



01 - 02.0  
11.20.GB

# CONTROL VALVES

## 100 line



# 100 line

## RV 102

control valves made of bronze  
with threaded connection



## RV 103

control valves made of grey cast iron  
with flanges



- two-way reverse control valves
- two-way angular control valve
- three-way control valve (with mixing or splitting function)

### Control

hand wheel and electromechanical actuators of producers  
**Ekorex, ZPA Nová Paka, Regada (E) Siemens (L), Belimo (B), Johnson Controls (C)**

### Application

valves are designed for application in heating, ventilation or air conditioning systems (maximal permissible operating pressures depending on the selected material and medium temperature, they are listed in the table on page 8 of this catalogue)

### Process media

Valve series **RV 102 and RV 103** are designed to regulate the flow and pressure of liquids, gases and vapours without abrasive particles e.g. water, low-pressure steam, (it applies to RV 102 only, RV 103 valves are not suitable for steam or steam condensate), air and other media compatible with material of the valve inner parts

Medium acidity and alkalinity should not exceed range of pH 4.5 to 9.5. To ensure reliable regulation, producer recommends to pipe a strainer in front of the valve into pipeline. The valve cannot work in cavitation conditions.

### Installation

The valve is to be piped the way so that the direction of medium flow will coincide with the arrows on the body (inlet ports A, B and outlet port AB).

In flow-diverting valves, the process medium flow is reversed (inlet port AB and outlet ports A, B). Valve can be installed in any position except position when the actuator is under the valve body.



# RV 102 RV 103

## Control valves

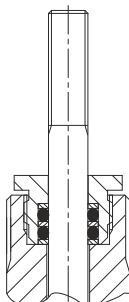
**DN 15 - 50**  
**PN 16**

### Technical data

Series	RV 102 E	RV 102 L	RV 102 B	RV 102 C	RV 103 E	RV 103 L	RV 103 B	RV 103 C
Type of valve	Two-way, reverse, control valve Three-way control valve							
Nominal size range	DN 15 to 50							
Nominal pressure	PN 16							
Body material	Brass 42 3135				Grey cast iron EN-JL 1040			
Plug material	Brass 42 3234							
Operating temp. range	0 - 150 °C	0 - 140 °C	0 - 150 °C	-5 - 140 °C	0 - 150 °C	0 - 140 °C	0 - 150 °C	-5 - 140 °C
Face to face dimensions	Section M4 acc. to DIN 3202 (4/1982)				Section 1 acc. to ČSN-EN 558-1 (3/1997)			
Connection	Internal threaded coupling acc. to ČSN-EN ISO 228-1 (9/2003)				Flange type B1 (raised face) acc. to ČSN-EN 1092-1 (4/2002)			
Type of plug	V-ported plug							
Flow characteristic	Linear; equal-percentage, in direct way							
Kvs values	0.6 to 40 m <sup>3</sup> / h <sup>3</sup>							
Leakage rate	Class III. acc. to ČSN-EN 1349 (5/2001) (< 0.1% Kvs) in A-AB way							
Rangeability r	50:1							
Packing	O - ring EPDM							

### Packings O-ring EPDM

Packing is designed for non-aggressive media with temperature from 0 °C to 140 °C. Packing excels with its reliability and long time tightness. It has ability of sealing even if the valve stem is a bit damaged. Low frictional forces enables valve to be actuated with a low-linear-force actuator. Service life of sealing rings depends on operating conditions and it is more than 400 000 cycles on average.



### 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.



Other technical valve parameters with actuators

## Ekorex+ ZPA Nová Paka Regada

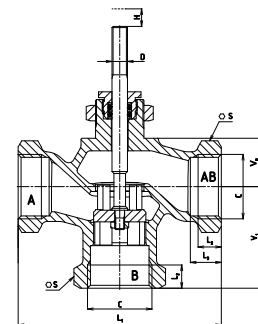
### Kvs values and differential pressures

$\Delta p_{max}$  value is the valve maximal differential pressure when reliable opening and closing can be guaranteed. Because of seat and plug service life, it is recommended so that permanent differential pressure would not exceed 0.6 MPa for valves RV 102 and 0.4 MPa for valves RV 103.

For further information on actuating, see actuator's catalogue sheets		Actuating (actuator)					Hand wheel	PIKO 524 65	PTN1 MIKRO 655	ST MINI	PTN1 MIKRO 655	STR 0	PTN2.20
		Marking in valve spec. No.					R	END	ERA, ENA	EPR	ERA, ENA	EPK	ERB
		Linear force						250 N	600 N	1100 N	1200 N	1800 N	2000 N
		Kvs [m <sup>3</sup> /h]					$\Delta p_{max}$ MPa	$\Delta p_{max}$ MPa	$\Delta p_{max}$ MPa	$\Delta p_{max}$ MPa	$\Delta p_{max}$ MPa	$\Delta p_{max}$ MPa	$\Delta p_{max}$ MPa
DN	H	1	2	3	4	5	MPa	MPa	MPa	MPa	MPa	MPa	
15	10	4.0	2.5	1.6	1.0	0.63	1.60	0.81	1.60	1.60	1.60	1.60	
20		6.3	4.0	2.5	---	---	1.10	0.45	1.32	1.60	1.60	1.60	
25		10.0	6.3	4.0	---	---	0.70	0.28	0.85	1.60	1.60	1.60	
32	16	16.0	10.0	6.3	---	---	0.45	0.16	0.52	1.04	1.14	1.60	
40		25.0	16.0	10.0	---	---	0.28	0.10	0.33	0.67	0.74	1.15	
50		40.0	25.0	16.0	---	---	0.16	0.05	0.19	0.40	0.44	0.69	

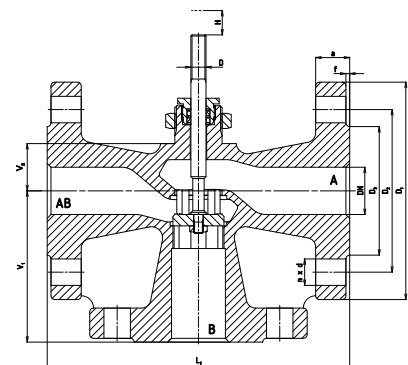
### Dimensions and weights for the type RV 102 E

DN	C	L <sub>1</sub> mm	L <sub>2</sub> mm	L <sub>3</sub> mm	V <sub>1</sub> mm	V <sub>2</sub> mm	S mm	H mm	D mm	MIX 2-way	
										m	kg
15	G 1/2	85	9	12	43	25	27	10	M8x1	0.55	0.6
20	G 3/4	95	11	14	48	25	32			0.65	0.75
25	G 1	105	12	16	53	25	41			0.80	0.95
32	G 1 1/4	120	14	18	66	35	50			1.40	1.65
40	G 1 1/2	130	16	20	70	35	58			2.00	2.3
50	G 2	150	18	22	80	42	70	16	M8x1	2.95	3.5



### Dimensions and weights for the type RV 103 E

DN	D <sub>1</sub> mm	D <sub>2</sub> mm	D <sub>3</sub> mm	n x d mm	a mm	f mm	L <sub>1</sub> mm	V <sub>1</sub> mm	V <sub>2</sub> mm	H mm	D mm	MIX 2-way	
												m	kg
15	95	65	45	4x14	16	2	130	65	25	10	M8x1	3.2	4.0
20	105	75	58				150	75	25			4.3	5.4
25	115	85	68				18	160	80			25	5.5
32	140	100	78	4x18	18	3	180	90	35	16	M8x1	7.7	9.7
40	150	110	88				200	100	35			8.5	10.9
50	165	125	102				20	230	115			42	11.9





Other technical valve parameters with actuators

**Siemens**

### Kvs values and differential pressures

$\Delta p_{max}$  value is the valve maximal differential pressure when reliable opening and closing can be guaranteed. Because of seat and plug service life, it is recommended so that permanent differential pressure would not exceed 0.6 MPa for valves RV 102 and 0.4 MPa for valves RV 103.

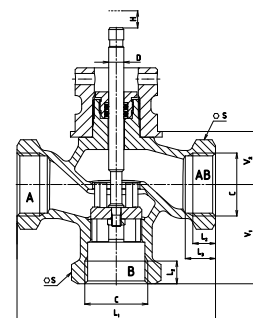
For further information on actuating, see actuator's catalogue sheets		Actuating (actuator)					SAX ...	SKD ...
		Marking in valve spec. No.					ELE	HLA, HLB, HLC
		Linear force					800 N	1000 N
		Kvs [m <sup>3</sup> /h]					$\Delta p_{max}$	$\Delta p_{max}$
DN	H	1	2	3	4	5	MPa	MPa
15	10	4.0	2.5	1.6	1.0	0.63	1.60	1.60
20		6.3	4.0	2.5	---	---	1.60	1.60
25		10.0	6.3	4.0	---	---	1.18	1.51
32	16	16.0	10.0	6.3	---	---	0.73	0.94
40		25.0	16.0	10.0	---	---	0.47	0.61
50		40.0	25.0	16.0	---	---	0.28	0.36

Note: The value of the nominal stroke of the actuator does not match the nominal stroke of the valve. Therefore, it is necessary to take into account the reduction of its range to 500 - 1000  $\Omega$  when using a resistance position transmitter at a stroke of 10 mm and at 200 - 1000  $\Omega$  at a stroke of 16 mm.

Both the SAX61 and SKD 6xxx actuators, equipped with a stroke calibration function, allow control in the full stroke range.

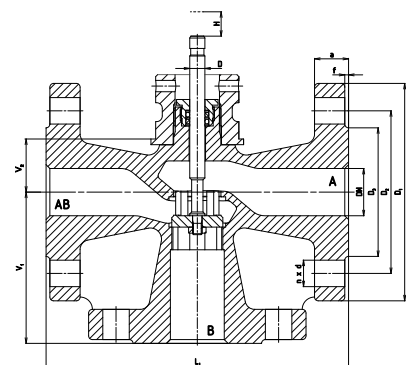
### Dimensions and weights for the type RV 102 L

DN	C	L <sub>1</sub> mm	L <sub>2</sub> mm	L <sub>3</sub> mm	V <sub>1</sub> mm	V <sub>2</sub> mm	S mm	H mm	D mm	MIX 2-way	
										m	kg
15	G 1/2	85	9	12	43	28	27	10	8	0.9	0.85
20	G 3/4	95	11	14	48	28	32			1.05	0.95
25	G 1	105	12	16	53	28	41			1.25	1.1
32	G 1 1/4	120	14	18	66	38	50	16	8	1.95	1.7
40	G 1 1/2	130	16	20	70	38	58			2.6	2.3
50	G 2	150	18	22	80	45	70			3.75	3.25



### Dimensions and weights for the type RV 103 L

DN	D <sub>1</sub> mm	D <sub>2</sub> mm	D <sub>3</sub> mm	n x d mm	a mm	L <sub>1</sub> mm	V <sub>1</sub> mm	V <sub>2</sub> mm	H mm	D mm	MIX 2-way	
											m	kg
15	95	65	45	4x14	16	130	65	28	10	8	4.3	3.2
20	105	75	58			150	75	28			5.7	4.4
25	115	85	68			18	160	80			28	7.3
32	140	100	78	4x18	18	180	90	38	16	8	10.5	8.0
40	150	110	88			200	100	38			11.5	8.8
50	165	125	102			20	230	115			45	15.9





Other technical valve parameters with actuators

## Belimo

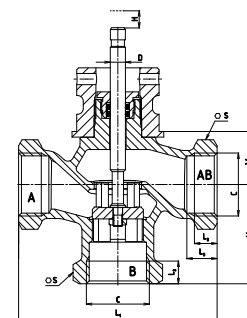
### Kvs values and differential pressures

$\Delta p_{max}$  value is the valve maximal differential pressure when reliable opening and closing can be guaranteed. Because of seat and plug service life, it is recommended so that permanent differential pressure would not exceed 0.6 MPa for valves RV 102 and 0.4 MPa for valves RV 103.

For further information on actuating, see actuator's catalogue sheets		Actuating (actuator)					NV	SV
		Marking in valve spec. No.					EBM	EBM
		Linear force					1000 N	1500 N
		Kvs [m³/h]					$\Delta p_{max}$	$\Delta p_{max}$
DN	H	1	2	3	4	5	MPa	MPa
15	10	4.0	2.5	1.6	1.0	0.63	1.60	1.60
20		6.3	4.0	2.5	---	---	1.60	1.60
25		10.0	6.3	4.0	---	---	1.51	1.60
32	16	16.0	10.0	6.3	---	---	0.94	1.45
40		25.0	16.0	10.0	---	---	0.61	0.95
50		40.0	25.0	16.0	---	---	0.36	0.57

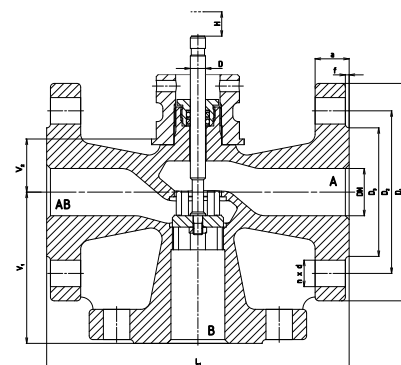
### Dimensions and weights for the type RV 102 B

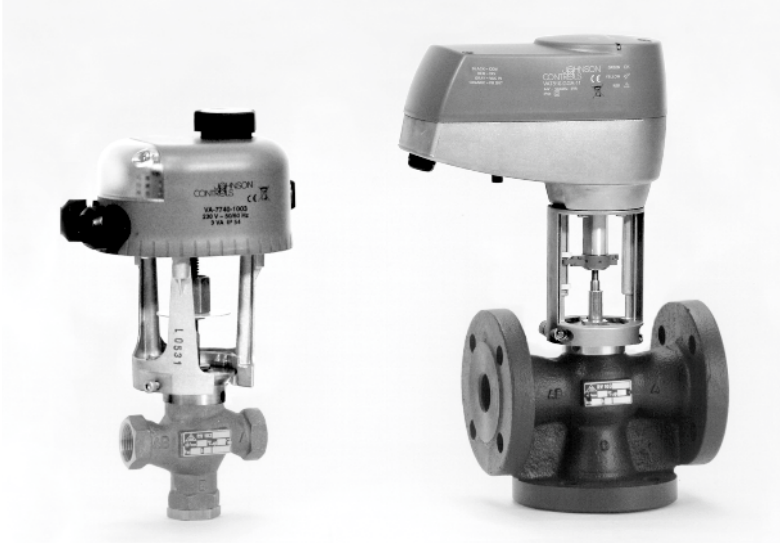
DN	C	L <sub>1</sub> mm	L <sub>2</sub> mm	L <sub>3</sub> mm	V <sub>1</sub> mm	V <sub>2</sub> mm	S mm	H mm	D mm	MIX 2-way	
										m	kg
15	G 1/2	85	9	12	43	28	27	10	8	0.9	0.85
20	G 3/4	95	11	14	48	28	32			1.05	0.95
25	G 1	105	12	16	53	28	41	16	8	1.25	1.1
32	G 1 1/4	120	14	18	66	38	50			1.95	1.7
40	G 1 1/2	130	16	20	70	38	58			2.6	2.3
50	G 2	150	18	22	80	45	70			3.75	3.25



### Dimensions and weights for the type RV 103 B

DN	D <sub>1</sub> mm	D <sub>2</sub> mm	D <sub>3</sub> mm	n x d mm	a mm	L <sub>1</sub> mm	V <sub>1</sub> mm	V <sub>2</sub> mm	H mm	D mm	MIX 2-way	
											m	kg
15	95	65	45	4x14	16	130	65	28	10	8	4.3	3.2
20	105	75	58			150	75	28			5.7	4.4
25	115	85	68	4x18	18	160	80	28	16	8	7.3	5.6
32	140	100	78			180	90	38			10.5	8.0
40	150	110	88	200	100	38	11.5	8.8				
50	165	125	102		20	230	115	45			15.9	12.4





Other technical valve parameters with actuators

## Johnson Controls

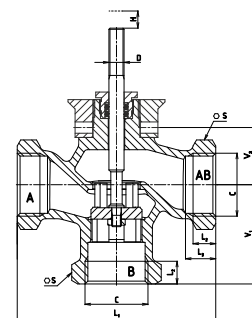
### Kvs values and differential pressures

$\Delta p_{max}$  value is the valve maximal differential pressure when reliable opening and closing can be guaranteed. Because of seat and plug service life, it is recommended so that permanent differential pressure would not exceed 0.6 MPa for valves RV 102 and 0.4 MPa for valves RV 103.

For further information on actuating, see actuator's catalogue sheets		Actuating (actuator)		VA-77xx-100x	VA-7810-xxx-11			
		Marking in valve spec. No.		ECM	ECN			
		Linear force		500 N $\pm$ 20%	1000 N $\pm$ 20%			
		Kvs [m <sup>3</sup> /h]					$\Delta p_{max}$	$\Delta p_{max}$
DN	H	1	2	3	4	5	MPa	MPa
15	10	4.0	2.5	1.6	1.0	0.63	1.60	1.60
20		6.3	4.0	2.5	---	---	1.07	1.60
25		10.0	6.3	4.0	---	---	0.69	1.18
32	16	16.0	10.0	6.3	---	---	0.42	0.73
40		25.0	16.0	10.0	---	---	0.27	0.47
50		40.0	25.0	16.0	---	---	0.15	0.28

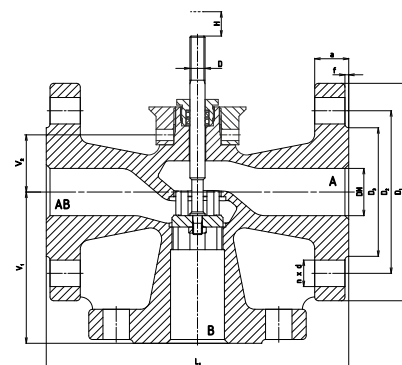
### Dimensions and weights for the type RV 102 C

DN	C	L <sub>1</sub> mm	L <sub>2</sub> mm	L <sub>3</sub> mm	V <sub>1</sub> mm	V <sub>2</sub> mm	S mm	H mm	D mm	m kg
15	G 1/2	85	9	12	43	30	27	10	1/4" UNF	0.55
20	G 3/4	95	11	14	48	30	32			0.65
25	G 1	105	12	16	53	30	41			0.80
32	G 1 1/4	120	14	18	66	40	50	16	1/4" UNF	1.40
40	G 1 1/2	130	16	20	70	40	58			2.00
50	G 2	150	18	22	80	47	70			2.95



### Dimensions and weights for the type RV 103 C

DN	D <sub>1</sub> mm	D <sub>2</sub> mm	D <sub>3</sub> mm	n x d mm	a mm	f mm	L <sub>1</sub> mm	V <sub>1</sub> mm	V <sub>2</sub> mm	H mm	D mm	m kg
15	95	65	45	4x14	16	2	130	65	30	10	1/4" UNF	3.2
20	105	75	58				150	75	30			4.3
25	115	85	68				160	80	30			5.5
32	140	100	78	4x18	18	3	180	90	40	16	1/4" UNF	7.7
40	150	110	88				200	100	40			8.5
50	165	125	102				230	115	47			11.9



## Valve complete specification No. for ordering

		XX	XXX	XXX	XX	XX	- XX	/	XXX	- XX
<b>1. Valve</b>	Control valve	RV								
<b>2. Series</b>	Valve made of brass		102							
	Valve made of grey cast iron		103							
<b>3. Actuating</b>  <sup>1)</sup> actuators with fail-safe function (closes direct way)	Electric actuators			E						
	Hand wheel			R						
	Electrohydraulic actuators			H						
	Electric actuator PTN1			ERA						
	Electric actuator PTN2.20			ERB						
	Electric actuator ST MINI			EPR						
	Electric actuator ST(R) 0			EPK						
	Electric actuator MIKRO 655			ENA						
	Electric actuator PIKO 524 65			END						
	Electric actuator SAX 31, SAX 61, SAX 81			ELE						
	Electric actuator series NV			EBM						
	Electric actuator series SV			EBM						
	Electric actuator VA-77xx-100x			ECM						
	Electric actuator VA-7810-xxx-11			ECN						
	Electrohydraulic actuators SKD 32.50, SKD 60, SKD 82.50			HLA						
Electrohydraulic actuators SKD 32.51, SKD 32.21, SKD 82.51 <sup>1)</sup>			HLB							
Electrohydraulic actuators SKD 62, SKD 62UA <sup>1)</sup>			HLC							
<b>4. Design</b>	Applicable to RV 102	Straight, two-way, threaded valves			1					
		Angle, two-way, threaded valves			2					
		Mixing (diverting), three-way, threaded valves			3					
	Applicable to RV 103	Straight, two-way, flanged valves				4				
		Angle, two-way, flanged valves				5				
		Mixing (diverting), three-way, flanged valves				6				
<b>5. Body material</b>	Grey cast iron				3					
	Brass				5					
<b>6. Flow characteristic</b>	Linear					1				
	Equal-percentage, in direct way					2				
<b>7. Nominal Kvs value</b>	Column No. acc. to Kvs values table						X			
<b>8. Nominal pressure</b>	PN							16		
<b>9. Operating temperature</b>	°C								140	
									150	
<b>10. Nominal size</b>	DN									XX

## Maximal permissible operating pressures acc. to ČSN EN 1092-3 and to ČSN EN 1092-2[MPa]

Material	PN	Temperature [ °C ]			
		RT <sup>1)</sup>	100	120	150
<b>Brass 42 3135</b> (CuSn5Zn5Pb5-C)	16	1,60	1,60	1,60	1,60
<b>Grey cast iron EN-JL 1040</b> (EN-GJL-250)	16	1,60	1,60	1,60	1,44

<sup>1)</sup> -10°C to 50°C





Electric actuators

# ZPA Nová Paka

**PIKO 524 65**

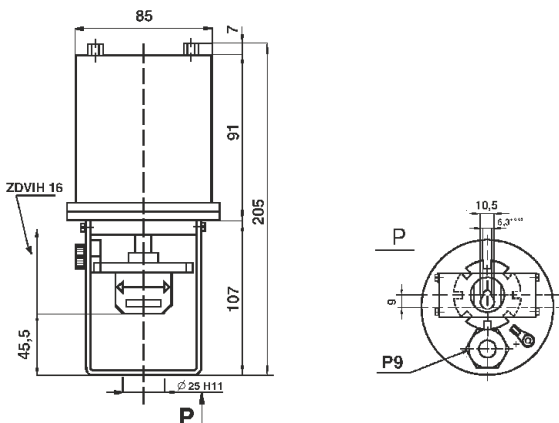
**ENA**

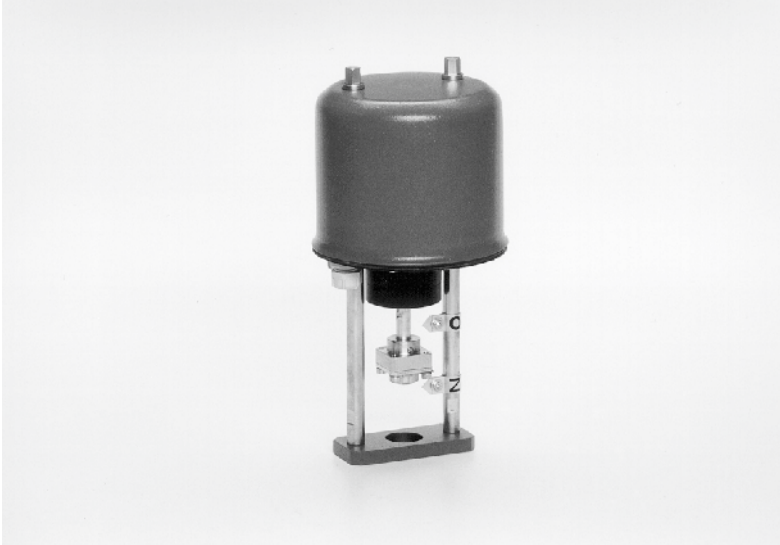
Technical data	
Type	PIKO 524 65.XXXX
Marking in valve specification No.	END
Voltage	230 V AC or 24 V AC
Frequency	50 ± 2 Hz
Power consumption	max. 9 VA
Control	3 - position
Nominal force	250 N when frequency 50 Hz
Travel	10, 16 mm
Enclosure	IP 54
Process medium max. temp.	150 °C
Ambient temperature range	-20 to 60 °C
Ambient humidity range	5 - 100 % wit condensation
Weight	1,5 kg

→ See original producer's catalogue sheets for further information about actuators [www.zpanp.cz](http://www.zpanp.cz)

Specification of actuator PIKO 524 65						
PIKO		524 65	X	X	X	X
Voltage	230 V / 50 Hz		0			
	24 V / 50 Hz		1			
Resetting speed	10 mm/min			2	0	
	20 mm/min			4	0	
Connection dimensions	LDM execution - max. draw bar stroke 16 mm					3

## Wiring diagram





Electric actuators

# ZPA Nová Paka

**MIKRO 655**

**ENA**

Technical data	
Type	MIKRO 655 xxx
Marking in valve specification No.	ENA
Voltage	230 V AC or 24 V AC
Frequency	50 / 60 Hz
Power consumption	max. 6 (9) VA
Control	3 - position, 0 - 10 V, 0(4) - 20 mA
Nominal force	600 and 1200 N
Travel	10, 16 mm
Enclosure	IP 65
Process medium max. temp.	acc. to used valve
Ambient temperature range	-25 to 55 °C
Ambient humidity range	10 - 100 % with condensation
Weight	2,7 kg

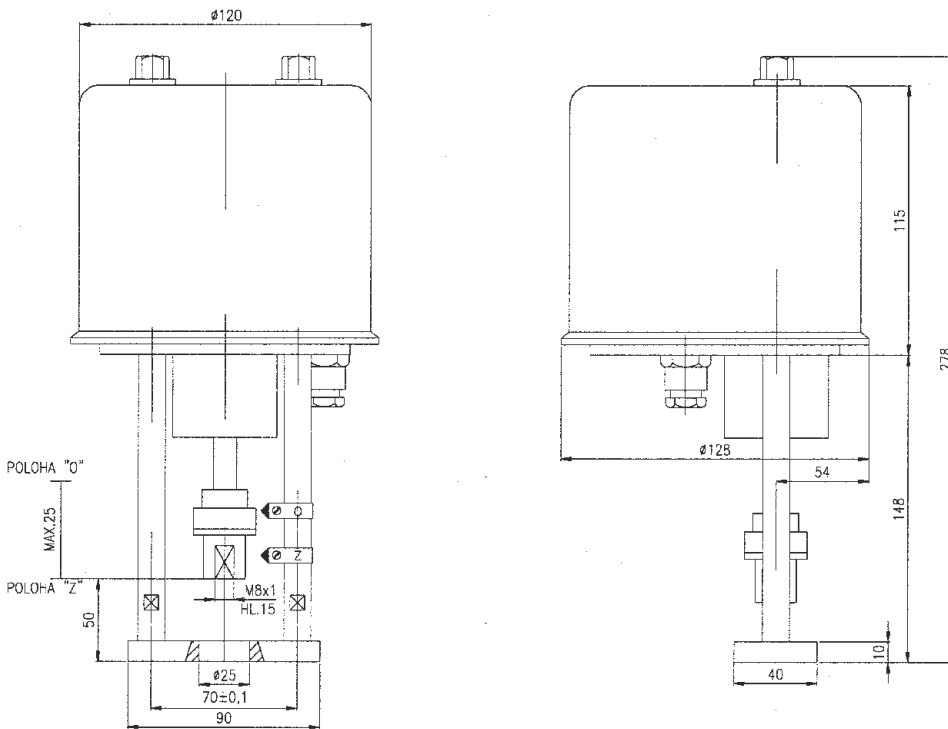
→ See original producer's catalogue sheets for further information about actuators [www.zpanp.cz](http://www.zpanp.cz)

## Specification of actuators MIKRO 655

		MIKRO 655	X	X	X	/	XXX
<b>Feeding voltage AC</b>	230 V (50/60 Hz)		<b>1</b>				
	24 V (50/60 Hz)		<b>2</b>				
<b>Linear force [kN]</b>	0,6			<b>1</b>			
	1,2			<b>2</b>			
<b>Resetting speed [mm/min]</b>	10				<b>1</b>		
	16				<b>2</b>		
	25				<b>3</b>		
<b>Accessories</b>	Positioners 0-1 V, 0-10 V, 0(4)-20 mA - without R2 and I1						<b>OP1</b>
	Signalization switches SO and SZ						<b>S1</b>
	1 resistance transmitter of 100 Ω						<b>R1</b>
	2 resistance transmitter 100 Ω - without OP1 and I1						<b>R2</b>
	Transmitter 4 - 20 mA - without OP1 and R2						<b>I1</b>
Connection flange na Ø25, spojka M8x1							<b>P2</b>

Basic version: 3-position control, manual operating, limit switches for Open and Closed positions, without transmitter and connection elements

## Dimensions of actuator MIKRO 655





Electric actuators

# Ekorex

PTN1

ERA

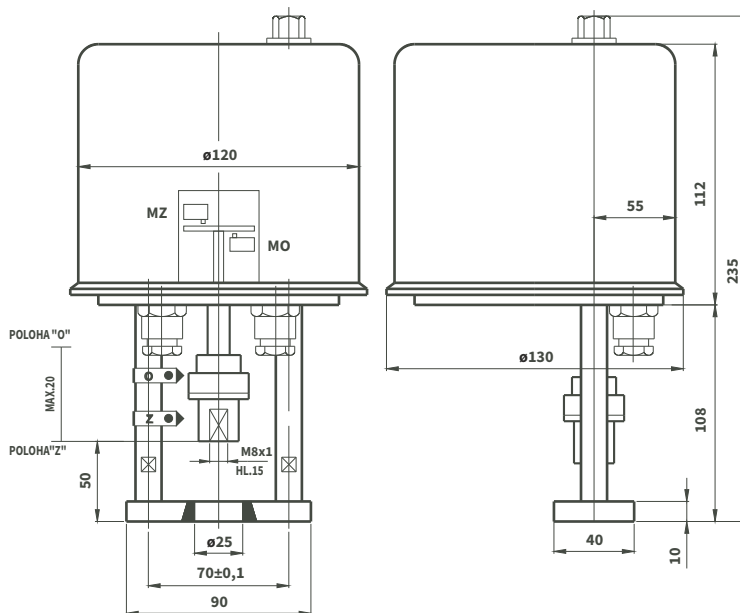
Technical data	
Type	PTN 1 XXXXXXXX
Marking in valve specification No.	ERA
Voltage	230 V AC or 24 V AC
Frequency	50 ± 2 Hz
Power consumption	8 VA
Control	3 - position; 4 - 20 mA; 0 - 10 V; 0 - 20 mA
Nominal force	600 N, 1200 N
Travel	10, 16 mm
Enclosure	IP 54
Process medium max. temp.	150 °C
Ambient temperature range	-20 to 60 °C
Ambient humidity range	5 - 100 % with condensation
Weight	2,5 kg

→ See original producer's catalogue sheets for further information about actuators [www.ekorex.cz](http://www.ekorex.cz)

Specification of actuator PTN 1										
PTN 1	X	X	X	X	X	X	X	X	Nominal force [N]	Resetting speed [mm.min <sup>-1</sup> ]
1	1								600	10
1	2								600	16
1	3								600	25
2	1								1200	10
2	2								1200	16
2	3								1200	25
0								230 V, 50 Hz	<b>Motor supply voltage (AC)</b>	
2								24 V, 50 Hz		
0								MO; MZ	<b>Number of microswitches</b>	
2								MO; MZ; SO; SZ		
0								Without accessories	<b>Independent feeding voltage 24 V</b>	
1								Output 0 - 10 V		
2								Output 0 - 20 mA		
3								Output 4 - 20 mA		
4								Output 4 - 20 mA		<b>2 - wire connection</b>
5								Output 0 - 100 Ω 1x		<b>Resistance output signal</b>
6								Output 0 - 100 Ω 2x		
2								10	Draw bar stroke [mm]	
3								16		
1	0								Flange with columns, clutch M 8x1	

**NOTE:**  
 Table applies to actuator with 3-position control.  
 It is possible to supply actuator with control signal of 0 - 10 V, 0 - 20 mA, 4 - 20 mA  
 (example of marking: PTN 1 - XX.XX.XX.XX / control signal 4 - 20 mA)

### Dimensions of actuator PTN 1





Electric actuators

# Ekorex

**PTN 2**
**ERB**

## Technical data

Type	<b>PTN 2.20</b>
Marking in valve spec. No.	<b>ERB</b>
Voltage	230 V + 6 %, -12 % or 24 V + 10 %, -15 % AC
Frequency	50 Hz
Power consumption	max. 19 VA
Control	3 - position, (0) 4 - 20 mA, 0 - 10 V
Nominal force	2000 N
Travel	max. 25 mm
Enclosure	IP 65
Process medium max. temp.	acc. to used valve
Ambient temperature range	-20 to 60°C, -45 to 60°C (weather-resistant design)
Ambient humidity range	5 to 100 % with condensation
Weight	4 kg

→ See original producer's catalogue sheets for further information about actuators [www.ekorex.cz](http://www.ekorex.cz)

## Specifikace pohonu PTN 2

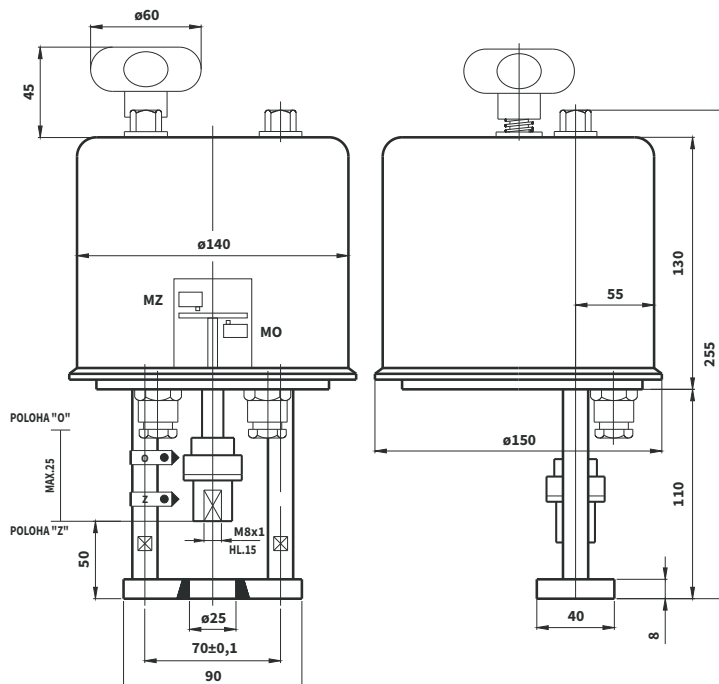
PTN 2	X	X	X	X	X	X	X	X	Nominal force [kN]	Resetting speed [mm.min <sup>-1</sup> ]
	2	0							2	10, 16, 25, 32
		0							230 V, 50 Hz	Motor supply voltage (AC)
		2							24 V, 50 Hz	
			1						10	Resetting speed [mm.min <sup>-1</sup> ]
			2						16	
			3						25	
			4						32	
				0					Without equipment	Independent feeding 24 V
				1					Output 0 - 10 V	
				2					Output 0 - 20 mA	
				3					Output 4 - 20 mA	
					4				Output 4 - 20 mA	2-wire connection
					5				Output 0 - 100 Ω 1x	Resistance output signal
					6				Output 0 - 100 Ω 2x	
						7			Output 4 - 20 mA	Capacity transmitter
							1		Flange with columns, pitch 70 mm, clutch M 8x1	Počet mikrosplínačů
							0		MO; MZ	
							2		MO; MZ; SO; SZ	
							9		Acc. to agreement	
								2	10	Draw bar stroke [mm]
								3	16	

### NOTE:

Table applies to actuator with 3-position control.

It is possible to supply actuator with control signal of 0 - 10 V, 0 - 20 mA (code /DMS 3), 4 - 20 mA with manual control outside of cabinet (/RO) or version with increased climate resistance -45°C to 60°C (/KO) (example of marking in type number: PTN 2-XX.XX.XX.XX/DMS 3 4-20 mA/RO/KO)

## Dimension PTN 2





## Electric actuators

**Siemens**  
**SAX**
**ELE**

Technical data					
Type	SAX 31.00	SAX 31.03	SAX 61.03	SAX 81.00	SAX 81.03
Mark in valve spec. No.	ELE				
Voltage	230 V AC		24 V AC/DC		
Frequency			50 Hz		
Power consumption	3,5 VA	8 VA	8 VA	3,5 VA	8 VA
Control	3 - position		0 - 10 V, 4 - 20 mA, 0 - 1000 Ω		
Open-close running time	120 s	30 s	30 s	120 s	30 s
Nominal force	800 N				
Travel	20 mm				
Enclosure	IP 54				
Process medium max. temp.	+5 to 130°C, with midpiece up to 150°C				
Ambient and actuator surface temp. range	-15 to 55°C				
Ambient humidity limit	< 95 % r.v.				
Handle	yes				
Weight	1,85 kg				

→ See original producer's catalogue sheets for further information about actuators [www.siemens.com](http://www.siemens.com)

### Accessories for actuators SAX31..., SAX81... (optional)

Auxiliary switch ASC10.51  
 2x auxiliary switch ASC10.51 (only without ASZ7.5)  
 Potentiometer 135 Ω ASZ7.5/135  
 Potentiometer 200 Ω ASZ7.5/200  
 Potentiometer 1000 Ω ASZ7.5/1000  
 Weather shield ASK39.1  
 Stem heating element (130°C...160°C)

### Accessories for actuators SAX61... (optional)

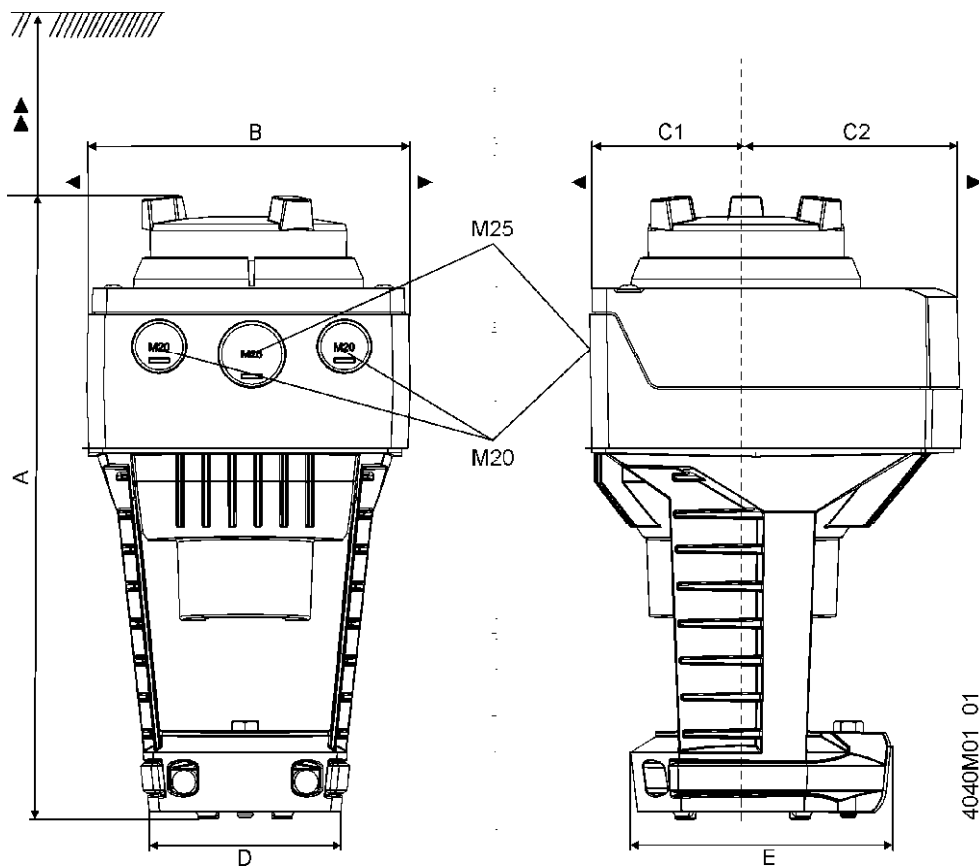
Auxiliary switch ASC10.51  
 2x auxiliary switch ASC10.51 (jen bez AZX61.1)  
 Function module AZX61.1  
 Weather shield ASK39.1  
 Stem heating element (130°C...160°C)

### Function module AZX61.1

The functional module allows sequential drive, adaptation of control signal and reversing signal



## Dimensions of actuator



4040M01\_01

Product type	A	B	C	C1	C2	D	E	>	>>
SAX...	242	124	150	68	82	80	100	100	200
Cover included ASK39.1	+25	154	300	200	100	-	-	-	-

Dimensions in mm



Electrohydraulic actuators

**Siemens**  
SKD 60, SKD 62

**HLA, HLC**

Technical data			
Type	SKD 60	SKD 62	SKD 62UA *)
Mark in valve spec. No.	HLA		HLC
Voltage		24 V AC	
Frequency		50...60 Hz	
Power consumption		17 VA / 12 VA	
Control		0 - 10 V, 4 - 20 mA, 0 - 1000 Ω	
Resetting speed	open	30 s	
	closed	15 s	
Open-close running time	---		15 s
Nominal force		1000 N	
Travel		20 mm	
Enclosure		IP 54	
Process medium max. temp.		150°C	
Ambient and actuator surface temp. range		-15 to 50 °C	
Ambient humidity limit		5 - 95 % of relative humidity	
Weight	3,6 kg	3,85 kg	3,6 kg

\*) UA... version with improved electronics

→ See original producer's catalogue sheets for further information about actuators [www.siemens.com](http://www.siemens.com)

### Accessories (optional)

Auxiliary switch 24 V ASC1.6

### Description

Each actuator with continuous control signal is equipped with ACT control technology enabling the following features as standard:

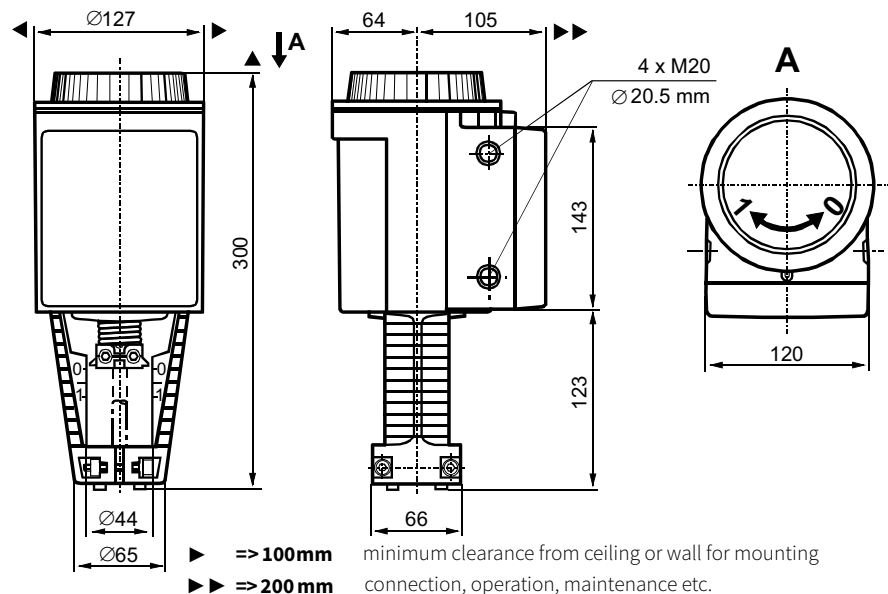
- stroke range calibration
- state indication via LED
- flow characteristic selection (log / lin)
- selection of control signal at Y terminal
- feedback signal at U terminal corresponding to current stroke position
- forced control at Z terminal

Version with improved electronics (UA) further enables:

- inversion of control signal
- sequence control
- stroke limiting

### Dimensions

All dimensions in mm





Electrohydraulic actuators

# Siemens

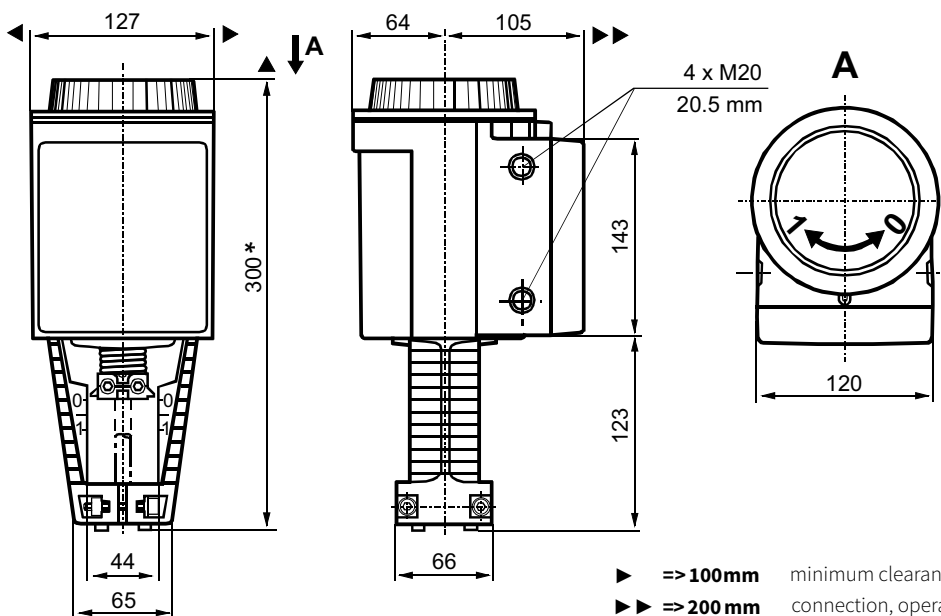
SKD 32, SKD 82

HLA, HLB

Technical data					
Type	SKD 32.50	SKD 82.50	SKD 32.51	SKD 32.21	SKD 82.51
Mark in valve spec. No.	HLA			HLB	
Voltage	230 V AC	24 V AC	230 V AC		24 V AC
Frequency			50...60 Hz		
Power consumption	10 VA		15 VA		
Control	3 - position		3 - position		
Resetting speed	open	120 s	120 s	30 s	120 s
	closed	120 s	120 s	10 s	120 s
Open-close running time	---		8 s		
Nominal force	1000 N				
Travel	20 mm				
Enclosure	IP 54				
Process medium max. temp.	150 °C				
Ambient and actuator surface temp. range	-15 to 50 °C				
Ambient humidity limit	5 - 95 % of relative humidity				
Weight	3,6 kg				

→ See original producer's catalogue sheets for further information about actuators [www.siemens.com](http://www.siemens.com)

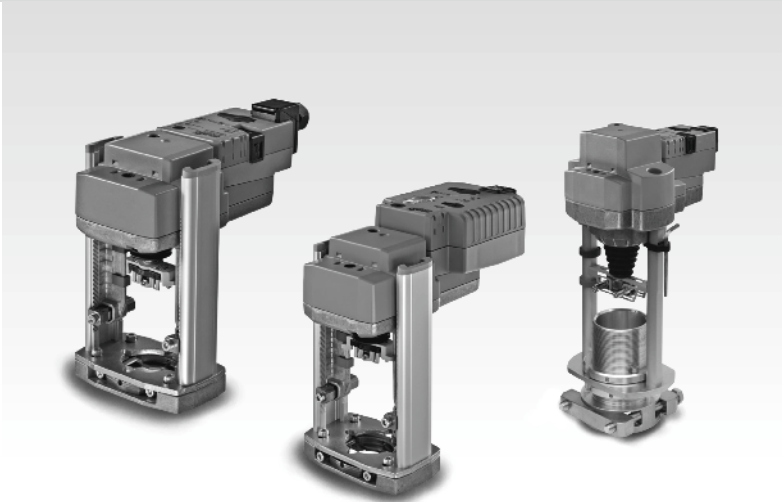
## Dimensions of actuator



## Accessories (optional)

- Pair of auxiliary switches ASC9.3
- Potentiometer 1000 Ω ASZ7.3 \*)
- Potentiometer 135 Ω ASZ7.31 \*)
- Potentiometer 200 Ω ASZ7.32 \*)

\*) 1 potentiometer can be used for 1 actuator only



## Electric actuators

# Belimo

NV..., SV...

EBM

## Technical data

Type	NV230A-RE	NV24A-RE	NV24A-MP-RE	NVC24A-MP-RE	NVK24A-3-RE	NVK24A-MP-RE
Marking in valve specification No.	EBM					
Voltage	AC 230 V	AC/DC 24 V				
Frequency	50 / 60 Hz					
Motor power	2 W / 4,5 VA	1,5 W / 3 VA	3,5 W / 5,5 VA		2,5 W / 6 VA	
Control	3 - position		DC (0)2...10V parameterisable		3 - position	DC (0)2...10V parameterisable
Running time	150 s		35 s		150 s	
Fail-safe mode	---		---		35 s	
Fail-safe function	---		---		NC, NO, adjustable	
Nominal force	1000 N					
Travel	20 mm					
Enclosure	IP 54					
Process medium max. temp.	+5 to 150°C, with cooling adapter up to 240°C					
Ambient temperature range	0 to 50°C					
Ambient humidity limit	5 ... 95 %					
Weight	2,6 kg	2,5 kg	2,6 kg	2,6 kg	2,8 kg	

## Technical data

Type	NVK230A-3-RE	NVKC24A-MP-RE	SV24A-MP-RE	SVC230A-RE	SV24A-RE	SVC24A-MP-RE
Marking in valve specification No.	EBM			EBM		
Voltage	AC 230 V	AC/DC 24 V		AC 230 V	AC/DC 24 V	
Frequency	50 / 60 Hz					
Motor power	2 W / 4,5 VA	4,5 W / 9 VA	2 W / 3,5 VA	2 W / 4 VA	2,5 W / 5 VA	4 W / 6 VA
Control	3 - position	DC (0)2...10V parameterisable		3 - position		DC (0)2...10V parameterisable
Running time	150 s	35 s	150 s		35 s	
Fail-safe mode	35 s		---			
Fail-safe function	NC, NO, adjustable		---			
Nominal force	1000 N			1500 N		
Travel	20 mm					
Enclosure	IP 54					
Process medium max. temp.	+5 ... 150°C, with cooling adapter up to 240°C					
Ambient temperature range	0 to 50°C					
Ambient humidity limit	5 ... 95 %					
Weight	2,9 kg	2,8 kg	2,6 kg			2,6 kg

→ See original producer's catalogue sheets for further information about actuators [www.belimo.ch](http://www.belimo.ch)



Electric actuators

# Johnson Controls

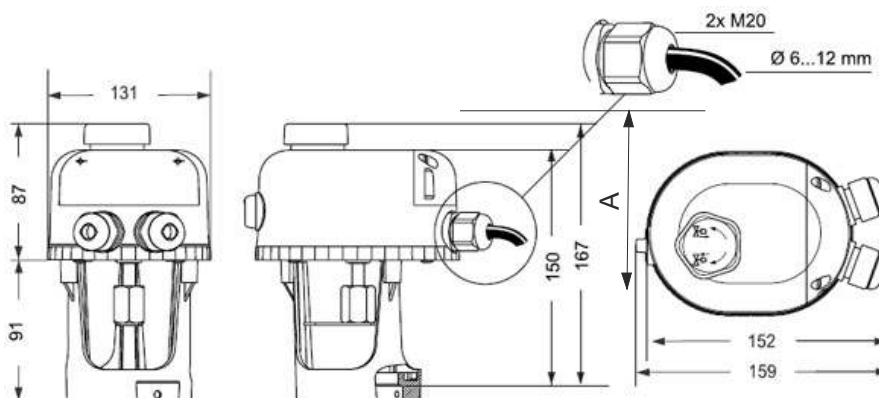
VA-77xx-100x

ECM

Technical data	
Type	VA-77xx-100x
Marking in valve specification No.	ECM
Voltage	24 V AC, 230 V AC
Frequency	50 / 60 Hz
Power consumption	2,4 VA
Control	3 - point, 0 - 10 V, 0 (4) - 20mA
Open-close running time	6 mm/min (pro 50 Hz)
Nominal force	500 N ± 20%
Travel	max. 20 mm
Enclosure	IP 54
Process medium max. temp.	140 °C
Ambient temperature range	-5 to 55 °C
Ambient humidity limit	10 - 90% of relative humidity, without condensation
Weight	0,8 kg

→ See original producer's catalogue sheets for further information about actuators [www.johnsoncontrols.com](http://www.johnsoncontrols.com)

## Dimensions of actuator

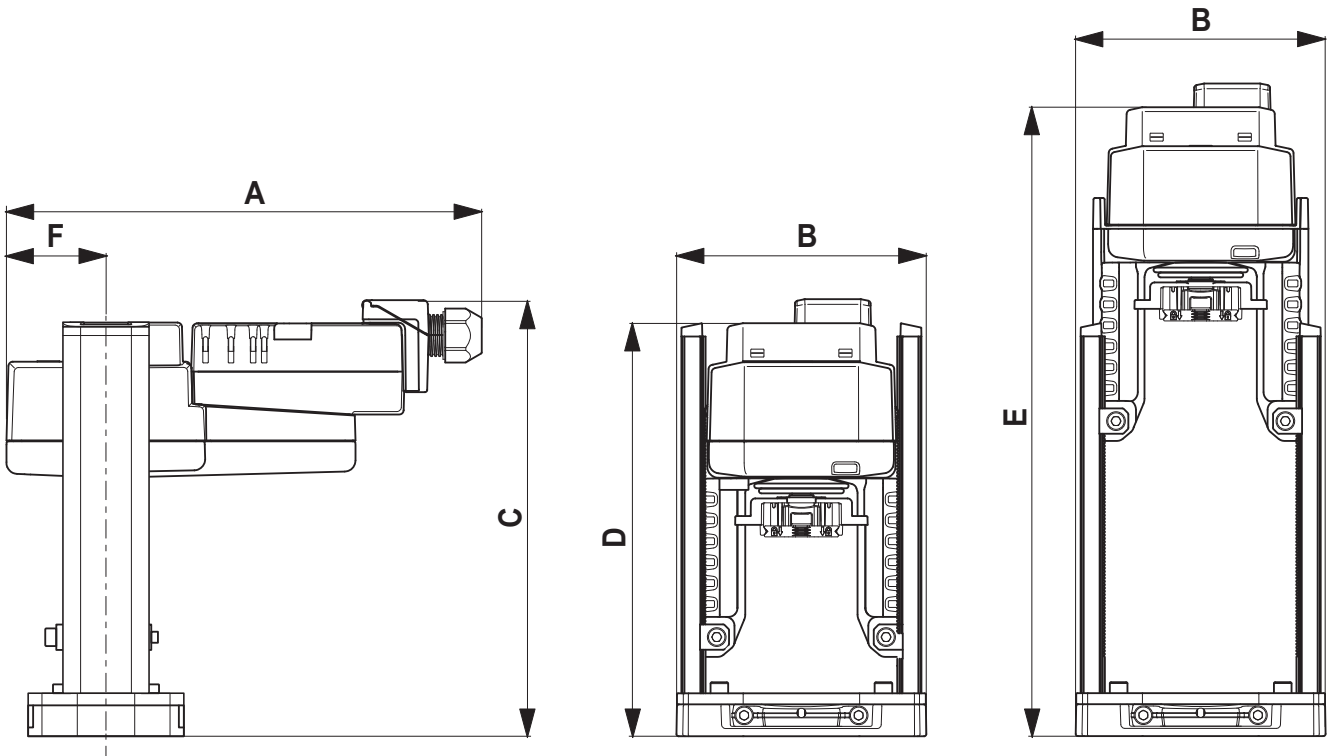


A	25 mm	VA-770x actuators without hand re-setting
A	80 mm	VA-774x actuators with hand re-setting

Specification of actuats VA-77xx-100x		VA - 77	X	X	-	1	0	0	X
Hand wheel	Reversible, without feedback		0						
	Proportional control with signal 0 - 10 V		4						
Control	3 - position			0					
	Proportional 0-10 V / 0 (4) - 20 mA			6					
Voltage	24 V								1
	230 V (just 3-position models)								3

## Dimensions of actuators

Actuator marking	Dimensions [mm]						
	A	B	C	D	E	F	G
NV230A-RE	193	113	200	190	290	45	---
NV24A-RE	193	113	200	190	290	45	---
NV24A-MP-RE	215	113	200	190	290	45	---
NVC24A-MP-RE	215	113	200	190	290	45	---
NVK24A-3-RE	244	113	217	207	307	45	---
NVK24A-MP-RE	244	113	217	207	307	45	---
NVK230A-3-RE	250	113	209	207	307	45	---
NVKC24A-MP-RE	244	113	217	207	307	45	---
SV24A-MP-RE	215	113	200	190	290	45	---
SV230A-RE	215	113	200	190	290	45	---
SV24A-RE	193	113	200	190	290	45	---
SVC24A-MP-RE	215	113	200	190	290	45	---





Electric actuators

# Johnson Controls

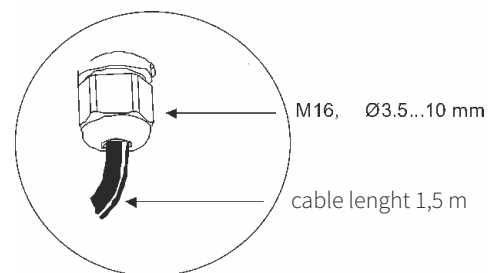
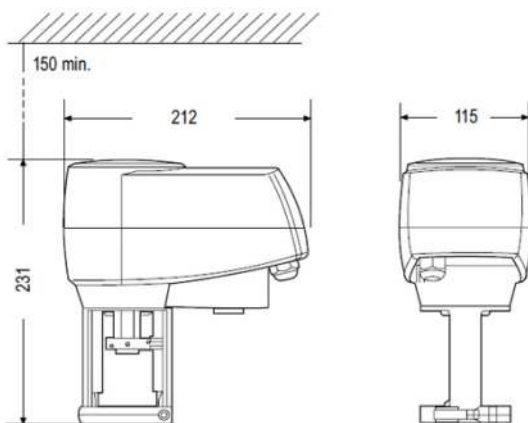
VA-7810-xxx-1x

ECN

## Technical data

Type	VA-7810-xxx-1x
Marking in valve specification No.	ECN
Voltage	24 V AC nebo 230 V AC
Frequency	50 / 60 Hz
Power consumption	max. 8 VA
Control	3-position or 0 (2) - 10 V, 0 (4) - 20 mA
Open-close running time	10 mm / min.
Nominal force	1000 N ± 20 %
Travel	max. 25 mm
Enclosure	IP 54
Process medium max. temp.	140 °C
Ambient temperature range	-5 to 55 °C
Ambient humidity limit	10 - 90% of relative humidity, without condensation
Weight	1,7 kg

→ See original producer's catalogue sheets for further information about actuators [www.johnsoncontrols.com](http://www.johnsoncontrols.com)



## Specification of actuators VA-7810-xxx-xx

		VA - 7810	-XXX	-XX
<b>3-position models</b>	230 V AC		ADA	
	24 V AC		AGA	
	24 V AC, 2 additional switches		AGC	
	24 V AC, feedback potentiometer 2 kΩ		AGH	
<b>Proportional models</b>	24 V AC, 0 (2) - 10 V or 0 (4) - 20 mA		GGA	
	24 V AC, 0 (2) - 10 V or 0 (4) - 20 mA, 2 additional switches		GGC	
<b>Connection for the actuator type</b>	Thread coupling (RV 102, RV 103)			11
	Camp coupling (200 line)			12



**LDM, spol. s r.o.**  
**Litomyšlská 1378**  
**560 02 Česká Třebová**  
**Czech Republic**

tel.: +420 465 502 511  
fax: +420 465 533 101  
e-mail: sale@ldm.cz

**LDM, spol. s r.o.**  
**Office Prague**  
**Podolská 50**  
**147 01 Praha 4**  
**Czech Republic**

tel.: +420 241 087 360  
fax: +420 241 087 192  
e-mail: sale@ldm.cz

**LDM, spol. s r.o.**  
**Office Ústí nad Labem**  
**Ladova 2548/38**  
**400 11 Ústí nad Labem**  
**- Severní Terasa**  
**Czech Republic**

tel.: +420 602 708 257  
e-mail: tomas.kriz@ldm.cz

**LDM servis, spol. s r.o.**  
**Litomyšlská 1378**  
**560 02 Česká Třebová**  
**Czech Republic**

tel.: +420 465 502 411-3  
fax: +420 465 531 010  
e-mail: servis@ldm.cz

**LDM Bratislava s.r.o.**  
**Mierová 151**  
**821 05 Bratislava**  
**Slovakia**

tel.: +421 2 43415027-8  
fax: +421 2 43415029  
e-mail: ldm@ldm.sk

**LDM, Polska Sp. z o.o.**  
**ul. Bednorza 1**  
**40 384 Katowice**  
**Poland**

tel.: +48 32 730 56 33  
fax: +48 32 730 52 33  
mobile: +48 601 354 999  
e-mail: ldmpolska@ldm.cz

**LDM Armaturen GmbH**  
**Wupperweg 21**  
**D-51789 Lindlar**  
**Germany**

tel.: +49 2266 440333  
fax: +49 2266 440372  
mobile: +49 177 2960469  
e-mail: ldmmarmaturen@ldmvalves.com

**OOO "LDM Promarmatura"**  
**Jubilejnyj prospekt,**  
**dom.6a, of. 601**  
**141400 Khimki Moscow Region**  
**Russia**

tel.: +7 4957772238  
fax: +7 4956662212  
mobile: +7 9032254333  
e-mail: inforus@ldmvalves.com

**TOO "LDM"**  
**Shakirova 33/1**  
**kab. 103**  
**100012 Karaganda**  
**Kazakhstan**

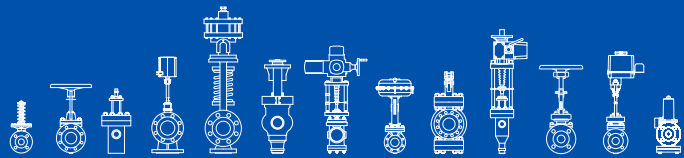
tel.: +7 7212 566 936  
fax: +7 7212 566 936  
mobile: +7 701 738 36 79  
e-mail: sale@ldm.kz

**LDM - Bulgaria - OOD**  
**z. k. Mladost 1**  
**bl. 42, floor 12, app. 57**  
**1784 Sofia**  
**Bulgaria**

tel.: +359 2 9746311  
fax: +359 2 9746311  
mobile: +359 888 925 766  
e-mail: ldm.bg@ldmvalves.com

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