

Characterised control valve, 2-way, Internal thread
• For open and closed cold and warm water systems

- · For modulating water-side control of air handling units and heating systemsAir bubble tight



Type overview							
	Туре	kvs	DN	Rp	PN	n(gl)	Sv min.
		[m³/h]	[]	["]	[]	[]	[]
	R2015-P25-S1	0.25	15	1/2	40	3.2	50
	R2015-P4-S1	0.4	15	1/2	40	3.2	50
	R2015-P63-S1	0.63	15	1/2	40	3.2	50
	R2015-1-S1	1	15	1/2	40	3.2	50
	R2015-1P6-S1	1.6	15	1/2	40	3.2	50
	R2015-2P5-S1	2.5	15	1/2	40	3.2	50
	R2015-4-S1	4	15	1/2	40	3.2	100
	R2015-6P3-S1	6.3	15	1/2	40	3.2	100
	R2020-4-S1	4	20	3/4	40	3.2	100
	R2020-6P3-S1	6.3	20	3/4	40	3.2	100
	R2025-6P3-S2	6.3	25	1	40	3.2	100
	R2025-10-S2	10	25	1	40	3.2	100
	R2032-10-S2	10	32	1 1/4	25	3.2	100
	R2032-16-S2	16	32	1 1/4	25	3.2	100
	R2040-16-S2	16	40	1 1/2	25	3.2	100
	R2040-25-S2	25	40	1 1/2	25	3.2	100
	R2050-25-S3	25	50	2	25	3.2	100
	R2050-40-S3	40	50	2	25	3.2	100

		R2050-40-S3	40	50	2	25	3.2	100
Technical data								
	Functional data	Media		d and wa		er, water	with glyc	ol up to
		Medium temperature	-10.	120°C				
		Medium temperature note	dep can	ending o	n the ty I in the	pe of ac	ture can t tuator. Lir ve data s	
		Closing pressure ∆ps	140	0kPa				
		Differential pressure ∆pmax	350	kPa				
		Differential pressure note	200	kPa for lo	w-nois	e operat	ion	
		Flow characteristic		al percer	٠ ,	/DI/VDE	2178), o	ptimised in
		Leakage rate	Lea	kage rate	A, air-	bubble-t	ight (EN	12266-1)
		Pipe connectors		rnal threa			-	
		Angle of rotation	90°	(Operation	ng rang	e 1590)°)	
		Installation position	Upr	ight to ho	rizontal	(in rela	tion to the	stem)
		Maintenance		ntenance				·
	Materials	Housing	Bra	ss body r	nickel-pl	ated		
		Closing element	Stai	nless ste	el			
		Stem	Sta	nless ste	el			
		Stem seal	O-ri	ng EPDN	1			
		Valve seat	PTF	E, O-ring	EPDN	1		
		Characterising disc	TEF	ZEL	-			



Safety notes



- The valve has been designed for use in stationary heating, ventilation and air-conditioning systems and is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- The valve does not contain any parts that can be replaced or repaired by the user.
- The valve may not be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- When determining the flow rate characteristic of controlled devices, the recognised directives must be observed.

Product features

Mode of operation

The characterised control valve is adjusted by a rotary actuator. The actuator is controlled by a commercially available modulating or 3-point control system and moves the ball of the valve – the throttling device – to the position dictated by the positioning signal. Open the characterised control valve counterclockwise and close it clockwise.

Flow characteristic

Equal percentage flow control is ensured by the integrated characterising disc.

Accessories

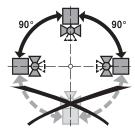
Mechanical accessories

Description	Туре
Pipe connector to ballvalves DN 15 Rp 1/2"	ZR2315
Pipe connector to ballvalves DN 20 Rp 3/4"	ZR2320
Pipe connector to ballvalves DN 25 Rp 1"	ZR2325
Pipe connector to ballvalves DN 32 Rp 1 1/4"	ZR2332
Pipe connector to ballvalves DN 40 Rp 1 1/2"	ZR2340
Pipe connector to ballvalves DN 50 Rp 2"	ZR2350

Installation notes

Recommended installation positions

The ball valve can be installed upright to horizontal. The ball valve may not be installed in a hanging position, i.e. with the stem pointing downwards.



Water quality requirements

The water quality requirements specified in VDI 2035 must be adhered to.

Belimo valves are regulating devices. For the valves to function correctly in the long term, they must be kept free from particle debris (e.g. welding beads during installation work). The installation of suitable strainer is recommended.

Maintenance

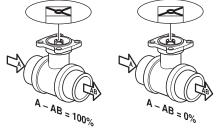
Ball valves and rotary actuators are maintenance-free.

Before any kind of service work is carried out on the actuator, it is essential to isolate the rotary actuator from the power supply (by unplugging the electrical cable). Any pumps in the part of the piping system concerned must also be switched off and the appropriate slide valves closed (allow everything to cool down first if necessary and reduce the system pressure to ambient pressure level).

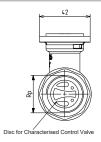
The system must not be returned to service until the ball valve and the rotary actuator have been properly reassembled in accordance with the instructions and the pipeline has been refilled in the proper manner.

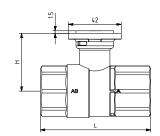
Flow direction

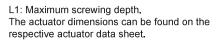
The direction of flow, specified by an arrow on the housing, is to be complied with, since otherwise the ball valve could become damaged. Please ensure that the ball is in the correct position (marking on the spindle).



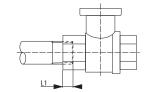












Гуре	DN []	Rp ["]	L [mm]	L1 [mm]	H [mm]	Weight approx. [kg]
R2015-P25-S1	15	1/2	67	13	35	0.24
R2015-P4-S1	15	1/2	67	13	35	0.24
R2015-P63-S1	15	1/2	67	13	35	0.24
R2015-1-S1	15	1/2	67	13	35	0.24
R2015-1P6-S1	15	1/2	67	13	35	0.24
R2015-2P5-S1	15	1/2	67	13	44	0.30
R2015-4-S1	15	1/2	67	13	44	0.30
R2015-6P3-S1	15	1/2	67	13	44	0.30
R2020-4-S1	20	3/4	79	14	44	0.37
R2020-6P3-S2	20	3/4	79	14	44	0.37
R2025-6P3-S2	25	1	87	16	46	0.55
R2025-10-S2	25	1	87	16	46	0.55
R2032-10-S2	32	1 1/4	105	19	46	0.7
R2032-16-S2	32	1 1/4	105	19	46	0.8
R2040-16-S2	40	1 1/2	111	19	50.5	0.95
R2040-25-S2	40	1 1/2	111	19	50.5	0.95
R2050-25-S3	50	2	125	22	56	1.5
R2050-40-S3	50	2	125	22	56	1.5



Modulating rotary actuator for ball valves

- Nominal torque 5Nm
- Nominal voltage AC/DC 24V
- Control Modulating DC (0)2...10V
- Position feedback DC 2...10V



Technical data		
Electrical data	Nominal voltage	AC/DC 24V
	Nominal voltage frequency	50/60Hz
	Nominal voltage range	AC 19.228.8V / DC 19.228.8V
	Power consumption in operation	1.5W
	Power consumption in rest position	0.4W
	Power consumption for wire sizing	3VA
	Connection supply / control	Cable 1m, 4 x 0.75mm²
	Parallel operation	Yes (note the performance data)
Functional data	Torque motor	Min. 5Nm
	Positioning signal Y	DC (0)210V
	Positioning signal Y note	Input impedance 100kΩ
	Operating range Y	DC 210V
	Position feedback U	DC 210V
	Position feedback U note	Max. 1mA
	Position accuracy	±5%
	Manual override	Gear disengagement with push-button, can be
		locked
	Running time motor	90s / 90°
	Sound power level motor max.	35dB(A)
	Position indication	Mechanically, pluggable
Safety	Protection class IEC/EN	III Safety extra-low voltage
	Protection class UL	UL Class 2 Supply
	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 2, UL Enclosure Type 2
	EMC	CE according to 2004/108/EC
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14
	Mode of operation	Type 1
	Rated impulse voltage supply / control	0.8kV
	Control pollution degree	3
	Ambient temperature	-3050°C
	Non-operating temperature	-4080°C
	Ambient humidity	95% r.h., non-condensing
	Maintenance	Maintenance-free
Weight	Weight	Approx. 0.55kg



- This device has been designed for use in stationary heating, ventilation and air conditioning systems and is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- The switch for changing the direction of rotation may only be operated by authorised specialists. The direction of rotation must not in particular be reversed in a frost protection circuit.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The cables must not be removed from the device.
- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.



Product features

Mode of operation

The actuator is connected with a standard modulating signal of DC (0)2...10V and travels to the position defined by the positioning signal. Measuring voltage U serves for the electrical display of the valve position 0...100% and as slave control signal for other actuators.

Simple direct mounting

Straightforward direct mounting on the ball valve with only one central screw. The assembly tool is integrated in the plug-in position indication. The mounting position in relation to the

ball valve can be selected in 90° steps.

Manual override

Manual override with push-button possible (the gear is disengaged for as long as the button is pressed or remains locked).

High functional reliability The actuator is overload pro

The actuator is overload protected, requires no limit switches and automatically stops when

the end stop is reached.

Adjustable angle of rotation

Adjustable angle of rotation with mechanical end stops.

Accessories

Electrical accessories

Description	Туре
Auxiliary switch, add-on, 1 x SPDT	S1A
Auxiliary switch, add-on, 2 x SPDT	S2A
Feedback potentiometer 140 Ohm, add-on	P140A
Feedback potentiometer 200 Ohm, add-on	P200A
Feedback potentiometer 500 Ohm, add-on	P500A
Feedback potentiometer 1 kOhm, add-on	P1000A
Feedback potentiometer 2.8 kOhm, add-on	P2800A
Feedback potentiometer 5 kOhm, add-on	P5000A
Feedback potentiometer 10 kOhm, add-on	P10000A

Electrical installation

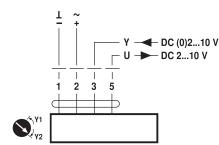


Notes

- · Connection via safety isolating transformer.
- Parallel connection of other actuators possible. Observe the performance data.
- Direction of rotation switch is covered. Factory setting: Direction of rotation Y2.

Wiring diagrams

AC/DC 24V, modulating



Cable colours:

1 = black

2 = red

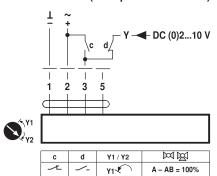
3 = white

5 = orange



Electrical installation

Override control (frost protection circuit)



→ Y2

Cable colours:

1 = black

2 = red

3 = white

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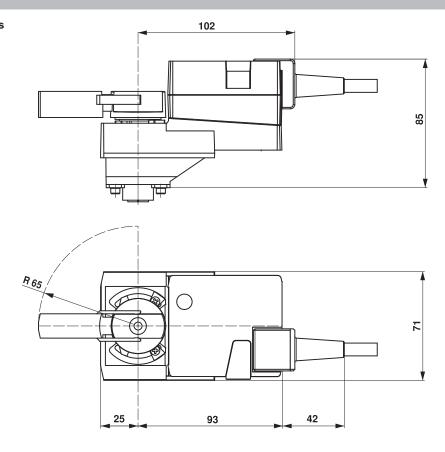
Dimensions [mm]

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Dimensional drawings

DC (0)2...10 V

A – AB = 0%





Modulating rotary actuator for ball valves

- Nominal torque 10Nm
- Nominal voltage AC/DC 24V
- Control Modulating DC (0)2...10V
- Position feedback DC 2...10V



Technical data						
	No selection of the con-	A O/DO O A V				
Electrical data	Nominal voltage	AC/DC 24V				
	Nominal voltage frequency	50/60Hz				
	Nominal voltage range	AC 19.228.8V / DC 19.228.8V				
	Power consumption in operation	2.5W				
	Power consumption in rest position	0.4W				
	Power consumption for wire sizing	5VA				
	Connection supply / control	Cable 1m, 4 x 0.75mm²				
	Parallel operation	Yes (note the performance data)				
Functional data	Torque motor	Min. 10Nm				
	Positioning signal Y	DC (0)210V				
	Positioning signal Y note	Input impedance 100kΩ				
	Operating range Y	DC 210V				
	Position feedback U	DC 210V				
	Position feedback U note	Max. 1mA				
	Position accuracy	±5%				
	Manual override	Gear disengagement with push-button, can be locked				
	Running time motor	90s / 90°				
	Sound power level motor max.	35dB(A)				
	Position indication	Mechanically, pluggable				
Safety	Protection class IEC/EN	III Safety extra-low voltage				
	Protection class UL	UL Class 2 Supply				
	Degree of protection IEC/EN	IP54				
	Degree of protection NEMA/UL	NEMA 2, UL Enclosure Type 2				
	EMC	CE according to 2004/108/EC				
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14				
	Mode of operation	Type 1				
	Rated impulse voltage supply / control	0.8kV				
	Control pollution degree	3				
	Ambient temperature	-3050°C				
	Non-operating temperature	-4080°C				
	Ambient humidity	95% r.h., non-condensing				
	Maintenance	Maintenance-free				
Weight	Weight	Approx. 0.75kg				



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Product features

Mode of operation The actuator is connected with a standard modulating signal of DC (0)2...10V and travels to

the position defined by the positioning signal. Measuring voltage U serves for the electrical

display of the valve position 0...100% and as slave control signal for other actuators.

Simple direct mounting

Straightforward direct mounting on the ball valve with only one central screw. The assembly

tool is integrated in the plug-in position indication. The mounting position in relation to the

ball valve can be selected in 90° steps.

Manual override Manual override with push-button possible (the gear is disengaged for as long as the button is pressed or remains locked).

High functional reliability The actuator is overload protected, requires no limit switches and automatically stops when

the end stop is reached.

Adjustable angle of rotation Adjustable angle of rotation with mechanical end stops.

Accessories Description Type Auxiliary switch, add-on, 1 x SPDT S1A **Electrical accessories** Auxiliary switch, add-on, 2 x SPDT S2A Feedback potentiometer 140 Ohm, add-on P140A Feedback potentiometer 200 Ohm, add-on P200A Feedback potentiometer 500 Ohm, add-on P500A Feedback potentiometer 1 kOhm, add-on P1000A Feedback potentiometer 2.8 kOhm, add-on P2800A

Feedback potentiometer 5 kOhm, add-on

Feedback potentiometer 10 kOhm, add-on

Electrical installation

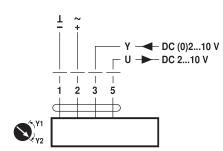


Notes

- · Connection via safety isolating transformer.
- · Parallel connection of other actuators possible. Observe the performance data.
- Direction of rotation switch is covered. Factory setting: Direction of rotation Y2.

Wiring diagrams

AC/DC 24V, modulating



Cable colours:

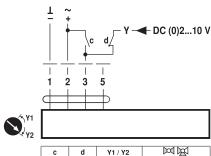
1 = black

2 = red

3 = white

5 = orange

Override control (frost protection circuit)



С	d	Y1 / Y2	MM			
Ł	/-	Y1 ₹	A – AB = 100%			
/-	/-	→ Y2	A – AB = 0%			
/_	1	DC (0)210 V				

Cable colours:

1 = b**l**ack

2 = red

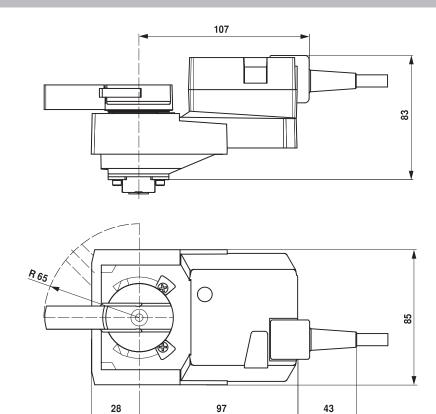
P5000A

P10000A

3 = white

5 = orange







Rotary actuator for rotary valves

- · Nominal torque 20Nm
- Nominal voltage AC/DC 24V
- Control Modulating DC (0)2...10V
- Position feedback DC 2...10V



Part			
Nominal voltage frequency Nominal voltage range AC 19.228.8V / DC 19.228.8V Power consumption in operation Power consumption in rest position Power consumption for wire sizing SVA Connection supply / control Cable 1m, 4 x 0.75mm² Parallel operation Positioning signal Y Positioning signal Y Positioning signal Y Positioning signal Y note Input impedance 100kΩ Operating range Y Position feedback U Position feedback U Position feedback U note Position in feedback U note Position in feedback U note Position in feedback U note Running time motor Sound power level motor max. Position indication Safety Protection class IEC/EN III Safety extra-low voltage Protection class U Degree of protection IEC/EN Pegree of protection IEC/EN Rated impulse voltage supply / control Rated impulse voltage supply / control Oentrol pollution degree Ambient humidity Maintenance Mechanical data Mechanical data Mechanical data Mechanical data Mechanical data Connection flange F05	Technical data		
Nominal voltage range	Electrical data	Nominal voltage	AC/DC 24V
Power consumption in operation Power consumption in rest position Power consumption for wire sizing Power consumption for wire sizing Connection supply / control Parallel operation Positioning signal Y Positioning signal Y Positioning signal Y Position feedback U Position feedback U Position accuracy Manual override Running time motor Sound power level motor max. Position indication Safety Protection class IEC/EN Degree of protection IEC/EN Degree of protection IEC/EN Degree of protection NEMA/UL Degree of protection NEMA/UL NEMA 2, UL Enclosure Type 2 EMC Certification IEC/EN IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Rated impulse voltage supply / control Centrol pollution degree Ambient temperature Ambient temperature Ambient multidy Maintenance Mechanical data Poston consumption in est position Ava 0.45W Control of Ass (CE) Control pollution of the power in the power in the protection of the power in the powe		Nominal voltage frequency	50/60Hz
Power consumption in rest position Power consumption for wire sizing Connection supply / control Cable 1m, 4 x 0.75mm² Parallel operation Yes (note the performance data) Functional data Torque motor Min. 20Nm Positioning signal Y Positioning signal Y Positioning signal Y Position feedback U DC 210V Position feedback U Position feedback U Position feedback U Position accuracy ±5% Manual override Running time motor Sound power level motor max, Position indication Mechanically, integrated, two-section Safety Protection class IEC/EN III Safety extra-low voltage Protection class UL Degree of protection IEC/EN Degree of protection NEMA/UL EMC Cetrification IEC/EN IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Rated impulse voltage supply / control Rated impulse voltage supply / control Osky Control pollution degree Ambient humidity Maintenance Mechanical data Mechanical data Connection flange F05		Nominal voltage range	AC 19.228.8V / DC 19.228.8V
Power consumption for wire sizing SVA		Power consumption in operation	2.5W
Connection supply / control Parallel operation Yes (note the performance data)		Power consumption in rest position	0.4W
Functional data Torque motor Min. 20Nm Positioning signal Y DC (0)210V Positioning signal Y note Input impedance 100kΩ Operating range Y DC 210V Position feedback U note Max. 1mA Position accuracy ±5% Manual override Gear disengagement with push-button, can be locked Running time motor 90s / 90° Sound power level motor max. 45dB(A) Position indication Mechanically, integrated, two-section Safety Protection class IEC/EN III Safety extra-low voltage Protection class UL UL Class 2 Supply Degree of protection IEC/EN IP54 Degree of protection NEMA/UL NEMA 2, UL Enclosure Type 2 EMC CE according to 2004/108/EC Certification IEC/EN IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage supply / control 0.8kV Control pollution degree 3 Armbient temperature -3050°C Non-operating temperature -4080°C Armbient humidity 95% r.h., non-condensing <		Power consumption for wire sizing	5VA
Functional data Torque motor Positioning signal Y Positioning signal Y note Operating range Y Position feedback U Position accuracy Fosition accuracy Fosition feedback U Running time motor Sound power level motor max. Position indication Fosition indication Fosition indication Fosition indication Fosition indication Fosition class IEC/EN Fosition indication Fosi		Connection supply / control	Cable 1m, 4 x 0.75mm²
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Operating range Y Position feedback U DC 210V Position feedback U note Position accuracy #5% Manual override Running time motor Sound power level motor max. Position indication Safety Protection class IEC/EN Protection class UL Degree of protection IEC/EN Degree of protection NEMA/UL EMC Certification IEC/EN Rated impulse voltage supply / control Rated impulse voltage supply / control Control pollution degree Ambient humidity Maintenance Mechanical data Mechanical data DC 210V DC 210V DC 210V DC 210V DC 210V DC 210V DAX . IMA DC 210V DC 210V DAX . IMA DAX . IMA DAX . IMA DC 210V DC 210V DC 210V DAX . IMA DAX . IMA DAX . IMA DAX . IMA DC 210V DC 210V DAX . IMA DAX . IMA DC 210V DC 210V DAX . IMA DAX . IMA DC 210V DC 210V DAX . IMA DAX . IMA DAX . IMA DC 210V DC 210V DAX . IMA DAX .		Positioning signal Y	DC (0)210V
Position feedback U DC 210V Position feedback U note Max. 1mA Position accuracy ±5% Manual override Gear disengagement with push-button, can be locked Running time motor 90s / 90° Sound power level motor max. 45dB(A) Position indication Mechanically, integrated, two-section Safety Protection class IEC/EN III Safety extra-low voltage Protection class U UL Class 2 Supply Degree of protection IEC/EN IP54 Degree of protection NEMA/UL NEMA 2, UL Enclosure Type 2 EMC CE according to 2004/108/EC Certification IEC/EN IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage supply / control 0.8kV Control pollution degree 3 Ambient temperature -3050°C Non-operating temperature -4080°C Ambient humidity 95% r.h., non-condensing Maintenance Maintenance-free		Positioning signal Y note	Input impedance 100kΩ
Position feedback U note Max. 1mA Position accuracy ±5% Manual override Gear disengagement with push-button, can be locked Running time motor 90s / 90° Sound power level motor max. 45dB(A) Position indication Mechanically, integrated, two-section Safety Protection class IEC/EN III Safety extra-low voltage Protection class UL UL Class 2 Supply Degree of protection IEC/EN IP54 Degree of protection NEMA/UL NEMA 2, UL Enclosure Type 2 EMC CE according to 2004/108/EC Certification IEC/EN IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage supply / control 0.8kV Control pollution degree 3 Ambient temperature -3050°C Non-operating temperature -4080°C Ambient humidity 95% r.h., non-condensing Maintenance Maintenance-free		Operating range Y	DC 210V
Position accuracy ±5% Manual override Gear disengagement with push-button, can be locked Running time motor 90s / 90° Sound power level motor max. 45dB(A) Position indication Mechanically, integrated, two-section Safety Protection class IEC/EN III Safety extra-low voltage Protection class UL UL Class 2 Supply Degree of protection IEC/EN IP54 Degree of protection NEMA/UL NEMA 2, UL Enclosure Type 2 EMC CE according to 2004/108/EC Certification IEC/EN IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage supply / control Rated impulse voltage supply / control Control pollution degree 3 Ambient temperature -3050°C Non-operating temperature -4080°C Ambient humidity 95% r.h., non-condensing Maintenance Maintenance-free		Position feedback U	DC 210V
Manual override Running time motor Sound power level motor max. Position indication Safety Protection class IEC/EN Degree of protection IEC/EN Degree of protection NEMA/UL EMC Certification IEC/EN Node of operation Rated impulse voltage supply / control Ron-operating temperature Ambient temperature Ambient humidity Maintenance Mechanical data Messagement with push-button, can be locked Gear disengagement with push-button, can be locked ### Gear disengagement with push-button, can be locked ### Gear disengagement with push-button, can be locked #### Gear disengagement with push-button, can be locked ###################################		Position feedback U note	
Iocked		Position accuracy	
Sound power level motor max. Position indication Safety Protection class IEC/EN Protection class IEC/EN III Safety extra-low voltage Protection class UL UL Class 2 Supply Degree of protection IEC/EN Degree of protection NEMA/UL EMC CE according to 2004/108/EC Certification IEC/EN IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Rated impulse voltage supply / control Control pollution degree Ambient temperature Ambient humidity Maintenance Mechanical data Safety HIS afety extra-low voltage UL Class 2 Supply UL Class 2		Manual override	
Position indication Mechanically, integrated, two-section Protection class IEC/EN III Safety extra-low voltage Protection class UL UL Class 2 Supply Degree of protection IEC/EN IP54 Degree of protection NEMA/UL NEMA 2, UL Enclosure Type 2 EMC CE according to 2004/108/EC Certification IEC/EN IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage supply / control 0.8kV Control pollution degree 3 Ambient temperature -3050°C Non-operating temperature -4080°C Ambient humidity 95% r.h., non-condensing Maintenance Maintenance-free Mechanical data Connection flange F05		Running time motor	90s / 90°
Protection class IEC/EN Protection class UL Degree of protection IEC/EN Degree of protection NEMA/UL Degree of protection NEMA/UL NEMA 2, UL Enclosure Type 2 EMC Cetrification IEC/EN IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Rated impulse voltage supply / control Control pollution degree Ambient temperature Non-operating temperature Ambient humidity Maintenance Mechanical data Protection class IEC/EN III Safety extra-low voltage UL Class 2 Supply NEMA 2, UL Enclosure Type 2 Eaccording to 2004/108/EC Ce according to 2004/108/EC Ocal and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage supply / control 0.8kV Control pollution degree 3 Ambient temperature -3050°C Non-operating temperature -4080°C Ambient humidity Maintenance Maintenance-free		Sound power level motor max.	45dB(A)
Protection class UL Degree of protection IEC/EN Degree of protection NEMA/UL Degree of protection NEMA/UL NEMA 2, UL Enclosure Type 2 EMC CE according to 2004/108/EC Certification IEC/EN IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage supply / control Rated impulse voltage supply / control Control pollution degree Ambient temperature -3050°C Non-operating temperature -4080°C Ambient humidity 95% r.h., non-condensing Maintenance Maintenance-free Mechanical data Connection flange F05		Position indication	Mechanically, integrated, two-section
Degree of protection IEC/EN Degree of protection NEMA/UL Degree of protection NEMA/UL NEMA 2, UL Enclosure Type 2 EMC CE according to 2004/108/EC Certification IEC/EN IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage supply / control 0.8kV Control pollution degree 3 Ambient temperature -3050°C Non-operating temperature -4080°C Ambient humidity 95% r.h., non-condensing Maintenance Maintenance-free Mechanical data Connection flange F05	Safety	Protection class IEC/EN	III Safety extra-low voltage
Degree of protection NEMA/UL EMC Ce according to 2004/108/EC Certification IEC/EN Mode of operation Rated impulse voltage supply / control Control pollution degree Ambient temperature Ambient humidity Maintenance Mechanical data NEMA 2, UL Enclosure Type 2 CE according to 2004/108/EC EEC/EN 60730-1 and IEC/EN 60730-2-14 Type 1 0.8kV 0.8kV Control pollution degree 3 Ambient temperature -3050°C Non-operating temperature -4080°C Ambient humidity 95% r.h., non-condensing Maintenance-free		Protection class UL	UL Class 2 Supply
EMC Certification IEC/EN IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage supply / control Control pollution degree 3 Ambient temperature Non-operating temperature Abient humidity Maintenance Mechanical data EMC CE according to 2004/108/EC IEC/EN 60730-1 and IEC/EN 60730-2-14 Type 1 0.8kV Control pollution degree 3 Ambient temperature -3050°C Auno-condensing Maintenance Maintenance-free		Degree of protection IEC/EN	IP54
Certification IEC/EN Mode of operation Rated impulse voltage supply / control Control pollution degree Ambient temperature Non-operating temperature Ambient humidity Maintenance Mechanical data Certification IEC/EN 60730-1 and IEC/EN 60730-2-14 Type 1 0.8kV 0.8kV 0.8kV -3050°C Autor -3050°C Autor -4080°C Ambient humidity 95% r.h., non-condensing Maintenance-free F05		Degree of protection NEMA/UL	•
Mode of operation Rated impulse voltage supply / control Control pollution degree 3 Ambient temperature Non-operating temperature Ambient humidity Maintenance Mechanical data Mode of operation Type 1 0.8kV 0.8kV Control pollution degree 3 -3050°C -4080°C Ambient humidity 95% r.h., non-condensing Maintenance-free F05			<u> </u>
Rated impulse voltage supply / control 0.8kV Control pollution degree 3 Ambient temperature -3050°C Non-operating temperature -4080°C Ambient humidity 95% r.h., non-condensing Maintenance Maintenance-free Mechanical data Connection flange F05		Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14
Control pollution degree 3 Ambient temperature -3050°C Non-operating temperature -4080°C Ambient humidity 95% r.h., non-condensing Maintenance Maintenance-free Mechanical data Connection flange F05		<u> </u>	• • • • • • • • • • • • • • • • • • • •
Ambient temperature -3050°C Non-operating temperature -4080°C Ambient humidity 95% r.h., non-condensing Maintenance Maintenance-free Mechanical data Connection flange F05			
Non-operating temperature Ambient humidity Maintenance Mechanical data Non-operating temperature -4080°C 95% r.h., non-condensing Maintenance-free F05			
Ambient humidity 95% r.h., non-condensing Maintenance Maintenance-free Mechanical data Connection flange F05		<u> </u>	
Maintenance Maintenance-free Mechanical data Connection flange F05			
Mechanical data Connection flange F05			<u> </u>
		Maintenance	Maintenance-free
Weight Weight Approx. 1kg	Mechanical data	Connection flange	F05
	Weight	Weight	Approx. 1kg



- This device has been designed for use in stationary heating, ventilation and air conditioning systems and is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- The switch for changing the direction of rotation may only be operated by authorised specialists. The direction of rotation must not in particular be reversed in a frost protection circuit.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- · The cables must not be removed from the device.
- The device contains electrical and electronic components and is not allowed to be disposed
 of as household refuse. All locally valid regulations and requirements must be observed.



P10000A

Product features

Mode of operation

The actuator is connected with a standard modulating signal of DC (0)2...10V and travels to the position defined by the positioning signal. Measuring voltage U serves for the electrical display of the valve position 0...100% and as slave control signal for other actuators.

Simple direct mounting

Simple direct mounting on the rotary valve with mounting flange. The mounting position in relation to the fitting can be selected in 90° steps.

Manual override

Manual override with push-button possible (the gear is disengaged for as long as the button is pressed or remains locked).

High functional reliability

The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.

Adjustable angle of rotation Combination valve/actuator

Adjustable angle of rotation with mechanical end stops.

For valves with the following mechanical specifications in accordance with ISO 5211 F05:

- Square stem head SW = 14mm for form fit coupling of the rotary actuator.

- Hole circle d = 50mm

Accessories

Description Type **Electrical accessories** Auxiliary switch, add-on, 1 x SPDT S1A Auxiliary switch, add-on, 2 x SPDT S2A Feedback potentiometer 140 Ohm, add-on P140A Feedback potentiometer 200 Ohm, add-on P200A Feedback potentiometer 500 Ohm, add-on P500A Feedback potentiometer 1 kOhm, add-on P1000A Feedback potentiometer 2.8 kOhm, add-on P2800A Feedback potentiometer 5 kOhm, add-on P5000A

Electrical installation



Notes

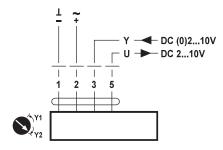
Connection via safety isolating transformer.

Feedback potentiometer 10 kOhm, add-on

- Parallel connection of other actuators possible. Observe the performance data.
- Direction of rotation switch is covered. Factory setting: Direction of rotation Y2.

Wiring diagrams

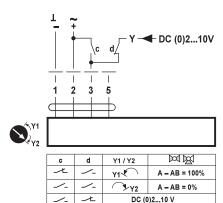
AC/DC 24V, modulating



Cable colours:

- 1 = black
- 2 = red
- 3 = white
- 5 = orange

Override control (frost protection circuit)

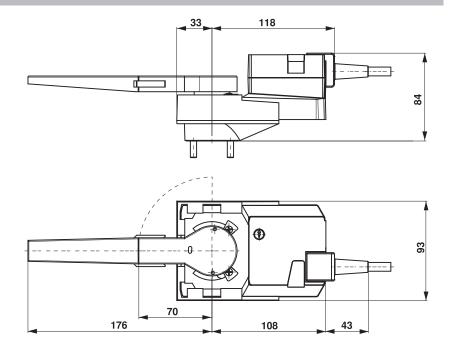


Cable colours:

1 = black

- 2 = red
- 3 = white
- 5 = orange







Characterised control valve, 3-way, Internal thread
• For closed cold and warm water systems

- · For modulating water-side control of air handling units and heating systems
- Air bubble-tight (control path A AB)



Type overview							
	Туре	kvs	DN	Rp	PN	n(gl)	Sv min.
		[m³/h]	[]	["]	[]	[]	[]
	R3015-P25-S1	0.25	15	1/2	40	3.2	50
	R3015-P4-S1	0.4	15	1/2	40	3.2	50
	R3015-P63-S1	0.63	15	1/2	40	3.2	50
	R3015-1-S1	1	15	1/2	40	3.2	50
	R3015-1P6-S1	1.6	15	1/2	40	3.2	50
	R3015-2P5-S1	2.5	15	1/2	40	3.2	50
	R3015-4-S1	4	15	1/2	40	3.2	100
	R3020-4-S1	4	20	3/4	40	3.2	100
	R3020-6P3-S1	6.3	20	3/4	40	3.2	100
	R3025-6P3-S2	6.3	25	1	40	3.2	100
	R3025-10-S2	10	25	1	40	3.2	100
	R3032-10-S2	10	32	1 1/4	25	3.2	100
	R3032-16-S2	16	32	1 1/4	25	3.2	100
	R3040-16-S3	16	40	1 1/2	25	3.2	100
	R3040-25-S4	25	40	1 1/2	25	3.2	100
	R3050-25-S4	25	50	2	25	3.2	100
	R3050-40-S4	40	50	2	25	3.2	100
	R3050-58-S4	58	50	2	25	3.2	100

Technical data		
Functional data	Media	Cold and warm water, water with glycol up to max. 50% vol.
	Medium temperature	-10120°C
	Medium temperature note	The allowed media temperature can be limited,
		depending on the type of actuator. Limitations
		can be found in the respective data sheets of
		the actuators.
	Closing pressure ∆ps	1400kPa
	Differential pressure ∆pmax	350kPa
	Differential pressure note	200kPa for low-noise operation
	Flow rate	Bypass B – AB: 70% of kvs value
	Flow characteristic	Control path A – AB: equal percentage (VDI/
		VDE 2178), optimised in the opening range,
	 	Bypass B – AB: linear (VDI/VDE 2178)
	Leakage rate	Control path A - AB: Leakage rate A, air-bubble-
		tight (EN 12266-1), Bypass B - AB: Leakage class I (EN 1349 and EN 60534-4) approx.
		12% of the kvs value, with respect to the
		largest value within the DN
	Pipe connectors	Internal thread according to ISO 7-1
	Angle of rotation	90° (Operating range control path A - AB
		1590°, Bypass B – AB 1570°)
	Installation position	Upright to horizontal (in relation to the stem)
	Maintenance	Maintenance-free
Materials	Housing	Brass body nickel-plated
	Closing element	Stainless steel
	Stem	Stainless steel
	Stem seal	O-ring EPDM
	Valve seat	PTFE, O-ring EPDM
	Characterising disc	TEFZEL
		R3040-25-S4, R3050-40-S4,

R3050-58-S4: Stainless steel



Safety notes



- The valve has been designed for use in stationary heating, ventilation and air-conditioning systems and is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- The valve does not contain any parts that can be replaced or repaired by the user.
- The valve may not be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- When determining the flow rate characteristic of controlled devices, the recognised directives must be observed.

Product features

Mode of operation

The characterised control valve is adjusted by a rotary actuator. The actuator is controlled by a commercially available modulating or 3-point control system and moves the ball of the valve – the throttling device – to the position dictated by the positioning signal. Open the characterised control valve counterclockwise and close it clockwise.

Flow characteristic

Equal percentage flow control is ensured by the integrated characterising disc.

Accessories

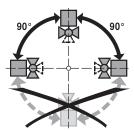
Mechanical accessories

Description	Туре
Pipe connector to ballvalves DN 15 Rp 1/2"	ZR2315
Pipe connector to ballvalves DN 20 Rp 3/4"	ZR2320
Pipe connector to ballvalves DN 25 Rp 1"	ZR2325
Pipe connector to ballvalves DN 32 Rp 1 1/4"	ZR2332
Pipe connector to ballvalves DN 40 Rp 1 1/2"	ZR2340
Pipe connector to ballvalves DN 50 Rp 2"	ZR2350

Installation notes

Recommended installation positions

The ball valve can be installed upright to horizontal. The ball valve may not be installed in a hanging position, i.e. with the stem pointing downwards.



Water quality requirements

The water quality requirements specified in VDI 2035 must be adhered to.

Belimo valves are regulating devices. For the valves to function correctly in the long term, they must be kept free from particle debris (e.g. welding beads during installation work). The installation of suitable strainer is recommended.

Maintenance

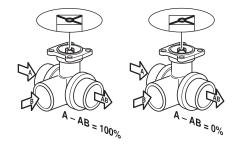
Ball valves and rotary actuators are maintenance-free.

Before any kind of service work is carried out on the actuator, it is essential to isolate the rotary actuator from the power supply (by unplugging the electrical cable). Any pumps in the part of the piping system concerned must also be switched off and the appropriate slide valves closed (allow everything to cool down first if necessary and reduce the system pressure to ambient pressure level).

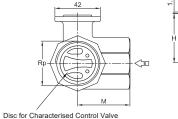
The system must not be returned to service until the ball valve and the rotary actuator have been properly reassembled in accordance with the instructions and the pipeline has been refilled in the proper manner.

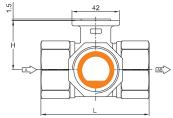
Flow direction

The direction of flow, specified by an arrow on the housing, is to be complied with, since otherwise the ball valve could become damaged. Please ensure that the ball is in the correct position (marking on the spindle).





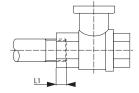




L1: Maximum screwing depth.

The actuator dimensions can be found on the respective actuator data sheet.





Туре	DN []	Rp ["]	L [mm]	L1 [mm]	M [mm]	H [mm]	Weight approx. [kg]
R3015-P25-S1	15	1/2	67	13	36	35	0.27
R3015-P4-S1	15	1/2	67	13	36	35	0.27
R3015-P63-S1	15	1/2	67	13	36	35	0.27
R3015-1-S1	15	1/2	67	13	36	35	0.27
R3015-1P6-S1	15	1/2	67	13	36	35	0.27
R3015-2P5-S1	15	1/2	67	13	36	44	0.37
R3015-4-S1	15	1/2	67	13	36	44	0.37
R3020-4-S1	20	3/4	79	14	41.5	46	0.45
R3020-6P3-S1	20	3/4	79	14	41.5	46	0.45
R3025-6P3-S2	25	1	87	16	45	46	0.65
R3025-10-S2	25	1	87	16	45	46	0.65
R3032-10-S2	32	1 1/4	105	19	55.5	46	0.97
R3032-16-S3	32	1 1/4	105	19	55.5	50.5	0.99
R3040-16-S3	40	1 1/2	111	19	56	50.5	1.15
R3040-25-S4	40	1 1/2	122	19	66.5	62	1.15
R3050-25-S4	50	2	125	22	68	56	1.9
R3050-40-S4	50	2	142	22	79	68	1.8
R3050-58-S4	50	2	142	22	79	68	1.8





2-way Characterised Control Valves DN65...150 Equal-percentage characteristics for modulating control of cold and hot water

Applications



- Water-side control of air handling units in air conditioning systems
- · Water-side control in heating systems



Technical data

Flow medium	Cold and hot w	ater, water with max. 50% volume of glycol		
Temp. of medium	-5+100°C			
Rated pressure	1600kPa			
Flow characteristic	Equal percenta	ge		
Rangeability	Sv>100			
Leakage rate	00.01% Kvs ((ANSI Class IV)		
	(No leakage wh	nen ex-factory)		
Pipe connector	Flanged ISO 7005-2			
Differential pressure △Pmax	DN65125	350kPa (200kPa for low-noise operation)		
	DN150	<300kPa		
Close-off pressure △Ps	DN65125	700kPa		
	DN150	400kPa		
Angle of rotation	90°			
Installation position	Upright to horiz	contal (in relation to the stem)		
Maintenance	Maintenance-free			
Valve Material				
Body	GG25, Polyeste	er coated		
Ball	Stainless steel			
Seat	DN65125 RPTFE			
	DN150 TFM1600			
Shaft	Stainless steel			
O-ring	EPDM			
Characterising disc	Stainless steel			

Product features

Mode of Operation

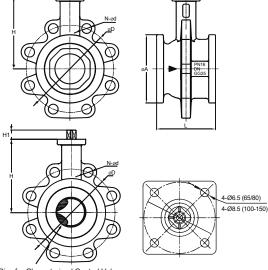
The Characterised Control Valve is operated by a Rotary Actuator. The actuator is controlled by a standard modulating or 3-point control system and drives the ball of the valve - the throttling device - to the opening position dictated by the control signal.

Equal-percentage characteristic

Equal-percentage characteristic of the flow rate ensured by the integral characterising disc.

Dimensions [mm]

Value turns	D	DN Dimensions[mm]				Weight			
Valve type	mm	ln	ØΑ	ØD	Н	H1	L	N-ød	[kg]
R664AO/R665AO	65	2½"	105	145	128.0	12.0	93.0	4-18	4.8
R679AO/R680AO	80	3"	125	160	134.5	12.0	108.0	8-18	7.2
R6099AO/R6100AO	100	4"	148	180	144.0	15.5	120.0	8-18	10.5
R6124AO/R6125AO	125	5"	174	210	158.0	15.5	142.0	8-18	14
R6149AO/R6150AO	150	6"	204	240	176.5	15.5	170.0	8-22	21



Disc for Characterised Control Valve

GR24A-SR-5 / -7



Modulating rotary actuator for rotary valves GR24A-SR-5 with mounting flange ISO 5211-F05 GR24A-SR-7 with mounting flange ISO 5211-F07

- Torque 40Nm
- Nominal voltage AC/DC 24V
- Control: modulating DC(0) 2...10V
- Position feedback DC 2...10V



Nominal voltage AC 24V, 50/60 Hz / DC 24V	Technical data					
Nominal voltage range Power In operation consumption At rest 1.5W 6.5VA Co.2nl.e	Electrical data	Nominal voltage		AC 24V, 50/60 Hz / DC 24V		
Consumption At rest For wire sizing 6.5VA				AC 19.228.8V / DC 21.628.8V		
For wire sizing Connection Cable 1m, 4 x 0.75mm² Parallel operation Possible, note the performance data Torque (nominal torque) Min. 40Nm @ nominal voltage Control Control signal Y DC (0)210V, typical input impedance 100κΩ Operating range Y DC 210V, max. 1mA Position accuracy ±5% Manual override Gearing latch disengaged with pushbutton, can be locked Running time 150s / 90° Sound power level Max. 45dB(A) Position indication Mechanical, pluggable Safety Protection class IEC/EN III Safety extra-low voltage Protection class U U. Class 2 Supply Degree of protection IEC/EN IP54 Degree of protection IEC/EN IP56 Degree of protection IEC/EN Degree of protection IEC/EN Degree of protection IEC/EN Degree of protection IEC/EN		Power	In operation	4.5W @ nominal torque		
Connection Parallel operation Possible, note the performance data		consumption				
Functional data Functional data Torque (nominal torque) Control Signal Y Operating range Y Operati			For wire sizing			
Functional data Torque (nominal torque) Control Control signal Y Coperating range Y DC (2)10V, typical input impedance 100kΩ Dc 210V, max. 1mA Position accuracy Position accuracy Manual override Running time Sound power level Position indication Safety Protection class IEC/EN Protection class IEC/EN Degree of protection IEC/EN Degree of protection EMA/UL EMMC Certification Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Rated impulse voltage Control pollution degree Ambient temperature Non-operating temperature Ambient temperature Ambient memorance Mechanical data Min. 40Nm @ nominal voltage DC (0)210V, typical input impedance 100kΩ DC 210V, max. 1mA DC (0)210V, typical input impedance 100kΩ Dc (0)210V, typical input impedance 100kΩ Dc (0)210V, max. 1mA Dc (0)210V, typical input impedance 100kΩ Dc (210V, max. 1mA Dc (0)210V, typical input impedance 100kΩ Dc (210V, max. 1mA Assum. 1mA Dc (0)210V, typical input impedance 100kΩ Dc (210V, max. 1mA Assum. 1mA Dc (0)210V, max. 1mA Dc (0)2.						
Control Control signal Y Operating range Y Operating P Operating range Y Operating P Operat		Parallel operation		Possible, note the performance data		
Operating range Y DC 210V Position feedback DC 210V, max. 1mA Position accuracy ±5% Manual override Gearing latch disengaged with pushbutton, can be locked Running time 150s / 90° Sound power level Max. 45dB(A) Position indication Mechanical, pluggable Protection class IEC/EN III Safety extra-low voltage Protection class UL UL Class 2 Supply Degree of protection IEC/EN IP54 Degree of protection EMA/UL NEMA 2, UL Enclosure Type 2 EMC CE in accordance with 2004/108/EU Certification Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature 0+50°C Non-operating temperature -40+80°C Ambient humidity 95% r.h., non-condensating Maintenance Mechanical data Mechanical data Dimensions / Weight Dimensions See «Dimensions»	Functional data	Torque (nominal to	rque)			
Position feedback DC 210V, max. 1mA Position accuracy ±5% Manual override Gearing latch disengaged with pushbutton, can be locked Running time 150s / 90° Sound power level Max. 45dB(A) Position indication Mechanical, pluggable Safety Protection class IEC/EN III Safety extra-low voltage Protection class U UL Class 2 Supply Degree of protection IEC/EN IP54 Degree of protection EMA/UL NEMA 2, UL Enclosure Type 2 EMC CE in accordance with 2004/108/EU Certification Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature 0+50°C Non-operating temperature 40+80°C Ambient humidity 95% r.h., non-condensating Maintenance Mechanical data Mechanical data Dimensions See «Dimensions»		Control	Control signal Y			
Position accuracy ±5% Manual override Gearing latch disengaged with pushbutton, can be locked Running time 150s / 90° Sound power level Max. 45dB(A) Position indication Mechanical, pluggable Safety Protection class IEC/EN III Safety extra-low voltage Protection class UL UL Class 2 Supply Degree of protection IEC/EN IP54 Degree of protection EMA/UL NEMA 2, UL Enclosure Type 2 EMC CE in accordance with 2004/108/EU Certification Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature 0+50°C Non-operating temperature -40+80°C Ambient humidity 95% r.h., non-condensating Maintenance Maintenance-free Mechanical data Connection flange GR24A-SR-5 GR24A-SR-7 Dimensions / Weight Dimensions See «Dimensions»			Operating range Y			
Manual override Running time Sound power level Position indication Safety S		Position feedback		<u> </u>		
Can be locked Running time 150s / 90° Sound power level Max. 45dB(A) Position indication Mechanical, pluggable Protection class IEC/EN III Safety extra-low voltage Protection class UL UL Class 2 Supply Degree of protection IEC/EN IP54 Degree of protection EMA/UL NEMA 2, UL Enclosure Type 2 EMC CE in accordance with 2004/108/EU Certification Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature 0+50°C Non-operating temperature -40+80°C Ambient humidity 95% r.h., non-condensating Maintenance Maintenance-free Mechanical data Connection flange GR24A-SR-5 GR24A-SR-7 Dimensions / Weight Dimensions See «Dimensions»						
Running time 150s / 90° Sound power level Max. 45dB(A) Position indication Mechanical, pluggable Protection class IEC/EN III Safety extra-low voltage Protection class UL UL class 2 Supply Degree of protection IEC/EN IP54 Degree of protection EMA/UL NEMA 2, UL Enclosure Type 2 EMC CE in accordance with 2004/108/EU Certification Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature 0+50°C Non-operating temperature 40+80°C Ambient humidity 95% r.h., non-condensating Maintenance Maintenance-free Mechanical data Dimensions / Weight Dimensions See «Dimensions»		Manual override				
Sound power level Max. 45dB(A) Position indication Mechanical, pluggable Protection class IEC/EN III Safety extra-low voltage Protection class UL UL Class 2 Supply Degree of protection IEC/EN IP54 Degree of protection EMA/UL NEMA 2, UL Enclosure Type 2 EMC CE in accordance with 2004/108/EU Certification Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature 0+50°C Non-operating temperature 4-40+80°C Ambient humidity 95% r.h., non-condensating Maintenance Maintenance-free Mechanical data Dimensions / Weight Dimensions Dimensions See «Dimensions»						
Safety Position indication Mechanical, pluggable Protection class IEC/EN Protection class UL Degree of protection IEC/EN Degree of protection EMA/UL EMC Certification Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Rated impulse voltage Control pollution degree Ambient temperature Mono-operating temperature Mechanical data Mechanical data Mechanical, pluggable III Safety extra-low voltage UL Class 2 Supply UL Class 2 Supply NEMA 2, UL Enclosure Type 2 CE in accordance with 2004/108/EU Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature 0+50°C Non-operating temperature -40+80°C Ambient humidity 95% r.h., non-condensating Maintenance Maintenance-free Mechanical data Dimensions Dimensions See «Dimensions»						
Safety Protection class IEC/EN Protection class UL Degree of protection IEC/EN Degree of protection EMA/UL Degree of protection EMA/UL Degree of protection EMA/UL Degree of protection EMA/UL NEMA 2, UL Enclosure Type 2 EMC Certification Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Rated impulse voltage Control pollution degree Ambient temperature Non-operating temperature Ambient humidity Maintenance Mechanical data Mechanical data Dimensions / Weight Protection class IEC/EN UL Class 2 Supply UL Class 2 Supply NEMA 2, UL Enclosure Type 2 CE in accordance with 2004/108/EU Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Verified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Ou.+50°C Non-operation Type 1 See «Dimensions»				. ,		
Protection class UL UL Class 2 Supply Degree of protection IEC/EN IP54 Degree of protection EMA/UL NEMA 2, UL Enclosure Type 2 EMC CE in accordance with 2004/108/EU Certification Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature 0+50°C Non-operating temperature -40+80°C Ambient humidity 95% r.h., non-condensating Maintenance Maintenance-free Mechanical data Dimensions / Weight Dimensions See «Dimensions»		Position indication		Mechanical, pluggable		
Degree of protection IEC/EN Degree of protection EMA/UL Degree of protection EMA/UL EMC CE in accordance with 2004/108/EU Certification Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature 0+50°C Non-operating temperature Ambient humidity 95% r.h., non-condensating Maintenance Mechanical data Connection flange GR24A-SR-5 GR24A-SR-7 F07 Dimensions / Weight NEMA 2, UL Enclosure Type 2 CE in accordance with 2004/108/EU Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Type 1 Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature 40+50°C Non-condensating Maintenance-free	Safety					
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EMC CE in accordance with 2004/108/EU Certification Certified to IEC/EN 60730-1 and IEC/EN 60730- 2-14 Mode of operation Type 1 Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature 0+50°C Non-operating temperature -40+80°C Ambient humidity 95% r.h., non-condensating Maintenance Maintenance-free Mechanical data Mechanical data Dimensions / Weight Dimensions CE in accordance with 2004/108/EU Certified to IEC/EN 60730-1 and IEC/EN 60730- 2-14 Mode of operation Type 1 0.8kV Control pollution degree 3 Ambie 1 Make				-		
Certification Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 Mode of operation Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature Non-operating temperature Ambient humidity Maintenance Mechanical data Mechanical data Dimensions / Weight Certified to IEC/EN 60730-1 Type 1 0.8kV 08kV 0+50°C 0+80°C -40+80°C Maintenance-densating Maintenance-free F05 GR24A-SR-5 GR24A-SR-7 F07 See «Dimensions»			on EMA/UL			
2-14 Mode of operation Type 1 Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature 0+50°C Non-operating temperature -40+80°C Ambient humidity 95% r.h., non-condensating Maintenance Maintenance-free Mechanical data Mechanical data Connection flange GR24A-SR-5 GR24A-SR-7 F07 Dimensions / Weight Dimensions See «Dimensions»						
Rated impulse voltage 0.8kV Control pollution degree 3 Ambient temperature 0+50°C Non-operating temperature -40+80°C Ambient humidity 95% r.h., non-condensating Maintenance Maintenance-free Mechanical data Mechanical data Connection flange GR24A-SR-5 GR24A-SR-7 F07 Dimensions / Weight Dimensions See «Dimensions»		Certification				
Control pollution degree 3 Ambient temperature 0+50°C Non-operating temperature -40+80°C Ambient humidity 95% r.h., non-condensating Maintenance Maintenance-free Mechanical data Connection flange GR24A-SR-5 F05 GR24A-SR-7 F07 Dimensions / Weight Dimensions See «Dimensions»		Mode of operation		Type 1		
Ambient temperature 0+50°C Non-operating temperature -40+80°C Ambient humidity 95% r.h., non-condensating Maintenance Maintenance-free Mechanical data Connection flange GR24A-SR-5 F05 GR24A-SR-7 F07 Dimensions / Weight Dimensions See «Dimensions»		Rated impulse voltage		0.8kV		
Non-operating temperature Ambient humidity Maintenance Mechanical data Mechanical data Dimensions / Weight Non-operating temperature -40+80°C 95% r.h., non-condensating Maintenance-free F05 GR24A-SR-5 GR24A-SR-7 F07 See «Dimensions»		Control pollution degree		3		
Ambient humidity 95% r.h., non-condensating Maintenance Maintenance-free Mechanical data Connection flange GR24A-SR-5 F05 GR24A-SR-7 F07 Dimensions / Weight Dimensions See «Dimensions»		Ambient temperature		0+50°C		
Maintenance Maintenance-free Mechanical data Connection flange GR24A-SR-5 F05 GR24A-SR-7 F07 Dimensions / Weight Dimensions See «Dimensions»		Non-operating temperature		–40+80°C		
Mechanical dataConnection flangeGR24A-SR-5F05GR24A-SR-7F07Dimensions / WeightDimensionsSee «Dimensions»				, ,		
GR24A-SR-7 F07 Dimensions / Weight Dimensions See «Dimensions»		Maintenance		Maintenance-free		
Dimensions / Weight Dimensions See «Dimensions»	Mechanical data	Connection flange	GR24A-SR-5	F05		
			GR24A-SR-7	F07		
Weight Approx 2 5kg	Dimensions / Weight	Dimensions		See «Dimensions»		
vveignit Approx. 2.3kg	_	Weight		Approx. 2.5kg		



- The actuator has been designed for use in stationary heating, ventilation and air conditioning systems and is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- It may only be installed by suitably trained personnel. Any legal regulations or regulations issued by authorities must be observed during assembly.
- The switch for changing the direction of rotation may only be operated by authorised personnel. The direction of rotation must not be reversed in a frost protection circuit.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- · The cable must not be removed from the device.
- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.



Product features

Mode of operation

Manual override

Simple direct mounting

The actuator is controlled with a standard modulating signal of DC (0)2...10V and travels to the position defined by the control signal. Measuring voltage U serves for the electrical display of the actuator position 0...100% and as slave control signal for other actuators. Simple direct mounting on the rotary valve with mounting flange. The mounting position in

relation to the fitting can be selected in 90° steps.

Manual override with push-button possible (the gear is disengaged for as long as the button is pressed or remains locked).

Adjustable angle of rotation High functional reliability Adjustable angle of rotation with mechanical end stops.

The actuator is overload-proof, requires no limit switches and automatically stops when the end stop is reached.

Combination valve/actuator

For valves with the following mechanical specifications in accordance with ISO 5211 F05:

- Square stem head SW = 14mm for form-fit coupling of the rotary actuator.
- Hole circle d = 50mm

For valves with the following mechanical specifications in accordance with ISO 5211 F07:

- Square stem head SW = 17mm for form-fit coupling of the rotary actuator.
- Hole circle d = 70mm

Accessories

Electrical accessories

Description	Туре
Auxiliary switch, add-on, 1 x SPDT	S1A
Auxiliary switch, add-on, 2 x SPDT	S2A
Feedback potentiometer 140 Ohm, add-on	P140A
Feedback potentiometer 200 Ohm, add-on	P200A
Feedback potentiometer 500 Ohm, add-on	P500A
Feedback potentiometer 1 kOhm, add-on	P1000A
Feedback potentiometer 2.8 kOhm, add-on	P2800A
Feedback potentiometer 5 kOhm, add-on	P5000A
Feedback potentiometer 10 kOhm, add-on	P10000A

Wiring diagram

· Connect via safety isolation transformer.

Note performance data for supply.

· Direction of rotation switch is covered.

Factory setting: Direction of rotation Y2

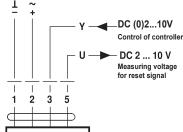
· Other actuators can be connected in parallel.

Notes

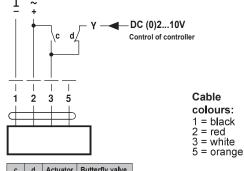
Notes

GR24A-SR-5

Standard connection



Override control (Frost protection circuit)



С	d	Actuator	Butterfly valve			
Ł	/_	Y1 ₹	A – AB = 100%			
/_	/-	✓ Y2 A - AB = 0%				
<i>_</i> _	Ł	Modulating operation				

Direction of rotation



GR24A-SR-7

Standard connection

· Direction of rotation switch is covered. Factory setting: Direction of rotation Y2

· Connect via safety isolation transformer.

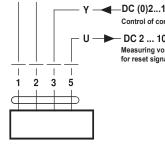
Note performance data for supply.

· Other actuators can be connected in parallel.

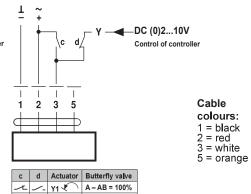
-DC (0)2...10V Control of controller DC 2 ... 10 V Measuring voltage for reset signal 2 3 5

Direction of rotation





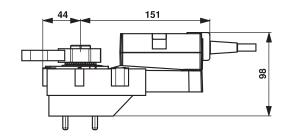
Override control (Frost protection circuit)

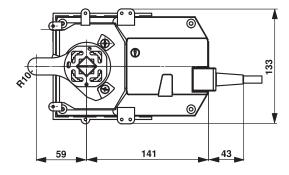


У Y2 A - AB = 0% Modulating operation



GR24A-SR-5





GR24A-SR-7

