



01 - 10.1
12.22.GB

CONTROL AND
SHUT-OFF VALVES

200 line
acc. to ANSI/ASME



200 line

CV / SV 220 (Ex)
CV / SV 230 (Ex)

control or shut-off valve

CV 222 (Ex)
CV 232 (Ex)

control valve with
pressure-balanced plug

Control valves **CV (SV) 200 (Ex)** are designed for regulation and shut-off of process liquid flow. In Ex proof version meet the requirements II 1/2G IIC T6...T1 Ga/Gb acc. to ČSN EN ISO 80079-36 (9/2016) and ČSN EN 1127-1 section 2 (1/2012). The selected materials correspond to recommendations stipulated by ČSN EN 12516-1 (8/2015) - steel and ČSN EN 1503-3 (1/2002) - cast. The maximal permissible operating pressures in behaviour with types of material and temperature are specified in the table on page 67 of this catalogue.

Control

hand wheel or electromechanical actuators of producers
Regada, Schiebel, Auma, Rotork
pneumatic actuators of producers **Flowserve, A. Hock.**

Application

CV / SV 2xx - heating, ventilation, power generation and chemical processing industries
CV / SV 2xx Ex - gas and chemical industries

Process media

CV / SV 2xx - liquids, gases and vapours without abrasive particles
e.g. water, steam, air and other media compatible with material of the valve inner parts
CV / SV 2xx Ex - technical and fuel gases and inflammable liquids

To ensure a reliable regulation, the producers recommends to pipe a strainer in front of the valve into pipeline or ensure in any other way that process medium does not contain abrasive particles or impurities

Installation

The valve can be installed in any position except position when the actuator is under the valve body. The valve is to be piped the way so that the direction of medium flow will coincide with the arrows on the body

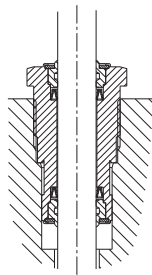
It is necessary to protect the actuator from excessive heat from the pipeline at medium temperatures above **150°C (300°F)**, e.g. by appropriately insulating the pipeline and valve and tilting the actuator from the vertical axis. Detailed informations are given in the instruction for installation and service

Packings

DRSpack® (PTFE)

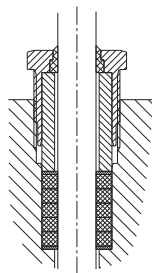
DRSpack® (Direct Radial Sealing Pack) is a packing with high tightness at both low and high operating pressure values.

It is the most used type of packing suitable for temperatures ranging from 0°C to 260°C. The pH range is from 0 to 14. The packing enables using of actuators with low linear force. The design enables an easy change of the whole packing. The average service life of DRSpack® is more than 500 000 cycles.



Graphite

This type of packing can be used for media with temperature up to **550°C (1020°F)** and pH range: 0 to 14. Packing can be "sealed up" either by screwing the packing screw in or adding another sealing ring. In regard of intensive frictional forces, graphite packing is suitable for actuators with a sufficient linear force.

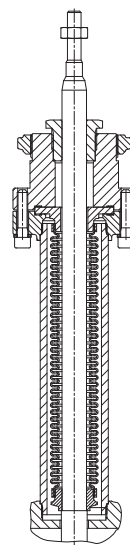


Bellows

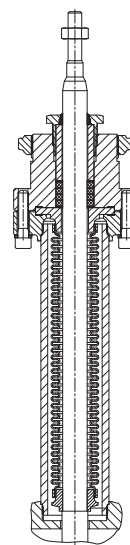
Bellows packing is suitable for low and high temperatures ranging from **-50 to 550°C (-58 to 1020°F)**. Bellows ensures absolute tightness to environment. Packing is equipped with safety PTFE packing as standard to prevent medium from leaking in case of damage to bellows. Intensive linear forces are not required.

Bellows packing is suitable for applications with very aggressive, toxic or other dangerous media that require absolute tightness to environment. In such case, it is necessary to check compatibility of used body material as well as the valve inner parts material with process medium. It is recommended to use bellows with safety packing preventing medium from leaking in case of damage to bellows when there is an extremely dangerous process medium used.

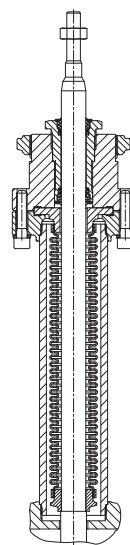
Bellows is also a great solution to use of process medium either with temperature below zero when ice accretions cause premature damage to packing or with high temperatures when bellows ensures medium cooling.



Bellows
without safety packing



Bellows with
safety graphite
packing



Bellows with
safety PTFE
packing

Principles for plug type selection

V-ported plugs should not be used in supercritical differential pressures with inlet pressure $p \geq 0,4$ MPa and for regulation of saturated steam. In these cases we recommend to use a perforated plug. The perforated plug should be also used always when cavitation may occur due to a high differential pressure value or valve ports erosion caused by high speed of process medium flow. If the parabolic plug is used (because of small Kvs) for supercritical differential pressures, it is necessary to close both plug and seat with a hard metal overlay, i.e. stellite trim.

Rangeability

Rangeability is the ratio of the biggest value of flow coefficient to the smallest value. In fact it is the ratio (under the same conditions) of highest regulated flow rate value to its lowest value. The lowest or minimal regulated flow rate is always higher than 0.



CV / SV 2x0

Control
and shut-off valves

NPS ½"- 10"
Class 150

Technical data

Series	CV / SV 220 (Ex)	CV / SV 230 (Ex)
Type of valve	Two-way, single-seated, control (shut-off) valve	
Nominal pressure	NPS 1/2" to 10"	
Body material	Class 150	
	Cast steel	Stainless steel
	A216 WCB, A217 WC6	A351 CF8M
Seat material: NPS ½"-2"	1.4028	1.4571
NPS 2½"-10"	1.4027	1.4581
Plug material: NPS ½"-2½"	1.4021	1.4571
NPS 3"-10"	1.4027	1.4581
Stem material	1.4923	1.4980
Operating temperature range	-50 to 550 °C (-58 to 1020 °F)- (request for negative temperature need to be specified in order)	
Face to face dimensions	acc. to ISA-75.08.01-2002 /R2007) for version with flanges	
Connection flanges	Acc. to ASME B16.5-2013	
Flange faces	RF (Raised Face), LFF (Large Female Face), SFF (Small Female Face), LGF (Large Groove Face), SGF (Small Groove Face)	
Type of plug	V-ported, contoured, perforated	
Flow characteristic	Linear, equal-percentage, LDMspline®, parabolic, on - off	
Kvs value	0,01 to 800 m³/h (0,012 to 950 US gallon/min)	
Leakage rate	Class III. acc. to ANSI/FCI 70-2-2013 (<0,1% Cv) for c. valves with metal-metal seat sealing Class IV. acc. to ANSI/FCI 70-2-2013 (<0.01% Cv) for c. valves with metal-PTFE seat sealing Class IV. acc. to ANSI/FCI 70-2-2013 (<0.01% Cv) for shut-off valve	
Leakage rate for Ex version	CV 2xx Class IV. acc. to ANSI/FCI 70-2-2013 (<0.01% Cv); SV 2xx Rate C acc. to ISO 5208:2008	
Rangeability r	50 : 1	
Packing	DRSpack* (PTFE) t _{max} = 260°C (500°F), exp. graphite t _{max} = 550°C (1020°F), bellows (NPS ½"- 6") t _{max} = 550°C (1020°F)	

Kvs values and differential pressures $\Delta p_{\max}$ [Mpa], [psi] of valves NPS 1/2" - 10" with V-ported plugs, contoured plugs (flow direction below plug) for electromechanical actuators

$\Delta p_{\max}$ value is the valve max. differential pressure when open - close function is always guaranteed. In regard of service life of seat and plug, it is recommended so that permanent differential pressure would not exceed 1.6 MPa, 232 psi. Otherwise it is suitable to use perforated plug, or sealing surfaces of seat and plug with a hard metal overlay.

For further information on actuating, see actuators’ catalogue sheets			Actuating (actuator)										ST 0		Auma		ST 1 Ex			
													ST 0.1		Schiebel		ST 0.1			
			Marking in valve specification No.										CVL-1000		EPK EPL EQL		EA... EZ...		EPJ EPL EQL	
													4 kN		5 kN		6.3 kN			
NPS	H[mm]	Ds[mm]	Kvs [m³/h] Cv [US galon/min]										$\Delta p_{\max}$ ^[MPa] packing		$\Delta p_{\max}$ ^[MPa] packing		$\Delta p_{\max}$ ^[MPa] packing			
			1	2	3	4	5	6	7	8	9		graph.PTFE	graph.PTFE	graph.PTFE					
½”		16	3	---	---	---	---	---	---	---	0.16 ³⁾ 0.18 ³⁾	0.1...0.01 ³⁾ 0.116...0.012 ³⁾		2 2 290 290	2 2 290 290	2 2 290 290				
			6	---	---	---	---	---	---	0.25 ¹⁾ 0.29 ¹⁾	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290				
			8	---	---	---	1.0 ¹⁾ 1.16	0.63 ¹⁾ 0.73	0.4 ¹⁾ 0.46	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290				
			12	---	2.5 ¹⁾ 2.89	1.6 ¹⁾ 1.85	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290				
			15	4.0 ¹⁾ 4.62 ¹⁾	---	---	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290				
¾”		16	3	---	---	---	---	---	---	---	0.16...0.01 ³⁾ 0.18...0.012 ³⁾		2 2 290 290	2 2 290 290	2 2 290 290					
			6	---	---	---	---	---	---	0.25 ¹⁾ 0.29 ¹⁾	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290				
			8	---	---	---	---	1.0 ¹⁾ 1.16 ¹⁾	0.63 ¹⁾ 0.73 ¹⁾	0.4 ¹⁾ 0.46 ¹⁾	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290				
			12	---	---	2.5 ¹⁾ 2.89 ¹⁾	1.6 ¹⁾ 1.85 ¹⁾	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290					
			15	---	4.0 ¹⁾ 4.62 ¹⁾	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290					
			20	6.3 ²⁾ 7.28 ²⁾	---	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290					
1”		16	3	---	---	---	---	---	---	---	---	0.16...0.01 ³⁾ 0.18...0.012 ³⁾		2 2 290 290	2 2 290 290	2 2 290 290				
			6	---	---	---	---	---	---	---	0.25 ¹⁾ 0.29 ¹⁾	---	---	2 2 290 290	2 2 290 290	2 2 290 290				
			8	---	---	---	---	---	1.0 ¹⁾ 1.16 ¹⁾	0.63 ¹⁾ 0.73 ¹⁾	0.4 ¹⁾ 0.46 ¹⁾	---	---	2 2 290 290	2 2 290 290	2 2 290 290				
			12	---	---	---	2.5 ¹⁾ 2.89 ¹⁾	1.6 ¹⁾ 1.85 ¹⁾	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290					
			15	---	---	4.0 ¹⁾ 4.62 ¹⁾	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290					
			20	---	6.3 ²⁾ 7.28 ²⁾	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290					
			25	10 11.6	6.3 ⁴⁾ 7.28	4.0 ⁴⁾ 4.62	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290					

the table continues on next page

1) shaped plug

2) V-ported plug with linear characteristic, parabolic plug with equal-percentage, LDMspline® or parabolic characteristic

3) valve with micro-throttling trim. Version with Kvs = 0.16; 0.1; 0.063; 0.04; 0.025; 0.016; 0.01

4) V-ported plug with linear characteristic only

Max. differential pressures specified in table apply to PTFE and graphite packing. Δp for bellows must be consulted with the producer LDMspline® or parabolic characteristic from Kvs ≥ 1.0 . Equal-percentage, from Kvs Kvs ≥ 0.4

For further information on actuating, see actuators’ catalogue sheets			Actuating (actuator)										Auma Schiebel ST 1 IQM 10		Auma Schiebel ST 1 Modact MTR IQM 10		Hand wheel	
			Marking in valve specification No.										EA... EZ... EPI EQ...		EA... EZ... EPI EPD EQ...		Rxx	
			Linear force										7.5 kN		10 kN			
													Δp _{max} ^[MPa] [psi] packing graph.PTFE		Δp _{max} ^[MPa] [psi] packing graph.PTFE		Δp _{max} ^[MPa] [psi] packing graph.PTFE	
NPS	H[mm]	Ds[mm]	1	2	3	4	5	6	7	8	9							
½”			3	---	---	---	---	---	---	---	0.16 ³⁾ 0.18 ³⁾	0.1...0.01 ³⁾ 0.116...0.012 ³⁾		2 2 290 290	2 2 290 290	2 2 290 290		
			6	---	---	---	---	---	---	0.25 ¹⁾ 0.29 ¹⁾	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	
			8	---	---	---	1.0 ¹⁾ 1.16	0.63 ¹⁾ 0.73	0.4 ¹⁾ 0.46	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	
			12	---	2.5 ¹⁾ 2.89	1.6 ¹⁾ 1.85	---	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	
			15	4.0 ¹⁾ 4.62 ¹⁾	---	---	---	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	
¾”			3	---	---	---	---	---	---	---	0.16...0.01 ³⁾ 0.18...0.012 ³⁾		2 2 290 290	2 2 290 290	2 2 290 290			
			6	---	---	---	---	---	---	0.25 ¹⁾ 0.29 ¹⁾	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290		
			8	---	---	---	---	1.0 ¹⁾ 1.16 ¹⁾	0.63 ¹⁾ 0.73 ¹⁾	0.4 ¹⁾ 0.46 ¹⁾	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290		
			12	---	---	2.5 ¹⁾ 2.89 ¹⁾	1.6 ¹⁾ 1.85 ¹⁾	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290		
			15	---	4.0 ¹⁾ 4.62 ¹⁾	---	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290		
			20	6.3 ²⁾ 7.28 ²⁾	---	---	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290		
1”			3	---	---	---	---	---	---	---	0.16...0.01 ³⁾ 0.18...0.012 ³⁾		2 2 290 290	2 2 290 290	2 2 290 290			
			6	---	---	---	---	---	---	---	0.25 ¹⁾ 0.29 ¹⁾	---	---	2 2 290 290	2 2 290 290	2 2 290 290		
			8	---	---	---	---	---	1.0 ¹⁾ 1.16 ¹⁾	0.63 ¹⁾ 0.73 ¹⁾	0.4 ¹⁾ 0.46 ¹⁾	---	---	2 2 290 290	2 2 290 290	2 2 290 290		
			12	---	---	---	2.5 ¹⁾ 2.89 ¹⁾	1.6 ¹⁾ 1.85 ¹⁾	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290		
			15	---	---	4.0 ¹⁾ 4.62 ¹⁾	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290		
			20	---	6.3 ²⁾ 7.28 ²⁾	---	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290		
			25	10 11.6	6.3 ⁴⁾ 7.28	4.0 ⁴⁾ 4.62	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290		

the table continues on next page

1) shaped plug

2) V-ported plug with linear characteristic, parabolic plug with equal-percentage, LDMspline® or parabolic characteristic

3) valve with micro-throttling trim. Version with Kvs = 0.16; 0.1; 0.063; 0.04; 0.025; 0.016; 0.01

4) V-ported plug with linear characteristic only

Max. differential pressures specified in table apply to PTFE and graphite packing. Δp for bellows must be consulted with the producer LDMspline® or parabolic characteristic from Kvs ≥ 1.0. Equal-percentage, from Kvs Kvs ≥ 0.4

For further information on actuating, see actuators' catalogue sheets			Actuating (actuator)										ST 0 ST 0.1 CVL-1000	Auma Schiebel	ST 1 Ex ST 0.1 CVL-1500
			Marking in valve specification No.										EPK EPL EQL	EA... EZ...	EPJ EPL EQL
			Linear force										4 kN	5 kN	6.3 kN
			Kvs [m³/h] Cv [US galon/min]										Δp_{max} [MPa] packing	Δp_{max} [MPa] packing	Δp_{max} [MPa] packing
NPS	H[mm]	DS[mm]	1	2	3	4	5	6	7	8	9		graph.PTFE	graph.PTFE	graph.PTFE
1¼"	16	6	---	---	---	---	---	---	---	---	0.25 ¹⁾ 0.29 ¹⁾	---	2 2 290 290	2 2 290 290	2 2 290 290
		8	---	---	---	---	---	---	1.0 ¹⁾ 1.16	0.63 ¹⁾ 0.73	0.4 ¹⁾ 0.46	---	2 2 290 290	2 2 290 290	2 2 290 290
		12	---	---	---	---	2.5 ¹⁾ 2.89	1.6 ¹⁾ 1.85	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290
		15	---	---	---	4.0 ¹⁾ 4.62 ¹⁾	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290
		20	---	---	6.3 ¹⁾ 7.28 ¹⁾	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290
		32	16 18.5	10 11.6	6.3 ⁴⁾ 7.28	---	---	---	---	---	---	---	1.39 2 201 290	2 2 290 290	2 2 290 290
1½"	20	6	---	---	---	---	---	---	---	---	0.25 ¹⁾ 0.29 ¹⁾	---	2 2 290 290	2 2 290 290	2 2 290 290
		8	---	---	---	---	---	---	1.0 ¹⁾ 1.16 ¹⁾	0.63 ¹⁾ 0.73 ¹⁾	0.4 ¹⁾ 0.46 ¹⁾	---	2 2 290 290	2 2 290 290	2 2 290 290
		12	---	---	---	---	1.6 ¹⁾ 2.89 ¹⁾	1.6 ¹⁾ 1.85 ¹⁾	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290
		15	---	---	---	4.0 ¹⁾ 4.62 ¹⁾	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290
		20	---	---	6.3 ²⁾ 7.28 ²⁾	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290
		40	25 28.9	16 18.5	10 11.6	6.3 ²⁾ 7.28 ²⁾	4.0 ⁴⁾ 4.62 ¹⁾	---	---	---	---	---	0.83 2 121 290	1.54 2 224 290	2 2 290 290
2"	20	50	40 46.2	25 28.9	16 18.5	10 11.6	6.3 ⁴⁾ 7.28 ¹⁾	---	---	---	---	---	0.46 1.36 66 198	0.88 1.79 128 259	1.44 2 208 290
2½"		65	63 72.8	40 46.2	25 28.9	16 18.5	10 11.6	---	---	---	---	---	0.24 0.79 35 115	0.5 1.05 73 153	0.84 1.39 122 202

the table continues on next page

1) shaped plug

2) V-ported plug with linear characteristic, parabolic plug with equal-percentage, LDMspline® or parabolic characteristic

3) valve with micro-throttling trim. Version with Kvs = 0.16; 0.1; 0.063; 0.04; 0.025; 0.016; 0.01

4) V-ported plug with linear characteristic only

Max. differential pressures specified in table apply to PTFE and graphite packing. Δp for bellows must be consulted with the producer LDMspline® or parabolic characteristic from Kvs ≥ 1.0 . Equal-percentage, from Kvs Kvs ≥ 0.4

For further information on actuating, see actuators' catalogue sheets			Actuating (actuator)										Auma Schiebel ST 1 IQM 10	Auma Schiebel ST 1 Modact MTR IQM 10	Hand wheel
			Marking in valve specification No.										EA... EZ... EPI EQ...	EA... EZ... EPI EPD EQ...	Rxx
			Linear force										7.5 kN	10 kN	
NPS	H[mm]	Ds[mm]	Kvs [m³/h] Cv [US galon/min]										Δp_{max} [MPa] packing	Δp_{max} [MPa] packing	Δp_{max} [MPa] packing
			1	2	3	4	5	6	7	8	9		graph.PTFE	graph.PTFE	graph.PTFE
½"	16	6	---	---	---	---	---	---	---	---	0.25 ¹⁾ 0.29 ¹⁾	---	2 2 290 290	2 2 290 290	2 2 290 290
		8	---	---	---	---	---	---	1.0 ¹⁾ 1.16	0.63 ¹⁾ 0.73	0.4 ¹⁾ 0.46	---	2 2 290 290	2 2 290 290	2 2 290 290
		12	---	---	---	---	2.5 ¹⁾ 2.89	1.6 ¹⁾ 1.85	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290
		15	---	---	---	4.0 ¹⁾ 4.62 ¹⁾	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290
		20	---	---	6.3 ²⁾ 7.28 ³⁾	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290
		32	16 18.5	10 11.6	6.3 ⁴⁾ 7.28	---	---	---	---	---	---	---	1.39 2 201 290	2 2 290 290	2 2 290 290
¾"	16	6	---	---	---	---	---	---	---	---	0.25 ¹⁾ 0.29 ¹⁾	---	2 2 290 290	2 2 290 290	2 2 290 290
		8	---	---	---	---	---	---	0.1 ¹⁾ 1.16 ¹⁾	0.25 ¹⁾ 0.73 ¹⁾	0.25 ¹⁾ 0.46 ¹⁾	---	2 2 290 290	2 2 290 290	2 2 290 290
		12	---	---	---	---	2.5 ¹⁾ 2.89	1.6 ¹⁾ 1.85	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290
		15	---	---	---	4.0 ¹⁾ 4.62 ¹⁾	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290
		20	---	---	6.3 ⁴⁾ 7.28	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290
		40	25 28.9	16 18.5	10 11.6	6.3 ⁴⁾ 7.28	4.0 ⁴⁾ 4.62	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290
2"	20	50	40 46.2	25 28.9	16 18.5	10 11.6	6.3 ⁴⁾ 7.28	---	---	---	---	---	1.95 2 282 290	2 2 290 290	2 2 290 290
2½"		65	63 72.8	40 46.2	25 28.9	16 18.5	10 11.6	---	---	---	---	---	1.15 1.7 167 247	1.8 2 261 290	1.8 2 261 290
3"	40	80	100 116	63 72.8	40 46.2	25 28.9	16 18.5	---	---	---	---	---	0.65 1.1 94 159	1.1 1.55 159 224	2 2 290 290
4"		100	160 185	100 116	63 72.8	40 46.2	25 28.9	---	---	---	---	---	0.4 0.69 57 100	0.69 0.98 100 142	1.39 168 201 244
5"		125	250 289	160 185	100 116	63 72.8	40 46.2	---	---	---	---	---	0.24 0.43 34 62	0.43 0.62 62 89	0.88 1.07 128 155
6"		150	360 416	250 289	160 185	100 116	63 72.8	---	---	---	---	---	0.15 0.29 22 41	0.29 0.42 41 61	0.6 0.74 88 107

the table continues on next page

1) shaped plug

2) V-ported plug with linear characteristic, parabolic plug with equal-percentage, LDMspline® or parabolic characteristic

3) valve with micro-throttling trim. Version with Kvs = 0.16; 0.1; 0.063; 0.04; 0.025; 0.016; 0.01

4) V-ported plug with linear characteristic only

Max. differential pressures specified in table apply to PTFE and graphite packing. Δp for bellows must be consulted with the producer LDMspline® or parabolic characteristic from Kvs ≥ 1.0. Equal-percentage, from Kvs Kvs ≥ 0.4

For further information on actuating, see actuators' catalogue sheets			Actuating (actuator)					Auma Schiebel	Modact MTR ST 2 CVL-5000	Auma Schiebel ST 2 CVL-5000 IQM 12	Modact MTR ST 2	Auma Schiebel IQM 20	Hand wheel
			Marking in valve specification No.					EA... EZ... EQ...	EPD EPM EQL	EA... EZ... EPM EQL EQ...	EPD EPM	EA... EZ... EQ...	Rxx
			Linear force					15 kN	16 kN	20 kN	25 kN	32 kN	
			Kvs [m³/h] Cv [US galon/min]					Δp_{max} [MPa] [psi] packing graph.PTFE	Δp_{max} [MPa] [psi] packing graph.PTFE	Δp_{max} [MPa] [psi] packing graph.PTFE	Δp_{max} [MPa] [psi] packing graph.PTFE	Δp_{max} [MPa] [psi] packing graph.PTFE	Δp_{max} [MPa] [psi] packing graph.PTFE
NPS	H[mm]	Ds[mm]	1	2	3	4	5						
3"	40	80	100	63	40	25	16	2	2	2	2	2	2
			116	72.8	46.2	28.9	18.5	290	290	290	290	290	290
		100	160	100	63	40	25	1.27	1.56	1.39	1.68	1.85	2
			185	116	72.8	46.2	28.9	184	227	201	244	269	290
4"	40	125	250	160	100	63	40	0.8	0.99	0.88	1.07	1.18	1.37
			289	185	116	72.8	46.2	117	144	128	155	172	199
5"	40	150	360	250	160	100	63	0.55	0.68	0.6	0.74	0.82	0.95
			416	289	185	116	72.8	80	99	88	107	118	138
6"	40	150	100	63	40	25	16	2	2	2	2	2	2
			116	72.8	46.2	28.9	18.5	290	290	290	290	290	290
		200	160	100	63	40	25	1.27	1.56	1.39	1.68	1.85	2
			185	116	72.8	46.2	28.9	184	227	201	244	269	290
8"	80	100	250	160	100	63	40	0.8	0.99	0.88	1.07	1.18	1.37
			289	185	116	72.8	46.2	117	144	128	155	172	199
		150	360	250	160	100	63	0.55	0.68	0.6	0.74	0.82	0.95
			416	289	185	116	72.8	80	99	88	107	118	138
10"	80	150	400	250	160	100	63	0.48	0.66	0.53	0.71	0.75	0.93
			462	289	185	116	72.8	70	95	77	103	109	134
		200	570	400	250	160	100	0.28	0.37	0.31	0.4	0.43	0.52
			659	462	289	185	116	41	53	45	58	63	75
12"	80	150	630	400	250	160	100	0.26	0.36	0.29	0.39	0.41	0.51
			728	462	289	185	116	37	52	42	56	59	74
		200	800	630	400	250	160	0.19	0.26	0.21	0.29	0.3	0.38
			925	728	462	289	116	27	38	30	41	44	55

Max. differential pressures specified in table apply to PTFE and graphite packing.
 Δp for bellows must be consulted with the producer.

Kvs values and differential pressures $\Delta p_{\max}$ [Mpa], [psi] of valves NPS 1/2" - 10" V-ported plugs, contoured plugs (flow direction below plug) for pneumatic actuators

$\Delta p_{\max}$ value is the valve max. differential pressure when open - close function is always guaranteed. In regard of service life of seat and plug, it is recommended so that permanent differential pressure would not exceed 1.6 MPa, 232 psi. Otherwise it is suitable to use perforated plug, or sealing surfaces of seat and plug with a hard metal overlay.

For further information on actuating, see actuators' catalogue sheets			Pneumatic actuator								Flowserve PA 253		A. Hock 2109				
			Specification No. of actuator								direct	indirect	direct	indirect			
			Actuator function								BDYxAA	BFYxZA	P2-0K-EL1	P2-0K-HL2			
			Spring range [bar] [psi]								1.0 - 2.4 15 - 35	2.0 - 4.8 29 - 70	0.2 - 1.0 2.9 - 15	1.5 - 3.8 22 - 55			
			Spring setting [bar] [psi]								1.0 - 2.12 15 - 31	2.56 - 4.8 37 - 70	0.2 - 0.84 2.9 - 12	1.96 - 3.8 28 - 55			
			Feeding pressure [bar] [psi]								4.8 70	5.8 84	3.0 44	4.6 67			
			Marking in valve specific. No.								PFA		PHF				
			Linear force								6.4 kN	6.4 kN	6.3 kN	5.7kN			
			Kvs [m³/h] Cv [US galon/min]								Δp _{max} ^[MPa] [psi] packing graph.PTFE	Δp _{max} ^[MPa] [psi] packing graph.PTFE	Δp _{max} ^[MPa] [psi] packing graph.PTFE	Δp _{max} ^[MPa] [psi] packing graph.PTFE			
NPS	H[mm]	Ds[mm]	1	2	3	4	5	6	7	8	9						
½"	16	3	---	---	---	---	---	---	---	0.16 ³⁾ 0.18	0.1 - 0.01 ³⁾ 0.116 - 0.012			2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290
		6	---	---	---	---	---	---	0.25 ¹⁾ 0.29	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		8	---	---	---	1 ¹⁾ 1.16	0.63 ¹⁾ 0.73	0.4 ¹⁾ 0.46	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290		
		12	---	2.5 ¹⁾ 2.89	1.6 ¹⁾ 1.85	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290		
		15	4 ¹⁾ 4.62	---	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290		
3		---	---	---	---	---	---	---	---	0.1 - 0.01 ³⁾ 0.18 - 0.012			2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
6		---	---	---	---	---	---	---	0.25 ¹⁾ 0.29 ¹⁾	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
8		---	---	---	---	1 ¹⁾ 1.16	0.63 ¹⁾ 0.73	0.4 ¹⁾ 0.46	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290		
12		---	---	2.5 ¹⁾ 2.89	1.6 ¹⁾ 1.85	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290		
15		---	4.0 ¹⁾ 4.62 ¹⁾	---	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290		
20	6.3 ¹⁾ 7.28 ¹⁾	---	---	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290			
1"	16	3	---	---	---	---	---	---	---	---	0.16 - 0.01 ³⁾ 0.18 - 0.012		2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		6	---	---	---	---	---	---	---	0.25 ¹⁾ 0.29	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		8	---	---	---	---	---	1 ¹⁾ 1.16	0.63 ¹⁾ 0.73	0.4 ¹⁾ 0.46	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		12	---	---	---	2.5 ¹⁾ 2.89	1.6 ¹⁾ 1.85	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		15	---	---	4.0 ¹⁾ 4.62 ¹⁾	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290		
		20	---	6.3 ¹⁾ 7.28 ¹⁾	---	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		25	10 11.6	6.3 ⁴⁾ 7.28 ¹⁾	4.0 ⁴⁾ 4.62	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	

the table continues on next page

1) shaped plg 2) V-ported plug with linear characteristic, parabolic plug with equal-percentage, LDMspline®

3) valve with micro-throttling trim. Version with Kvs = 0.16; 0.1; 0.063; 0.04; 0.025; 0.016; 0.01 4) V-ported plug with linear characteristic only

Max. differential pressures specified in table apply to PTFE and graphite packing. Δp for bellows must be consulted with the producer

LDMspline® or parabolic characteristic from Kvs ≥ 1.0. Equal-percentage, from Kvs ≥ 0.4

For further information on actuating, see actuators' catalogue sheets		Pneumatic actuator										Flowserve PA 253		A. Hock 2109			
		Specification No. of actuator										direct	indirect	direct	indirect		
		Actuator function										BDYxAA	BFYxZA	P2-0K-EL1	P2-0K-HL2		
		Spring range [bar] [psi]										1.0 - 2.4 15 - 35	2.0 - 4.8 29 - 70	0.2 - 1.0 2.9 - 15	1.5 - 3.8 22 - 55		
		Spring setting [bar] [psi]										1.0 - 2.12 15 - 31	2.56 - 4.8 37 - 70	0.2 - 0.84 2.9 - 12	1.96 - 3.8 28 - 55		
		Feeding pressure [bar] [psi]										4.8 70	5.8 84	3.0 44	4.6 67		
		Marking in valve specific. No.										PFA		PHF			
		Linear force										6.4 kN	6.4 kN	6.3 kN	5.7 kN		
NPS	H[mm]	DS[mm]	Kvs [m³/h] Cv [US galon/min]										Δp_{max} [MPa] packing graph.PTFE	Δp_{max} [MPa] packing graph.PTFE	Δp_{max} [MPa] packing graph.PTFE	Δp_{max} [MPa] packing graph.PTFE	
1¼"	16	6	---	---	---	---	---	---	---	---	0.25 ¹⁾ 0.29¹⁾	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		8	---	---	---	---	---	1.0 ¹⁾ 1.16	0.63 ¹⁾ 0.73	0.4 ¹⁾ 0.46	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		12	---	---	---	2.5 ¹⁾ 2.89	1.6 ¹⁾ 1.85	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		15	---	---	4.0 ¹⁾ 4.62¹⁾	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		20	---	---	6.3 ²⁾ 7.28¹⁾	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		32	16 18.5	10 11.6	6.3 ⁴⁾ 7.28	---	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
1½"	16	6	---	---	---	---	---	---	---	---	0.25 ¹⁾ 0.29¹⁾	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		8	---	---	---	---	---	1.0 ¹⁾ 1.16¹⁾	0.63 ¹⁾ 0.73¹⁾	0.4 ¹⁾ 0.46¹⁾	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		12	---	---	---	---	1.6 ¹⁾ 2.89¹⁾	1.6 ¹⁾ 1.85¹⁾	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		15	---	---	---	4.0 ¹⁾ 4.62¹⁾	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		20	---	---	---	6.3 ²⁾ 7.28²⁾	---	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	
		40	25 28.9	16 18.5	10 11.6	6.3 ²⁾ 7.28²⁾	4.0 ⁴⁾ 4.62¹⁾	---	---	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	

For further inform. on actuating, see actuators' catalogue sheets		Pneumatic actuator					Flowserve PA 253		Flowserve PB 503			A. Hock 2109		A. Hock 2112-30	
		Specification No. of actuator					direct	indirect	direct	indirect	direct	indirect	direct	indirect	
		Actuator function					BDYxAA	BFYxZA	BDYxAA	BFYxZA	P2-0K-BL1	P2-0K-HL2	P2-0K-BM1	P2-0K-WM2	
		Spring range [bar] [psi]					1.0 - 2.4 15 - 35	2.0 - 4.8 29 - 70	1.0 - 2.4 15 - 35	2.0 - 4.8 29 - 70	0.8 - 2.2 12 - 32	1.5 - 3.8 22 - 55	0.8 - 2.2 12 - 32	1.4 - 2.8 20 - 40	
		Spring setting [bar] [psi]					1.0 - 2.4 15 - 35	2.0 - 4.8 29 - 70	1.0 - 2.4 15 - 35	2.0 - 4.8 29 - 70	0.8 - 1.92 12 - 28	1.5 - 3.8 22 - 55	0.8 - 1.73 12 - 25	1.87 - 2.8 27 - 40	
		Feeding pressure [bar] [psi]					6 87	5.8 84	5.3 77	5.3 77	4.4 64	4.6 67	3.5 50	3.2 46	
		Marking in valve specific. No.					PFA		PFB		PHF		PHA		
		Linear force					8.5 kN	5 kN	10 kN	10 kN	6.4 kN	4.4 kN	10 kN	10.5 kN	
NPS	H[mm]	DS[mm]	Kvs [m³/h] Cv [US galon/min]					Δp_{max} [MPa] packing graph.PTFE	Δp_{max} [MPa] packing graph.PTFE	Δp_{max} [MPa] packing graph.PTFE	Δp_{max} [MPa] packing graph.PTFE	Δp_{max} [MPa] packing graph.PTFE	Δp_{max} [MPa] packing graph.PTFE	Δp_{max} [MPa] packing graph.PTFE	
2" 2½"	20	50	40 46.2	25 28.9	16 18.5	10 11.6	6.3 ⁴⁾ 7.28	2 2 290 290	0.88 1.79 128 259	2 2 290 290	2 2 290 290	1.48 2 206 290	0.63 1.53 91 222	2 2 290 290	2 2 290 290
		65	63 72.8	40 46.2	25 28.9	16 11.6	1.41 1.96 205 285	0.5 1.05 73 153	1.8 2 261 290	1.8 2 261 290	0.86 1.42 125 285	0.34 0.90 50 130	1.8 2 261 290	1.93 2 280 290	

the table continues on next page

1) tvarovaná kuželka 2) tvarovaná kuželka pro charakteristiku rovnoprocentní, parabolickou a LDMspline®

3) provedení s mikroškrťicím systémem. K dispozici v hodnotách Kvs = 0.16; 0.1; 0.063; 0.04; 0.025; 0.016; 0.01 4) válcová kuželka s výřezy pouze s lineární charakteristikou

Maximální diferenční tlaky uvedené v tabulce jsou určeny pro ucpávku grafit nebo PTFE. Pro vlnovcové provedení ucpávky je nutné Δp konzultovat s výrobcem.

LDMspline® a parabolická charakteristika od Kvs ≥ 1.0. Rovnoprocentní charakteristika od Kvs ≥ 0.4.

For further inform. on actuating, see actuators' catalogue sheets		Pneumatic actuator						Flowserve PB 503				Flowserve PB 701				A. Hock 2112-50				A. Hock 2112-50			
		Specification No. of actuator						direct		indirect		direct		indirect		direct		indirect		direct		indirect	
		Actuator function						BDYxAA		BFYxZA		BDYxAA		BFYxZA		P2-0K-DI1		P2-0K-XI2		P2-0K-DI1		P2-0K-SI2	
		Spring range [bar] [psi]						0.5 - 1.9		2.0 - 4.8		0.5 - 1.9		2.0 - 4.8		0.5 - 1.7		0.7 - 2.5		0.5 - 1.7		0.8 - 2.8	
								7 - 28		29 - 70		7 - 28		29 - 70		7 - 25		10 - 36		7 - 25		12 - 40	
		Spring setting [bar] [psi]						0.5 - 1.9		2.0 - 4.8		0.5 - 1.9		2.0 - 4.8		0.5- 1.43		1.06 - 2.5		0.5- 1.46		1.2 - 2.8	
								7 - 28		29 - 70		7 - 28		29 - 70		7 - 21		15 - 36		7 - 21		17 - 40	
		Feeding pressure [bar] [psi]						4.1		5.4		4.1		5.3		3.2		3.0		5.0		3.3	
						59		78		59		77		46		44		73		48			
Marking in valve specific. No.						PFA				PFB				PHA				PHA					
Linear force						10 kN		10 kN		14 kN		14 kN		10 kN		6 kN		20 kN		6.9 kN			
						$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]			
Kvs [m³/h] Cv [US galon/min]						packing		packing		packing		packing		packing		packing		packing		packing			
NPS	H[mm]	Ds[mm]	1	2	3	4	5	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE				
3"	40	80	100	63	40	25	16	1.1 1.55	1.1 1.55	1.82 2	1.82 2	1.1 1.55	0.38 0.83	2 2	1.82 2								
			116	72.8	46.2	28.9	18.5	159 224	159 224	264 290	264 290	159 224	55 120	290 290	264 290								
4"		100	160	100	63	40	25	0.69 0.98	0.69 0.98	1.15 1.45	1.15 1.45	0.69 0.98	0.22 0.51	1.85 2	1.15 1.45								
			185	116	72.8	46.2	28.9	100 142	100 142	167 210	167 210	100 142	32 74	269 290	167 210								
5"		125	250	160	100	63	40	0.43 0.62	0.43 0.62	0.73 0.92	0.73 0.92	0.43 0.62	0.12 0.31	1.18 1.37	0.73 0.92								
			289	185	116	72.8	46.2	62 89	62 89	106 133	106 133	62 89	18 45	172 199	106 133								
6"		150	360	250	160	100	63	0.29 0.42	0.29 0.42	0.5 0.63	0.5 0.63	0.29 0.42	0.07 0.21	0.82 0.95	0.5 0.63								
			416	289	185	116	72.8	41 61	41 61	72 91	72 91	41 61	11 30	118 138	72 91								

For further information on actuating, see actuators' catalogue sheets			Pneumatic actuator					Flowserve PO 1502											
			Specification No. of actuator					direct		indirect		direct		indirect		direct		indirect	
			Actuator function					BGFxAD		BVCxZD		BGFxAD		BFSxZD		BGFxAD		BAJxZD	
			Spring range [bar] [psi]					0.4 - 2.0 6 - 29		1.5 - 2.7 22 - 39		0.4 - 2.0 6 - 29		2.0 - 3.5 29 - 51		0.4 - 2.0 6 - 29		2.6 - 4.2 38 - 61	
			Spring setting [bar] [psi]					0.4 - 2.0 6 - 29		1.5 - 2.7 22 - 39		0.4 - 2.0 6 - 29		2.0 - 3.5 29 - 51		0.4 - 2.0 6 - 29		2.6 - 4.2 38 - 61	
			Feeding pressure [bar] [psi]					3.5 51		3.1 45		4.0 58		3.9 57		4.6 67		4.6 67	
			Marking in valve specific. No.					PFD											
			Linear force					22.5 kN		22.5 kN		30 kN		30 kN		38 kN		38 kN	
								$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]	
Kvs [m³/h] Cv [US galon/min]					packing		packing		packing		packing		packing		packing				
NPS	H[mm]	Ds[mm]	1	2	3	4	5	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE			
8”	80	100	---	---	250 289	160 185	100 116	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290			
		150	---	400 462	---	---	---	0.92 1.07 133 156	0.92 1.07 133 156	1.32 1.47 192 214	1.32 1.47 192 214	1.75 1.9 253 276	1.75 1.9 253 276	1.75 1.9 253 276	1.75 1.9 253 276	1.75 1.9 253 276			
		200	570 659	---	---	---	---	0.51 0.6 74 86	0.51 0.6 74 86	0.74 0.82 107 119	0.74 0.82 107 119	0.98 1.07 142 155	0.98 1.07 142 155	0.98 1.07 142 155	0.98 1.07 142 155	0.98 1.07 142 155			
		150	---	---	400 462	250 289	160 185	0.88 1.06 128 154	0.88 1.06 128 154	1.29 1.47 187 213	1.29 1.47 187 213	1.72 1.9 250 275	1.72 1.9 250 275	1.72 1.9 250 275	1.72 1.9 250 275	1.72 1.9 250 275			
10”		200	---	630 728	---	---	---	0.49 0.58 70 85	0.49 0.58 70 85	0.71 0.81 104 118	0.71 0.81 104 118	0.96 1.06 264 290	0.96 1.06 264 290	0.96 1.06 264 290	0.96 1.06 264 290	0.96 1.06 264 290			
		230	800 925	---	---	---	---	0.36 0.44 52 63	0.36 0.44 52 63	0.53 0.61 78 89	0.53 0.61 78 89	0.72 0.8 104 115	0.72 0.8 104 115	0.72 0.8 104 115	0.72 0.8 104 115	0.72 0.8 104 115			

the table continues on next page

Max. differential pressures specified in table apply to PTFE and graphite packing.
 Δp for bellows must be consulted with the producer.

For further information on actuating, see actuators' catalogue sheets			Pneumatic actuator					A. Hock 2116-100	A. Hock 2116S-100	A. Hock 2116-100	A. Hock 2116S-100				
			Specification No. of actuator					direct	indirect	direct	indirect				
			Actuator function					P2-OK-BN1	P2-OK-YN2	P2-OK-BN1	P2-OK-ZN2				
			Spring range [bar] [psi]					0.8 - 2.2 12 - 32	1.3 - 3.0 19 - 44	0.8 - 2.2 12 - 32	1.5 - 3.5 22 - 51				
			Spring setting [bar] [psi]					0.8- 1.92 12 - 28	1.64 - 3.0 24 - 44	0.8- 1.92 12 - 28	1.9 - 3.5 28 - 51				
			Feeding pressure [bar] [psi]					3.6 52	4.0 58	5.1 74	4.5 65				
			Marking in valve specific. No.					PHC							
			Linear force					20 kN	19.6 kN	38 kN	22.8 kN				
			Kvs [m³/h] Cv [US gallon/min]					Δp_{max} ^[MPa] [psi] packing graph.PTFE	Δp_{max} ^[MPa] [psi] packing graph.PTFE	Δp_{max} ^[MPa] [psi] packing graph.PTFE	Δp_{max} ^[MPa] [psi] packing graph.PTFE				
NPS	H[mm]	Ds[mm]	1	2	3	4	5	graph.PTFE		graph.PTFE		graph.PTFE		graph.PTFE	
8"	80	100	---	---	250 289	160 185	100 116	1.8 2 262 290	1.76 2 255 290	2 2 290 290	2 2 290 290				
		150	---	400 462	---	---	---	0.79 0.94 114 136	0.77 0.92 111 133	1.75 1.9 253 276	0.94 1.09 136 158				
		200	570 659	---	---	---	---	0.43 0.52 63 75	0.42 0.51 61 74	0.98 1.07 142 155	0.52 0.6 75 88				
10"		150	---	---	400 462	250 289	160 185	0.75 0.93 109 134	0.73 0.9 106 131	1.72 1.9 250 275	0.9 1.08 131 156				
		200	---	630 728	---	---	---	0.41 0.51 59 74	0.40 0.5 57 72	0.96 1.06 139 153	0.49 0.59 72 86				
		230	800 925	---	---	---	---	0.30 0.38 44 55	0.29 0.37 43 54	0.72 0.8 104 115	0.37 0.44 53 64				

Max. differential pressures specified in table apply to PTFE and graphite packing.
 Δp for bellows must be consulted with the producer.

Kvs values and differential pressures $\Delta p_{\max}$ [MPa], [psi] of valves NPS 1/2" - 10" with perforated plugs (flow direction above plug) for electromechanic actuators

$\Delta p_{\max}$ value is the valve max. differential pressure when open - close function is always guaranteed.

For further information on actuating, see actuators' catalogue sheets			Actuating (actuator)					ST 0 ST 0.1 CVL-1000	Auma Schiebel	ST 1 Ex ST 0.1 CVL-1500	Auma Schiebel ST 1 IQM 10	Modact MTR Auma Schiebel	Hand wheel
			Marking in valve specification No.					EPK EPL EQL	EA... EZ...	EPJ EPL EQL	EA... EZ... EPI EQ...	EPD EA... EZ...	Rxx
			Linear force					4 kN	5 kN	6.3 kN	7.5 kN	10 kN	
			Kvs [m³/h] Cv [US gallon/min]					$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE
NPS	H[mm]	DS[mm]	1	2	3	4	5						
1"	16	25	---	6.3 7.28	4 4.62	2.5 ⁵⁾ 2.89	1.6 ⁵⁾ 1.85	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290
1¼"		32	---	10 11.6	6.3 7.28	4 4.62	2.5 ⁵⁾ 28.9	1.39 2 201 290	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290
1½"		40	---	16 18.5	10 11.6	6.3 7.28	4 4.62	0.83 2 121 290	1.54 2 224 290	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290
2"	20	50	---	25 28.9	16 18.5	10 11.6	6.3 7.28	0.46 1.36 66 198	0.88 1.79 128 259	1.44 2 208 290	1.95 2 289 290	2 2 290 290	2 2 290 290
2½"		65	---	40 46.2	25 28.9	16 18.5	10 11.6	1.24 0.79 35 115	0.5 1.05 73 153	0.84 1.39 122 202	1.15 1.7 167 247	1.8 2 290 290	1.8 2 261 290
3"	40	80	---	63 72.8	40 28.9	25 46.2	16 18.5	---	---	---	0.65 1.1 94 159	1.1 1.55 159 224	2 2 290 290
4"		100	---	100 116	63 72.8	40 28.9	25 46.2	---	---	---	0.4 0.69 85 100	0.69 0.98 100 142	1.04 168 201 244
5"		125	---	160 185	100 116	63 72.8	40 46.2	---	---	---	0.24 0.43 34 62	0.43 0.62 62 89	0.88 1.07 128 155
6"		150	---	250 289	160 185	100 116	63 72.8	---	---	---	0.15 0.29 22 41	0.29 0.42 41 61	0.6 0.74 88 107

5) only with linear characteristic

Max. differential pressures specified in table apply to PTFE and graphite packing.
 Δp for bellows must be consulted with the producer.

For further information on actuating, see actuators' catalogue sheets			Actuating (actuator)					Auma Schiebel IQM 10		Modact MTR ST 2 CVL-5000		Auma Schiebel ST 2 CVL-5000 IQM 12		Modact MTR ST 2		Auma Schiebel IQM 20		Hand wheel	
			Marking in valve specification No.					EA... EZ... EQ...		EPD EPM EQL		EA... EZ... EPM EQL EQ...		EPD EPM		EA... EZ... EQ...		Rxx	
			Linear force					15 kN		16 kN		20 kN		25 kN		32 kN			
			Kvs [m³/h] Cv [US galon/min]					$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]		$\Delta p_{max}^{[MPa]}$ [psi]	
								packing		packing		packing		packing		packing		packing	
								graph.PTFE		graph.PTFE		graph.PTFE		graph.PTFE		graph.PTFE		graph.PTFE	
NPS	H[mm]	Ds[mm]	1	2	3	4	5												
3"	40	80	---	63 72.8	40 46.2	25 28.9	16 18.5	2 290	2 290	2 290	2 290	2 290	2 290	2 290	2 290	2 290	2 290	2 290	2 290
4"		100	---	100 116	63 72.8	40 46.2	25 28.9	1.27 184	1.56 227	1.39 201	1.68 244	1.85 269	2 290	2 290	2 290	2 290	1.39 201	1.68 244	
5"		125	---	160 185	100 116	63 72.8	40 46.2	0.8 117	0.99 144	0.88 128	1.07 155	1.18 172	1.37 199	1.56 226	2 254	2 290	2 290	0.88 128	1.07 155
6"		150	---	250 289	160 185	100 116	63 72.8	0.55 80	0.68 99	0.6 88	0.74 107	0.82 118	0.95 138	1.08 157	1.21 176	1.45 211	1.58 230	0.6 88	0.74 107
8"	80	200	---	400 462	250 289	160 185	100 116	0.28 41	0.37 53	0.31 45	0.4 58	0.43 63	0.52 202	0.58 85	0.67 97	0.8 290	0.88 128	1.04 151	1.13 163
10"		230	---	630 728	400 462	250 289	160 185	0.19 27	0.26 38	0.21 30	0.29 41	0.3 44	0.38 55	0.42 61	0.49 72	0.58 84	0.66 95	0.77 111	0.84 122

Max. differential pressures specified in table apply to PTFE and graphite packing.
 Δp for bellows must be consulted with the producer.

Kvs values and differential pressures $\Delta p_{\max}$ [MPa], [psi] of valves NPS 1" - 8" with perforated plugs (flow direction above plug) for pneumatic actuators

$\Delta p_{\max}$ value is the valve max. differential pressure when open - close function is always guaranteed.

For further information on actuating, see actuators' catalogue sheets			Pneumatic actuator					Flowserve PA 253				Flowserve PB 503		A. Hock 2109	
			Specification No. of actuator					direct	indirect	direct	indirect	direct	indirect	direct	indirect
			Actuator function					BVCxAA	BVCxZA	BVCxAA	BVCxZA	BVCxAA	BVCxZA	P2-0K-VL1	P2-0K-HL2
			Spring range [bar] [psi]					1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.2 - 3.0 17 - 44	1.5 - 3.8 22 - 55
			Spring setting [bar] [psi]					1.5 - 2.46 22 - 36	1.75 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.2 - 2.64 17 - 38	1.96 - 3.8 28 - 55
			Feeding pressure [bar] [psi]					4.5 65	4.5 65	4.5 65	4.5 65	4.5 65	4.5 65	3.9 57	5.8 84
			Marking in valve specific. No.					PFA				PFB		PHF	
			Linear force					4.3 kN	4.3 kN	3.7 kN	3.7 kN	7.5 kN	7.5 kN	3.5 kN	5.7 kN
			Kvs [m³/h] Cv [US galon/min]					$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing
NPS	H[mm]	DS[mm]	1	2	3	4	5	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE
1"	16	25	---	6.3 7.28	4 4.62	2.5 ⁵⁾ 2.89	1.6 ⁵⁾ 1.85	0.77 1.55 111 224	0.77 1.55 111 224	---	---	---	---	0.47 1.25 69 182	1.28 2 185 290
1¼"		32	---	10 11.6	6.3 7.28	4 4.62	2.5 ⁵⁾ 28.9	0.46 0.94 67 136	0.46 0.94 67 136	---	---	---	---	0.29 0.76 42 110	0.77 1.24 112 180
1½"		40	---	16 18.5	10 11.6	6.3 7.28	4 4.62	0.3 0.6 43 87	0.3 0.6 43 87	---	---	---	---	0.18 0.49 27 71	0.5 0.8 72 116
2"	20	50	---	25 28.9	16 18.5	10 11.6	6.3 7.28	0.18 0.36 26 52	0.18 0.36 26 52	0.13 0.31 19 45	0.13 0.31 19 45	0.45 0.63 65 92	0.45 0.63 65 92	---	---
2½"		65	---	40 46.2	25 28.9	16 18.5	10 11.6	0.11 0.22 16 32	0.11 0.22 16 32	0.08 0.19 11 27	0.08 0.19 11 27	0.28 0.39 40 56	0.28 0.39 40 56	---	---

For further information on actuating, see actuators' catalogue sheets			Pneumatic actuator					A. Hock 2112-30					
			Specification No. of actuator					direct	indirect	direct	indirect	direct	indirect
			Actuator function					P2-0K-BM1	P2-0K-BM2	P2-0K-BM1	P2-0K-BM2	P2-0K-WM1	P2-0K-MM2
			Spring range [bar] [psi]					0.8 - 2.2 12 - 32	0.8 - 2.2 12 - 32	0.8 - 2.2 12 - 32	0.8 - 2.2 12 - 32	1.4 - 2.8 20 - 41	1.6 - 3.2 23 - 46
			Spring setting [bar] [psi]					0.8 - 1.55 12 - 22	1.45 - 2.2 21 - 32	0.8 - 1.73 12 - 25	1.27 - 2.2 18 - 32	1.4 - 2.33 20 - 34	2.13 - 3.2 31 - 46
			Feeding pressure [bar] [psi]					2.4 35	3.7 54	2.6 38	3.5 51	3.8 55	5.4 78
			Marking in valve specific. No.					PHA		PHA		PHA	
			Linear force					4.6 kN	8.3 kN	4.6 kN	7.3 kN	8 kN	12.2 kN
			Kvs [m³/h] Cv [US galon/min]					$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing
NPS	H[mm]	DS[mm]	1	2	3	4	5	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE
1"	16	25	---	6.3 7.28	4 4.62	2.5 ⁵⁾ 2.89	1.6 ⁵⁾ 1.85	0.88 1.66 127 240	2 2 290 290	---	---	---	---
1¼"		32	---	10 11.6	6.3 7.28	4 4.62	2.5 ⁵⁾ 28.9	0.53 1 77 145	1.35 1.82 196 264	---	---	---	---
1½"		40	---	16 18.5	10 11.6	6.3 7.28	4 4.62	0.34 0.64 49 93	0.87 1.17 126 170	---	---	---	---
2"	20	50	---	25 28.9	16 18.5	10 11.6	6.3 7.28	---	---	0.20 0.39 30 56	0.43 0.62 63 89	0.49 0.3 72 44	0.83 1.02 121 147
2½"		65	---	40 46.2	25 28.9	16 18.5	10 11.6	---	---	0.12 0.24 18 34	0.27 0.38 38 55	0.3 0.41 44 60	0.51 0.62 74 90

the table continues on next page

5) only with linear characteristic

Max. differential pressures specified in table apply to PTFE and graphite packing.
 Δp for bellows must be consulted with the producer.

For further information on actuating, see actuators' catalogue sheets

For further information on actuating, see actuators' catalogue sheets			Pneumatic actuator					Flowserve PB 503		Flowserve PB 701		A. Hock 2112-50		A. Hock 2116-40	
			Specification No. of actuator					direct	indirect	direct	indirect	direct	indirect	direct	indirect
			Actuator function					BVCxAA	BVCxZA	BVCxAA	BVCxZA	P2-0K-SI1	P2-0K-SI2	P2-0K-BN1	P2-0K-BN2
			Spring range [bar] [psi]					1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	0.8 - 2.8 12 - 41	0.8 - 2.8 12 - 41	0.8 - 2.2 12 - 32	0.8 - 2.2 12 - 32
			Spring setting [bar] [psi]					1.5 - 2.46 22 - 36	1.75 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	0.8- 2.4 12 - 35	1.2 - 2.8 17 - 41	0.8- 1.36 12 - 20	1.64 - 2.2 24 - 32
			Feeding pressure [bar] [psi]					4.5 65	4.5 65	4.5 65	4.5 65	3.3 48	4.0 58	2.2 32	3.9 57
			Marking in valve specific. No.					PFB		PFC		PHA		PHC	
			Linear force					7.5 kN	4.3 kN	3.7 kN	3.7 kN	4.6 kN	6.9 kN	9.6 kN	19.5 kN
								$\Delta p_{\max}$ ^[MPa] [psi]	$\Delta p_{\max}$ ^[MPa] [psi]	$\Delta p_{\max}$ ^[MPa] [psi]	$\Delta p_{\max}$ ^[MPa] [psi]	$\Delta p_{\max}$ ^[MPa] [psi]	$\Delta p_{\max}$ ^[MPa] [psi]	$\Delta p_{\max}$ ^[MPa] [psi]	$\Delta p_{\max}$ ^[MPa] [psi]
			Kvs [m³/h] Cv [US galon/min]					packing	packing	packing	packing	packing	packing	packing	
NPS	H[mm]	Ds[mm]	1	2	3	4	5	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE
3"	40	80	100	63	40	25	16	0.18 0.27	0.18 0.27	0.28 0.37	0.28 0.37	0.07 0.16	0.15 0.24	0.25 0.34	0.61 0.7
			116	72.8	46.2	28.9	18.5	26 39	26 39	41 54	41 54	10 24	22 36	37 50	88 101
4"		100	160	100	63	40	25	0.11 0.17	0.11 0.17	0.18 0.24	0.18 0.24	0.05 0.11	0.1 0.16	0.16 0.22	0.39 0.45
			185	116	72.8	46.2	28.9	17 25	17 25	27 35	27 35	7 15	15 23	24 32	57 66
5"		125	250	160	100	63	40	0.07 0.11	0.07 0.11	0.12 0.16	0.12 0.16	0.03 0.07	0.07 0.1	0.11 0.14	0.26 0.29
			289	185	116	72.8	46.2	11 16	11 16	17 23	17 23	4 10	9 15	15 21	37 43
6"		150	360	250	160	100	63	0.05 0.08	0.05 0.08	0.08 0.11	0.08 0.11	0.02 0.05	0.05 0.07	0.07 0.1	0.18 0.21
			416	289	185	116	72.8	8 11	8 11	12 16	12 16	3 7	7 10	11 15	26 30

The valves CV 2x0 NPS 8" - 10" with perforated plugs and pneumatic actuators are not supplied

Max. differential pressures specified in table apply to PTFE and graphite packing.
 Δp for bellows must be consulted with the producer.

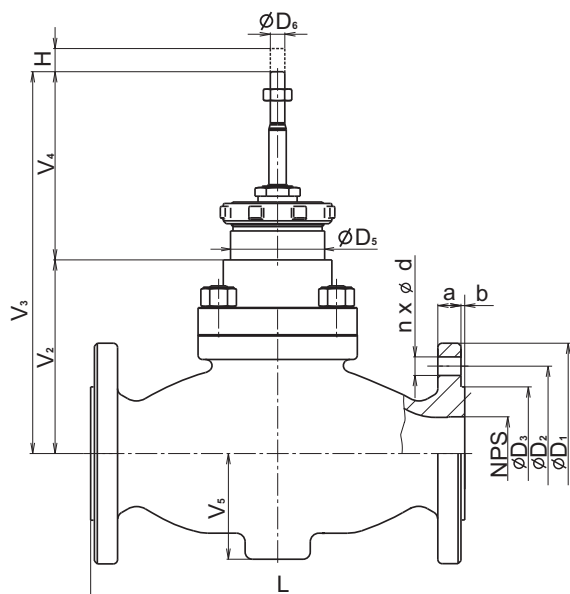
CV / SV 220 (Ex) a CV / SV 230 (Ex) NPS ½' - 10"																					
NPS	H	V ₂	[#] V ₂	V ₃	[#] V ₃	V ₄	V ₅	ØD ₁	ØD ₂	ØD ₃	ØD ₅	ØD ₆	M	d	n	a	b	m	[#] m _v	L ₁	L ₂
	mm	mm inch	mm inch	mm inch	mm inch	mm inch	mm inch	mm inch	mm inch	mm inch	mm inch	mm	mm inch	mm inch	mm	mm inch	mm	kg	kg	mm inch	mm inch
½"		90	279	220	409		47	90	60.3	34.9						9.6		5.5		184	194
		3.543	10.984	8.661	16.1		1.85	3.54	2.37	1.38						0.38				7.24	7.64
¾"		90	279	220	409		47	100	69.9	42.9						11.2		6		184	194
		3.543	10.984	8.661	16.102		1.85	3.94	2.75	1.69						0.44				7.24	7.64
1"	16	100	287	230	417		52	110	79.4	50.8				15.9		12.7		7		184	194
		3.937	11.299	9.055	16.417		2.047	4.33	3.13	2				5/8"		0.5				7.24	7.64
1¼"		100	287	230	417		49	115	88.9	63.5						14.3		8.5		200	210
		3.937	11.299	9.055	16.417		1.929	4.53	3.5	2.5						0.56				7.87	8.27
1½"		100	297	230	417		52	125	98.4	73					4	15.9		10		222	232
		3.937	1.299	9.055	16.417		2.047	4.92	3.87	2.88						0.62				8.74	9.13
2"	20	132	281	262	411	130	73	150	120.7	92.1	65		---			17.5		16		254	264
		5.197	11.063	10.314	16.181	5.118	2.874	5.91	4.75	3.62	2.559					0.69				10	10.39
2½"	20	132	281	262	411		73	180	139.7	104.8						20.7		21	3	276	286
		5.197	11.063	10.314	16.181		2.874	7.09	5.5	4.13				19.1		0.81				10.87	11.26
3"		164	396	294	526		105	190	152.4	127				3/4"		22.3		33		298	308
		6.456	15.591	11.575	20.709		4.133	7.48	6	5						0.88				11.73	12.13
4"		164	396	294	526		105	230	190.5	157.2						22.3		46		352	362
	40	6.456	15.591	11.575	20.709		4.133	9.06	7.5	6.19						0.88				13.86	14.25
5"		183	400	313	526		133	255	215.9	185.7						22.3		70		403	413
		7.205	15.748	12.323	20.866		5.236	10.04	8.5	7.31						0.88				15.87	16.26
6"		200	400	330	530		134	280	241.3	215.9						23.9		105		451	461
		7.874	15.748	12.992	20.866		5.275	11.02	9.5	8.5				22.3	8	0.94				17.76	18.15
8"		262	---	422	---		203	354	298.5	269.9						23.9		200		543	553
	80	10.314	---	16.614	---	160	7.992	13.58	11.75	10.62	---		150			0.94				21.38	21.77
10"		346	---	506	---	6.299	253	405	362	323.8				25.4	12	28.6		350		673	683
		13.622	---	19.921	---		9.961	15.94	14.25	12.75				1"		1.13				26.5	26.89

[#] - applied for version with bellows packing

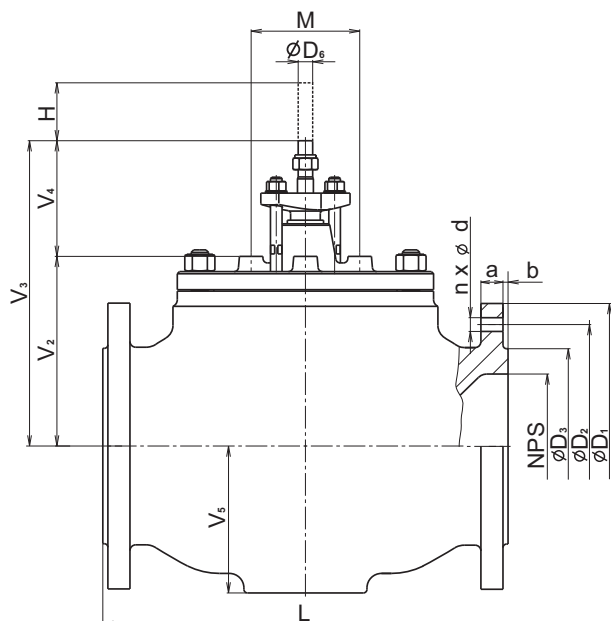
[#]m_v - weight of bellows packing

L₁ - RF

L₂ - LFF, SFF, LGF, SGF



NPS ½" - 6"



NPS 8" - 10"



CV 2x2

Control valve with
pressure-balanced
plug

NPS 1"- 10"
Class 150

Technical data

Series	CV 222 (Ex)	CV 232 (Ex)
Type of valve	Two-way, single-seated, control valve with pressure balanced plug	
Nominal size range	NPS 1" to 10"	
Nominal pressure	Class 150	
Body material	Cast steel A216 WCB, A217 WC6	Stainless steel A351 CF8M
Seat material: NPS ½"-2"	1.4028	1.4571
NPS 2½"-10"	1.4027	1.4581
Plug material: NPS 3"-10"	1.4021	1.4571
	1.4027	1.4581
Stem material	1.4923	1.4980
Operating temperature range	-50 to 550 °C (-58 to 1020 °F)- (request for negative temperature need to be specified in order)	
Face to face dimensions	Acc. to ISA-75.08.01-2002 /R2007 for version with flanges	
Connection flanges	Acc. to ASME B16.5-2013	
Flange faces	RF (Raised Face), LFF (Large Female Face), SFF (Small Female Face), LGF (Large Groove Face), SGF (Small Groove Face)	
Type of plug	V-ported, contoured, perforated	
Flow characteristic	Linear, equal-percentage, LDMspline®, parabolic, on - off	
Kvs value	1,6 to 800 m³/h (1,85 to 950 US gallon/min)	
Leakage rate	Class III. acc. to ANSI/FCI 70-2-2013 (<0,1% Cv) for c. valves with metal-metal seat sealing Class IV. acc. to ANSI/FCI 70-2-2013 (<0.01% Cv) for c. valves with metal-PTFE seat sealing	
Leakage rate for Ex version	Class IV. dle ANSI/FCI 70-2-2013 (<0.01% Cv)	
Rangeability r	50 : 1	
Packing	DRSpack® (PTFE) t _{max} = 260°C (500°F), exp. graphite t _{max} = 550°C (1020°F), bellows (NPS ½"- 6") t _{max} = 550°C (1020°F)	

Kvs values and differential pressures $\Delta p_{\max}$ [MPa], [psi] of valves with pressure balanced plugs NPS 1" - 10" with electromechanic actuators

$\Delta p_{\max}$ value is the valve max. differential pressure when open - close function is always guaranteed. In regard of service life of seat and plug, it is recommended so that permanent differential pressure would not exceed 1.6 MPa, 232 psi. Otherwise it is suitable to use perforated plug, (Δp up to 2,0 MPa, 290 psi) or sealing surfaces of seat and plug with a hard metal overlay (Δp up to 2,0 MPa, 290 psi).

For further information on actuating, see actuators' catalogue sheets			Actuating (actuator)					CVL-500	ST 0	CVL-1000	Auma Schiebel	ST 1 Ex ST 0.1 CVL-1500	Hand wheel
			Marking in valve specification No.					EQL	EPK	EQL	EA... EZ...	EPJ EPL EQL	Rxx
			Linear force					2 kN	2.5 kN	4 kN	5 kN	6.3 kN	
			Kvs [m³/h] Cv [US gallon/min]					$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE
NPS	H[mm]	Ds[mm]	1	2	3	4	5						
1"	16	25	10 11.6	6.3 ⁵⁾ 7.28	4 ⁵⁾ 4.62	2.5 ⁵⁾ 2.89	1.6 ⁵⁾ 1.85	---	2 290	2 290	2 290	2 290	2 290
			16 18.5	10 11.6	6.3 ⁵⁾ 7.28	4 ⁵⁾ 4.62	2.5 ⁵⁾ 2.89	---	2 290	2 290	2 290	2 290	2 290
1¼"	16	32	16 18.5	10 11.6	6.3 ⁵⁾ 7.28	4 ⁵⁾ 4.62	2.5 ⁵⁾ 2.89	---	2 290	2 290	2 290	2 290	2 290
1½"		40	25 28.9	16 18.5	10 11.6	6.3 ⁵⁾ 7.28	4 ⁵⁾ 4.62	---	2 290	2 290	2 290	2 290	2 290
2"	20	50	40 46.2	25 28.9	16 18.5	10 11.6	6.3 ⁵⁾ 7.28	---	2 290	2 290	2 290	2 290	2 290
			63 72.8	40 46.2	25 28.9	16 18.5	10 11.6	---	2 290	2 290	2 290	2 290	2 290
3"	40	80	100 116	63 72.8	40 46.2	25 28.9	16 18.5	---	---	---	2 290	2 290	2 290
			160 185	100 116	63 72.8	40 46.2	25 28.9	---	---	---	2 290	2 290	2 290
5"	40	125	250 289	160 185	100 116	63 72.8	40 46.2	---	---	---	2 290	2 290	2 290
6"		150	360 416	250 289	160 185	100 116	63 72.8	---	---	---	2 290	2 290	2 290
8"	80	200	630 728	400 462	250 289	160 185	100 116	---	---	---	---	---	2 290
10"		230	800 925	630 728	400 462	250 289	160 185	---	---	---	---	---	2 290

the table continues on next page

5) linear characteristic only

Perforated plug available only with Kvs values in shadowed frames with the following restrictions:

- Perforated plug with Kvs value acc. to column No. 2 available with linear or parabolic characteristic only

Max. differential pressures specified in table apply to PTFE and graphite packing.

$\Delta p_{\max}$ for bellows must be consulted with the producer.

For further information on actuating, see actuators' catalogue sheets			Actuating (actuator)					ST 1 IQM 10	ST 1 IQM 10	Auma Schiebel IQM 10	Modact MTR ST 2 CVL-5000	Auma Schiebel IQM 12	Modact MTR ST 2
			Marking in valve specification No.					EPI EQ...	EPI EQ...	EA... EZ... EQ...	EPD EPM EQL	EA... EZ... EQ...	EPD EPM
			Linear force					7.5 kN	10 kN	15 kN	16 kN	20 kN	25 kN
			Kvs [m³/h] Cv [US galon/min]					$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE	$\Delta p_{\max}$ [MPa] [psi] packing graph.PTFE
NPS	H[mm]	DS[mm]	1	2	3	4	5						
1"	16	25	10 11.6	6.3 ⁵⁾ 7.28	4 ⁵⁾ 4.62	2.5 ⁵⁾ 2.89	1.6 ⁵⁾ 1.85	2 2 290 290	2 2 290 290	---	---	---	---
1¼"		32	16 18.5	10 11.6	6.3 ⁵⁾ 7.28	4 ⁵⁾ 4.62	2.5 ⁵⁾ 28.9	2 2 290 290	2 2 290 290	---	---	---	---
1½"		40	25 28.9	16 18.5	10 11.6	6.3 ⁵⁾ 7.28	4 ⁵⁾ 4.62	2 2 290 290	2 2 290 290	---	---	---	---
2"	20	50	40 46.2	25 28.9	16 18.5	10 11.6	6.3 ⁵⁾ 7.28	2 2 290 290	2 2 290 290	---	---	---	---
2½"		65	63 72.8	40 46.2	25 28.9	16 18.5	10 11.6	2 2 290 290	2 2 290 290	---	---	---	---
3"	40	80	100 116	63 72.8	40 46.2	25 28.9	16 18.5	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	---	---
4"		100	160 185	100 116	63 72.8	40 46.2	25 28.9	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	---	---
5"		125	250 289	160 185	100 116	63 72.8	40 46.2	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	---	---
6"		150	360 416	250 289	160 185	100 116	63 72.8	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290	---	---
8"	80	200	630 728	400 462	250 289	160 185	100 116	---	---	2 2 290 290	2 2 290 290	2 2 290 290	---
10"		230	800 925	630 728	400 462	250 289	160 185	---	---	---	2 2 290 290	2 2 290 290	2 2 290 290

5) linear characteristic only

Perforated plug available only with Kvs values in shadowed frames with the following restrictions:

- Perforated plug with Kvs value acc. to column No. 2 available with linear or parabolic characteristic only

Max. differential pressures specified in table apply to PTFE and graphite packing.

$\Delta p_{\max}$ for bellows must be consulted with the producer.

Kvs values and differential pressures $\Delta p_{\max}$ [MPa], [psi] of valves with pressure balanced plugs NPS 1" - 10" with pneumatic actuators

$\Delta p_{\max}$ value is the valve max. differential pressure when open - close function is always guaranteed. In regard of service life of seat and plug, it is recommended so that permanent differential pressure would not exceed 1.6 MPa, 232 psi. Otherwise it is suitable to use perforated plug, (Δp up to 2,0 MPa, 290 psi) or sealing surfaces of seat and plug with a hard metal overlay (Δp up to 2,0 MPa, 290 psi).

For further information on actuating, see actuators' catalogue sheets			Pneumatic actuator		Flowserve PA 253				A. Hock 2109			
			Specification No. of actuator		direct	indirect	direct	indirect	direct	indirect	direct	indirect
			Actuator function		BVCxAA	BVCxZA	BVCxAA	BVCxZA	P2-0K-VL1	P2-0K-HL2	P2-0K-VL1	P2-0K-HL2
			Spring range [bar] [psi]		1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.2 - 3.0 17 - 44	1.5 - 3.8 22 - 55	1.2 - 3.0 17 - 44	1.5 - 3.8 22 - 55
			Spring setting [bar] [psi]		1.5 - 2.46 22 - 36	1.75 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.2 - 2.64 17 - 38	1.96 - 3.8 28 - 55	1.2 - 3.0 17 - 44	1.5 - 3.8 22 - 55
			Feeding pressure [bar] [psi]		4.5 65	4.5 65	4.5 65	4.5 65	3.9 57	5.8 84	4.2 61	5.3 77
			Marking in valve specific. No.		PFA				PHF			
			Linear force		4.3 kN	4.3 kN	3.7 kN	3.7 kN	3.5 kN	5.7 kN	3.5 kN	4.4 kN
			Kvs [m ³ /h] Cv [US galon/min]		$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing
NPS	H[mm]	DS[mm]	1	2	3	4	5	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE	graph.PTFE
1"	16	25	---	6.3 ⁵⁾ 7.28	4 ⁵⁾ 4.62	2.5 ⁵⁾ 2.89	1.6 ⁵⁾ 1.85	2 2 290 290	2 2 290 290	---	---	---
1 1/4"		32	---	10 11.6	6.3 ⁵⁾ 7.28	4 ⁵⁾ 4.62	2.5 ⁵⁾ 28.9	2 2 290 290	2 2 290 290	---	---	---
1 1/2"		40	---	16 18.5	10 11.6	6.3 ⁵⁾ 7.28	4 ⁵⁾ 4.62	2 2 290 290	2 2 290 290	---	---	---
2"	20	50	---	25 28.9	16 18.5	10 11.6	6.3 ⁵⁾ 7.28	---	---	2 2 290 290	2 2 290 290	2 2 290 290
2 1/2"		65	---	40 46.2	25 28.9	16 18.5	10 11.6	---	---	2 2 290 290	2 2 290 290	2 2 290 290

For further information on actuating, see actuators' catalogue sheets			Pneumatic actuator		A. Hock 2112-30					
			Specification No. of actuator		direct	indirect	direct	indirect	direct	indirect
			Actuator function		P2-0K-BM1	P2-0K-BM2	P2-0K-BM1	P2-0K-BM2	P2-0K-WM1	P2-0K-MM2
			Spring range [bar] [psi]		0.8 - 2.2 12 - 32	0.8 - 2.2 12 - 32	0.8 - 2.2 12 - 32	0.8 - 2.2 12 - 32	1.4 - 2.8 20 - 41	1.6 - 3.2 23 - 46
			Spring setting [bar] [psi]		0.8 - 1.55 12 - 22	1.45 - 2.2 21 - 32	0.8 - 1.73 12 - 25	1.27 - 2.2 18 - 32	1.4 - 2.33 20 - 34	2.13 - 3.2 31 - 46
			Feeding pressure [bar] [psi]		2.4 35	3.7 54	2.6 38	3.5 51	3.8 55	5.4 78
			Marking in valve specific. No.		PHA		PHA		PHA	
			Linear force		4.6 kN	8.3kN	4.6 kN	7.3kN	8 kN	12.2kN
			Kvs [m ³ /h] Cv [US galon/min]		$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing	$\Delta p_{\max}$ [MPa] packing
NPS	H[mm]	DS[mm]	1	2	3	4	5	graph.PTFE	graph.PTFE	graph.PTFE
1"	16	25	---	6.3 ⁵⁾ 7.28	4 ⁵⁾ 4.62	2.5 ⁵⁾ 2.89	1.6 ⁵⁾ 1.85	2 2 290 290	2 2 290 290	---
1 1/4"		32	---	10 11.6	6.3 ⁵⁾ 7.28	4 ⁵⁾ 4.62	2.5 ⁵⁾ 28.9	2 2 290 290	2 2 290 290	---
1 1/2"		40	---	16 18.5	10 11.6	6.3 ⁵⁾ 7.28	4 ⁵⁾ 4.62	2 2 290 290	2 2 290 290	---
2"	20	50	---	25 28.9	16 18.5	10 11.6	6.3 ⁵⁾ 7.28	---	---	2 2 290 290
2 1/2"		65	---	40 46.2	25 28.9	16 18.5	10 11.6	---	---	2 2 290 290

the table continues on next page

5) linear characteristic only

Perforated plug available only with Kvs values in shadowed frames with the following restrictions:

- Perforated plug with Kvs value acc. to column No. 2 available with linear or parabolic characteristic only

Max. differential pressures specified in table apply to PTFE and graphite packing.

$\Delta p_{\max}$ for bellows must be consulted with the producer.

For further information on actuating, see actuators' catalogue sheets			Pneumatic actuator					Flowserve PA 503				Flowserve PB 701	
			Specification No. of actuator					direct	indirect	direct	indirect	direct	indirect
			Actuator function					BVCxAA	BVCxZA	BVCxAB	BVCxZB	BVCxAB	BVCxZB
			Spring range [bar] [psi]					1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39
			Spring setting [bar] [psi]					1.5 - 2.46 22 - 36	1.75 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39
			Feeding pressure [bar] [psi]					4.5 65	4.5 65	4.5 65	4.5 65	4.5 65	4.5 65
			Marking in valve specific. No.					PFB				PFC	
			Linear force					7.5 kN	7.5 kN	7.5 kN	7.5 kN	10.5 kN	10.5 kN
			Kvs [m³/hod] Cv [US galon/min]					Δp_{max} [MPa] [psi] packing graph.PTFE	Δp_{max} [MPa] [psi] packing graph.PTFE	Δp_{max} [MPa] [psi] packing graph.PTFE	Δp_{max} [MPa] [psi] packing graph.PTFE	Δp_{max} [MPa] [psi] packing graph.PTFE	Δp_{max} [MPa] [psi] packing graph.PTFE
NPS	H[mm]	Ds[mm]	1	2	3	4	5						
2"	20	50	40 46.2	25 28.9	16 18.5	10 11.6	6.3 ⁵⁾ 1.85	2 2 290 290	2 2 290 290	---	---	---	---
2½"		65	63 72.8	40 46.2	25 28.9	16 18.5	10 28.9	2 2 290 290	2 2 290 290	---	---	---	---
3"	40	80	100 116	63 72.8	40 46.2	25 28.9	16 18.5	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290
4"		100	160 185	100 116	63 72.8	40 46.2	25 28.9	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290
5"		125	250 289	160 185	100 116	63 72.8	40 46.2	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290
6"		150	360 416	250 289	160 185	100 116	63 72.8	---	---	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290

5) linear characteristic only

For further information on actuating, see actuators' catalogue sheets			Pneumatic actuator					A. Hock 2112-50		A. Hock 2116-40	
			Specification No. of actuator					direct	indirect	direct	indirect
			Actuator function					P2-OK-SI1	P2-OK-SI2	P2-OK-BN1	P2-OK-BN2
			Spring range [bar] [psi]					0.8 - 2.8 12 - 41	0.8 - 2.8 12 - 41	0.8 - 2.2 12 - 32	0.8 - 2.2 12 - 32
			Spring setting [bar] [psi]					0.8 - 2.4 12 - 35	1.2 - 2.8 17 - 41	0.8 - 1.36 12 - 20	1.64 - 2.2 24 - 32
			Feeding pressure [bar] [psi]					3.3 48	4.0 58	2.2 32	3.9 57
			Marking in valve specific. No.					PHA		PHC	
			Linear force					4.6 kN	6.9 kN	9.6 kN	19.5 kN
			Kvs [m³/h] Cv [US galon/min]					Δp_{max} [MPa] [psi] packing graph.PTFE	Δp_{max} [MPa] [psi] packing graph.PTFE	Δp_{max} [MPa] [psi] packing graph.PTFE	Δp_{max} [MPa] [psi] packing graph.PTFE
NPS	H[mm]	Ds[mm]	1	2	3	4	5				
3"	40	80	100 116	63 72.8	40 46.2	25 28.9	16 18.5	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290
4"		100	160 185	100 116	63 72.8	40 46.2	25 28.9	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290
5"		125	250 289	160 185	100 116	63 72.8	40 46.2	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290
6"		150	360 416	250 289	160 185	100 116	63 72.8	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290

5) linear characteristic only

Perforated plug available only with Kvs values in shadowed frames with the following restrictions:

- Perforated plug with Kvs value acc. to column No. 2 available with linear or parabolic characteristic only

Max. differential pressures specified in table apply to PTFE and graphite packing.

 Δp_{max} for bellows must be consulted with the producer.

For further information on actuating, see actuators' catalogue sheets			Pneumatic actuator					Flowserve PO 1502			
			Specification No. of actuator					direct	indirect	direct	indirect
			Actuator function					BVCxAD	BVCxZD	BFSxAD	BFSxZD
			Spring range [bar] [psi]					1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 29 - 51	2.0 - 3.5 29 - 51
			Spring setting [bar] [psi]					1.5 - 2.7 22 - 39	1.5 - 2.7 22 - 39	1.5 - 2.7 29 - 51	2.0 - 3.5 29 - 51
			Feeding pressure [bar] [psi]					4.5 65	4.5 65	5.5 80	5.5 80
			Marking in valve specific. No.					PFD			
			Linear force					22.5 kN	22.5 kN	30 kN	30 kN
			Kvs [m³/h] Cv [US galon/min]					Δp_{max} [MPa] Δp_{max} [psi]	Δp_{max} [MPa] Δp_{max} [psi]	Δp_{max} [MPa] Δp_{max} [psi]	Δp_{max} [MPa] Δp_{max} [psi]
								packing graph.PTFE	packing graph.PTFE	packing graph.PTFE	packing graph.PTFE
NPS	H[mm]	Ds[mm]	1	2	3	4	5				
8"	80	200	630 728	400 462	250 289	160 185	100 116	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290
10"		230	800 925	630 728	400 462	250 289	160 185	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290

For further information on actuating, see actuators' catalogue sheets			Pneumatic actuator					A.Hock 2116S-100			
			Specification No. of actuator					direct	indirect	direct	indirect
			Actuator function					P2-0K-YN1	P2-0K-YN2	P2-0K-ZN1	P2-0K-ZN2
			Spring range [bar] [psi]					1.3 - 3.0 19 - 44	1.3 - 3.0 19 - 44	1.5 - 3.5 22 - 51	1.5 - 3.5 22 - 51
			Spring setting [bar] [psi]					1.3 - 2.66 19 - 39	1.64 - 3.0 24 - 44	1.5 - 3.1 22 - 45	1.9 - 3.5 28 - 51
			Feeding pressure [bar] [psi]					4.0 58	4.8 70	4.6 67	5.4 78
			Marking in valve specific. No.					PFC			
			Linear force					16 kN	19.6 kN	18 kN	22.8 kN
			Kvs [m³/h] Cv [US galon/min]					Δp_{max} [MPa] Δp_{max} [psi]	Δp_{max} [MPa] Δp_{max} [psi]	Δp_{max} [MPa] Δp_{max} [psi]	Δp_{max} [MPa] Δp_{max} [psi]
								packing graph.PTFE	packing graph.PTFE	packing graph.PTFE	packing graph.PTFE
NPS	H[mm]	Ds[mm]	1	2	3	4	5				
8"	80	200	630 728	400 462	250 289	160 185	100 116	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290
10"		230	800 925	630 728	400 462	250 289	160 185	2 2 290 290	2 2 290 290	2 2 290 290	2 2 290 290

Perforated plug available only with Kvs values in shadowed frames with the following restrictions:

- Perforated plug with Kvs value acc. to column No. 2 available with linear or parabolic characteristic only

Max. differential pressures specified in table apply to PTFE and graphite packing.

Dimensions and weights of valves CV / SV 222 (Ex) CV / SV 232 (Ex) NPS 1" - 10"

NPS	H	V ₂	[#] V ₂	V ₃	[#] V ₃	V ₄	V ₅	ØD ₁	ØD ₂	ØD ₃	ØD ₅	ØD ₆	M	d	n	a	b	m	[#] m _v	L ₁	L ₂			
	mm	mm inch	mm inch	mm inch	mm inch	mm inch	mm inch	mm inch	mm inch	mm inch	mm inch	mm	mm inch	mm inch	mm	mm inch	mm	kg	kg	mm inch	mm inch			
1"	16	100	287	230	417		52	110	79.4	50.8		M 10x1		15.9 5/8"	4	12.7		7.5		184	194			
		3.937	11.299	9.055	16.417			2.047	4.33	3.13						2				0.5		7.24	7.64	
1¼"		100	287	230	417			49	115	88.9						63.5				14.3	9	200	210	
		3.937	11.299	9.055	16.417			1.929	4.53	3.5						2.5				0.56		7.87	8.27	
1½"		100	297	230	417		52	125	98.4	73		M 10x1		15.9 5/8"	4	15.9		11	222	232				
	3.937	1.299	9.055	16.417		2.047	4.92	3.87	2.88		0.62							8.74	9.13					
2"	20	132	281	262	411		73	150	120.7	92.1	65					---		19.1 3/4"	4	17.5		17	254	264
		5.197	11.063	10.314	16.181		2.874	5.91	4.75	3.62												0.69		10
2½"		132	281	262	411	130	73	180	139.7	104.8	2.559			19.1 3/4"	4	20.7		22	276	286				
	5.197	11.063	10.314	16.181	5.118	2.874	7.09	5.5	4.13							0.81			10.87	11.26				
3"	40	164	396	294	526		105	190	152.4	127		M 16x1.5		22.3 7/8"	8	22.3	2 0.06	35	3	298	308			
		6.456	15.591	11.575	20.709			4.133	7.48	6						5			0.88		11.73	12.13		
4"		164	396	294	526			105	230	190.5						157.2			22.3	48	352	362		
		6.456	15.591	11.575	20.709			4.133	9.06	7.5						6.19			0.88		13.86	14.25		
5"		183	400	313	526		133	255	215.9	185.7		M 16x1.5		22.3 7/8"	8	22.3		73	403	413				
	7.205	15.748	12.323	20.866		5.236	10.04	8.5	7.31		0.88							15.87	16.26					
6"		200	400	330	530		134	280	241.3	215.9		M 16x1.5		22.3 7/8"	8	23.9		108	451	461				
	7.874	15.748	12.992	20.866		5.275	11.02	9.5	8.5		0.94							17.76	18.15					
8"	80 (63) ¹⁾	262	---	422	---	160	203	354	298.5	269.9	---	M 20x1.5	150	25.4 1"	12	23.9	2 0.06	205	543	553				
	10.314	---	16.614	---			7.992	13.58	11.75	10.62								0.94		21.38	21.77			
10"	80	346	---	506	---	6.299	253	405	362	323.8		M 20x1.5	5.905	25.4 1"	12	28.6		355	673	683				
	13.622	---	19.921	---		9.961	15.94	14.25	12.75		1.13							26.5	26.89					

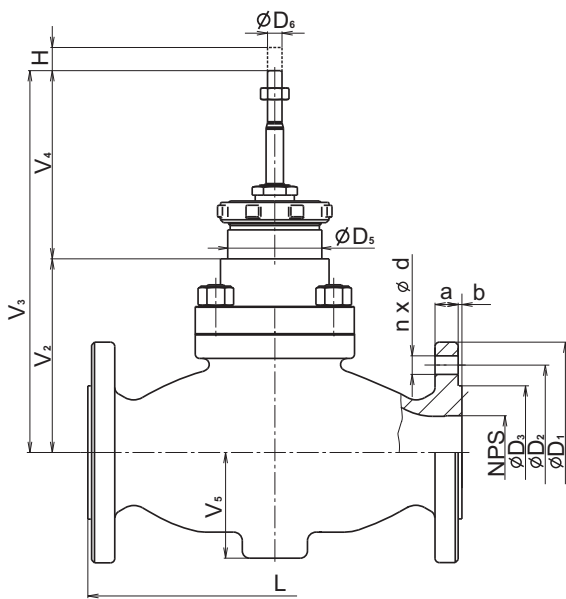
¹⁾ DN 200 with graphite pressure balancing - stroke = 63 mm

^{#)} - for valves with bellows packing

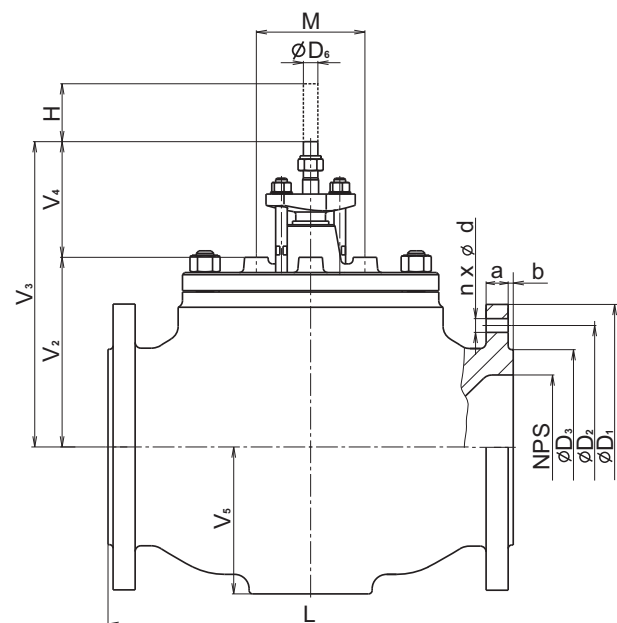
[#]m_v - weight of bellows packing

L₁ - RF

L₂ - LFF, SFF, LGF, SGF



NPS 1" - 6"



NPS 8" - 10"

Valve complete specification No. for ordering CV / SV 2x0 (Ex) and CV 2x2 (Ex)

		XX	XXX	XXX	XXXX	XX	XXX	/	XXX	-	XXX	XX
1. Valve	Control valve	CV										
	Shut-off valve	SV										
2. Series	Valves made of cast steel		2 2									
	Valves made of stainless steel		2 3									
	Direct valve		0									
	Pressure-balanced valve		2									
3. Actuating *)	Electric actuator			EXX								
	Pneumatic actuator			PXX								
	Hand wheel			RXX								
4. Connection	Flange RF (raised face)				1							
	Flange LFF (large female face)				3							
	Flange SFF (small female face)				4							
	Flange LGF (large groove face)				5							
	Flange SGF (small groove face)				6							
5. Body material	Cast steel A216 WCB (-29 to 425 °C); (-20 to 800 °F) ⁵⁾				1							
	CrMo steel A217 WC6 (-29 to 550 °C); (-20 to 1020 °F) ⁵⁾				7							
	Stainless steel A351 CF8M (-50 to 550 °C); (-58 to 1020 °F) ⁵⁾				8							
	Other material on request				9							
6. Seat sealing	Metal - metal				1							
	Soft sealing (metal - PTFE) ²⁾				2							
	Hard metal overlay on sealing surfaces				3							
	Balanced by graphite, metal - metal ³⁾				5							
	Balanced by graphite, hard metal overlay ³⁾				7							
	Hard metal overlay for CV 2x2, plug with metal seal ⁴⁾				8							
7. Packing	DRSpack® (PTFE)				3							
	Exp. graphite				5							
	Bellows ¹⁾				7							
	Bellows with safety PTFE packing ¹⁾				8							
	Bellows with safety Graphite packing ¹⁾				9							
8. Flow characteristic	Linear					L						
	Equal-percentage in straight way					R						
	LDMspline®					S						
	On-off					U						
	Parabolic					P						
	Linear - perforated plug					D						
	Equal-percentage - perforated plug					Q						
	Parabolic - perforated plug					Z						
9. Kvs	Column No. acc. to Kvs value table						X					
10. Nominal pressure PN	Class 150							150				
11. Max. operat. temp.	Acc. to version 260 - 550°C (500 - 1020°F)								XXX			
12. Nominal size DN	DN (NPS)									XXX		
13. Version	Standard											
	Non - explosive										Ex	
	Food industry version										Ox	

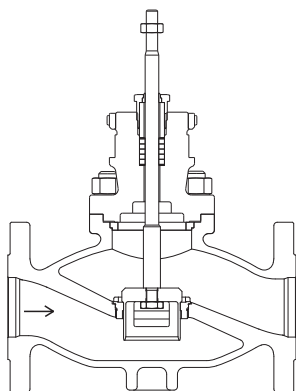
DN	NPS	DN	NPS	Temp. °C °F
015	½"	065	2½"	260 500
020	¾"	080	3"	300 570
025	1"	100	4"	315 600
032	1¼"	125	5"	400 750
040	1½"	150	6"	425 800
050	2"	200	8"	500 930
		250	10"	550 1020

Ordering example of version with flanges: CV220 ENC 1135 L1 150/400-080

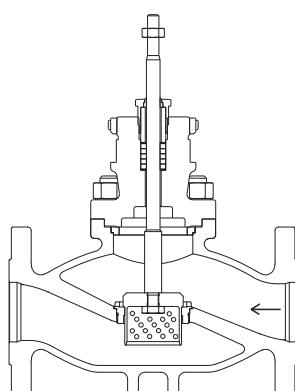
*) For marking of actuators in specification code, refer to table on page 67 of this catalogue

Valves CV / SV 2x0 (Ex)

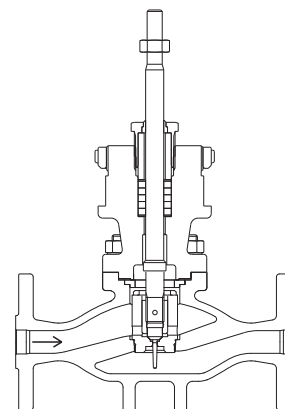
Section of valve
with V-ported plug



Section of valve
with perforated plug

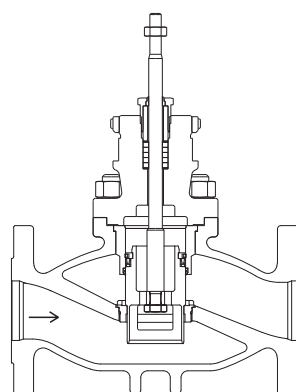


Section of valve
with micro-throttling system

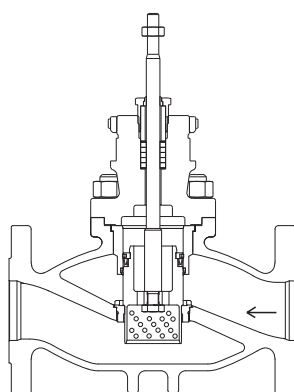


Valves CV 2x2 (Ex)

Section of pressure-balanced valve
with V-ported plug



Section of pressure-balanced valve
with perforated plug



Section of three-way valve with
V-ported plug



Electric actuators

Auma

**SA 07.2, SA Ex 07.2,
SAR 07.2, SAR Ex 07.2,
SA 07.6, SA Ex 07.6,
SAR 07.6, SAR Ex 07.6**

marking in type number:

**EAA, EAB, EAC, EAD
EAE, EAF, EAG, EAH**

Technical data								
Type	SA 07.2	SA Ex 07.2	SAR 07.2	SAR Ex 07.2	SA 07.6	SA Ex 07.6	SAR 07.6	SAR Ex 07.6
Marking in valve spec. No.	EAA	EAB	EAC	EAD	EAE	EAF	EAG	EAH
Voltage	1 ~ 230 V AC; 3 ~ 380 or 400 V AC							
Frequency	50 Hz							
Power consumption	see specification table							
Control	3 - position control or with signal 4 - 20 mA							
Nominal force	10 Nm~5 kN; 15 Nm~7,5 kN; 20 Nm~10 kN				30 Nm~15 kN; 40 Nm~20 kN			
Travel	acc. to used valve 16, 25, 40 mm				acc. to used valve 40, 80 mm			
Enclosure	IP 68							
Process medium max. temp.	acc. to used valve							
Ambient temprature range	-40 to 80°C	-20 to 60°C	-40 to 60°C	-20 to 60°C	-40 to 80°C	-20 to 60°C	-40 to 60°C	-20 to 60°C
Ambient humidity range	100 %							
Weight	- single-phase	25 - 62 kg			25 - 62kg			
	- three-phase	20 - 33 kg			21 - 33 kg			

→ **Note:** Specifications and technical data are for information only.

Detailed technical informations can be found in producer's data sheet or on the webside www.auma.com

Specification of Auma actuators									
					SA	X	XX	07.X	
Type					SA				
Duty		control ON - OFF				R			
Version		standard non-explosive					Ex		
Actuator size								07.2	07.6
Output shaft type A (thread TR 16x4 LH, connection flange F07) ... for RV 2xx DN 15 to 150									
Output speed [ot/min]		Tripping torque	SA 07.2 SA Ex 07.2	SAR 07.2 SAREx07.2	Motor power [kW]	SA 07.2 S2-15min	SA Ex 07.2 S2-15min	SAR 07.2 S4-25%	SAR Ex 07.2 S4-25%
	4		10-30 Nm	15-30 Nm		0,02	0,02	0,02	0,02
	5,6					0,02	0,02	0,02	0,02
	8					0,04	0,04	0,04	0,04
	11					0,04	0,04	0,04	0,04
	16					0,06	0,06	0,06	0,06
	22					0,06	0,06	0,06	0,06
	32					0,10	0,10	0,10	0,10
	45					0,10	0,10	0,10	0,10
	Output shaft type A (thread TR 20x4 LH, flange F10) ... for RV 2xx DN 80 to 400								
Output speed [ot/min]		Tripping torque	SA 07.6 SA Ex 07.6	SAR 07.6 SAREx07.6	Motor power [kW]	SA 07.6 S2-15min	SA Ex 07.6 S2-15min	SAR 07.6 S4-25%	SAR Ex 07.6 S4-25%
	4		20-60 Nm	30-60 Nm		0,03	0,03	0,03	0,03
	5,6					0,03	0,03	0,03	0,03
	8					0,06	0,06	0,06	0,06
	11					0,06	0,06	0,06	0,06
	16					0,12	0,12	0,12	0,12
	22					0,12	0,12	0,12	0,12
	32					0,20	0,20	0,20	0,20
	45					0,20	0,20	0,20	0,20

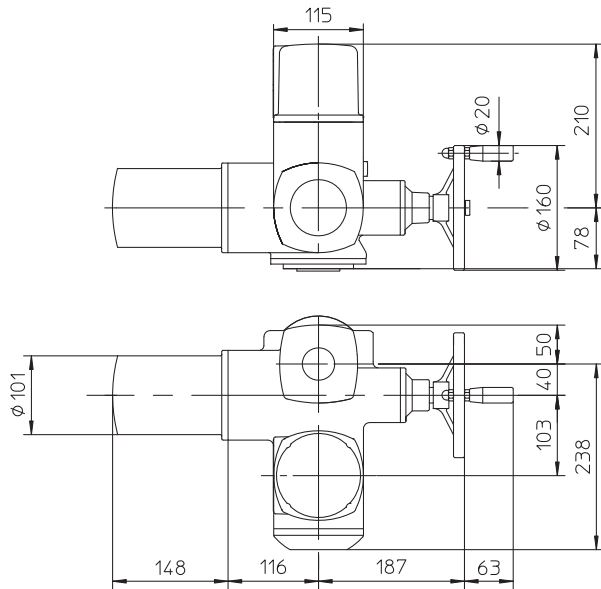
Accessories

- 2 TANDEM switches
- Gearing for signalisation of position
- Mechanical position indicator
- Potentiometer 1x200 Ω
- Electronic position transmitter RWG (potentiometer included), 4 - 20 mA, 2-wire
- Electronic position transmitter RWG (potentiometer included), 4 - 20 mA, 3/4-wire
- Inductive position transmitter IWG, 4 - 20 mA
- MATIC - or continuous control (specification of accessories acc. to catalogue of producer: IP 67; -25 to +70°C; ...), weight + 7 kg
- AUMATIC - or continuous control (specification of accessories acc. to catalogue of producer: IP 68; -25 to +70°C; ...), weight + 7kg

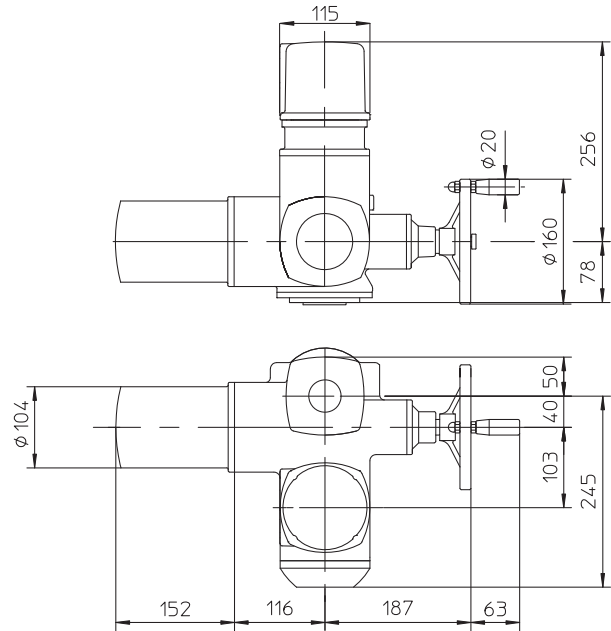
Other accessories acc. to catalogue of producer of actuators.

Dimensions of actuators Auma series 07.2 and 07.6

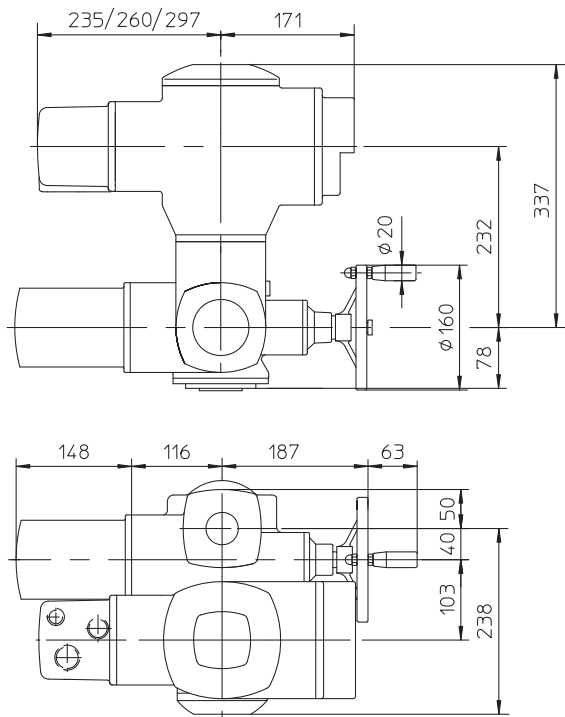
Normal version



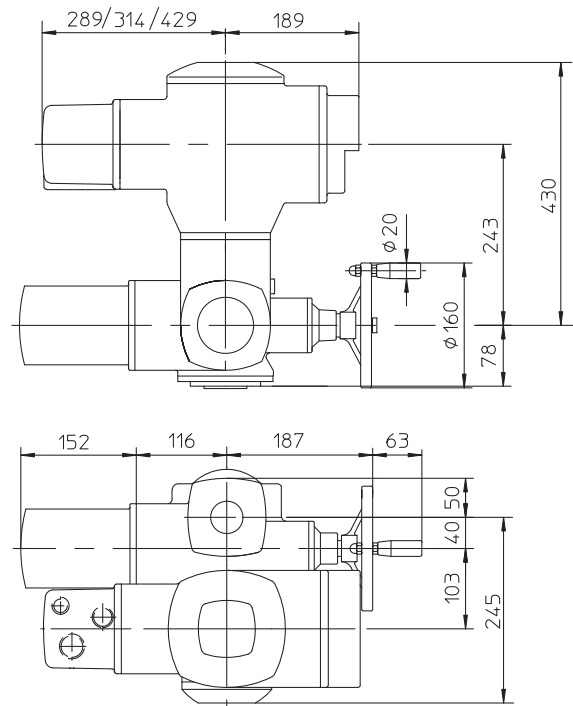
Version Ex norm



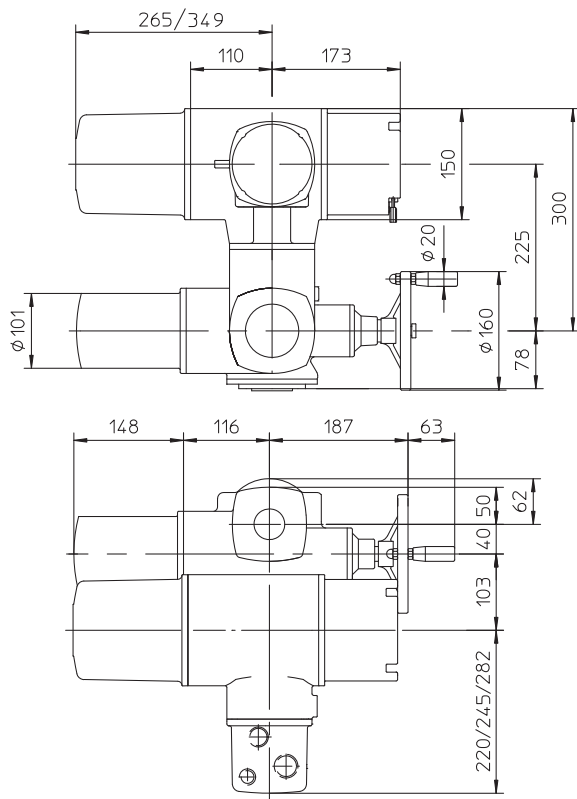
Version MATIC



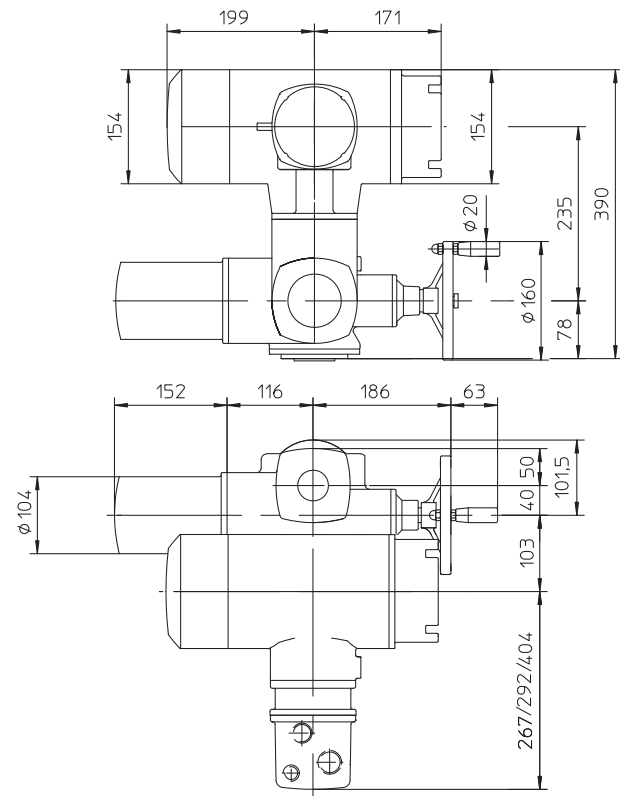
Version Ex MATIC



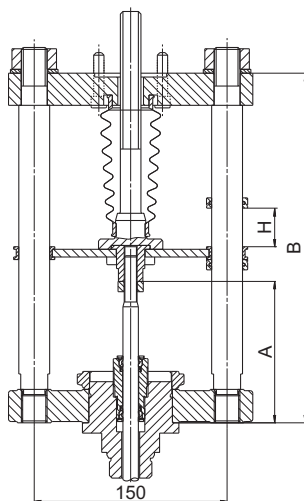
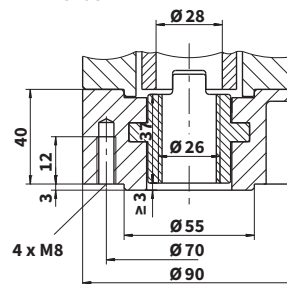
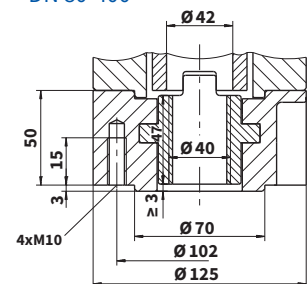
Version with AUMATIC



Version Ex AUMATIC



Attachment yoke (2 or 4 columns)

Output drive type A, F07
DN 15-65Output drive type A, F10
DN 80-400

For valves	Number of columns	A	B	Weight
CV 2xx NPS 1/2" - 6"	2	110	272	~ 8 kg
CV 2xx NPS 8" - 10"	4	140	420	~ 15 kg



Electric actuators

Auma

SA 10.2, SA Ex 10.2
SAR 10.2, SAR Ex 10.2

marking in type number:

EAI, EAJ, EAK, EAL

Technical data				
Type	SA 10.2	SA Ex 10.2	SAR 10.2	SAR Ex 10.2
Marking in valve spec. No.	EAI	EAL	EAJ	EAK
Voltage	3-phase ~ 380 or 400 V AC (1-phase ~ 230 V AC not applicable - high weight)			
Frequency	50 Hz			
Power consumption	see specification table			
Control	3 - point or with signal 4 - 20 mA			
Nominal force	80 Nm ~ 21,6 kN; 100 Nm ~ 27 kN; 120 Nm ~ 32 kN			
Travel	80, 100 mm			
Enclosure	IP 68			
Process medium max. temp.	acc. to used valve			
Ambient temperature range	-40 to 80 °C	-20 to 60 °C	-40 to 60 °C	-20 to 60 °C
Ambient humidity range	100 %			
Weight	22 to 47 kg			
Vibration resistance acc. to EN 60068-2-6	AUMA NORM: 2g, 10-200Hz; AUMA MATIC: 1g, 10-200Hz; AUMATIC: 1g, 10-200Hz			

→ **Note:** Specifications and technical data are for information only.

Detailed technical informations can be found in producer's data sheet or on the website www.auma.com

Specification of Auma actuators												
								SA	X	XX		10.2
Type								SA				
Duty			control ON - OFF						R			
Version			standard non-explosive								Ex	
Actuator size												10.2
Output drive shaft type A (thread TR 36x6 LH, flange F10) ... for RV 2xx DN 200 (NPS 8") - DN 400 (NPS 16")												
Voutput speed [ot/min]		Vtripping torque	SA 10.2 SA Ex 10.2	SAR 10.2 SAR Ex 10.2	Motor power [kW]	SA 10.2 S2-15min	SA Ex 10.2 S2-15min	SAR 10.2 S4-25%	SAR Ex 10.2 S4-25%			
	4					0,06	0,09	0,09	0,09			
	5,6					0,06	0,09	0,09	0,09			
	8					0,12	0,18	0,18	0,18			
	11		40-120 Nm	60-120 Nm		0,12	0,18	0,18	0,18			
	16					0,25	0,37	0,37	0,37			
	22					0,25	0,37	0,37	0,37			
	32					0,40	0,75	0,75	0,75			
	45					0,40	0,75	0,75	0,75			

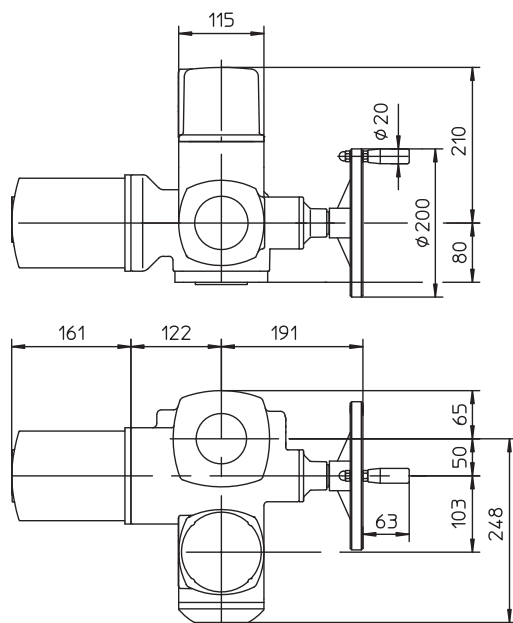
Accessories

- 2 TANDEM switches
 - Gearing for signalisation of position
 - Mechanical position indicator
 - Potentiometer 1x200 Ω
 - MATIC - or continuous control (specification of accessories acc. to catalogue of producer: IP 67; -25 to +70°C; ...), weight + 7 kg
 - AUMATIC - or continuous control (specification of accessories acc. to catalogue of producer: IP 68; -25 to +70°C; ...), weight + 7kg
- Other accessories acc. to catalogue of producer of actuators.

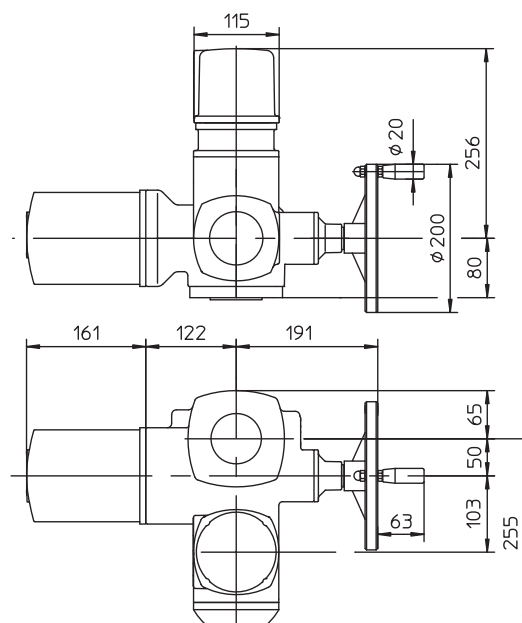
- Electronic position transmitter RWG (potentiometer included), 4 - 20 mA, 2-wire
- Electronic position transmitter RWG (potentiometer included), 4 - 20 mA, 3/4-wire
- Inductive position transmitter IWG, 4 - 20 mA

Dimensions of actuators Auma series 10

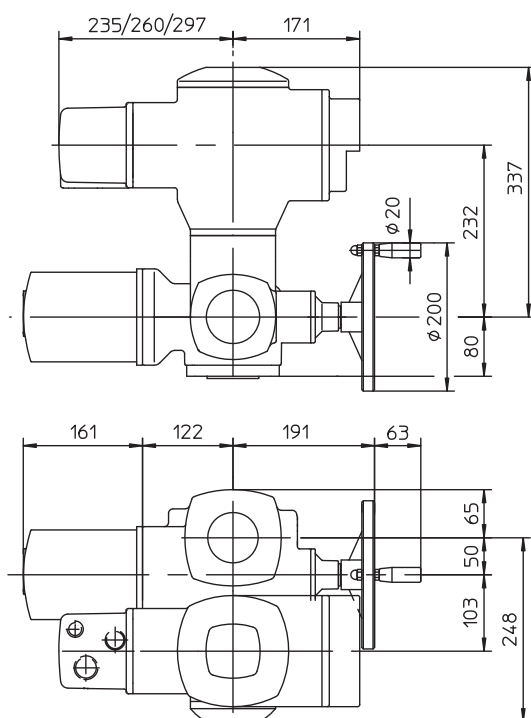
Normal version



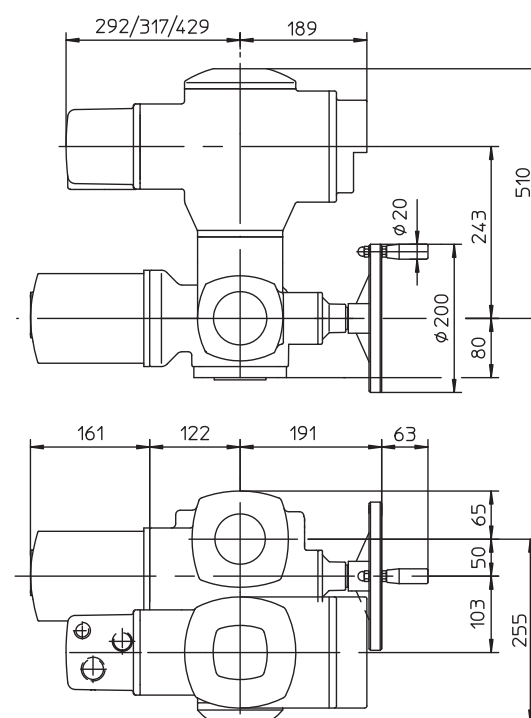
Ex normal version



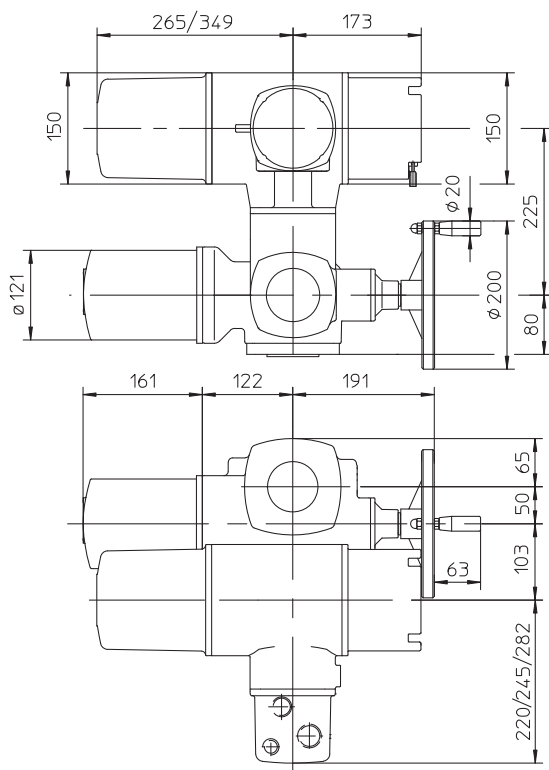
Version with MATIC



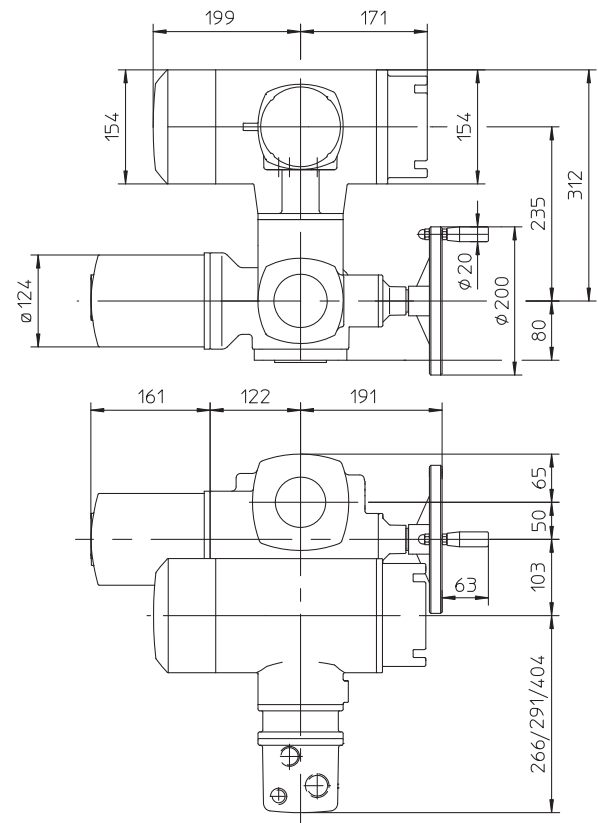
Version with Ex MATIC



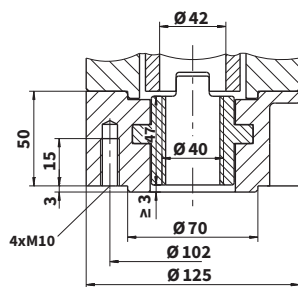
Version AUMATIC



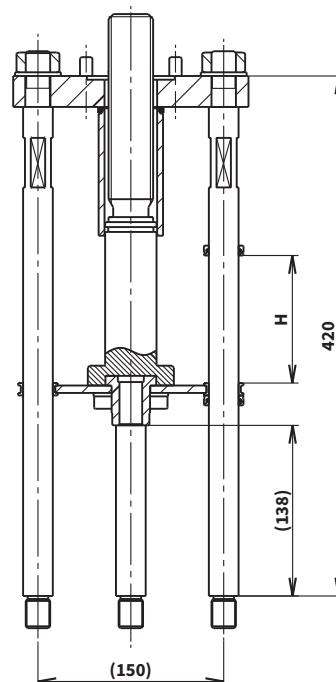
Version Ex AUMATIC



Output drive shaft A, F10



Attachment yoke DN 200 - 400 Connection A, F10, Tr36x6-LH





Elektric actuators **Schiebel**

AB3, AB5

marking in type number:

EZA, EZB, EZC, EZD
EZE, EZF, EZG, EZH

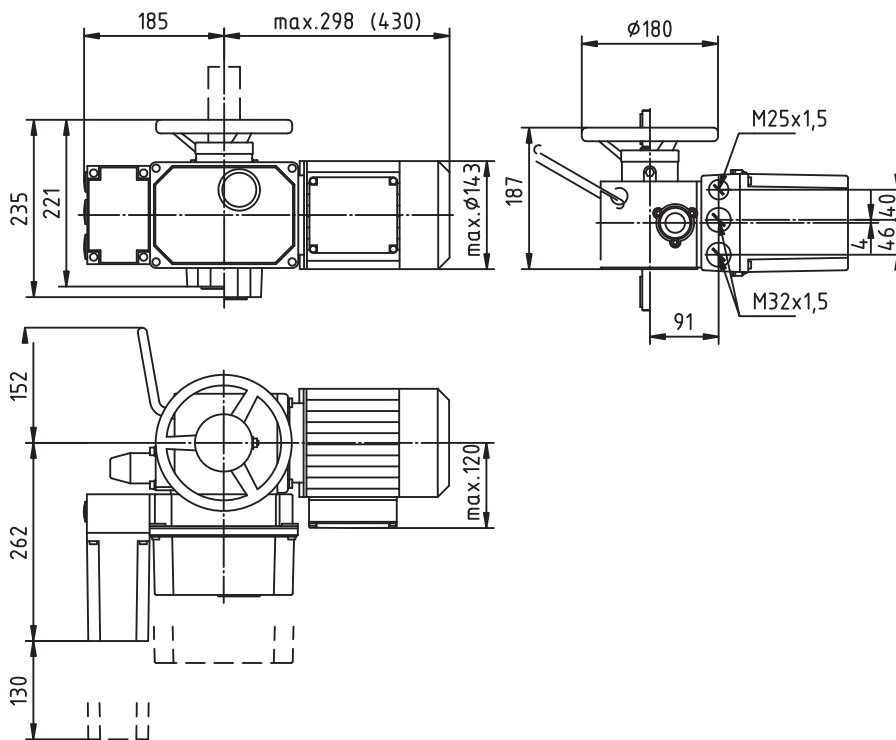
Technical data								
Type	AB3	AB5	exAB3	exAB5	rAB3	rAB5	exrAB3	exrAB5
Marking in valve spec. No.	EZA	EZE	EZB	EZF	EZC	EZG	EZD	EZH
Voltage	400 / 230 V; 230 V		400 / 230 V		400 / 230 V; 230 V		400 / 230 V	
Frequency	50 Hz							
Power consumption	see specification table							
Control	3-position or with signal 4 - 20 mA							
Nominal force	10 Nm ~ 5 kN; 15 Nm ~ 7,5 kN; 20 Nm ~ 10 kN; 30 Nm ~ 15 kN; 40 Nm ~ 20 kN							
Travel	acc. to used valve 16, 25, 40, 80 mm							
Enclosure	IP 66		IP 65		IP 66		IP 65	
Process medium max. temp.	acc. to used valve							
Ambient temprature range	-25 to 80 °C		-25 to 40 °C		-25 to 60 °C		-20 to 40 °C	
Ambient humidity range	90 % (tropical version: 100 % with condensation)							
Weight	16 - 20 kg							

→ **Note:** Specifications and technical data are for information only.

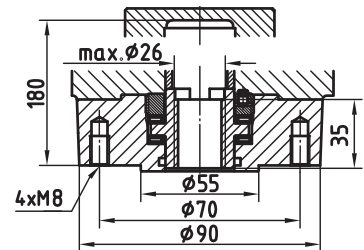
Detailed technical informations can be found in producer's data sheet or on the webside www.schiebel.com

Specification of actuators																
										XX	X	AB3	A	X	+	XXXXX
Version		non-explosive standard								ex						
Function		control ON - OFF									r					
Actuator size										AB3						
										AB5						
Output shaft type A (thread TR 16x4 LH, connection flange F07 ... DN 15 to 65)												A				
Output speed [ot/min]	2,5 5 7,5 10 15 20 30 40	Tripping torque	AB3 exAB3	rAB3 exrAB3	Motor power [kW]	AB3		rAB3		exAB3	exrAB3	2,5 5 7,5 10 15 20 30 40				
			400/230V	230V		400/230V	230V	400/230V	400/230V							
				0,09		0,09	0,09	0,09	0,09	0,09						
				0,03		0,12	0,03	0,12	0,12	0,12						
				0,09		0,09	0,09	0,09	0,09	0,09						
				0,09		0,09	0,09	0,09	0,09	0,09						
				0,18		0,09	0,09	0,18	0,09	0,09						
				0,18		0,18	0,09	0,37	0,09	0,09						
				0,18		0,25	0,18	0,25	0,37	0,18						
	0,18	0,25	0,18	0,55	0,37	0,18										
Output speed [ot/min]	2,5 5 7,5 10 15 20 30 40	Tripping torque	AB5 exAB5	rAB5 exrAB5	Motor power [kW]	AB5		rAB5		exAB5	exrAB5	2,5 5 7,5 10 15 20 30 40				
			400/230V	230V		400/230V	230V	400/230V	400/230V							
				0,09		0,09	0,09	0,09	0,09	0,09						
				0,06		0,12	0,06	0,12	0,12	0,12						
				0,09		0,09	0,09	0,18	0,09	0,09						
				0,09		0,18	0,09	0,37	0,09	0,09						
				0,18		0,18	0,18	0,37	0,18	0,18						
				0,18		0,55	0,18	0,75	0,18	0,18						
				0,37		0,55	0,37	1,10	0,37	0,37						
	0,37	0,55	0,37	1,10	0,37	0,37										
Accessories					Potentiometer 1 x 1000 Ω							F				
					Double potentiometer 2 x 1000 Ω							FF				
					Electronic transmitter 4 - 20 mA, 2-wire							ESG-Z				
					Electronic transmitter 4 - 20 mA, 2-wire, opto-electronic							ESM21				
					SMARTCON control unit							CSC				
					Additional torque switches							2DER 2DEL				
					Additional signalisation switches							2WER 2WEL				

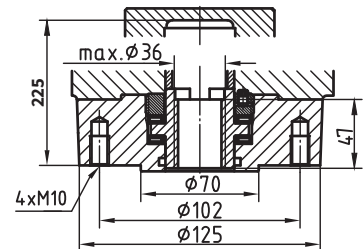
Dimensions of actuators ...AB3 and AB5



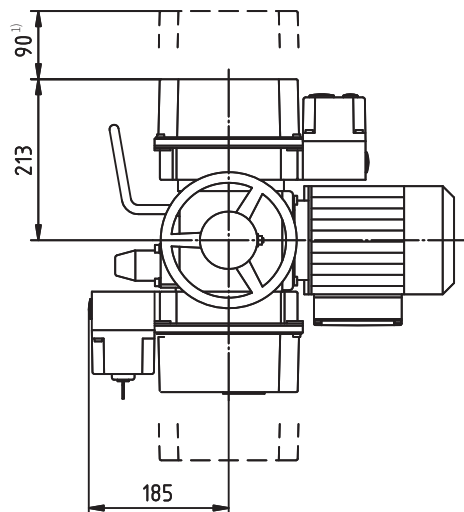
Output drive shaft A, flange F07



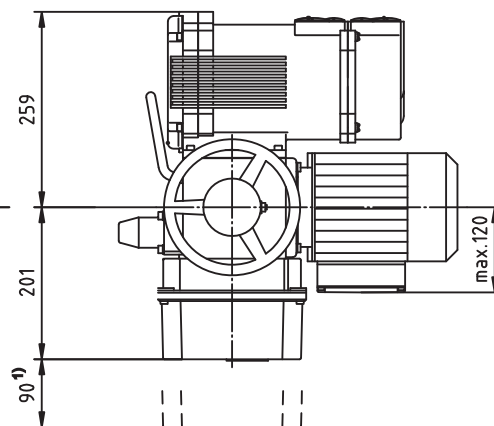
Connection acc. to ISO 5210, output drive shaft A, F10



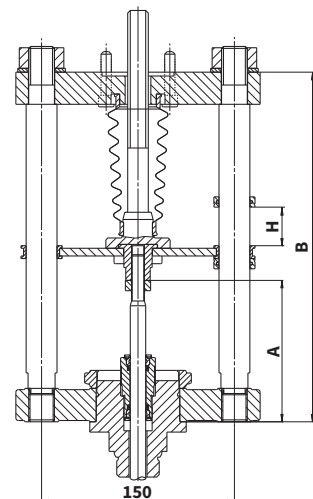
With ACTUMATIC R position regulator



With SMARTCON control unit



Attachment (2 or 4 columns)



For valves	Number of columns	A	B	H	Weight [kg]
CV 2xx NPS ½" - 6"	2	149	295	40	12
CV 2xx NPS 8" - 10"	4	141	295	80	12



Electric actuators **Schiebel**

AB8

marking in type number:

EZK, EZL

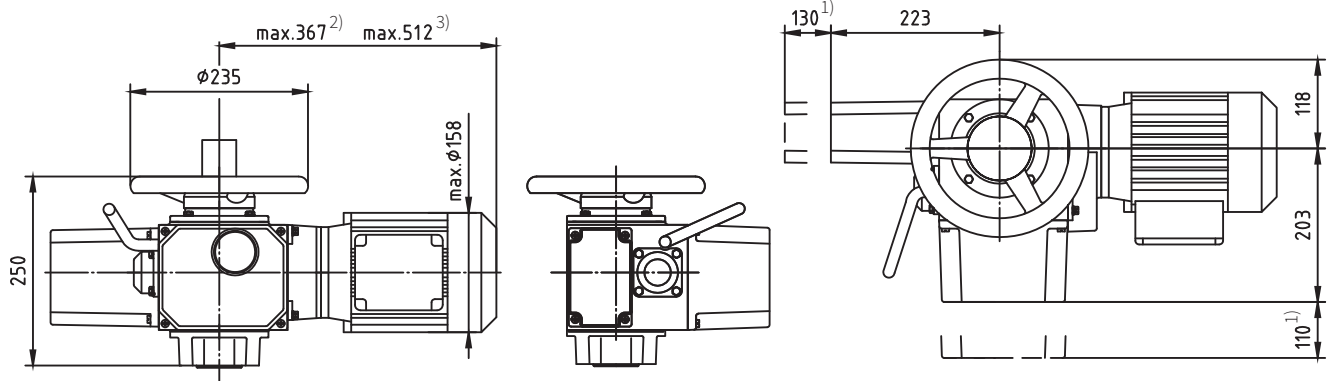
Technical data		
Type	rAB8	exrAB8
Marking in valve spec. No.	EZK	EZL
Voltage	400 / 230 V; 230 V	400 / 230 V
Frequency	50 Hz	
Power consumption	see specification table	
Control	3-position or with signal 4 - 20 mA	
Nominal force	(Tr 36x6 LH) 80 Nm ~ 21,6 kN; 100 Nm ~ 27 kN; 120 Nm ~ 32 kN	
Travel	80, 100 mm	
Enclosure	IP 66	IP 65
Process medium max. temp.	acc. to used valve	
Ambient temperature range	-25 to 60°C	-20 to 40°C
Ambient humidity range	90 % (tropical version: 100 % with condensation)	
Weight	24 - 35 kg	

→ **Note:** Specifications and technical data are for information only.

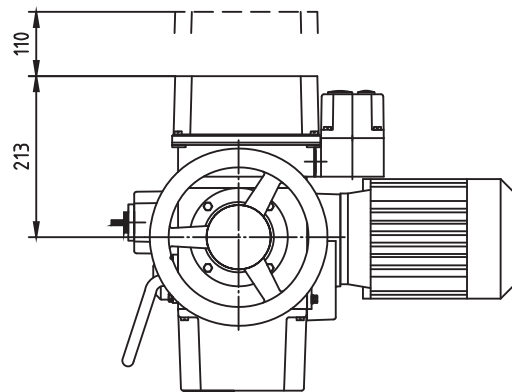
Detailed technical informations can be found in producer's data sheet or on the website www.schiebel.com

Specification of actuators													
						xx	x	XXX	X	X	+	XXXXX	
Version		normal											
Function		control						r					
Actuator size									AB8				
Output drive shaft A (thread TR 36x6 LH, flange F10)										A			
Output speed [ot/min]	Tripping torque	rAB8	Motor power [kW]	rAB8									
				400/230V	230V								
				0,06	0,12								2,5
				0,12	0,25								5
				0,18	0,37								7,5
		0,18		0,75	10								
		0,37		0,75	15								
		0,37		1,10	20								
		0,75		1,10	30								
		0,75		1,10	40								
Accessories			Potentiometer 1 x 1000 Ω								F		
			Double potentiometer 2 x 1000 Ω								FF		
			Electronic transmitter 4 - 20 mA, 2-wire								ESM21		
			Electronic transmitter 4 - 20 mA, 2-wire, opto-electronic								CMR		
			SMARTCON control unit								CSC		
			Additional torque switches								2DER 2DEL		
			Additional signalisation switches								2WER 2WEL		

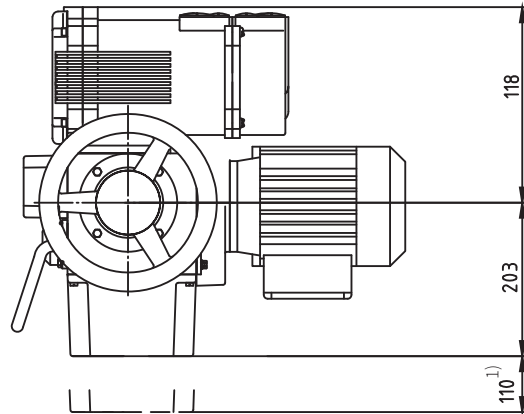
Dimensions of actuators ...AB8



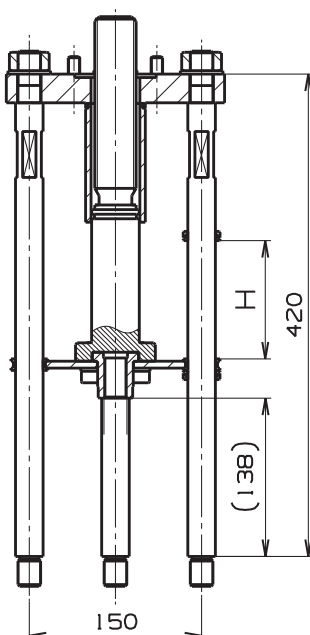
With ACTUMATIC R position regulator



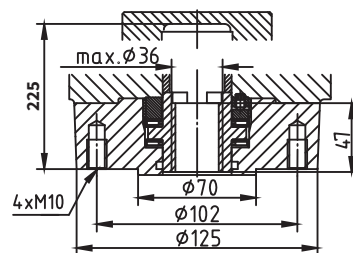
With SMARTCON control unit

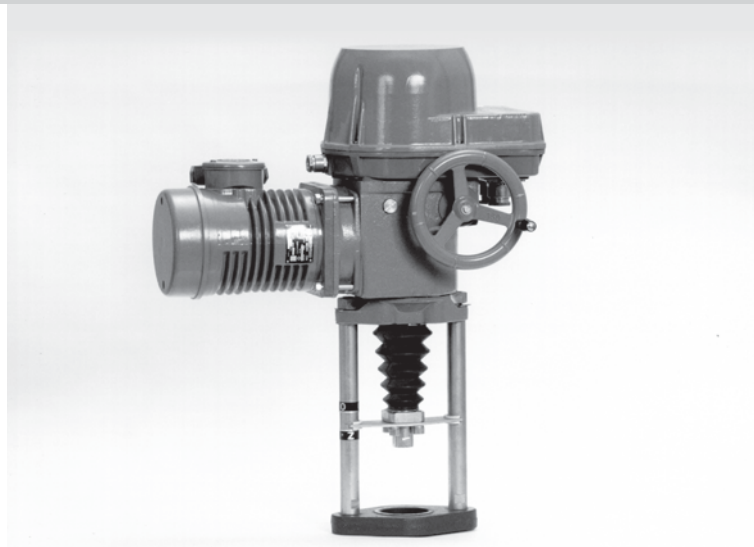


Attachment yoke DN200-400 Connection A, F10, Tr36x6-LH



Connection acc. to ISO 5210, output drive shaft A, F10





Electric actuator **Regada**

Modact MTR

marking in type number:

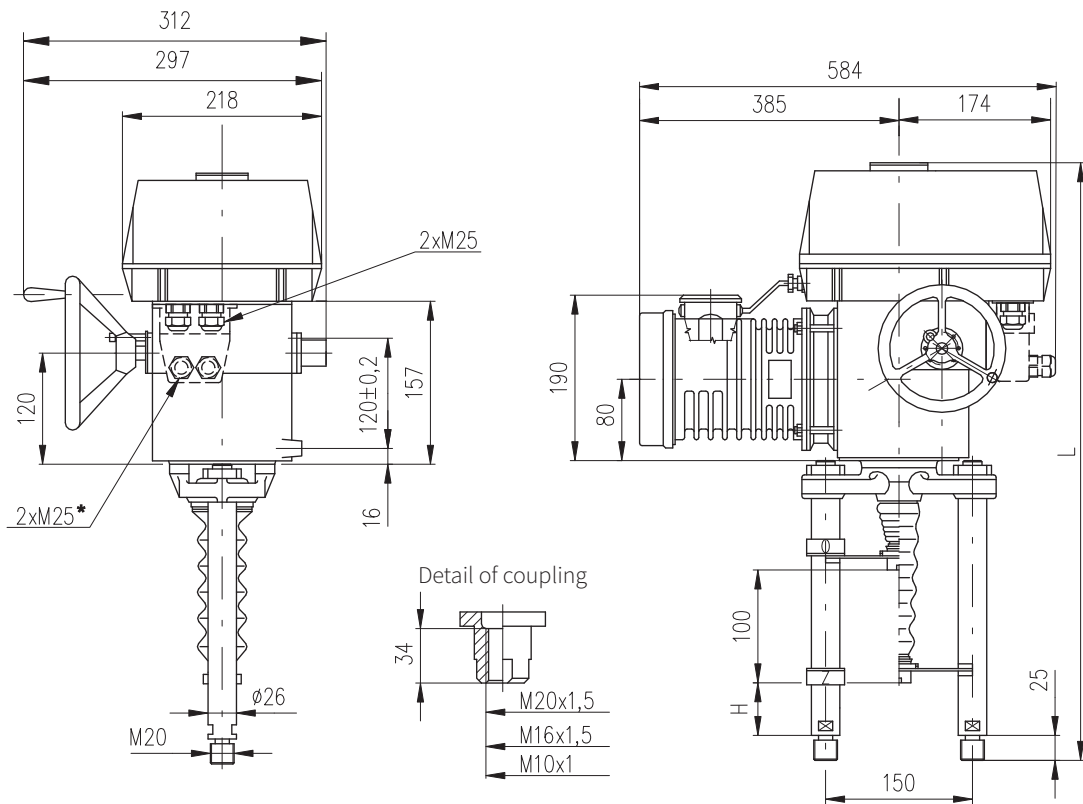
EPD

Technical data	
Type	Modact MTR
Marking in valve spec. No.	EPD
Voltage	230 V AC
Frequency	50 Hz
Power consumption	16 nebo 25 W
Control	3-position (with regulator NOTREP)
Nominal force	6.3, 10, 16, 25 kN
Travel	12,5 to 100 mm
Enclosure	IP 55 / IP 67
Process medium max. temp.	acc. to used valve
Ambient temperature range	-25 to 55 °C
Ambient humidity range	90 %
Weight	27 to 31 kg

→ **Note:** Specifications and technical data are for information only.

Detailed technical informations can be found in producer's data sheet or on the webside www.regada.sk

Dimensions of actuator Modact MTR



*only execution with connector

Columns version	with acme thread		Columns version	with ball bolt		For valves
	H	L		H	L	
P-1045b/B	74	622	P-1045b/E	74	646	CV 2xx NPS ½" - 6"
P-1045b/C	130	680	P-1045b/H	130	702	CV 2xx NPS 8" - 10"

Specification of Modact MTR

Electric motor linear MTR								52 420.	X	-	X	X	X	X	X	/	X	X	
Climatic resistance		Standard		-25°C to +55°C		Enclosure IP 55		0											
		Tropical		-25°C to +55°C		Enclosure IP 67		1											
						Enclosure IP 67		6											
Electric connection								Voltage											
To terminal board				230 V AC						9									
To connector										8									
Screw version		Switching-off thrust ^{32) 33)}	Rated operating speed	Operating speed	Electric motor														
					Power	Speed	Current												
trapeze	6 300/32	4.0 - 6.3 kN	32 mm/min.	38 - 32 mm/min.	16 W	1 150	0.31 A												
	4 000/50	2.5 - 4.0 kN	50 mm/min.	60 - 50 mm/min.															
	10 000/32	6.3 - 10.0 kN	32 mm/min.	38 - 32 mm/min.	25 W	1 250	0.41 A												
	6 300/50	4.0 - 6.3 kN	50 mm/min.	60 - 50 mm/min.															
ball screw	16 000/32-G	10.0 - 16.0 kN	32 mm/min.	38 - 32 mm/min.	16 W	1 150	0.31 A												
	10 000/50-G	6.3 - 10.0 kN	50 mm/min.	60 - 50 mm/min.															
	25 000/32-G	10.0 - 25.0 kN	32 mm/min.	38 - 32 mm/min.	25 W	1 250	0.41 A												
	16 000/50-G	10.0 - 16.0 kN	50 mm/min.	60 - 50 mm/min.															
	10 000/63-G	6.3 - 10.0 kN	63 mm/min.	75 - 63 mm/min.															
	6 300/100-G	4.0 - 6.3 kN	100 mm/min.	120 - 100 mm/min.															
Control board version			Operating stroke																
Electromechanical control board - without local control			16 mm																
			25 mm (for stroke 20 mm)																
			40 mm																
			80 mm																
Transmitter			Connection	Output															
Without transmitter			—	—															
Resistive		Single	—	1x100 Ω															
		Double		2x100 Ω															
		Single		1x2000 Ω															
		Double		2x2000 Ω															
Resistive with current converter		Without power supply	2-wire	4 - 20 mA															
		With power supply																	
		Without power supply																	
		With power supply																	
				Without power supply	3-wire	4 - 20 mA													
				With power supply															
				Without power supply															
				With power supply															
Capacitive CPT		Without power supply	2-wire	4 - 20 mA															
		With power supply																	
Mechanical connection	Connection height / stroke		Pillar spacing / Bore of flange	Thread of stem ³⁾	Dimensional drawing														
Columns	130		150/ —	M20x1.5 M16x1.5	P-1045b/B; P-1045b/E P-1045b/C; P-1045b/H														
Additional equipment																			
A	Without additional equipment; adjusted max. switching-off thrust from range																	0	1
	2 additional position switches S5,S6																	0	2

Possible combinations and execution: A+B = 07

Notes:

- 1) State the switching-off thrust in your order by words. If not stated it is adjusted to the maximum rate of the corresponding range. The load torque equals minimally the maximum switching-off thrust of the choosing range multiplied by 1.3.
- 2) The maximum load thrust equals the max. Switching-off thrust multiplied by:
 - 0.8 for duty cycle S2-10 min., or S4-25%, 6 - 90 cycles per hour
 - 0.6 for duty cycle S4-25%, 90 - 1200 cycles per hour
- 3) The thread in the coupling is to be specified in the order by words.



Electric actuators

Regada

ST 0
STR 0

marking in type number:

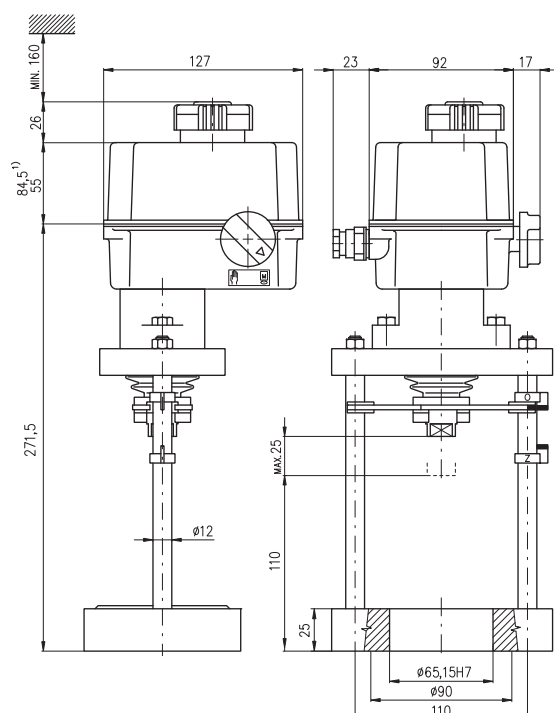
EPK

Technical data

Type	ST 0, STR 0
Marking in valve spec. No.	EPK
Voltage	230 V AC, 24 V AC
Frequency	50 Hz
Power consumption	1 W
Control	3-position (0 - 10 V, (0)4 - 20 mA)
Nominal force	2,9 kN a 4,5 kN
Travel	16, 25 mm
Enclosure	IP 54/ IP 67
Process medium max. temp.	daná použitou armatúrou
Ambient temperature range	-25 to 55 °C
Ambient humidity range	5 - 100% s kondenzací
Weight	2,5 to 4,5 kg

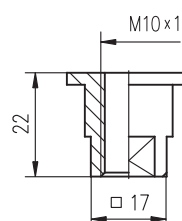
→ **Note:** Specifications and technical data are for information only. Detailed technical informations can be found in producer's data sheet or on the website www.regada.sk

Dimensions of actuator



¹⁾ applies for version with electronic transmitter

Detail of coupling



Specification of actuator ST 0, STR 0

Electric servomotor ST 0, STR 0										490.	X	-	X	X	X	X	X	/	X	X
Climatic resistance	Standard	-25°C to +55°C	IP 54	Without regulator (ST 0)							0									
	Standard	-25°C to +55°C	IP 67								1									
	Tropical	-25°C to +55°C	IP 67								6									
	Standard	-25°C to +55°C	IP 54	With regulator (STR 0) resistance feedback ¹⁶⁾							A									
	Tropical	-25°C to +55°C	IP 67								G									
Electric connection		To terminal board		Voltage			230 V AC	0												
							24 V AC	3												
Nominal force [N]	2900	Running speed		4 mm/min	Motor power	1 W	0													
	4500			5 mm/min		2,75 W	A													
	4500 ³⁷⁾			10 mm/min		2,75 W	N													
	2900 ³⁷⁾			16 mm/min		2,75 W	P													
Tripping torque		One-torque			Travel		16 mm												D	
							20 mm												E	
Remote position transmitter	Without transmitter																			A
	Resistance		Wiring	Single	Output	1 x 100 Ω														B
				1 x 2000 Ω														F		
	Electronic - current (without generator)			2-wire		4 - 20 mA														S
				2-wire ⁶⁾		0 - 20 mA														T
				3-wire ⁶⁾		4 - 20 mA														U
																			V	
																			W	
Mechanic connection - flange, connection height 110 mm, thread on con. stem M10x1																				L
Accessories		2 auxiliary position switches ⁷⁶⁾																		0 0

Notes:

⁶⁾ applies for version without regulator

¹⁶⁾ the feedback to the regulator is realized by a resistance transmitter (without specifying a code when selecting a transmitter)

³⁷⁾ applies for temperature range -15 to +55°C and voltage Un -5% to Un +10%

⁷⁶⁾ it is not possible to specify 2 auxiliary position switches (S5, S6) in the version with regulator and transmitter



Electric actuators

Regada

STR OPA

marking in type number:

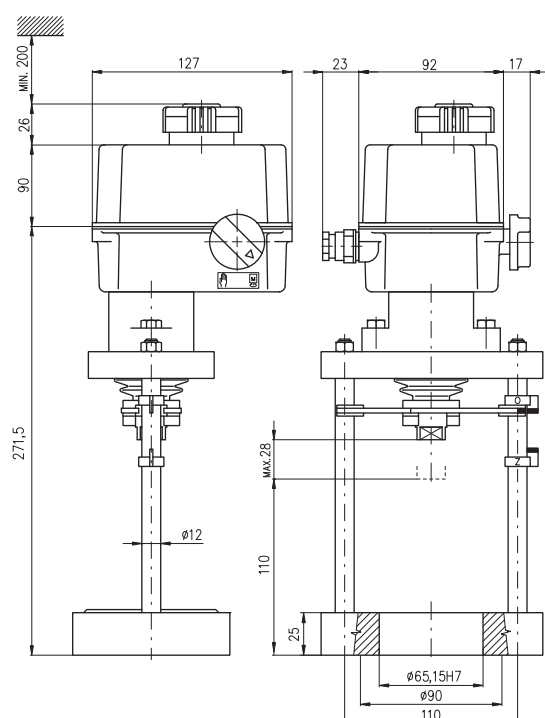
EPK

Technical data

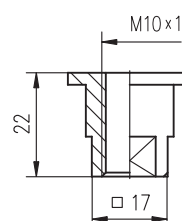
Type	STR OPA
Marking in valve spec. No.	EPK
Voltage	230 V AC, 24 V AC
Frequency	50 Hz
Power consumption	1 W
Control	3-position (0 - 10 V, (0)4 - 20 mA)
Nominal force	2,4 kN and 4,5 kN
Travel	10 to 28 mm
Enclosure	IP 67
Process medium max. temp.	acc. to used valve
Ambient temperature range	-25 to 55 °C
Ambient humidity range	5 - 100% with condensation
Weight	2,5 to 4,5 kg

→ **Note:** Specifications and technical data are for information only. Detailed technical informations can be found in producer's data sheet or on the webside www.regada.sk

Dimensions of actuator



Detail of coupling



Specifikace pohonu STR OPA

Electric servomotor STR 0PA										430.	X	-	X	X	X	X	X	/	X	X
Climatic resistance		Standard	-25°C to +55°C		IP 67				1											
		Tropical	-25°C to +55°C		IP 67				6											
Electric connection		To terminal board		Voltage	230 V AC				0											
					24 V AC				3											
Nominal force [N]		4500	Running speed	5 mm/min						A										
		4000		10 mm/min						N										
		2400		16 mm/min						P										
Travel		10-28 mm									J									
Control board	DMS3	Con-trol	modulating	0/4 - 20 mA	ON - OFF and pulse	24 V DC	Output	4 - 20 mA passive			G									
				0/2 - 10 V							H									
Mechanic connection - flange, connection height 110 mm, thread of stem M10x1												L								
Accessories		Without accessories																		
		Setting the stroke position to the desired value															0	1		



Electric actuators

Regada

ST 0.1

STR 0.1

marking in type number:

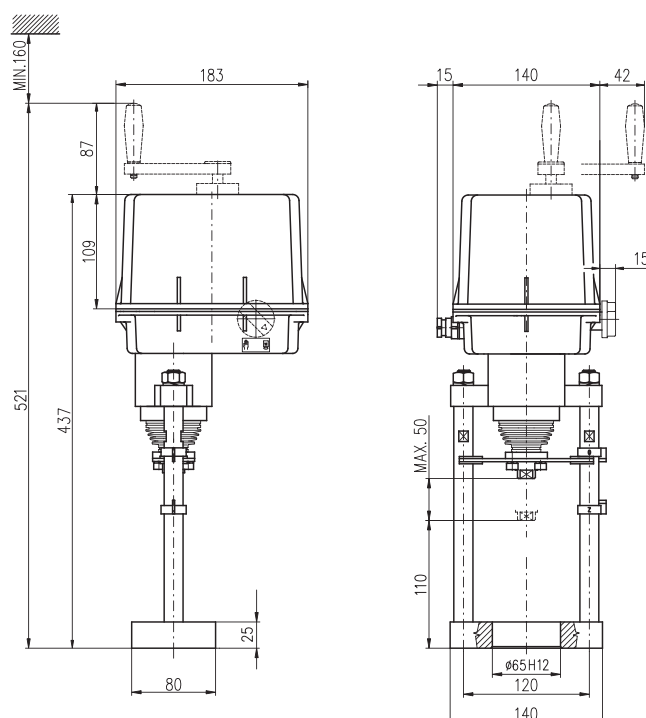
EPL

Technical data

Type	ST 0.1, STR 0.1
Marking in valve spec. No.	EPL
Voltage	230 V AC, 3 x 400 V AC, 3 x 380 V AC, 24 V AC, 24 V DC
Frequency	50 Hz
Power consumption	15W, 20W
Control	3-position (0 - 10 V, (0)4 - 20 mA)
Nominal force	4,6 and 7,2 kN
Travel	16, 25, 40 mm
Enclosure	IP 65 / IP 67
Process medium max. temp.	acc. to used valve
Ambient temperature range	-25 to 55 °C
Ambient humidity range	5 - 100% with condensation
Weight	5,4 to 8 kg

→ **Note:** Specifications and technical data are for information only. Detailed technical informations can be found in producer's data sheet or on the website www.regada.sk

Dimensions of actuator



Specification of actuator ST 0.1, STR 0.1

Electric servomotor ST 0.1, STR 0.1										498.	X	-	X	X	X	X	X	/	X	X																																																																																																																																																																																																																																																																																																																																																																						
Climatic resistance	Standard	-25°C to +55°C	IP 65	Without regulator (ST 0.1)						0																																																																																																																																																																																																																																																																																																																																																																																
			IP 67											1																																																																																																																																																																																																																																																																																																																																																																												
	Tropical	-25°C to +55°C	IP 67											6																																																																																																																																																																																																																																																																																																																																																																												
	Standard	-25°C to+55°C	IP 65	With regulator (STR 0.1)						A																																																																																																																																																																																																																																																																																																																																																																																
			IP 65											C																																																																																																																																																																																																																																																																																																																																																																												
			IP 67											G																																																																																																																																																																																																																																																																																																																																																																												
Tropicak	-25°C to +55°C	IP 67											J																																																																																																																																																																																																																																																																																																																																																																													
Electric connection			To terminal board						Voltage	24 V DC		A																																																																																																																																																																																																																																																																																																																																																																														
										230 V AC		0																																																																																																																																																																																																																																																																																																																																																																														
										24 V AC		3																																																																																																																																																																																																																																																																																																																																																																														
										3x400 V AC ⁶⁾		9																																																																																																																																																																																																																																																																																																																																																																														
										3x380 V AC ⁶⁾		M																																																																																																																																																																																																																																																																																																																																																																														
			To connector							24 V DC		C																																																																																																																																																																																																																																																																																																																																																																														
										230 V AC		5																																																																																																																																																																																																																																																																																																																																																																														
										24 V AC		8																																																																																																																																																																																																																																																																																																																																																																														
										3x400 V AC ⁶⁾		7																																																																																																																																																																																																																																																																																																																																																																														
										3x380 V AC ⁶⁾		R																																																																																																																																																																																																																																																																																																																																																																														
Nominal force [N]	4600	Running speed	10 mm/min				Motor power	15 W (230; 3x400; 20 W (24V AC/DC); 3x380 V AC)					G	H	I	J	K	T	U	V	W	Y																																																																																																																																																																																																																																																																																																																																																																				
			16 mm/min																																																																																																																																																																																																																																																																																																																																																																																							
			25 mm/min																																																																																																																																																																																																																																																																																																																																																																																							
			32 mm/min																																																																																																																																																																																																																																																																																																																																																																																							
			40 mm/min																																																																																																																																																																																																																																																																																																																																																																																							
	7200		10 mm/min																																																																																																																																																																																																																																																																																																																																																																																							
			16 mm/min																																																																																																																																																																																																																																																																																																																																																																																							
			25 mm/min																																																																																																																																																																																																																																																																																																																																																																																							
			32 mm/min																																																																																																																																																																																																																																																																																																																																																																																							
			40 mm/min																																																																																																																																																																																																																																																																																																																																																																																							
Tripping		Doublemoment				Stroke		16 mm													D	E	H																																																																																																																																																																																																																																																																																																																																																																			
								20 mm																																																																																																																																																																																																																																																																																																																																																																																		
								40 mm																																																																																																																																																																																																																																																																																																																																																																																		
Remote position transmitter	Without transmitter																				A																																																																																																																																																																																																																																																																																																																																																																					
	Resistance	Sigle	Wiring	---	Output	1 x 100 Ω																																																																																																																																																																																																																																																																																																																																																																																				

Permissible combinations of accessories and codes:

A+B=02, A+C=04, A+D=06, B+D=07, A+B+D=08, C+D=09, A+C+D=10

Notes:

⁶⁾ applies for version without regulator

⁸⁾ it is not possible to choose double transmitter for version with 2 auxiliary position switches



Electric actuators

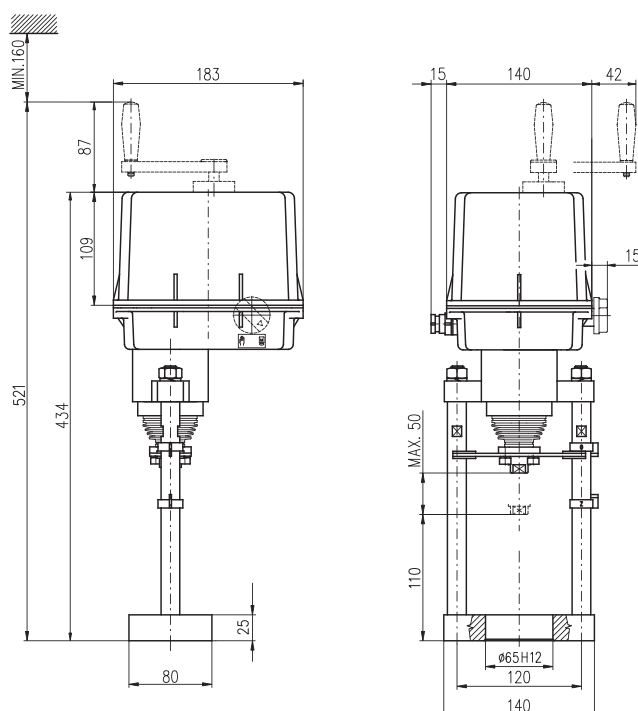
Regada**STR 0.1PA**

marking in type number:

EPL**Technical data**

Type	STR 0.1PA
Marking in valve spec. No.	EPL
Voltage	230 V AC, 24 V AC
Frequency	50 Hz
Power consumption	15 W
Control	3-position (0 - 10 V, (0)4 - 20 mA)
Nominal force	4,6 and 7,2 kN
Travel	16, 25, 40 mm
Enclosure	IP 67
Process medium max. temp.	acc. to used valve
Ambient temperature range	-25 to 55 °C
Ambient humidity range	5 - 100% with condensation
Weight	5,4 to 8 kg

→ **Note:** Specifications and technical data are for information only. Detailed technical informations can be found in producer's data sheet or on the webside www.regada.sk

Dimensions of actuators

Specification of actuator STR 0.1PA

Electric servomotor STR 0.1PA										438.		X	-	X	X	X	X	X	X	/	X	X
Climatic resistance		Standard	-25°C to +55°C			IP 67			1													
		Tropical	-25°C to +55°C			IP 67			6													
Electric connection			To terminal board			Voltage		230 V AC		0												
								24 V AC				3										
								3x400 V AC						2								
								3x380 V AC								N						
Nominal force [N]	4600	Running speed	10 mm/min								G											
			16 mm/min								H											
			25 mm/min								I											
			32 mm/min								J											
			40 mm/min								K											
	7200		10 mm/min								T											
			16 mm/min								U											
			25 mm/min								V											
			32 mm/min								W											
			40 mm/min								Y											
Stroke			10-50 mm									I										
Control board	DMS3	Control	Modulating	0/4 - 20 mA	ON - OFF and pulse	24 V DC	Output	4 - 20 mA pasive					G									
Mechanical connection - flange, connection height 110 mm, thread on con. stem M10x1 or M16x1,5														H								
														C								
Accessories		Without accessories																				
		A Setting the stroke position to the desired value																0		1		
		B LED display (position indicator)																0		4		
		D Auxiliary relay module (system DMS3 RE3)																0		5		
		F Local control for actuators with system DMS3 and LCD																0		7		

Permissible combinations of accessories and codes:

A+B=20, A+D=22, A+F=25, A+B+D=52, B+D=29, D+F=40



Electric actuators **Regada**

ST 1
STR 1

marking in type number:

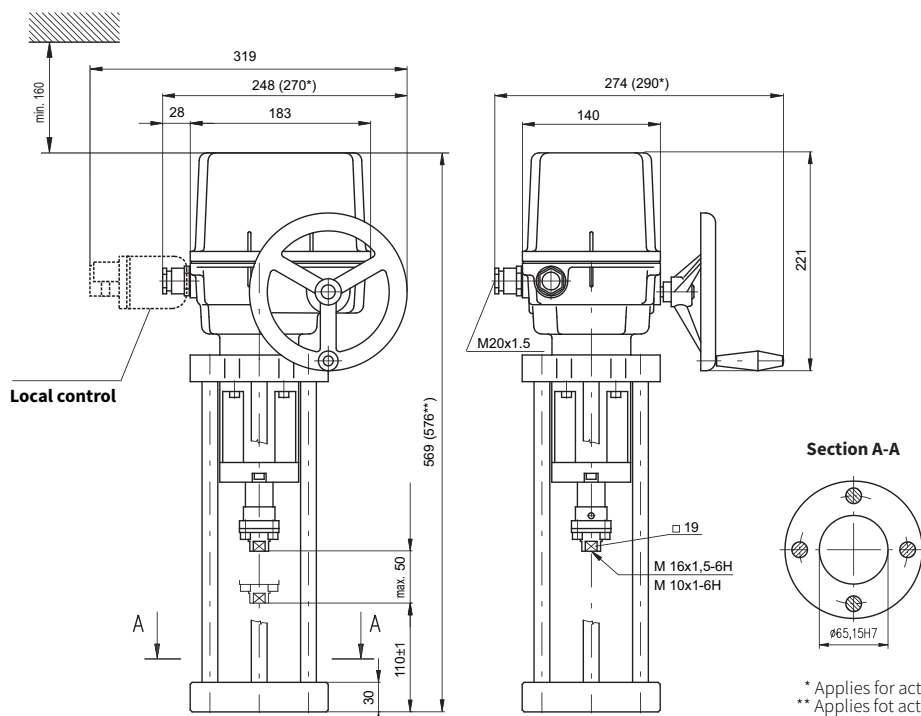
EPI

Technical data

Type	ST 1, STR 1
Marking in valve spec. No.	EPI
Voltage	230 V AC, 3 x 400 V AC, 3 x 380 V AC, 24 V AC, 24 V DC
Frequency	50 Hz
Power consumption	15 W, 20 W
Control	3-position (0 - 10 V, (0)4 - 20 mA)
Nominal force	7,5 and 10 kN
Travel	16 - 40 mm
Enclosure	IP 65 / IP 67
Process medium max. temp.	acc. to used valve
Ambient temperature range	-50 to 55 °C
Ambient humidity range	5 to 100% with condensation
Weight	8,5 to 10,9 kg

→ **Note:** Specifications and technical data are for information only. Detailed technical informations can be found in producer's data sheet or on the webside www.regada.sk

Dimensions of actuator



* Applies for actuators with connector
** Applies for actuators with enclosure IP 67

Specification of actuators ST 1, STR 1

Electric servomotor ST 1, STR 1										491.	X	-	X	X	X	X	X	/	X	X				
Climatic resistance	Standard	-25°C to +55°C	IP 65	Without regulator (ST 0.1)						0														
			IP 67							1														
	Tropical	-25°C to+55°C	IP 67							6														
	Universal	-50°C to +40°C	IP 67							8														
	Standard	-25°C to +55°C	IP 65	With regulator (STR 0.1)				A																
			IP 65					Current feedback	C															
	Tropical	-25°C to +55°C	IP 67					Resistance feedback	G															
		IP 67	Current feedback					J																
Electric connection			To terminal board				Voltage	24 V DC		A														
								230 V AC		0														
								24 V AC		3														
								3x400 V AC ⁶⁾		9														
								3x380 V AC ⁶⁾		M														
			To connector					24 V DC		C														
								230 V AC		5														
								24 V AC		8														
								3x400 V AC ⁶⁾		7														
								3x380 V AC ⁶⁾		R														
Nominal force [N]	10000	Running speed	8 mm/min				Motor power	15 W		0														
			10 mm/min					(230; 3x400; 3x380 V AC)		1														
			16 mm/min					20 W		2														
	7500		32 mm/min					(24V AC/DC)		5														
			20 mm/min							6														
Stroke								16 mm																
								20 mm																
								40 mm																
Remote position transmitter	Without transmitter																			A				
	Resistance	Single	Wiring	---	Output	1 x 100 Ω														B				
						1 x 2000 Ω														F				
	Double ⁶⁾			---		2 x 100 Ω														K				
				---		2 x 2000 Ω														P				
	Electronic - current	without its source		2-wire		4 - 20 mA														S				
		without its source		3-wire ⁶⁾		0 - 20 mA														Q				
						4 - 20 mA														T				
	Capacity	wo its source		2-wire ⁶⁾		4 - 20 mA														U				
		with its source																		2-wire	V			
						I																		
				J																				
Mechanical connection - flange, connection height 110 mm, thread on con. stem M10x1 or M16x1,5																				K				
Accessories		A	2 auxiliary position switches ⁶⁾																	0 0				
		E	Space heater with terminal switch																	0 2				
		C	Local control																	0 7				
		D	Space heater																	1 5				

Permissible combinations of accessories and codes:

A+E=04, A+C=08, E+C=10, A+E+C=12, A+D=16, C+D=17, A+C+D=18

Notes:

⁶⁾ applies for version without regulator

⁸⁾ it is not possible to choose double transmitter for version with 2 auxiliary position switches



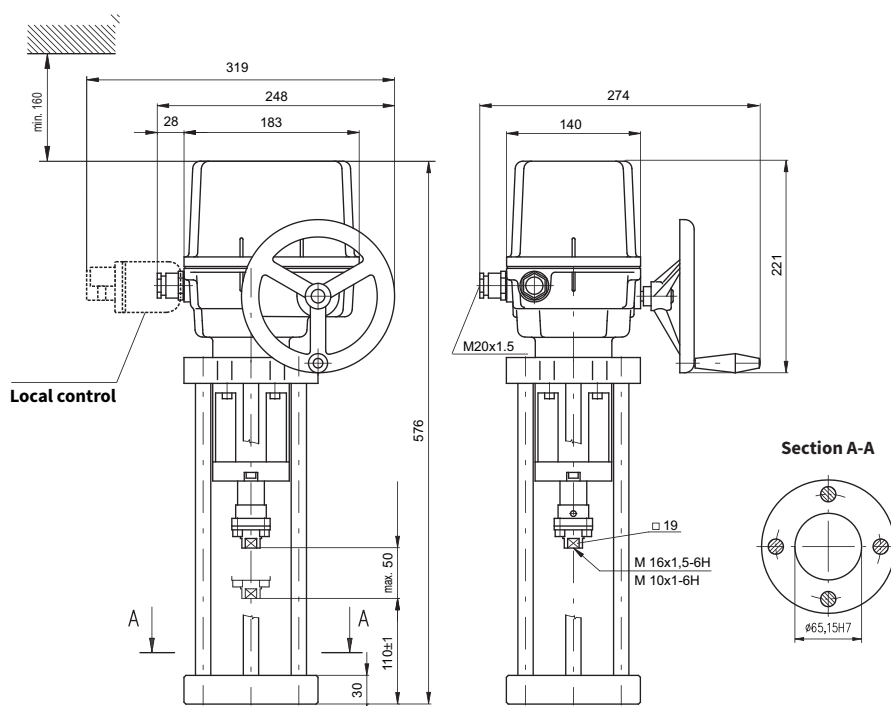
Regada

marking in type number:

EPI

Type	STR 1PA
Marking in valve spec. No.	EPI
Voltage	230 V AC, 3 x 400 V AC, 3 x 380 V AC, 24 V AC, 24 V DC
Frequency	50 Hz
Power consumption	15 W, 20 W
Control	3-position (0 - 10 V, (0)4 - 20 mA)
Nominal force	7,5 and 10 kN
Travel	10 - 50 mm
Enclosure	IP 67
Process medium max. temp.	accorded to used valve
Ambient temperature range	-40 to 55 °C
Ambient humidity range	5 - 100% with condensation
Weight	8,5 to 10,9 kg

Dimensions of actuator



Specification of actuators STR 1PA

Electric servomotor STR 1PA										431.	X	-	X	X	X	X	X	/	X	X						
Climatic resistance		Standard		-25°C to +55°C		IP 67		1																		
		Cold		-25°C to +55°C		IP 67		3																		
		Tropical		-25°C to +55°C		IP 67		6																		
Electric connection		To terminal board				Voltage		230 V AC		0																
								24 V AC		3																
								3x400 V AC		2																
								3x380 V AC		N																
Nominal force [N]	10000		Running speed	8 mm/min							0															
				10 mm/min							5															
				16 mm/min							1															
	7500			32 mm/min							2															
				20 mm/min							6															
				Stroke		10-50 mm																	I		G	H
Control board	DMS3	Con-trol	Modulating	0/4 - 20 mA	ON - OFF and pulse	24 V DC	Output	4 - 20 mA pasive																		
				0/2 - 10 V																						
Mechanical connection - flange, connection height 110 mm, thread on con. stem M10x1 or M16x1,5																				K						
Accessories		Without accessories																								
		A Setting the stroke position to the desired value																						0	1	
		D Auxiliary relay module R3, R4, R5 (module DMS3 RE3)																						0	5	
		E Auxiliary relay module R1, R2, R3, R4, R5, READY (module DMS3 RE6)																						0	6	
		F Local control for actuators with system DMS3 and LCD																						0	7	

Permissible combinations of accessories and codes:

A+D=22, A+E=23, A+F=24, D+F=40, E+F=44, A+D+F=63, A+E+F=67



Electric actuators

Regada

ST 1-Ex

marking in type number:

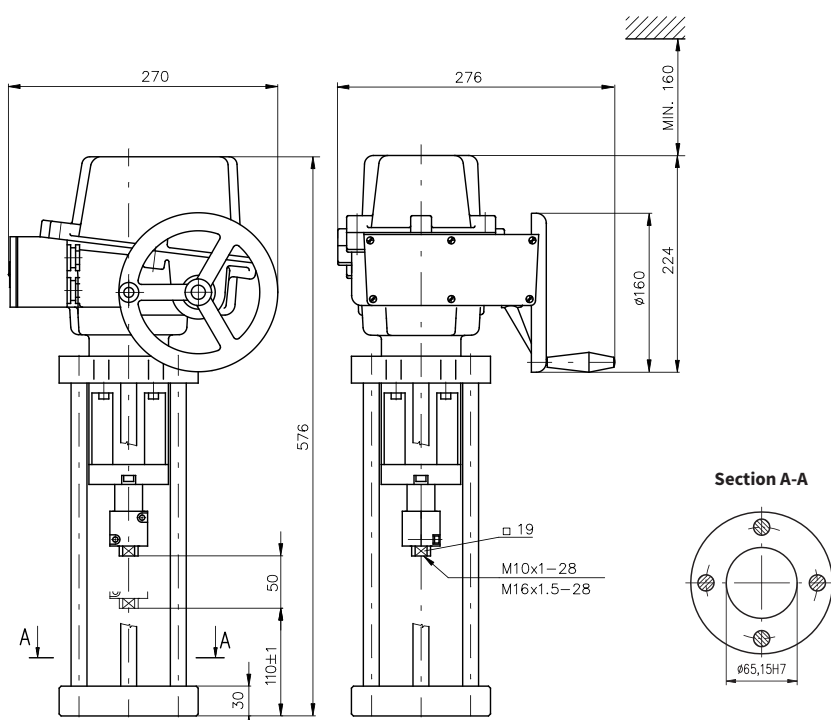
EPJ

Technical data

Type	ST 1-Ex
Marking in valve spec. No.	EPJ
Voltage	230 V AC, 3 x 400 V AC, 3 x 380 V AC, 24 V AC, 24 V DC
Frequency	50 Hz
Power consumption	15 W, 20 W
Control	3-position, with regulator 0 - 10 V; (0) 4 - 20 mA
Nominal force	7,5 and 10 kN
Travel	16, 25, 40 mm
Enclosure	IP 67
Process medium max. temp.	acc. to used valve
Ambient temperature range	-50 to 55 °C
Ambient humidity range	5 - 100% with condensation
Weight	11 to 15 kg

→ **Note:** Specifications and technical data are for information only. Detailed technical informations can be found in producer's data sheet or on the website www.regada.sk

Dimensions of actuator



Specification of actuators ST 1-Ex

Electric servomotor ST 1-Ex										411.	X	-	X	X	X	X	X
Climatic resistance	Standard	-25°C to +55°C		Basic version (without regulator)				IP 67		1							
	Universal	-50°C to +40°C								8							
	Standard	-25°C to +55°C		With regulator		Resistance feedback	IP 67		B								
	Universal	-50°C to +40°C				Current feedback	IP 67		D								
					Resistance feedback	IP 67		K									
					Current feedback			M									
Electric connection			To terminal board	Voltage		24 V DC					A						
						230 V AC					0						
						24 V AC					3						
						3x400 V AC ⁶⁾					9						
Nominal force [N]	10000 N		Running speed	8 mm/min		Motor power	15 W										0
				16 mm/min			(230; 3x400;										1
	7500 N			32 mm/min			3x380 V AC)										2
	10000 N			10 mm/min			20 W										5
	8600 N			20 mm/min			(24V AC/DC)										6
	5800 N			40 mm/min													7
Maximal stroke (without transmitter) acc. to mechanical connection					50 mm	Stroke	16 mm										D
For actuators without transmitter is possible to set up the stroke in between 0 to max.							20 mm										E
							40 mm										H
Remote position transmitter	Without transmitter																A
	Resistance	Single	Wiring	---		Output	1 x 100 Ω										B
		Dvojity ^{6) 58)}		---			1 x 2000 Ω										F
	Electronic - current	Wo its source		---			2 x 100 Ω										K
				---			2 x 2000 Ω										P
		With its source ⁵⁹⁾		2 - wire	4 - 20 mA				S								
				3 - wire ⁶⁾	0 - 20 mA				T								
				2 - wire	4 - 20 mA				V								
				3 - wire ⁶⁾	4 - 20 mA				Q								
				2 - wire ⁶⁾	0 - 20 mA				U								
	Capacity	Wo its source		---			4 - 20 mA										W
		Wi its source ⁵⁹⁾		---			4 - 20 mA										I
		Wi its source ⁵¹⁾		---			4 - 20 mA										J
Mechanical connection - D-shape flange, connection height 110 mm, thread on con. stem M10x1 or M16x1,5																	K

Notes:

⁶⁾ applies for version without regulator

⁵¹⁾ Only for version with regulator and current feedback,

in this excution the output signal is not galvanically separated from the input signal

⁵⁸⁾ applied just for version without auxiliary position switches S5, S6 for 24 V DC

⁵⁹⁾ position transmitter with its source for feeding voltage 24 V DC after agreement with producer



Electric actuators

Regada

ST 2
STR 2

marking in type number:

EPM

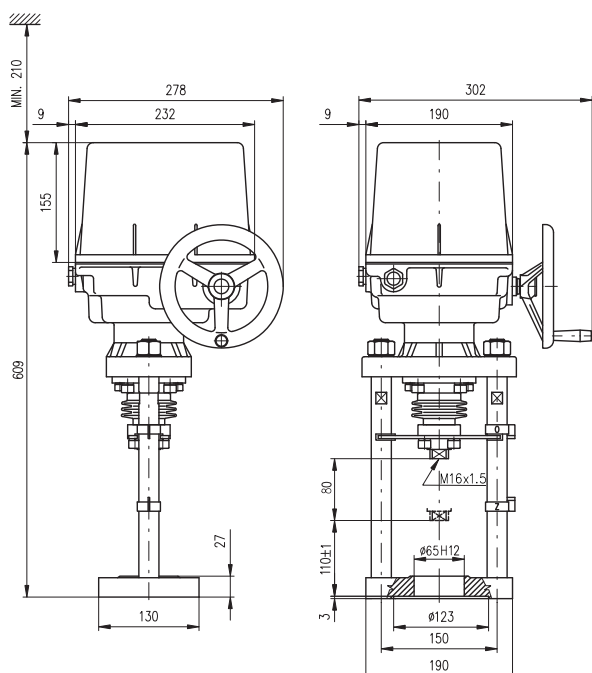
Technical data

Type	ST 2, STR 2
Marking in valve spec. No.	EPM
Voltage	230 V AC, 3x400 V AC, 3x380 V AC, 24 V AC, 24 V DC
Frequency	50 Hz
Power consumption	see specification table
Control	3-position, with regulator 0 - 10 V; (0) 4 - 20 mA
Nominal force	16 and 25 kN
Travel	40, 80 mm
Enclosure	IP 65 / IP 67
Process medium max. temp.	acc. to used valve
Ambient temperature range	-50 to 55 °C
Ambient humidity range	5 - 100% with condensation
Weight	17 to 21,5 kg

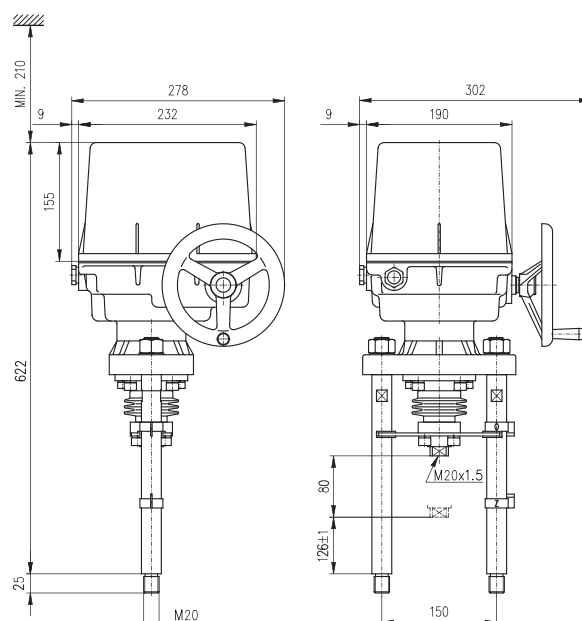
→ **Note:** Specifications and technical data are for information only. Detailed technical informations can be found in producer's data sheet or on the website www.regada.sk

Dimensions of actuator

DN 80 - 150 (connection D)



DN 200 - 300 (connection M)



Specification of actuator ST 2, STR 2

Electric servomotor ST 2, STR 2										492.	X	-	X	X	X	X	X	/	X	X				
Climatic resistance	Standard	-25°C to +55°C	IP 65	Without regulator (ST 2)						0														
			IP 67																					
	Tropical	-25°C to +55°C	IP 67																					
	Universal	-50°C to +40°C	IP 67																					
	Standard	-25°C to +55°C	IP 67	With regulator (STR 2)				Resistance feedback		B														
			IP 67					Current feedback		D														
			IP 67					Resistance feedback		G														
			IP 67					Current feedback		J														
Electric connection			To terminal board					Voltage	24 V DC			A												
									230 V AC			0												
									24 V AC			3												
									3x400 V AC ⁶⁾			9												
									3x400 V AC ²⁸⁾			2												
									3x380 V AC ⁶⁾			M												
									3x380 V AC ²⁸⁾			N												
									24 V DC			C												
			To connector ²¹⁾		230 V AC				5															
					24 V AC				8															
					3x400 V AC ⁶⁾				7															
					3x400 V AC ²⁸⁾				6															
					3x380 V AC ⁶⁾				R															
					3x380 V AC ²⁸⁾				S															
230 V AC, 24 V AC/DC - 65W										3x400 V AC														
Nominal force [N]	25 000		20 W	Nominal force [N]	---		Motor power	90 W	Running speed	10 mm/min			A											
	20 000										H													
	16 000										J													
	25 000				25 000					20 mm/min			B											
	20 000		20 000								K													
	16 000		16 000								L													
	25 000		25 000		32 mm/min						M													
	20 000		20 000								N													
	16 000		16 000								P													
	25 000		25 000		40 mm/min						C													
	20 000		20 000								Q													
	16 000		16 000								R													
	20 000		25 000		50 mm/min ⁶⁾						S													
	16 000		20 000								T													
	---		16 000								U													
	20 000		25 000		60 mm/min ⁶⁾						D													
	16 000		20 000								V													
	---		16 000								W													
	16 000		20 000		80 mm/min ⁶⁾						E													
	---		16 000								Y													
---		20 000		100 mm/min ⁶⁾			F																	
---		16 000					Z																	
Stroke		Max. (without transmitter) ⁴¹⁾ ... 100 mm					Wi transmitter		40 mm							H								
									80 mm							K								

Continued on next page

Remote position transmitter	Without transmitter																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											</
-----------------------------	---------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	----

Permissible combinations of accessories and codes:

A+E=04, A+C=08, C+E=10, A+C+E=12, A+D=16, C+D=17, A+C+D=18, A+G=26, E+G=27, C+G=28, D+G=29, A+E+G=30, A+C+G=31, A+D+G=32, C+E+G=33, C+D+G=34, A+D+E+G=35, A+C+D+G=36

Notes:

⁶⁾ applies for version without regulator

²¹⁾ version with connector only for -40°C

²⁸⁾ version with reverse contactors

⁴¹⁾ version without transmitter - it is possible to set up stroke 0 - 80 mm

⁵¹⁾ only for version with regulator and current feedback



Electric actuators

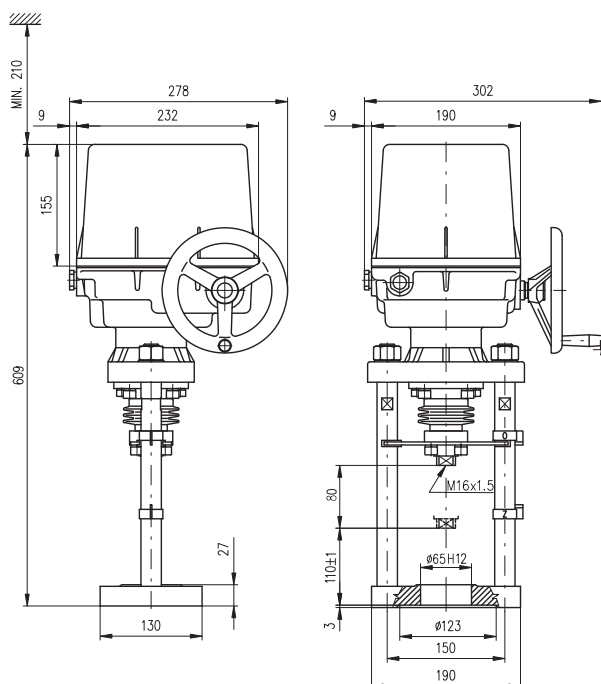
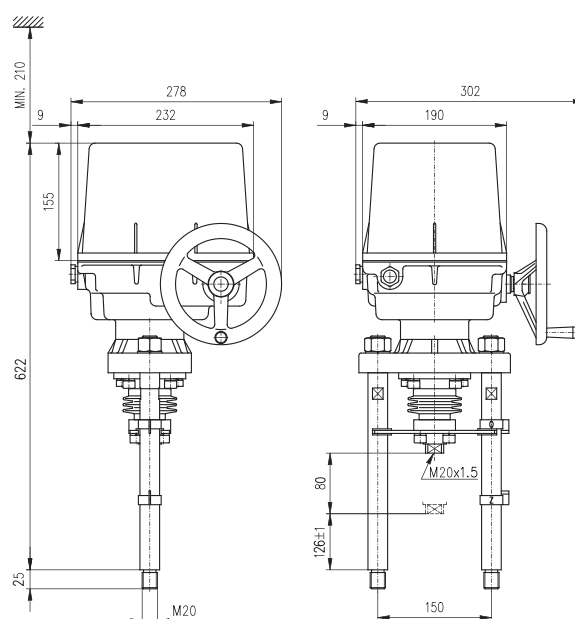
Regada**STR 2PA**

marking in type number:

EPM**Technical data**

Type	STR 2PA
Marking in valve spec. No.	EPM
Voltage	230 V AC, 3x400 V AC, 3x380 V AC, 24 V AC, 24 V DC
Frequency	50 Hz
Power consumption	see specification table
Control	3-position, with regulator 0 - 10 V; (0) 4 - 20 mA
Nominal force	16 and 25 kN
Travel	40, 80 mm
Enclosure	IP 67
Process medium max. temp.	acc. to used valve
Ambient temperature range	-40 to 55 °C
Ambient humidity range	5 - 100% with condensation
Weight	17 and 21,5 kg

→ **Note:** Specifications and technical data are for information only. Detailed technical informations can be found in producer's data sheet or on the website www.regada.sk

Dimensions of actuator**DN 80 - 150 (connection D)****DN 200 - 300 (connection M)**

Electric servomotor STR 2PA										432.		X	-	X	X	X	X	X	/	X	X
Climatic resistance		Standard		-25°C to +55°C				IP 67		1											
		Cold		-40°C to +40°C				IP 67		3											
		Tropical		-25°C to +55°C				IP 67		6											
Electric connection to terminal board		Switching electromotor	Through optocouplers				Napájecí napětí	230 V AC				0									
								3x400 V AC				2									
			Through reverse contactors					3x380 V AC				N									
								3x400 V AC				E									
			Contactless switching					3x380 V AC				F									
Nominal force [N]		Running speed			230 V		3x400 V, 3x380 V														
25 000		10 mm/min			●		—						A								
		20 mm/min			●		●						J								
		32 mm/min			●		●						B								
		40 mm/min			●		●						L								
		50 mm/min			—		●						C								
		60 mm/min			—		●						R								
20 000		10 mm/min			●		—						D								
		20 mm/min			●		●						V								
		32 mm/min			●		●						W								
		40 mm/min			●		●						E								
		50 mm/min			●		—						Y								
		50 mm/min			—		—						Z								
		60 mm/min			●		●						C								
		60 mm/min			—		●						R								
		80 mm/min			—		●						D								
		100 mm/min			—		●						V								
16 000		10 mm/min			●		—						W								
		20 mm/min			●		●						E								
		32 mm/min			●		●						Y								
		40 mm/min			●		●						Z								
		50 mm/min			●		—						W								
		50 mm/min			—		●						E								
		60 mm/min			●		—						Y								
		60 mm/min			—		●						Z								
		80 mm/min			●		—						E								
		80 mm/min			—		●						Y								
Stroke		100 mm/min			—		●						Z								
Stroke							20-80 mm						K								
Control board	DMS3	Control	Modulating	0/4 - 20 mA	ON - OFF and pulse	24 V DC	Output	4 - 20 mA pasive					G								
				0/2 - 10 V							H										
Mechanical connection			Flange, connection height 110 mm, stem thread M16x1,5										D								
			Columns, connection height 126 mm, stem thread M20x1,5										M								
Accessories			Without accessories																		
			A Setting the stroke position to the desired value															0	1		
			D Auxiliary relay module R3, R4, R5 (module DMS3 RE3)															0	5		
			E Auxiliary relay module R1, R2, R3, R4, R5, READY (module DMS3 RE6)															0	6		
			F Local control for actuators with system DMS3 and LCD															0	7		

Permissible combinations of accessories and codes:
A+D=22. A+E=23. A+F=24. D+F=40. E+F=44. A+D+F=63. A+E+F=67



Pneumatic actuators

Flowserve

Series 253 - 701

marking in type number:

PFA, PFB, PFC

Technical data

Type	PA 253		PB 503		PB 701	
Marking in valve spec. No.	PFA		PFB		PFC	
Feeding pressure			6,0 bar max			
Function	direct	indirect	direct	indirect	direct	indirect
Control	pneumatic signal 0,2 - 1,0 bar pneumatic signal 0(4) - 20 mA					
Nominal force	according to table of nominal force values					
Travel	25 mm		40 mm			
Enclosure	IP 54					
Process medium max. temp.	acc. to used valves					
Ambient temperature range	-40 to 80 °C					
Ambient humidity range	95 %					
Weight	see dimensions table					

→ **Note:** Specifications and technical data are for information only. Detailed technical informations can be found in producer's data sheet or on the website www.flowserve.com

Accessories

Elektropneumatic positioner type SRI 981	Device with electric input of 20 - 100 kPa to control the pneumatic actuators with pneumatic control signal
Elektropneumatic positioner type SRI 986	Analog positioner with input signal 4(0) - 20 mA
Elektropneumatic positioner (analog) type SRD 990	Device with electric input of 4 (0) - 20 mA and outlet of controlling air into actuator. It is adjusted by PC and special software
Elektropneumatic positioner (intelligent) type SRD 991	Device with electric input of 4 (0) - 20 mA and outlet of controlling air into actuator. It is adjusted by PC and special software
Elektropneumatic positioner (intelligent) type SRD 998	Device with electric input of 4 (0) - 20 mA and outlet of controlling air into actuator. Standard equipment: HART, LED display, setting using the multi selector
Elektropneumatic positioner SIPART PS2	Digital positioner se vstupem 4(0) – 20 mA
Elektropneumatic positioner ABB TZIDC	
Signalisation switches type SGE985	Adjustable end position switches
Air set type G651 (-20 to 50°C)	Reduces the supply pressure to a value required
Air set type typ FRS 923 (-40 to 80°C)	
Solenoid valve standard type SC G551A005	Direct operated electromagnetic valve, version 3/2, function U (universal), G 1/4"
Solenoid valve standard type SC G327B001	Direct operated electromagnetic valve, version 3/2, function U (universal) G 1/4", with the increased safety/epoxy encapsulation operator
Solenoid valve inexplosive EEx em type EM G327B001	
Solenoid valve inexplosive EEx d type NF G327B001	Direct operated electromagnetic valve, version 3/2, function U (universal), G 1/4", solid conclusion
Solenoid valve 5/2-way type SCG551B417	Direct operated electromagnetic valve, version 5/2, function U (universal), G 1/4", (use for double-acting actuators)
Air lock relay, type EIL 200	Retaining device for closing of air pipeline on a pressure drop
Booster-valve type EIL 100	Airflow enhancer

Operating conditions

Pneumatic actuators Flowserve can operate with extremely high ambient temperatures with unique resistance to shock loads. They excel with resistance to vibrations and reached 10^6 of cycles in operation. It is possible to deliver the actuator with both fail to open and fail to close function, possibly with a position blocking (air lock) upon feeding pressure air supply failure. Various accessories can be delivered together with the actuator.

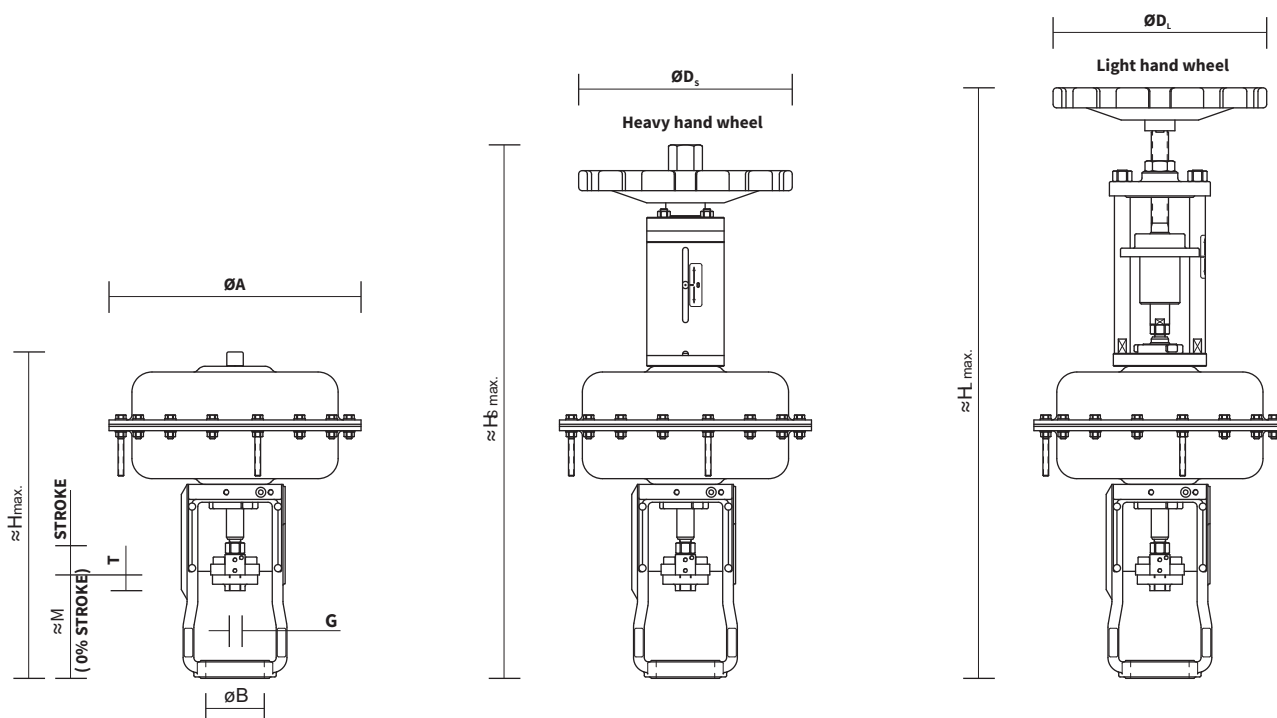
Direct and indirect functions

Direct function ensures that actuator's stem retracts upon control air supply failure (valve opens).

Indirect function ensures that actuator's stem extends upon control air supply failure (valve closes).

Dimensions and weight of actuators Flowserve series 253 - 701

Type	Actuator											Weight		
	A [mm]	H [mm]	H _s [mm]	H _L [mm]	D _s [mm]	D _L [mm]	Stroke [mm]	B [mm]	M [mm]	G [mm]	T [mm]	[kg]	with RK _s [kg]	with RK _L [kg]
PA 253	260	335	600	620	200	200	20	65	105	M10x1	23	10	17	15
PB 503	355	460	845	795	250	300	40	82	140	M16x1,5	25	22	31	30
PB 701	390	500	875	---	350	---	40	82	140	M16x1,5	25	31	53	---



Specification No. of Flowserve actuators 253 - 701

		PX XXX	X	X	X	X	X
Actuator type	250 cm²	PA 253					
	500 cm²	PB 503					
	700 cm²	PB 701					
Color		white	B				
Spring range [bar]	0,2 - 1,0		A	D			
	1,5 - 2,7		V	C			
	2,0 - 4,8		F	Y			
	1,0 - 2,4		D	Y			
	0,5 - 1,9		B	L			
Hand wheel	without wheel				O		
	light wheel				L		
	heavy wheel				H		
Function	direct				A		
	indirect				Z		
Stroke	20						A
	40						B



Pneumatic actuators

Flowserve

PO 1502

marking in type number:

PFD

Technical data

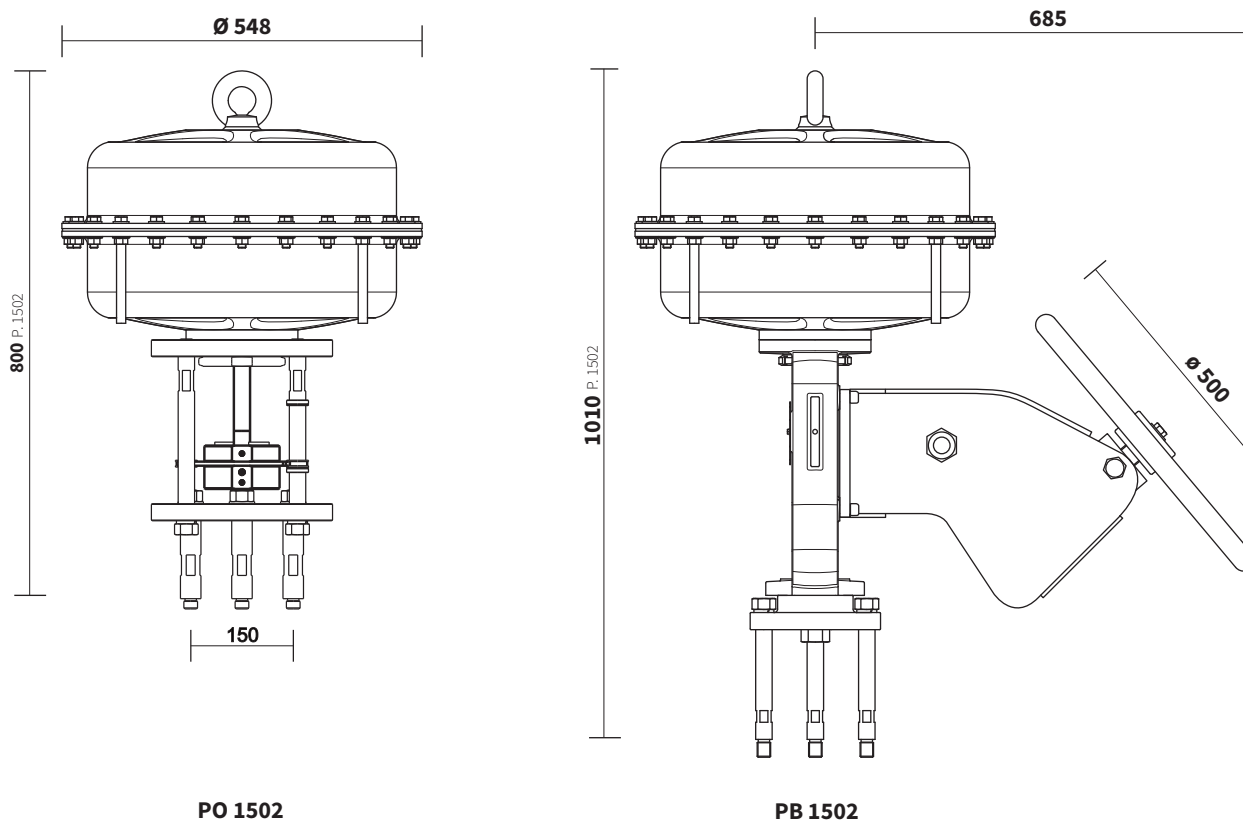
Type	PO 1502		
Marking in valve spec. No.	PFD		
Feeding pressure	6,0 bar max		
Function	direct	indirect	
Control	pneumatic signal 0,2 - 1,0 bar current signal 0(4) - 20 mA		
Nominal force	according to table of nominal force values		
Travel	80, 100 mm		
Enclosure	IP 54		
Process medium max. temp.	acc. to used valves		
Ambient temperature range	-40 to 80 °C		
Ambient humidity range	95 %		
Weight	124 kg - with hand wheel 174 kg		

→ **Note:** Specifications and technical data are for information only. Detailed technical informations can be found in producer's data sheet or on the website www.flowserve.com

Accessories

Elektropneumatic positioner type SRI 981	Device with electric input of 20 - 100 kPa to control the pneumatic actuators with pneumatic control signal
Elektropneumatic positioner type SRI 986	Analog positioner with input signal 4(0) - 20 mA
Elektropneumatic positioner (analog) type SRD 990	Device with electric input of 4 (0) - 20 mA and outlet of controlling air into actuator. It is adjusted by PC and special software
Elektropneumatic positioner (intelligent) type SRD 991	Device with electric input of 4 (0) - 20 mA and outlet of controlling air into actuator. It is adjusted by PC and special software
Elektropneumatic positioner (intelligent) type SRD 998	Device with electric input of 4 (0) - 20 mA and outlet of controlling air into actuator. Standard equipment: HART, LED display, setting using the multi selector
Elektropneumatic positioner SIPART PS2	Digital positioner se vstupem 4(0) - 20 mA
Elektropneumatic positioner ABB TZIDC	
Signalisation switches typ SGE985	Adjustable end position switches
Air set type G651 (-20 to 50°C)	Reduces the supply pressure to a value required
Air set type typ FRS 923 (-40 to 80°C)	
Solenoid valve standard type SC G551A005	Direct operated electromagnetic valve, version 3/2, function U (universal), G 1/4"
Solenoid valve standard type SC G327B001	
Solenoid valve inexplosive EEx em type EM G327B001	Direct operated electromagnetic valve, version 3/2, function U (universal), G 1/4", with the increased safety/epoxy encapsulation operator
Solenoid valve inexplosive EEx d type NF G327B001	Direct operated electromagnetic valve, version 3/2, function U (universal), G 1/4", solid conclusion
Solenoid valve 5/2-way type SCG551B417	Direct operated electromagnetic valve, version 5/2, function U (universal), G 1/4", (use for double-acting actuators)
Air lock relay, type EIL 200	Retaining device for closing of air pipeline on a pressure drop
Booster-valve type EIL 100	Airflow enhancer

Dimensions of actuator Flowserve 1502



Specification No. of Flowserve actuators 1502										
				PX XXXX	X	X	X	X	X	X
Type of actuator		1500 cm²	PO 1502							
		1500 cm²	PB 1502							
Color				white	B					
Spring range [bar]	PO 1502	H = 80 mm	0,4 - 2,0		G	F				
			1,5 - 2,7		V	C				
			2,0 - 3,5		F	S				
			2,6 - 4,2		A	J				
	PO 1502	H = 100 mm	0,9 - 1,9		H	L				
			1,8 - 3,8		J	I				
			2,0 - 4,3		F	L				
Hand wheel			without wheel					O		
			side light wheel					S		
Function			direct						A	
			indirect						Z	
Stroke H			80						D	



Pneumatic actuators

A. Hock

2109, 2112, 2112S

2112T, 2116, 2116S

marking in type number:

PHF, PHA, PHB, PHC

A. Hock pneumatic actuators are suitable for applications in extreme conditions and have good shock resistance. Actuators can be supplied in direct, reverse and springless configuration. Broad range of accessories is available.

Technical data						
Type	2109	2112	2112S	2112T	2116	2116S
Marking in valve spec. No.	PHF	PHA		PHB	PHC	
Max. supply pressure	NO, NC	6 bar		acc. to springs		6 bar
Function	double-acting	5,5 bar		3 bar		5,5 bar
Control	direct (NO), reverse (NC), double-acting					
Nominal force	pneumatic signal 20-100 kPa electric singnal 4-20 mA					
Stroke	according to springs					
Enclosure	16, 20	16, 20, 25, 40		25, 40		40, 80,100
Process medium max. temp.	according to used valve					
Ambient temperature range	standard -40 to 100 °C alternatively -60 to 80 °C					
Weight	see dimensions table					

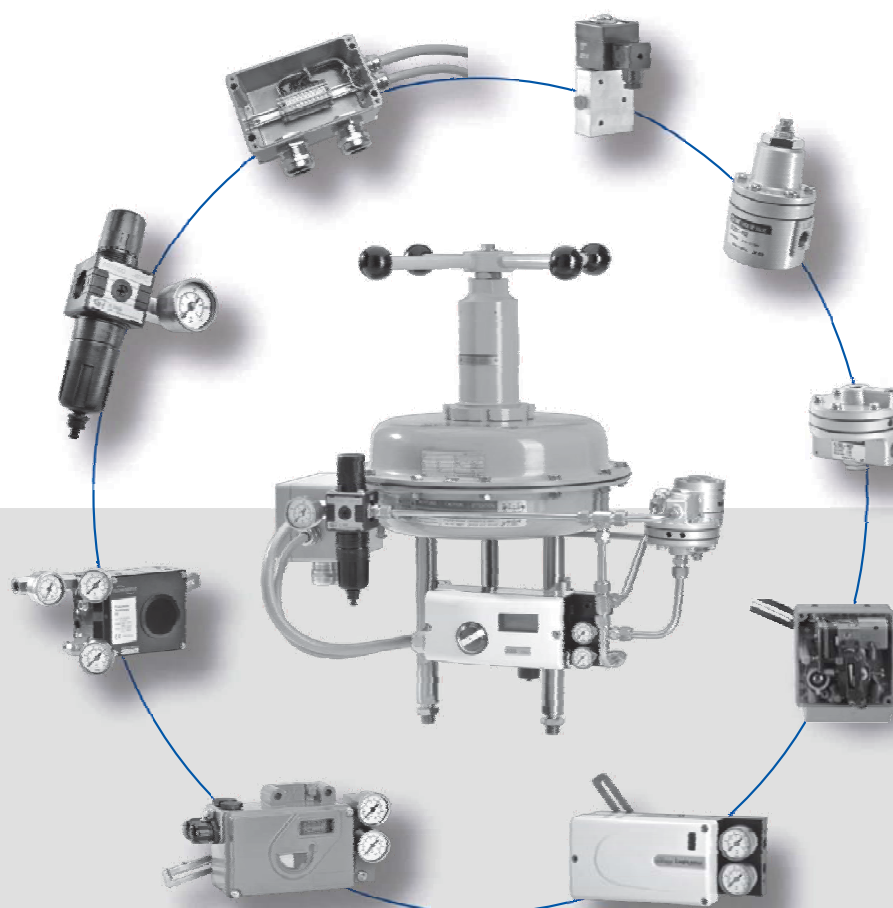
Direct and reverse functions

Direct function ensures that actuator's stem retracts upon control air supply failure (valve opens).

Reverse function ensures that actuator's stem extends upon control air supply failure (valve closes).

Accessories

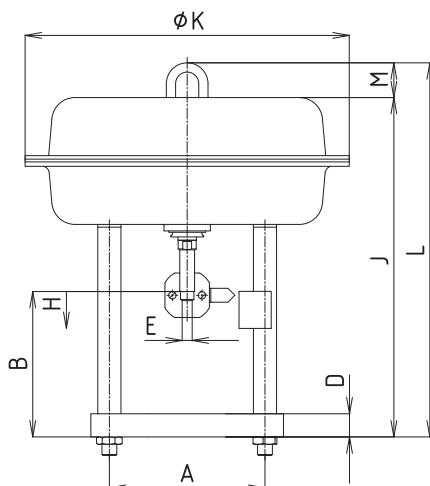
Pneumatic positioner type SRI 981	Device with pneumatic input of 20 - 100 kPa
Electropneumatic positioner type SRI 986	Analog positioner with input signal 4(0) - 20 mA
Electropneumatic positioner (analog) type SRD 990	Device with electric input of 4 (0) - 20 mA and direct pneumatic output into actuator. Adjusted by switches and potentiometers
Electropneumatic positioner (intelligent) type SRD 991	Device with electric input of 4 (0) - 20 mA and outlet of air into actuator. It is adjusted by PC and special software
Electropneumatic positioner (intelligent) type SRD 998	Device with electric input of 4 (0) - 20 mA and direct pneumatic output into actuator. Standard equipment: HART, LED display, adjustment by the multi selector
Electropneumatic positioner SIPART PS2	Digital positioner with input 4(0) - 20 mA
Electropneumatic positioner ABB TZIDC	
Limit switch type SGE985	Adjustable end limit switches
Air set type G651 (-20 to 50°C)	Reduces the supply air pressure to a required value
Air set type FRS 923 (-40 to 80°C)	
Solenoid valve standard type SC G551A005	Direct operated electromagnetic valve, version 3/2, function U (universal), G 1/4"
Solenoid valve standard type SC G327B001	
Solenoid valve EEx em b type EM G327B001, explosion-proof	Direct operated electromagnetic valve, version 3/2, function U (universal) G 1/4", with increased safety, encapsulated epoxy moulded
Solenoid valve EEx d type NF G327B001, explosion-proof	Direct operated electromagnetic valve, version 3/2, function U (universal), G 1/4", flameproof enclosure
Solenoid valve 5/2-way type SCG551B417	Direct operated electromagnetic valve, version 5/2, function U (universal), G 1/4", (use for double-acting actuators)
Air lock relay, type EIL 200	Retaining device for closing of air pipeline on a pressure drop
Booster-valve type EIL 100	Airflow enhancer



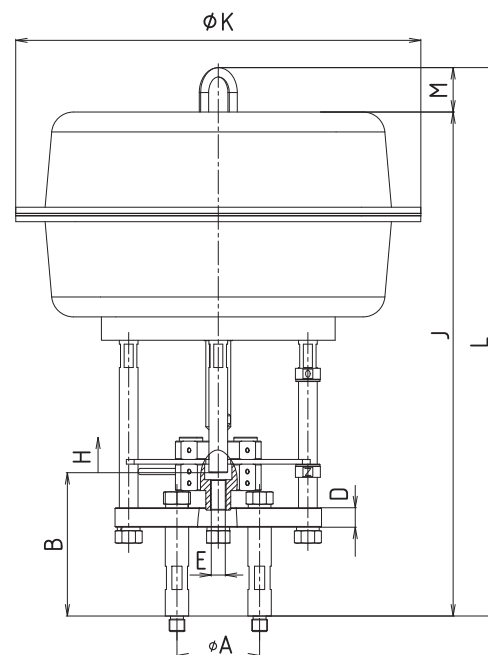
Dimensions and weight of actuators A. Hock series 2000

Typ	Connection version	Main dimensions of diaphragm actuators and manual control												Weight		Hand wheel	
		A	B	D	E	J	K	L	M	R	U	V	W	0,2-1,0	>	side	upper
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]		[kg]	
2109	A252	132	162	22	M10x1	349	268	387	38	297		265	210	10	10	7	6
2112-30 (NC)	A253	168	168	23	M10x1	400	352	438	38	316		350	265	20	20	7	8
2112T-30 (NC)	A253	168	168	23	M10x1	587	352	625	38			350	265	36	36		8
2112-30 (NO)	A255	168	157	25	M10x1	367	352	404	38	316		350	265	21	21	7	8
2112T-30 (NO)	A255	168	157	25	M10x1	555	352	593	38			350	265	38	38		8
2112-30 (NO)	A256	168	167	25	M10x1	377	352	414	38	316		350	265	21	21	7	8
2112T-30 (NO)	A256	168	167	25	M10x1	565	352	603	38			350	265	38	38		8
2112-50 (NC)	A254	168	177	25	M16x1,5	387	352	425	38	316		350	265	22	22	7	8
2112S-50 (NC)	A254	168	177	25	M16x1,5	387	352	425	38			350	265		23		8
2112T-50 (NC)	A254	168	177	25	M16x1,5	575	352	613	38			350	265	40	40		8
2112-50 (NO)	A257	168	177	25	M16x1,5	387	352	425	38	316		350	265	22	22	7	8
2112S-50 (NO)	A257	168	177	25	M16x1,5	387	352	425	38			350	264		23		8
2112T-50 (NO)	A257	168	177	25	M16x1,5	575	352	613	38			350	265	38	38		8
2116-40 (NO, NC)	A258	230	190	26	M16x1,5	597	520	654	57		500		670	105	110		48
2116-100 (NO, NC)	A302	150	184	25	M20x1,5	647	520	704	57		500		670	113	118		48
2116S-100 (NO, NC)	A302	150	184	25	M20x1,5	647	520	704	57		500		670		132		48

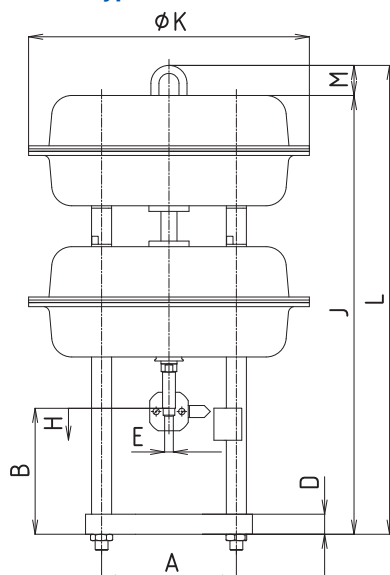
Standard actuator

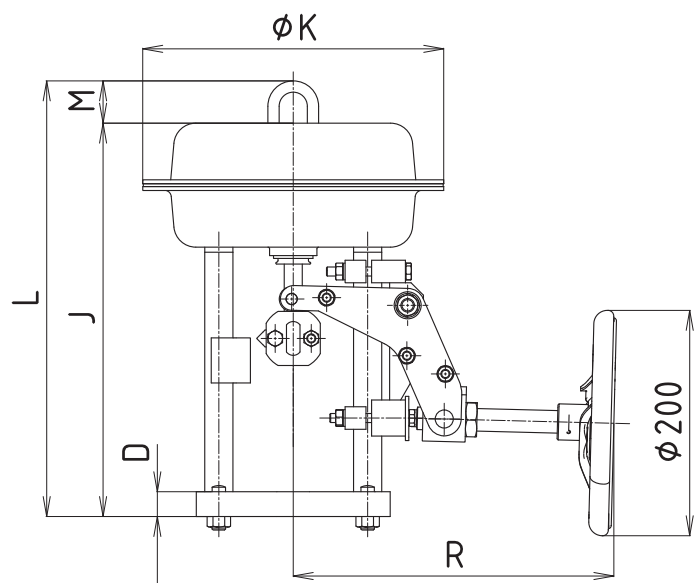


Standard actuator with linear unit 2116(S)

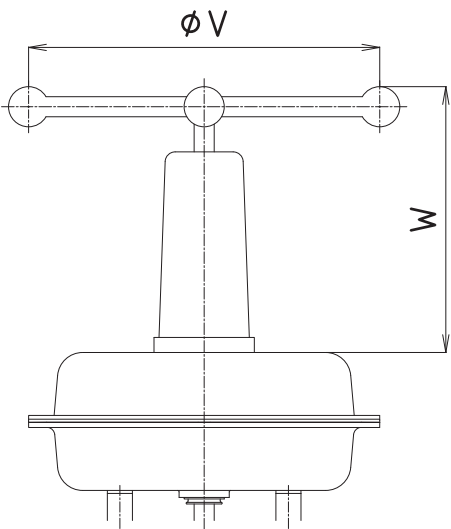


Tandem-type actuator 2112T

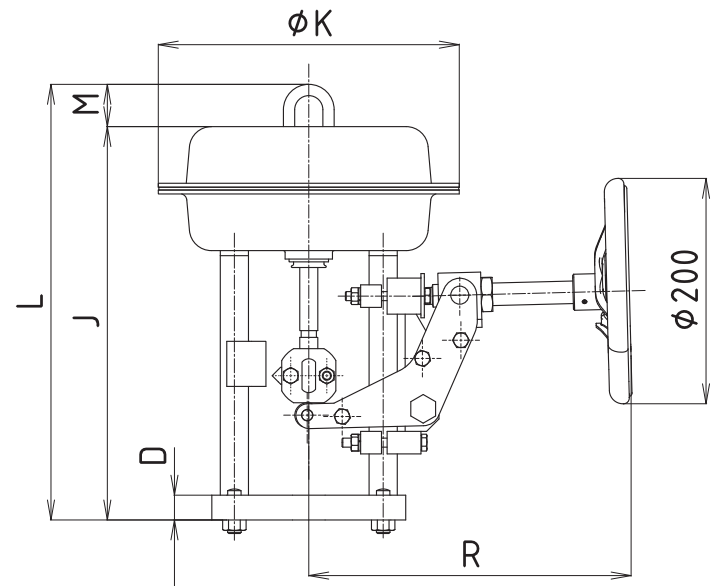




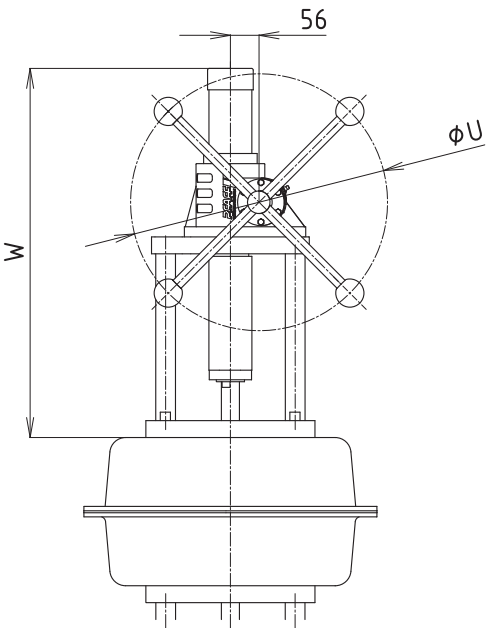
Standard actuator with side wheel (NO)



Upper wheel for actuators
2109, 2112, 2112S, 2112T



Standard actuator with side wheel (NC)



Upper wheel for actuators
2116(S)

Specification No. of actuators A. Hock series 2000

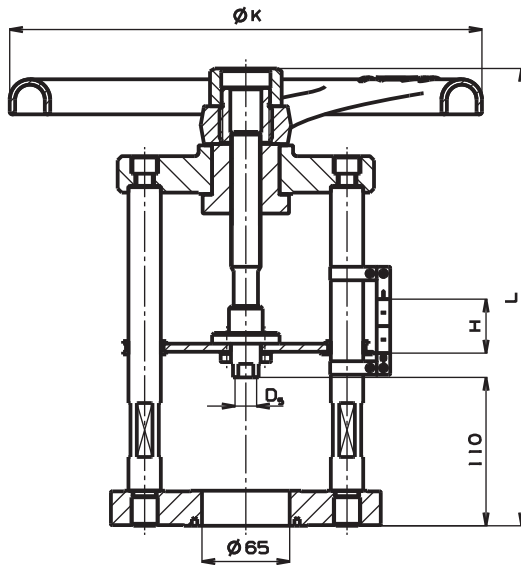
				P2-0K-	X	X	X	(AXXX)	
Spring range [bar]	Without hand wheel	0,2 - 1,0	all actuators	A					
		0,8 - 2,2	all actuators, except 2112-50 / 2112T-50	B					
		1,2 - 3,0	2109	V					
		1,5 - 3,8	2109 (NC only)	H					
		1,6 - 3,2	2112-30 (NC only)	M					
		1,4 - 2,8	only 2112-30 / 2112T-30	W					
		1,5 - 3,0	2112T-30 (NC only)	R					
		0,5 - 1,7	2112-50 / 2112T-50	D					
		0,8 - 2,8	2112-50	S					
		0,7 - 2,5	only 2112-50	X					
		0,75 - 2,7	2112T-50 (NC only)	U					
		1,2 - 3,0	only 2112S-50	Y					
		1,4 - 3,4	only 2112S-50	Z					
		1,3 - 3,0	only 2116S-100	Y					
		1,5 - 3,5	only 2116S-100	Z					
	With upper wheel	0,2 - 1,0	all actuators	E					
		0,8 - 2,2	2109 / 2112-30 / 2112T-30	F					
		0,8 - 2,2	2116 / 2116T	F					
		1,2 - 3,0	2109 / 2112S-50	L					
		0,5 - 1,7	2112-50 / 2112T-50	G					
		0,7 - 2,5	2112-50 / 2112T-50	T					
		1,4 - 2,8	2112-30	N					
	With side wheel	0,2 - 1,0	except 2116 / 2116T	I					
		0,8 - 2,2	2109 / 2112-30	K					
		0,5 - 1,7	2112-50	P					
		0,7 - 2,5	2112-50 (NO only)	Q					
	Without hand wheel	Double-acting version			C				
Actuator size / nominal travel	2109-20			L					
	2112-30			M					
	2112-50 / 2112S-50			I					
	2112T-30			P					
	2112T-50			T					
	2116-40, 2116-100, 2116S-100			N					
Function	Direct (NO)							1	
	Reverse (NC)							2	
	Double-acting							3	
Connection version	2109		CV 2XX, NPS ½" - 2½"					A252	
	2112-30 (NC) / 2112T-30 (NC)		CV 2XX, NPS ½" - 2½"					A253	
	2112-30 (NO)		CV 2XX, NPS ½" - 1½"					A255	
	2112-30 (NO) / 2112T-30 (NO)		CV 2XX, NPS 2" - 2½"					A256	
	2112-50 (NC) / 2112S-50 (NC) 2112T-50 (NC)		CV 2XX, NPS 3" - 6"					A254	
	2112-50 (NO) / 2112S-50 (NO) 2112T-50 (NO)		CV 2XX, NPS 3" - 6"					A257	
	2116-40 (only NC & NO)		CV 2XX, NPS 3" - 6"					A258	
	2116-100 / 2116S-100 (only NC & NO)		CV 2XX, NPS 8" - 16"					A302	

 Ordering number example: **P2-0K-BL2 (A252)**

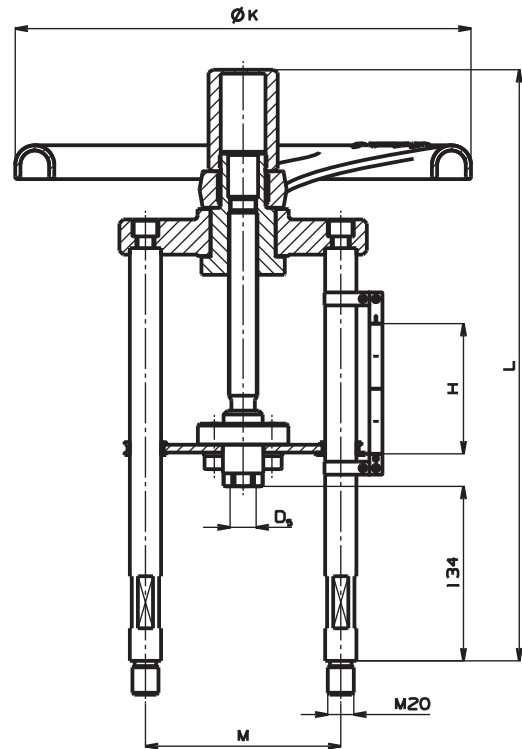
Specification No. of actuators A. Hock (stainless steel version) series 2000									
				P5-0K-	X	X	X	(AXXX)	
Spring range [bar]	Without hand wheel	0,2 - 1,0	all actuators		A				
		0,8 - 2,2	all actuators, except 2112-50 / 2112T-50		B				
		1,6 - 3,2	2112-30 (NC only)		M				
		1,4 - 2,8	only 2112-30 / 2112T-30		W				
		1,5 - 3,0	2112T-30 (NC only)		R				
		0,5 - 1,7	2112-50 / 2112T-50		D				
		0,8 - 2,8	2112-50		S				
		0,7 - 2,5	only 2112-50		X				
		0,75 - 2,7	2112T-50 (NC only)		U				
		1,2 - 3,0	only 2112S-50		Y				
		1,4 - 3,4	only 2112S-50		Z				
	With upper wheel	0,8 - 2,2	2109 / 2112-30 / 2112T-30		F				
		1,2 - 3,0	2109 / 2112S-50		L				
		0,5 - 1,7	2112-50 / 2112T-50		G				
		0,7 - 2,5	2112-50 / 2112T-50		T				
		1,4 - 2,8	2112-30		N				
	Without hand wheel		double -acting		C				
Actuator size / nominal travel	2109-20					L			
	2112-30					M			
	2112-50, 2112S-50					I			
	2112T-30					P			
	2112T-50					T			
Function	Direct (NO)							1	
	Indirect (NC)							2	
	Double-acting							3	
Connection version	2109		CV 2XX, NPS ½" - 2½"						A252
	2112-30 (NC) / 2112T-30 (NC)		CV 2XX, NPS ½" - 2½"						A253
	2112-30 (NO)		CV 2XX, NPS ½" - 1½"						A255
	2112-30 (NO) / 2112T-30 (NO)		CV 2XX, NPS 2" - 2½"						A256
	2112-50 (NC) / 2112S-50 (NC)		CV 2XX, NPS 3" - 6"						A254
	2112T-50 (NC)								
	2112-50 (NO) / 2112S-50 (NO)		CV 2XX, NPS 3" - 6"						A257
2112T-50 (NO)									

Ordering number example: P5-0K-BL2 (A252)

Hand wheels RV / UV 2x0, 2x2 and 2x4



Hand wheel for DN 15 - 150



Hand wheel for DN 200 - 400

Dimensions of manual control

DN	Marking	H [mm]	L [mm]	ØK [mm]	M [mm]	D _s [mm]	D _e [mm]	m [kg]	Ordering no. (BOM number)
15	R16	16	247	160	---	65	M10x1	5	S900 0231
20									
25									
32									
40	R20	20	275	195	---	65	M10x1	11	S900 0115
50									
65	R28	40	317	280	---	65	M16x1,5	13	S900 0116
80									
100	R35	80	454	350	150	---	M20x1,5	15	S900 0141
125									
150									
200									
250	R35	100	454	350	150	---	M20x1,5	15	S900 0141
300									
400									S900 0235

Marking of actuators in type no.

Electric actuator 660 MIDI	ENB	Electric actuator Schiebel AB3	EZA
Electric actuator Zepadyn 670	ENC	Electric actuator Schiebel exAB3	EZB
Electric actuator Zepadyn 671	ENE	Electric actuator Schiebel rAB3	EZC
Electric actuator PTN 2.20	ERB	Electric actuator Schiebel exrAB3	EZD
Electric actuator PTN 2.32 ; PTN 2.40	ERC	Electric actuator Schiebel AB5	EZE
Electric actuator PTN 6	ERD	Electric actuator Schiebel exAB5	EZF
Electric actuator PTN 7	ERG	Electric actuator Schiebel rAB5	EZG
Electric actuator Modact MTR	EPD	Electric actuator Schiebel exrAB5	EZH
Electric actuator ST 0, STR 0 PA	EPK	Electric actuator Schiebel rAB8	EZK
Electric actuator ST 0.1, STR 0.1 PA	EPL	Electric actuator Schiebel exrAB8	EZL
Electric actuator ST 1, STR 1 PA	EPI	Electric actuator Rotork IQM10 a IQM12	EQA
Electric actuator ST 1 Ex	EPJ	Electric actuator Rotork Ex IQM10 a Ex IQM12	EQB
Electric actuator ST 2, STR 2 PA	EPM	Electric actuator IQM20	EQD
Electric actuator Modact MTN Control, MTP Control	EYA	Electric actuator Ex IQM20	EQE
Electric actuator Modact MTN, MTP	EYB	Electric actuator Rotork CVL-500 to CVL-5000	EQL
Electric actuator Modact MTNED, MTPED	EYA	Pneumatic actuator Flowserve PA 253	PFA
Electric actuator Auma SA 07.2	EEA	Pneumatic actuator Flowserve PB 503	PFB
Electric actuator Auma SA Ex 07.2	EAB	Pneumatic actuator Flowserve PB 701	PFC
Electric actuator Auma SAR 07.2	EAC	Pneumatic actuator Flowserve PO 1502	PFD
Electric actuator Auma SAR Ex 07.2	EAD	Pneumatic actuator Flowserve PO 3002	PFE
Electric actuator Auma SA 07.6	EAE	Pneumatic actuator A.Hock 2109-20	PHF
Electric actuator Auma SA Ex 07.6	EAF	Pneumatic actuator A.Hock 2112-30, A.Hock 2112-50	PHA
Electric actuator Auma SAR 07.6	EAG	Pneumatic actuator A.Hock 2112T-30, A.Hock 2112T-50	PHB
Electric actuator Auma SAR Ex 07.6	EAH	Pneumatic actuator A.Hock 2116-40	PHC
Electric actuator Auma SA 10.2	EAI	Hand wheel pro DN 15 - 40	R16
Electric actuator Auma SAR 10.2	EAJ	Hand wheel pro DN 50 - 65	R20
Electric actuator Auma SAR Ex 10.2	EAK	Hand wheel pro DN 80 - 100	R28
Electric actuator Auma SA Ex 10.2	EAL	Hand wheel pro DN 125 - 400	R35

Maximal permissible operating pressures acc. to ASME B16.34-2013 [MPa]

Material	Class	Temperature [°C]																
		RT ¹⁾	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	550
A216 WCB	150	1.96	1.92	1.77	1.58	1.38	1.21	1.02	0.93	0.84	0.74	0.65	0.55	---	---	---	---	---
A217 WC 6 ²⁾	150	1.98	1.95	1.77	1.58	1.38	1.21	1.02	0.93	0.84	0.74	0.65	0.55	0.46	0.37	0.28	0.14	0.14
A351 CF8M ³⁾	150	1.90	1.84	1.62	1.48	1.37	1.21	1.02	0.93	0.84	0.74	0.65	0.55	0.46	0.37	0.28	0.14	0.14

¹⁾ -29°C to 38°C

²⁾ Material only normalized annealed.

The intentional addition of any element not listed in ASTM A 217 is not permitted except for Ca and Mg for deoxidation

³⁾ Use at temperatures above 540 °C only when the carbon content is 0.04% or higher

Maximal permissible operating pressures acc. to ASME B16.34-2013 [psig]

Material	Class	Temperature [°F]														
		RT ¹⁾	200	300	400	500	600	650	700	750	800	850	900	950	1000	1050
A216 WCB	150	285	260	230	200	170	140	125	110	95	80	---	---	---	---	---
A217 WC 6²⁾	150	290	260	230	200	170	140	125	110	95	80	65	50	35	20	20
A351 CF8M³⁾	150	275	235	215	195	170	140	125	110	95	80	65	50	35	20	20

¹⁾ -20 °F to 100 °F

²⁾ Material only normalized annealed.

The intentional addition of any element not listed in ASTM A 217 is not permitted except for Ca and Mg for deoxidation

³⁾ Use at temperatures above 1000 °F only when the carbon content is 0.04% or higher