC 160	ELC 220
Actuating time [1]	s/mm	9 · 5*	9 · 5*	12 · 9* · 4 · 1.9	6 · 4*	3
Actuating thrust	kN	0.6	0.6	1	1.6	2.2
Stroke	mm	max. 20	max. 20	max. 20	max. 30	max. 30
Power supply	VAC	24 ±10%				
Power supply [2]	VDC	24 ±10%				
Frequency	Hz	50/60 ±5%				
Power consumption	VA	7	3.5	6	6	18
Input signal [3]		3-point - -	- 0(2)...10 VDC 77 kOhm 0(4)...20 mA 0.51 kOhm	3-point 0(2)...10 VDC 77 kOhm 0(4)...20 mA 0.51 kOhm		
Output signal [3]		0...10 VDC max. 8 mA, min. 1200 Ohm				
Hysterisis [4]	V	0.3	0.3	0.15 · 0.5	0.05 · 0.15 · 0.3 · 0.5	
Enclosure protection		IP54 in automatic mode. IP30 in manual operation		IP54		
Resolution electric	VDC	0.04				
Resolution mechanical	mm	0.06	0.06	0.095	0.05	0.05
Operating mode		S3 ED 50% 1200 s/h				S3 ED 30% 1200 s/h
End position switch-off		Load-dependent				
Ambient temperature		0 to +60 °C				
Weight	kg	1.5	1.5	2.5	3.2	3.2

Type		ELC 400	ELC 500	ELC 1000	ELC 1500	ELC 2500
Actuating time [1]	s/mm	0.6 · 0.4*	5 · 3.5*	1	2	N/A
Actuating thrust	kN	4	5	10	15	
Stroke	mm	max. 60	max. 60	max. 80	max. 80	
Power supply	VAC	24 ±10%				
Power supply [2]	VDC	24 ±10%		-	-	
Frequency	Hz	50/60 ±5%				
Power consumption	VA	50	18	50	50	
Input signal [3]		3-point 0(2)...10 VDC 77 kOhm 0(4)...20 mA 0.51 kOhm				
Output signal [3]		0...10 VDC max. 8 mA, min. 1200 Ohm				
Hysterisis [4]	V	0.05 · 0.15 · 0.3 · 0.5				
Enclosure protection		IP54				
Resolution electric	VDC	0.04				
Resolution mechanical	mm	0.12	0.04	0.05	0.05	
Operating mode		S3 ED 30% 1200 s/h	S3 ED 50% 1200 s/h	S3 ED 30% 1200 s/h		
End position switch-off		Load-dependent				
Ambient temperature		0 to +60 °C				
Weight	kg	9.5	7.4	11.5	11.5	

Notes: 1. Actuating time freely adjustable, presetting is marked with *
2. Only rectified alternating voltage
3. Invertible input and output signal
4. Adjustable to pre-defined values

Optional extras	ELC 55	ELC 55Y	ELC 100	ELC 160	ELC 220	ELC 400	ELC 500	ELC 1000	ELC 1500	ELC 2500
2 switches (WE1/WE2) [1, 2]	-	-	x	x	x	x	x	x	x	x
Enclosure IP65	-	-	x	x	x	x	x	x	x	Std
Output signal X=0(4)_20 mA	-	-	x	x	x	x	x	x	x	x
115 VAC power supply	x	-	x	x	x	x	x	x	x	-
P10 firmware [3]	-	-	x	x	-	x	x	x	x	-

Notes: 1. Potential free infinitely adjustable; Rated load: 8A / 250 VAC, 8A / 30 VDC; Turn-on voltage: max. 400 VAC, max. 125 VDC.
2. Extra switches and 4_20 mA output signal not in combination.
3. The P10 firmware for ELC actuators has three behaviours upon power failure. In automatic mode, the last position is recognised after the power supply is restored. In the manual mode, if the stroke position is adjusted, the previous position is lost. Once the power is restored and if then, switched back to automatic mode, the actuator first moves to the reference point and re-initialises itself. If it is switched to automatic mode before the power is restored, the position and mode remain in the stroke position and the original calibration is lost.

ELC-SR – Spring-return Electric Actuator

- Mechanical spring-return function
- Hydraulically damped spring action
- Fail-close funtion in case of power failure (actuator stem extended)
- Available in two sizes: 1 kN and 2.5 kN

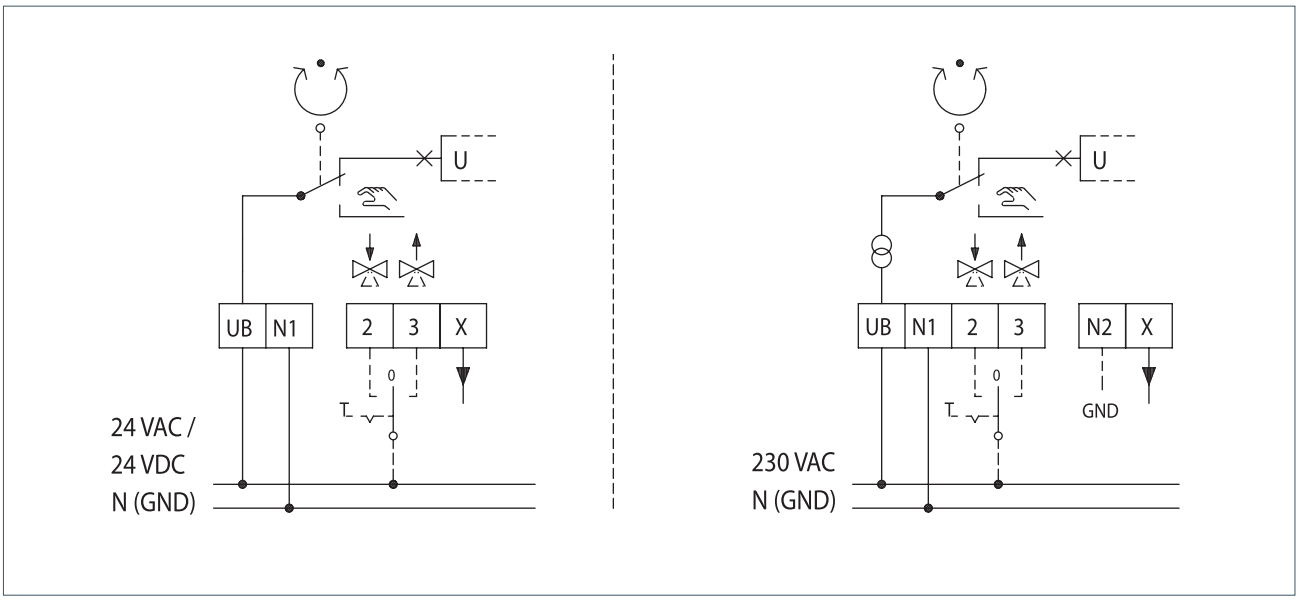
		230 VAC		24 V	
Type		**ELC 100SR**	**ELC 250SR**	**ELC 100SR**	**ELC 250SR**
Actuating time [1]	s/mm	6 · 4*	5 · 3.5*	6 · 4*	5 · 3.5*
Spring-return time	s/mm	approx. 0.1			
Actuating thrust	kN	1	2.5	1	2.5
Stroke	mm	max. 20	max. 40	max. 20	max. 40
Power supply	VAC	230 ±10%		24 ±10%	
Power supply [2]	VDC	-		24 ±10%	
Frequency	Hz	50/60 ±5%			
Power consumption	VA	20	80	25	50
Input signal [3]		3-point 0(2)...10 VDC 77 kOhm 0(4)...20 mA 0.51 kOhm			
Output signal [3]		0...10 VDC max. 8 mA min. 1200 Ohm			
Hysterisis [4]	V	0.05 · 0.15 · 0.3 · 0.5			
Enclosure protection		IP54			
Resolution electric	VDC	0.04			
Resolution mechanical	mm	0.05	0.04	0.05	0.04
Operating mode		S3 ED 50% 1200s/h			
End position switch-off		Load-dependent			
Ambient temperature		0 to 60°C			
Approx. weight	kg	5	13	5	13

Notes: 1. Actuating time freely adjustable, presetting is marked with *
2. Only rectified alternating voltage
3. Invertible input and output signal
4. Adjustable to pre-defined values

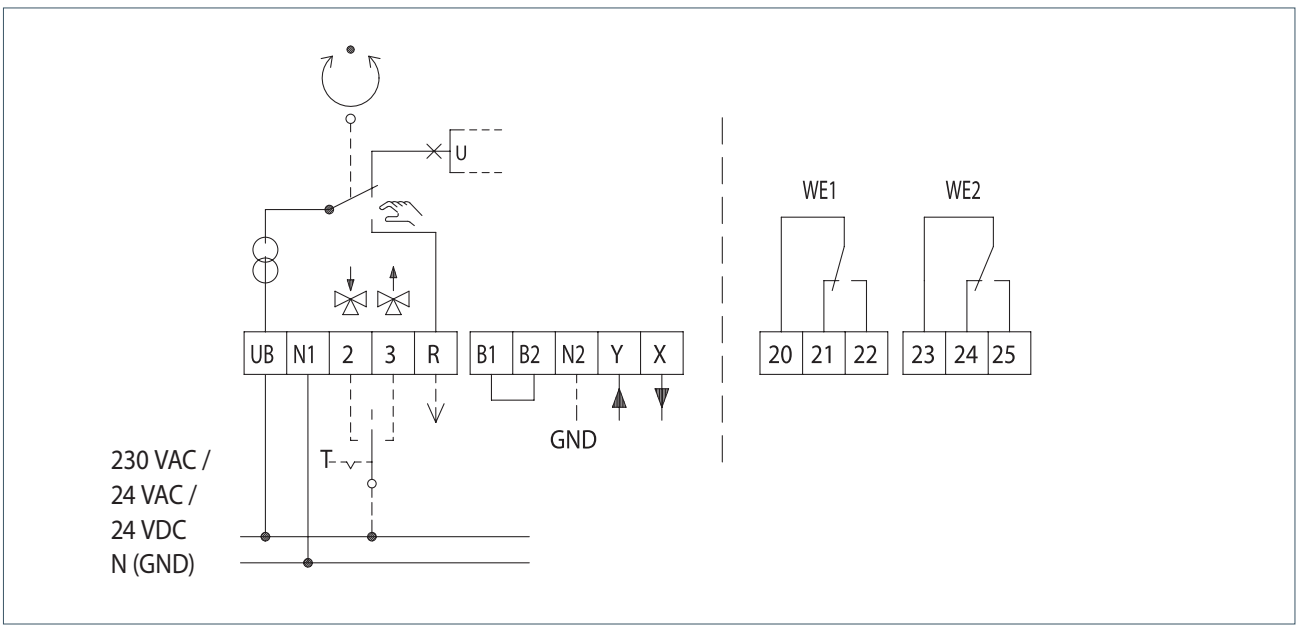
Optional extras	**ELC 100SR**	**ELC 250SR**
2 switches (WE1/WE2) [1, 2]	x	x
Enclosure IP65	-	-
Output signal X=0(4)_20 mA	x	x
115 VAC power supply	x	x

Notes: 1. Potential free infinitely adjustable; Rated load: 8A / 250 VAC, 8A / 30 VDC; Turn-on voltage: max. 400 VAC, max. 125 VDC
2. Extra switches and 4_20mA output signal not in combination on ELC100, ELC 160

ELC 55 wiring diagram



ELC 100 - 220 Wiring diagram

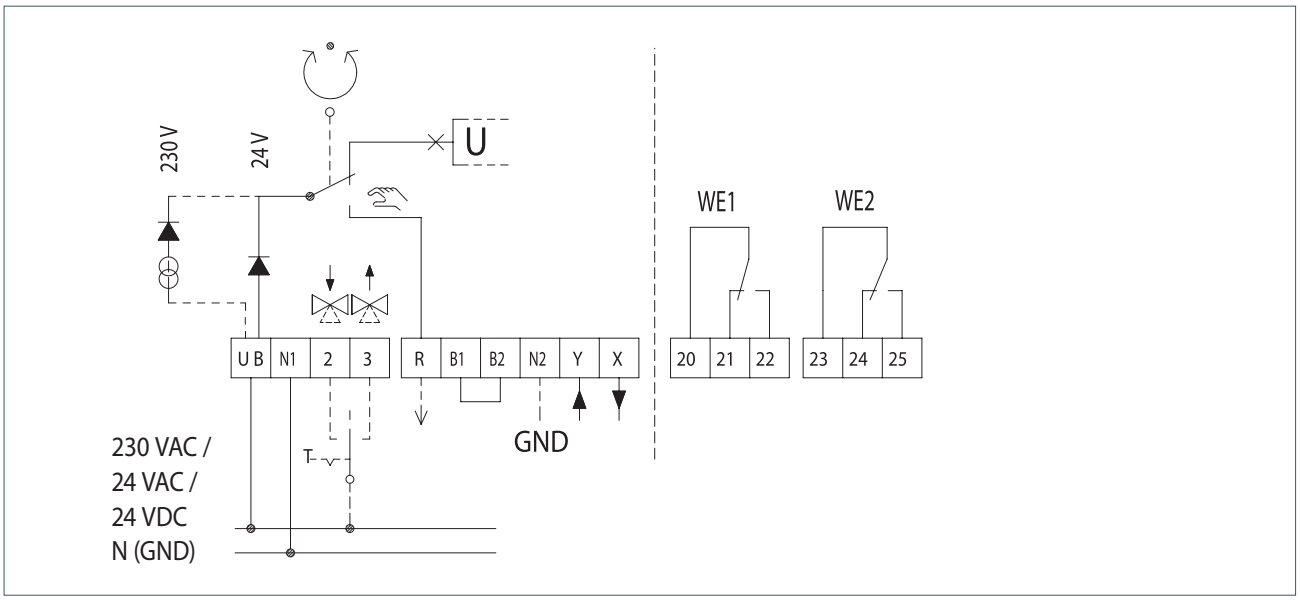


R Feedback signal in "Manual" mode of operation
R = 24 VAC max. 100 mA for actuators in 24 VAC design
R = 24 VDC max. 100 mA for actuators in 24 VDC design
R = 24 VDC max. 100 mA for actuators in 230 VAC design
N2 Zero potential of the "X", "Y" and "R" signals.

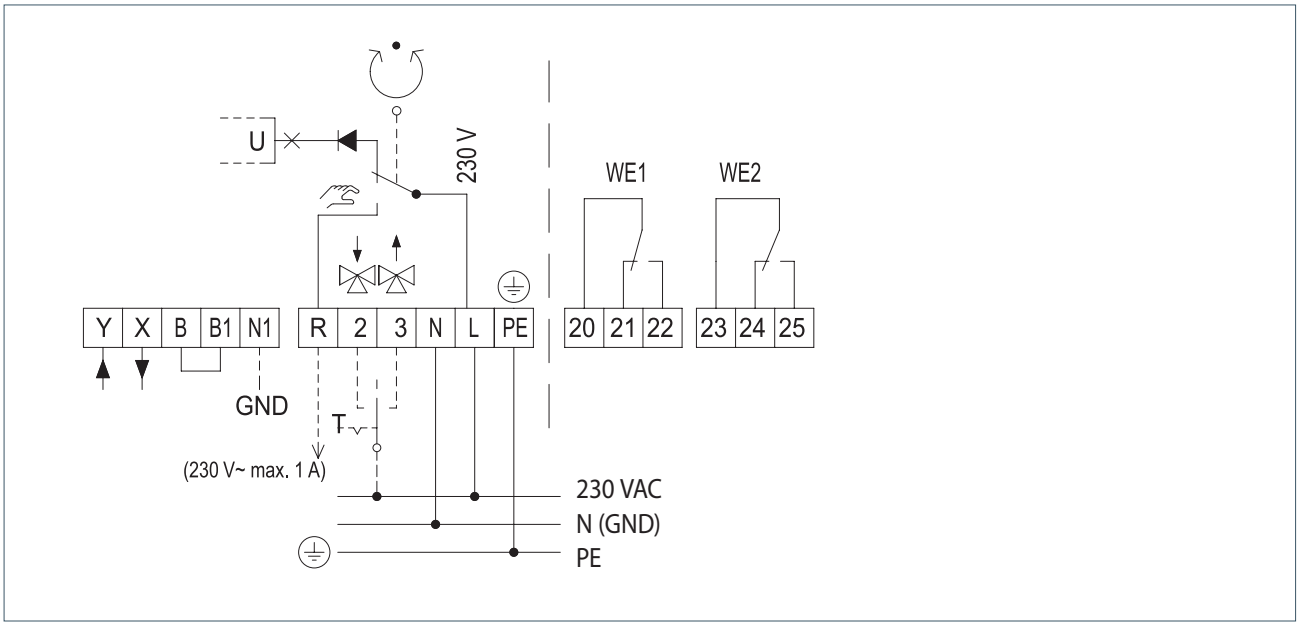
If the actuators in 230 VAC design are to be triggered on the "continuous" mode of operation i.e., by analogue signal "Y", the connection of N2 (zero potential of the controller) is absolutely necessary. For actuators in 230 VAC design the connection N2 in the "3-position" mode of operation is only necessary if "X" and/or "R" are to be used by the actuator. If the zero potentials of the signals X, Y and R are identical witht the zero potential of the suply voltage, a bridge can be laid between N1 and N2 in order to save an additional lead to N2.

B1/B2 connection of a binary signal (e.g. frost safety).

ELC 400 - 1500 wiring diagram

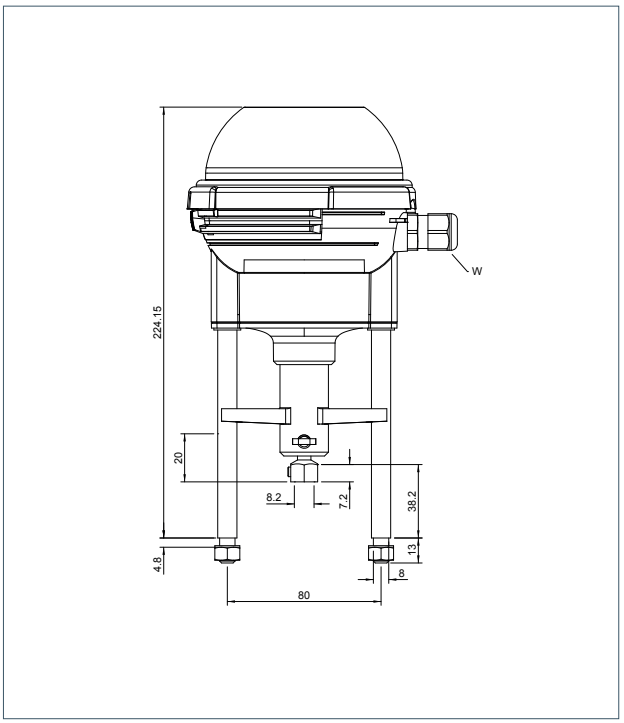


ELC 2500 wiring diagram

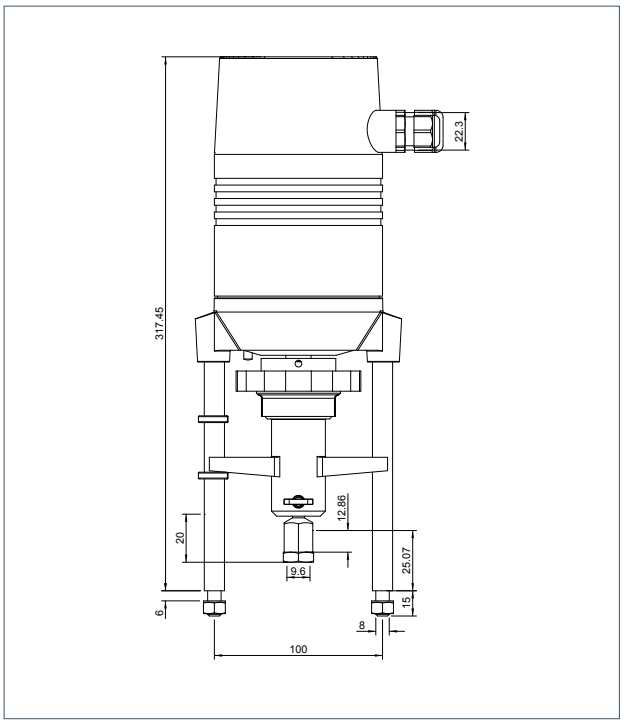


Dimensional Data

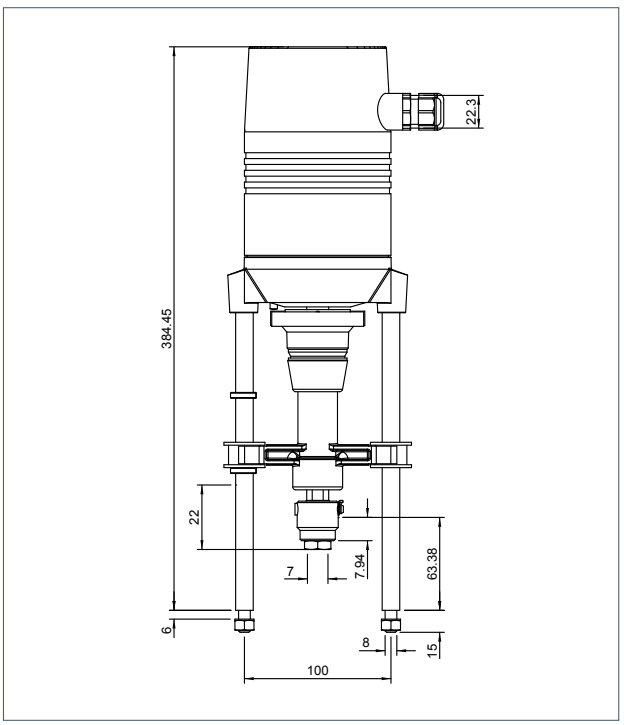
ELC 55



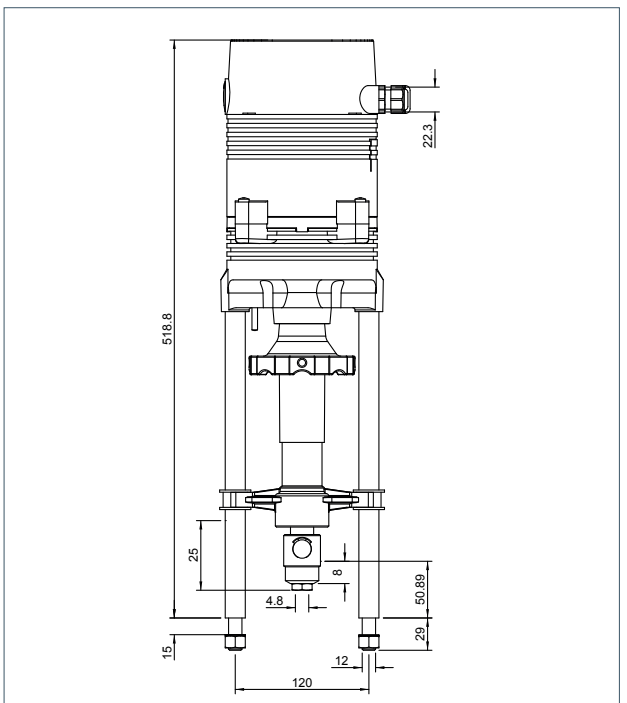
ELC 100



ELC 160

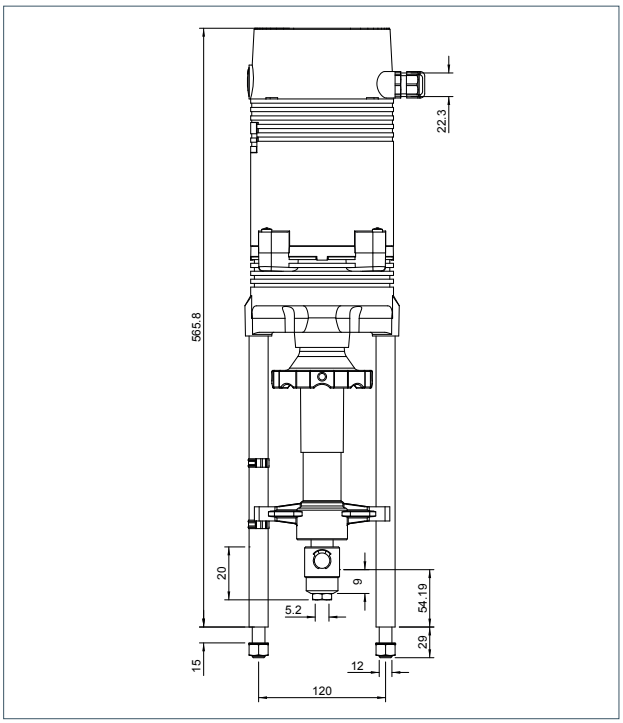


ELC 220

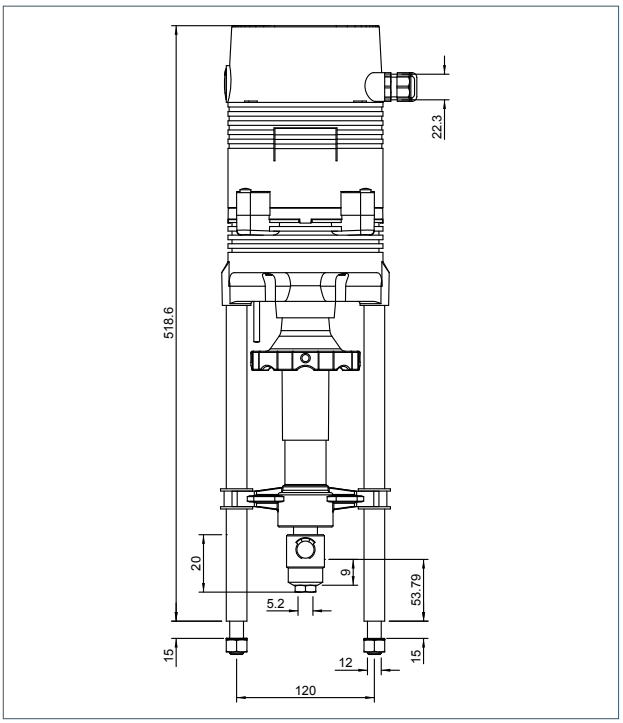


Dimensional Data

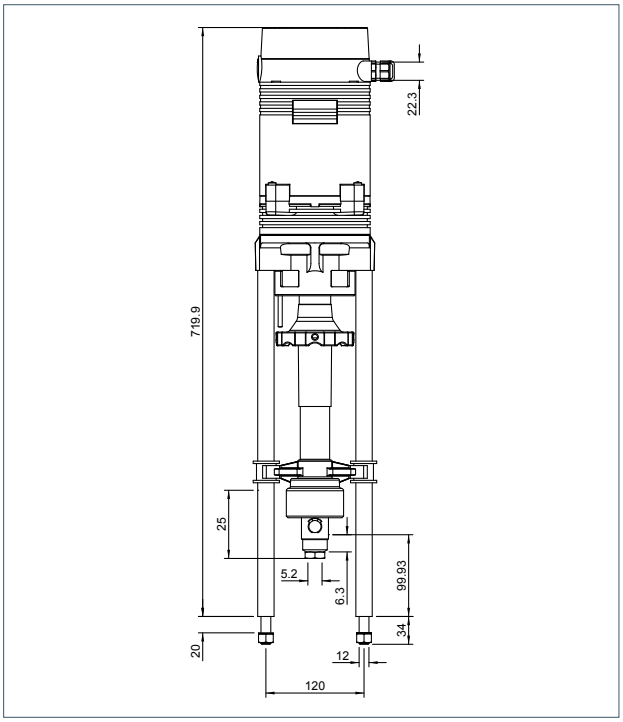
ELC 400



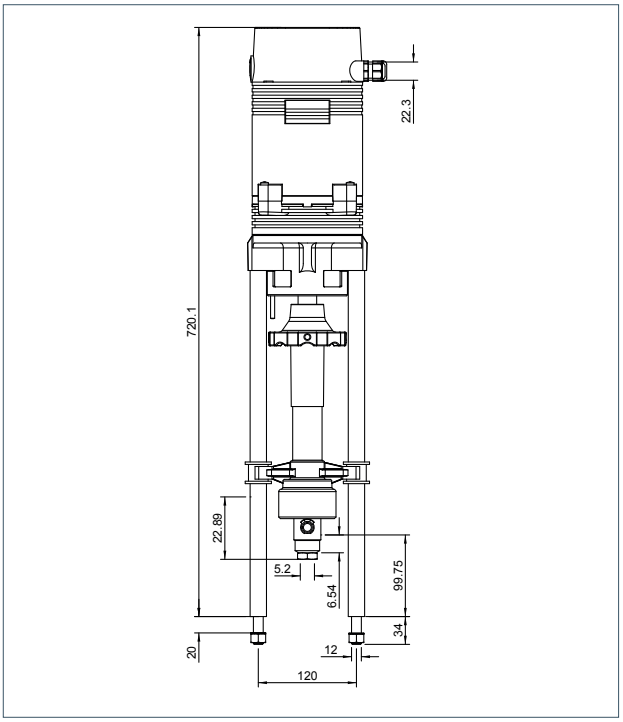
ELC 500



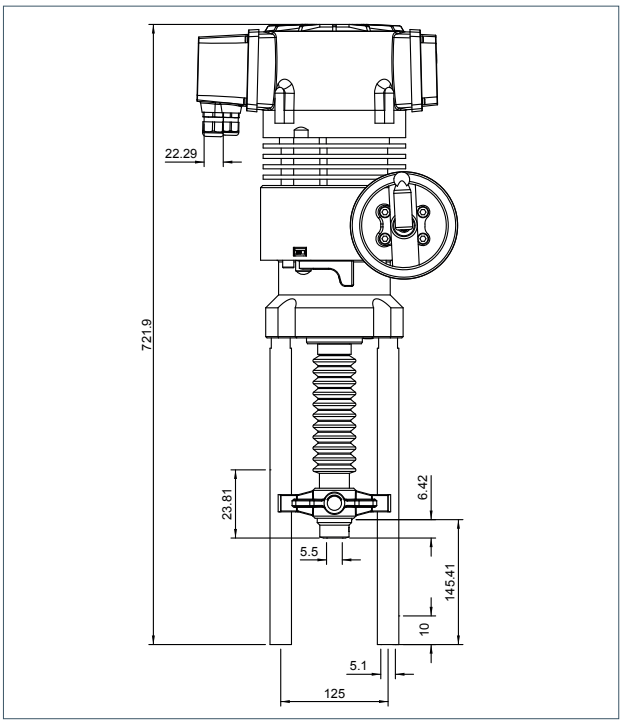
ELC 1000



ELC 1500



ELC 2500



Electric Motor Performance Data

230 VAC

Model	Stand-by current (A)	Nominal current (A)	Rated current (A)	Starting current (A)
ELC55	0.025	0.05	0.06	0.3
ELC100	0.035	0.05	0.08	0.85
ELC100SR	0.05	0.06	0.08	0.85
ELC160	0.035	0.06	0.1	0.85
ELC220	0.04	0.07	0.1	0.85
ELC250SR	0.22	0.3	0.5	8.2
ELC400	0.25	0.35	0.5	8.2
ELC500	0.15	0.2	0.3	3.3
ELC1000	0.25	0.35	0.5	8.2
ELC1500	0.25	0.4	0.5	8.2
MH2503	0.1	1.5	2.3	90

24 VDC

Model	Stand-by current (A)	Nominal current (A)	Rated current (A)	Starting current (A)
ELC55	0.01	0.1	0.2	*
ELC100	0.025	0.1	0.35	*
ELC100SR	0.2	0.3	0.8	*
ELC160	0.025	0.21	0.4	*
ELC220	0.025	0.35	0.6	*
ELC250SR	0.5	0.7	1.2	*
ELC400	0.03	0.7	2.6	*
ELC500	0.03	0.25	0.6	*
ELC1000	0.03	0.7	2.6	*
ELC1500	0.03	1.2	2.6	*

24 VAC single-phase

Model	Stand-by current (A)	Nominal current (A)	Rated current (A)	Starting current (A)
ELC55	0.05	0.25	0.35	*
ELC100	0.06	0.38	0.76	*
ELC100SR	0.55	1	1.5	*
ELC160	0.06	0.75	1.3	*
ELC220	0.06	1	1.9	*
ELC250SR	0.8	1.5	5	*
ELC400	0.12	1.7	10	*
ELC500	0.12	0.5	5	*
ELC1000	0.12	1.7	10	*
ELC1500	0.12	2.5	10	*

Valve Connection Threads

The following standard valve coupling threads are available for connection with the valves. When not specified, the actuators will be delivered with coupling threads indicated by '**O**'. Special adaption couplings are available upon request.

Model	Force (kN)	Valve coupling thread						
		M6	M8	M10	M12	M14	M16	M20
55	0.6	**O**	x					
55Y	0.6	**O**	x					
100	1	x	x	x	**O**	x	x	
100SR	1		x	x	**O**	x	x	
160	1.6		x	x	**O**	x	x	
220	2.2		x	x	**O**	x	x	
250SR	2.5		x	x	**O**	x	x	
400	4		x	x	**O**	x	x	
500	5		x	x	**O**	x	x	
1000	10		x	x	x	x	**O**	
1500	15			x	x	x	**O**	
2500	25							**O**

Product Order Codes

Nomenclature

ELC 160 - 0 0 1 0 - 0

Model

55	=	0.6 kN 3-Point Control
55Y	=	0.6 kN Analogue Control
100	=	1 kN
100SR	=	1 kN Spring-Return
160	=	1.6 kN
220	=	2.2 kN
250SR	=	2.5 kN Spring-Return
400/30	=	4.0 kN 30mm max stroke
400/60	=	4.0 kN 60mm max stroke
500/30	=	5.0 kN 30mm max stroke
500/60	=	5.0 kN 60mm max stroke
1000/60	=	10 kN 60mm max stroke
1000/80	=	10 kN 80mm max stroke
1500/60	=	15 kN 60mm max stroke
1500/80	=	15 kN 80mm max stroke
2500	=	25 kN

IP Rating

0	=	IP54
1	=	IP65[1]

Power Supply

0	=	230 VAC[2]
1	=	24 VAC
2	=	24 VDC[3]
3	=	115 VAC

Optional Cards

0	=	No Optional Cards
1	=	Output signal X=0(4)_20mA*[4]
2	=	2 Switches (WE1/WE2)
3	=	2 Switches + Output signal X=0(4)_20mA[5]

Specials

0	=	Standard Build
1	=	P10 Firmware

Adaption

0	=	Standard (+ Optional Couplings)[6]
1	=	Special Dimensions

Notes: 1. IP65 not available on ELC55, ELC55Y, ELC100SR, and ELC250SR. IP54 Not available on ELC2500
2. 230 VAC not available on ELC55Y
3. Only rectified alternating voltage
4. 4-20 mA not available on ELC55 and ELC55Y
5. Only Available on ELC250SR, ELC400, ELC500, ELC1000, ELC1500 and ELC2500
6. See Table for Standard and Optional Couplings. Optional couplings need to be specified within PO.

Reduce downtime, extend the lifespan of assets, and optimise performance with Rotork's comprehensive service solutions.

Our focus on Full Lifecycle Experience provides world-class service and ensures the reliability of your Rotork products.

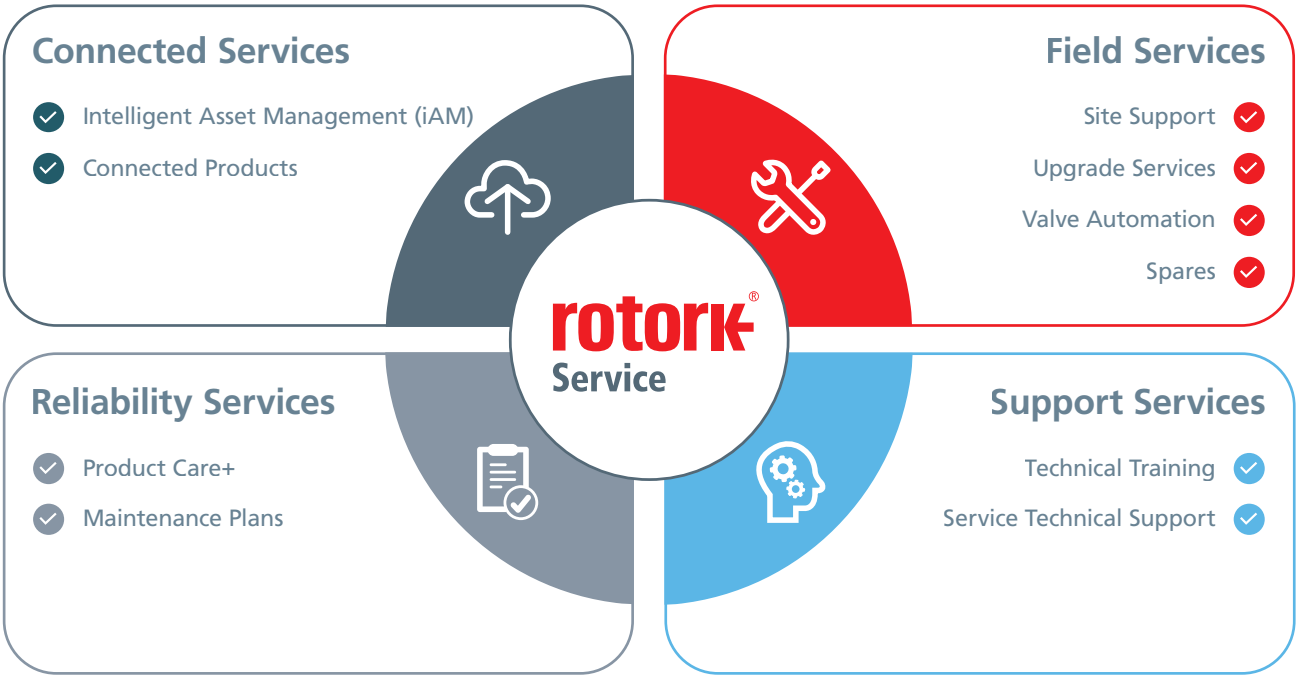
We offer specialist expertise to support mission-critical flow control and instrumentation solutions across oil and gas, water and power, and chemical, process and industrial markets.

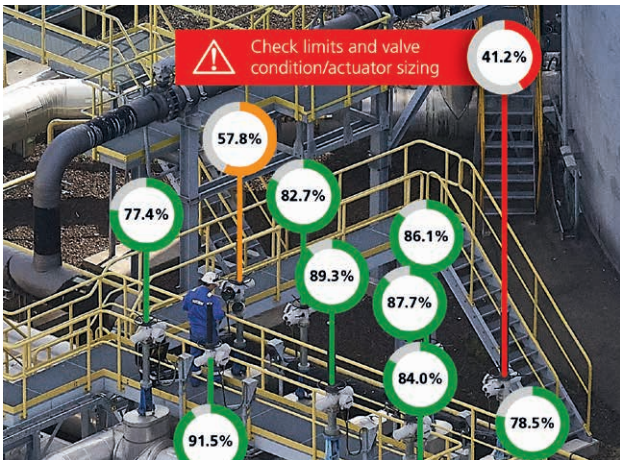
With a global presence and decades of experience, we offer services including installation, commissioning, Reliability Services, Intelligent Asset Management (iAM), product upgrades, spare parts, and overhauls.

Our engineers are highly trained, ensuring consistent, high-quality service worldwide. We operate dedicated workshops for the repair, calibration and testing of our products and only use genuine parts to guarantee top-level performance and reliability.

Our service offering covers four key areas:

- **Connected Services** including Rotork's Intelligent Asset Management (iAM) system
- **Field Services** including site support, upgrade solutions, valve automation and spares
- **Reliability Services** including health checks and product maintenance
- **Support Services** including technical training and support





Connected Services

Intelligent Asset Management (iAM) is a cloud-based system for intelligent Rotork actuators and the flow control equipment they operate. Effective asset management and maintenance are essential for maintaining site uptime.

Reliability Services

Reliability Services is a customisable approach to maintenance, with options that provide progressively increased levels of coverage and support. Our tailor-made programmes increase reliability and availability and allow customers to have flexibility about what services are most appropriate for them.

Field Services

Site Support

Benefit from our on-site support, from installation to emergency repairs.

Upgrade Solutions

Make sure your assets are prepared for the future with suitable upgrade options.

Valve Automation

Achieve precise and consistent flow control with automation of existing valves and replacement actuator/valve packages.

Spares

Maximise performance and reliability with genuine OEM spare parts.

Support Services

Technical Training

Our products and solutions are used in mission-critical applications and it is critical that any workforce is highly trained to ensure a safe and efficient plant. We provide advanced technical training from our strategically located facilities around the world.

Technical Support

We provide expert technical support exactly when you need it – trusted by global industries for over 60 years. Our technical experts draw on decades of our experience to provide you with the right answers and solutions.

rotork®

Contact us now

mail@rotork.com
www.rotork.com

PUB192-001-00
Issue 07/25