



Kieback&Peter

OPERATING INSTRUCTIONS

MF100-SR AND MF100-SR-E

ACTUATOR WITH EMERGENCY CONTROL

FUNCTION FOR TWO-WAY/THREE-WAY

VALVES FROM THE

RK/RB/RF/RGD/RWG/RGDE SERIES

This document replaces all versions with an older release date. This version is not updated automatically. Subject to change.

The figures in this document were created with the utmost care. Nevertheless, we cannot guarantee that the delivered product will not differ from these figures.

The original operating instructions were composed in German.

Documentation in other languages has been translated from German.

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1 Notes on these operating instructions



NOTE

If you have any questions that cannot be clarified with these operating instructions, you can obtain further information from your Kieback&Peter contact person.

1.1 Validity of the operating instructions

These operating instructions are part of the MF100-SR and MF100-SR-E actuator with emergency control function for two-way/three-way valves used in the RK/RB/RF/RGD/RWG/RGDE series and are only applicable in conjunction with this actuator with emergency control function and these valves.

To make the document easier to read, the MF100-SR and MF100-SR-E actuator with emergency control function is referred to in the text below as the “actuator”. The two-way/three-way valves of the RK/RB/RF/RGD/RWG/RGDE series are referred to in the text as “valve”.

1.2 Display elements



NOTE

Notes provide you with important information.

You can find the following display elements in these instructions:

- List point
- ▶ Step or measure for avoiding danger

2 Safety

IMPORTANT

READ CAREFULLY BEFORE USE

RETAIN FOR LATER REFERENCE

2.1 Explanation of safety instructions and warnings

The basic safety information includes general instructions for the safe use of the actuator with valve or instructions to maintain its safe condition.

Action-related warnings of residual risks are indicated prior to performing dangerous actions.

Presentation and structure of warnings

The warnings are action-related and are structured as follows.



CAUTION

Type and source of danger!

Potential consequences when the danger occurs or the warning is not observed.

- ▶ Measures to avoid the danger.

Warnings are classified according to the severity of the hazard. The hazard levels and their corresponding signal words and warning symbols are described below:



WARNING

Indicates a hazard of medium risk which can result in **death or serious bodily injury** if not avoided.



CAUTION

Indicates a hazard of low risk which can result in **minor or medium bodily injury** if not avoided.



CAUTION

Indicates a hazard which can result in **material damage or malfunctions** if not avoided.

2.2 Basic safety instructions

Safety in the workplace depends on the attention, care and rationality of all the persons involved. To prevent damage and injury, read and follow the safety instructions below, the safety instructions in the documentation on using the components and the applicable local regulations.

Sharp edges and corners

There is a risk of skin abrasions and cutting injuries due to sharp edges and corners, such as those on cast iron bodies and the outer threads of the valves and individual parts of the actuators.

- ▶ Proceed with care.
- ▶ Wear protective gloves.

Toppling, falling and ejected parts

Severe injury and substantial damage to property due to:

- Toppling or falling valve or actuator parts
- Ejected parts in the event of impermissible pressure increases (bursting components)
- Impermissible drop in pressure (e.g. when using tensioning devices)
- ▶ Secure the protected area against access by unauthorized persons.
- ▶ Secure parts to prevent toppling and falling.
- ▶ Do not exceed the maximum valve operating pressure.

Pressurized liquids

There is a risk of severe burns and injuries caused by liquid jets due to incorrect connections.

- ▶ Do not exceed the maximum valve operating pressure.
- ▶ Check all connections before filling the system.
- ▶ Secure the protected area against access by unauthorized persons.

Hot or cold surfaces

Severe burns or hypothermia are possible if contact is made with hot or cold surfaces at valves and pipelines.

- ▶ Before starting the work, wait until the temperature of the pipelines and valves corresponds to around 5 to 35°C.

Musculoskeletal disorders

There is a risk of severe of musculoskeletal disorders (e.g. back injuries) due to incorrect posture or excessive exertion (e.g. due to weight loads).

- ▶ Proceed with care.

2.3 Responsibilities of the Operator

The actuator and valve must be operated only when in a technically sound and safe condition. The operator must observe the following points:

- Ensure that the operating instructions are available to all persons who perform work on the actuator and valve.
- Ensure that all persons have read and understood the operating instructions before working on the actuator and valve.
- Ensure the required ambient conditions and clearances at the mounting location.
- Ensure that mounting, installation and commissioning are carried out only by a fitter or specialist electrician, according to the tasks. NOT DEFINED
- Inform your Kieback&Peter contact person in the event of damage to the actuator and/or valve.
- Ensure that personnel receive the personal protective equipment (PPE) stipulated in the specific country and use this equipment at all times.

2.4 Qualification of personnel

Fitter

The fitter is familiar with heating, ventilation and air conditioning systems. Based on his or her technical training and appropriate knowledge and experience, he or she is familiar with the described actuator and valve. The fitter knows the applicable regulations, can assess his or her assigned tasks and identify potential dangers.

Electrical specialist

The electrical specialist is a person who is familiar with the described actuator. Based on his or her professional training, knowledge and experience, he or she has a very good understanding of the fields of cable, wire and laying systems and a good knowledge of the areas of electrical engineering and electrical machines and actuators. The electrical specialist knows the applicable regulations, can assess work assigned to him or her and identify possible dangers.

Who is permitted to perform which tasks?

Task	Fitter	Electrical specialist
Mounting		
Assembling the valve	x	
Assembling the actuator	x	
Commissioning		
Electrical connection		x
Adapting actuator functions		x
Faults and remedial measures		
Searching for and correcting faults	x	x
Decommissioning, disassembly and disposal		
Taking the actuator out of operation		x
Disassembling the actuator	x	
Disassembling the valve	x	
Disposal	x	

2.5 Intended use

- The actuator with valve is designed to control the flow or precise mixture of liquids for heating, ventilation and air conditioning systems.
- Operate the actuator only with one of the specified valves and the original valve accessories.
- The actuator with valve is intended only for industrial and commercial use; never operate the actuator with valve in the private sphere or in households.
- Only operate the actuator with valve indoors.
- Maintain the specified ambient conditions during operation, transport and storage.
- Use a suitable operating medium.
- Only operate the actuator with valve in its original condition. Modifications to the actuator and/or valve may result in unforeseeable dangers and are thus prohibited.

3 Description

The actuators with emergency control function MF100-SR and MF100-SR-E with a positioning force of 1000 N are used for fine stroke adjustment of two-way and three-way valves of the types:

- RK15..50/65K(-BF)
- RB15..50(-BK)
- RF15..50/65K(-BF)
- RGD15..40
- RWG15..40
- RGDE25..50

This is controlled with one of the following signals:

- Constant signal 0(2)..10 V DC or 0(4)..20 mA
- 2-point signal open/close or
- 3-point signal open/stop/closed by direct control with operating mode switch

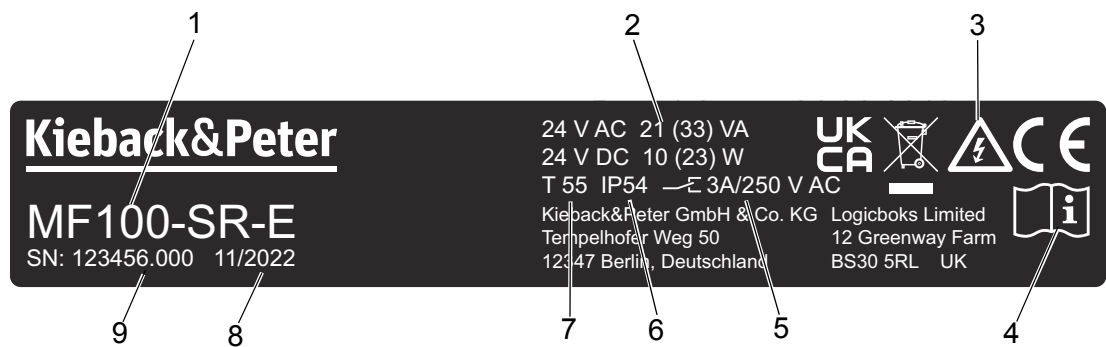
The actuator has an emergency control function that, depending on the type of valve used, automatically closes or opens valves with spring force in the event of a power failure.

Emergency control function: Drive extended without current

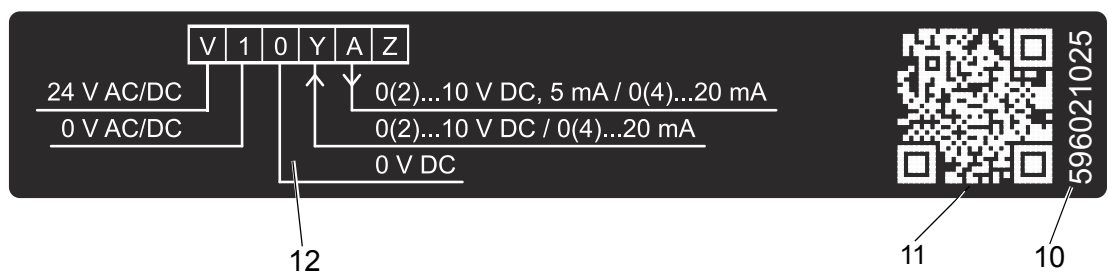
The actuator MF100-SR-E additionally has an auxiliary switch with two galvanically separated changers for the optional message of the valve positions open or closed.

3.1 Identification

The actuator labelling is on the beam.



3-1: Type plate of the actuator (example presentation)



3-2: Terminal image (example presentation)

- 1 Actuator type
- 2 Key electrical data for the actuator
- 3 Labelling: Disposal, protection class, CE/UKCA
- 4 Reference to the operating instructions regarding further information
- 5 Switching capacity of the auxiliary switch, only for MF100-SR-E
- 6 Degree of protection of the actuator
- 7 Temperature range
- 8 Month/year of construction
- 9 Serial number
- 10 Production number
- 11 Production-related QR code
- 12 Wiring diagram



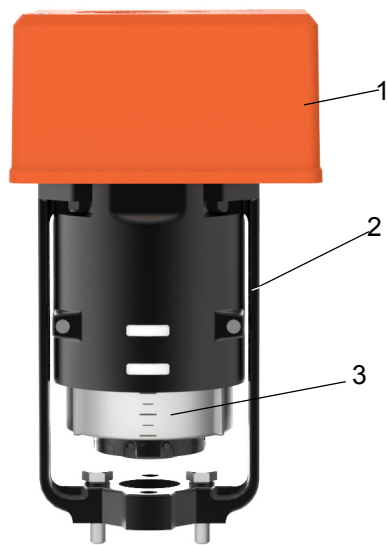
NOTE

The product number of the valve is only entered on the actuator's type plate if you have received a pre-mounted actuator-valve combination.

You can find important valve-specific information on the type plate of the valve. Depending on the valve type, the type plate is affixed to different positions on the valve body or flange.

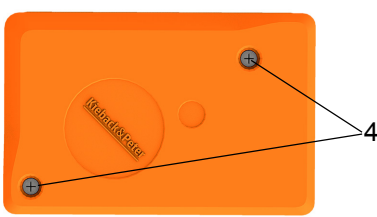
3.2 Actuator

3.2.1 Structure



3-3: Actuator layout – view A

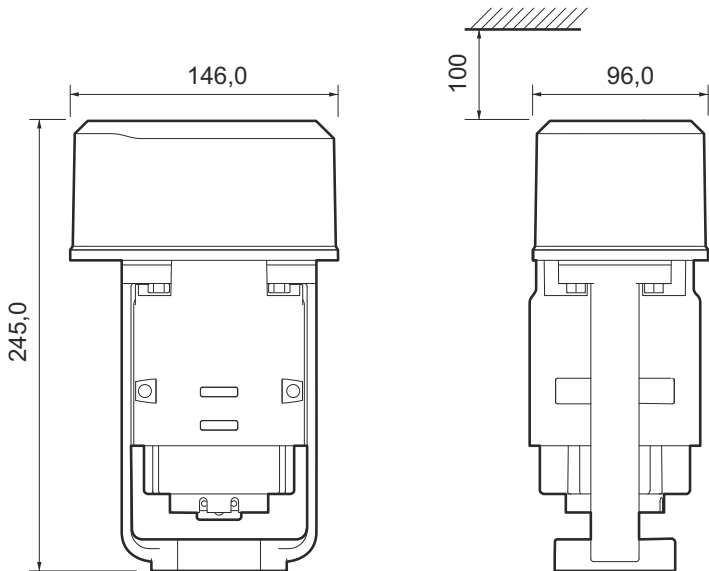
- 1 Cover
- 2 Beam
- 3 Stroke range scale
- 4 Cover screws (2x)



3-4: Actuator layout – view B

- Actuator cover
- Display of the valve's current stroke position
- Cover fastening

3.2.2 Dimensions



3.2.3 Technical data

Nominal voltage	24 V AC $\pm$ 15 %, 50/60 Hz; 24 V DC $\pm$ 15 %
Dimensioning	33 VA (AC); 23 W (DC)
Switch-on current	max. 7 A, < 1 ms, < 0.049 A ² s
Power consumption	Sleep mode: 2..5 VA (AC); 0.5..2 W (DC) (depending on the setting position)
	Nominal: 21 VA (AC); 10 W (DC)
Auxiliary switch	only with MF100-SR-E 2 floating changeover contacts, contact load max. 3 A, 250 V AC
Cable cross section	min. 0.75 mm ²
Control	Continuous, adjustable via DIP switch (see page 38) - with voltage signal 0(2)..10 V DC; Re=100 k Ω ; invertible - with power signal 0(4)..20 mA; invertible 2-point signal open/close or 3-point signal (open/stop/closed) by direct control with operating mode switch
Position feedback	Adjustable via DIP switch (see 38) - Voltage signal 0(2)..10 V DC; 5 mA; invertible; approx. 12.5 V signal in the event of a fault - current signal 0(4)..20 mA; Ri = 0.5 k Ω ; invertible; approx. 0 mA signal during fault
Stroke	Max. 20 mm, automatic stroke adjustment though initialization
Actuating speed	Approx. 1 s/mm (factory setting)
	Approx. 9 s/mm
Emergency stop speed	Approx. 1 s/mm
Emergency control function	Drive extended without current, by means of return spring
Positioning force	Nominal 1000 N
Ambient temperature	0..55 °C
Ambient humidity	0..95% r.h., non-condensing
Degree of protection	IP54
Protection class	MF100-SR: III in accordance with EN 60730
	MF100-SR-E: I in accordance with EN 60730
Installation position	Vertically above the valve to a horizontal position
Maintenance	Maintenance-free
Weight	MF100-SR: 2.80 kg, MF100-SR-E: 2.81 kg

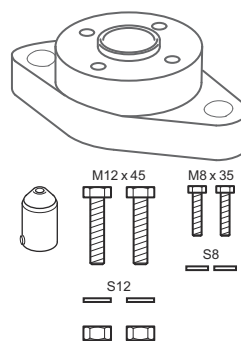
3.2.4 Accessories

Z189

Mounting kit for RGDE. up to DN50

When valve/actuator combinations are delivered from the factory, the Z189 mounting kit is preassembled.

Mounting instructions 3.10-40.299-99 contains further information on the mounting (included with accessory Z189).



3.3 RK15..RK50/65K(-BF) three-way/two-way valve with actuator

Application

The gray cast iron three-way valves and two-way valves with actuator are used for the precise mixing of liquids or for regulating liquid volumes.

The valves can be used as two-way valves using the BF blank flange on gate B.

The actuator has an emergency stop function which automatically closes valve gate B in the event of a power failure = straight passage A → AB normally open.



3.3.1 Types

Gray cast iron three-way valve RK15..50/RK65K for actuator MF100-SR or MF100-SR-E, for water up to 120°C, 6 bar

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RK15/0,63	15	6	0.63	6	2.2	Port A: Open
RK15/1,0	15	6	1.0	6	2.2	Port A: Open
RK15/1,6	15	6	1.6	6	2.2	Port A: Open
RK15/2,5	15	6	2.5	6	2.2	Port A: Open
RK15	15	6	4.0	6	2.2	Port A: Open
RK20	20	6	6.3	6	3.0	Port A: Open
RK25	25	6	10	6	3.7	Port A: Open
RK32	32	6	16	6	5.6	Port A: Open
RK40	40	6	25	5.5	7.0	Port A: Open
RK50	50	6	40	3.5	8.4	Port A: Open
RK65K	65	6	63	1.5	14.7	Port A: Open

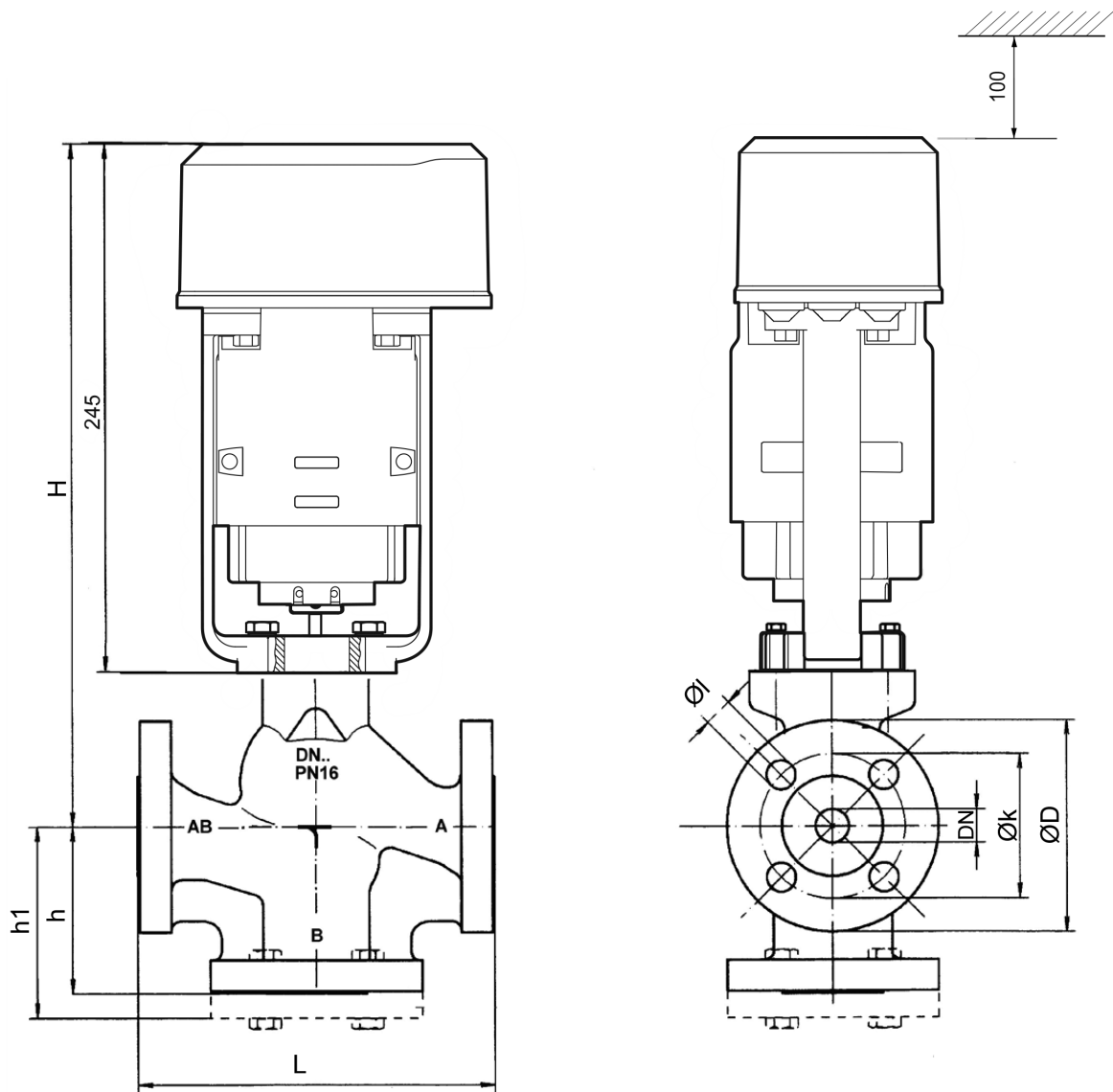
Gray cast iron three-way valve RK15..50/RK65K for actuator MF100-SR or MF100-SR-E, for water up to 120°C, 6 bar

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RK15/0,6-BF	15	6	0.63	6	2.8	Valve: Open
RK15/1,0-BF	15	6	1.0	6	2.8	Valve: Open
RK15/1,6-BF	15	6	1.6	6	2.8	Valve: Open
RK15/2,5-BF	15	6	2.5	6	2.8	Valve: Open
RK15-BF	15	6	4.0	6	2.8	Valve: Open
RK20-BF	20	6	6.3	6	3.9	Valve: Open
RK25-BF	25	6	10	6	4.8	Valve: Open
RK32-BF	32	6	16	6	7.1	Valve: Open
RK40-BF	40	6	25	5.5	8.8	Valve: Open
RK50-BF	50	6	40	3.5	10.5	Valve: Open
RK65K-BF	65	6	63	1.5	17.9	Valve: Open

3.3.2 Technical Data: RK..(-BF) Valves

Nominal width	DN15..65	
Pressure rating	PN 6	
Connection	Flanges to EN 1092-2 type 21	
Characteristic curve	RK..	Ports A → AB = equal percentage
		Ports B → AB = linear
	RK..-BF	Ports A → AB = equal percentage
Positioning stroke	RK15..50(-BF): 14 mm RK65K(-BF): 20 mm	
Leak rate	In accordance with EN 1349, leakage class VI	
Medium temperature	0..130 °C (max. 120 °C at 6 bar)	
Housing	Gray cast iron EN-JL1040	
Valve seat	CrNi steel 1.4021	
Cone	Brass CW614N	
Valve spindle	CrMo steel 1.4122	
Stem seal	O-rings with guide bushes EPDM/PTFE, maintenance-free	

Dimensions



DN	L	Ø D	Ø k	Ø I	H	h	h1 (RK..-BF)
15	130	80	55	4x Ø 18	287	65	79
20	150	90	65	4x Ø 18	292	70	84
25	160	100	75	4x Ø 18	297	75	91
32	180	120	90	4x Ø 18	300	95	111
40	200	130	100	4x Ø 18	303	100	116
50	230	140	110	4x Ø 18	303	100	118
65	290	160	160	4x Ø 18	352	120	144
Measurement L to h1 in mm							

3.4 RB15..50(-BK) three-way/two-way valve with actuator

Application

The red cast iron three-way valves and two-way valves with actuator are used for the precise mixing of liquids or for regulating liquid volumes.

The valves can be used as two-way valves using the BK blank cover on gate B.

The actuator has an emergency stop function which automatically closes valve gate B in the event of a power failure = straight passage A → AB normally open.

3.4.1 Types

Gunmetal three-way valve RB15..50 with actuator MF100-SR or MF100-SR-E, for water up to 120°C, 16 bar

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RB15/0,63	15	16	0.63	16	0.9	Port A: Open
RB15/1,0	15	16	1.0	16	0.9	Port A: Open
RB15/1,6	15	16	1.6	16	0.9	Port A: Open
RB15/2,5	15	16	2.5	16	0.9	Port A: Open
RB15	15	16	4.0	16	0.9	Port A: Open
RB20	20	16	6.3	16	1.4	Port A: Open
RB25	25	16	10	15	1.7	Port A: Open
RB32	32	16	16	9	3.4	Port A: Open
RB40	40	16	25	5.5	4.0	Port A: Open
RB50	50	16	40	3.5	5.6	Port A: Open

Gunmetal two-way valve RB15..50-BK for actuator MF100-SR or MF100-SR-E, for water up to 120°C, 16 bar

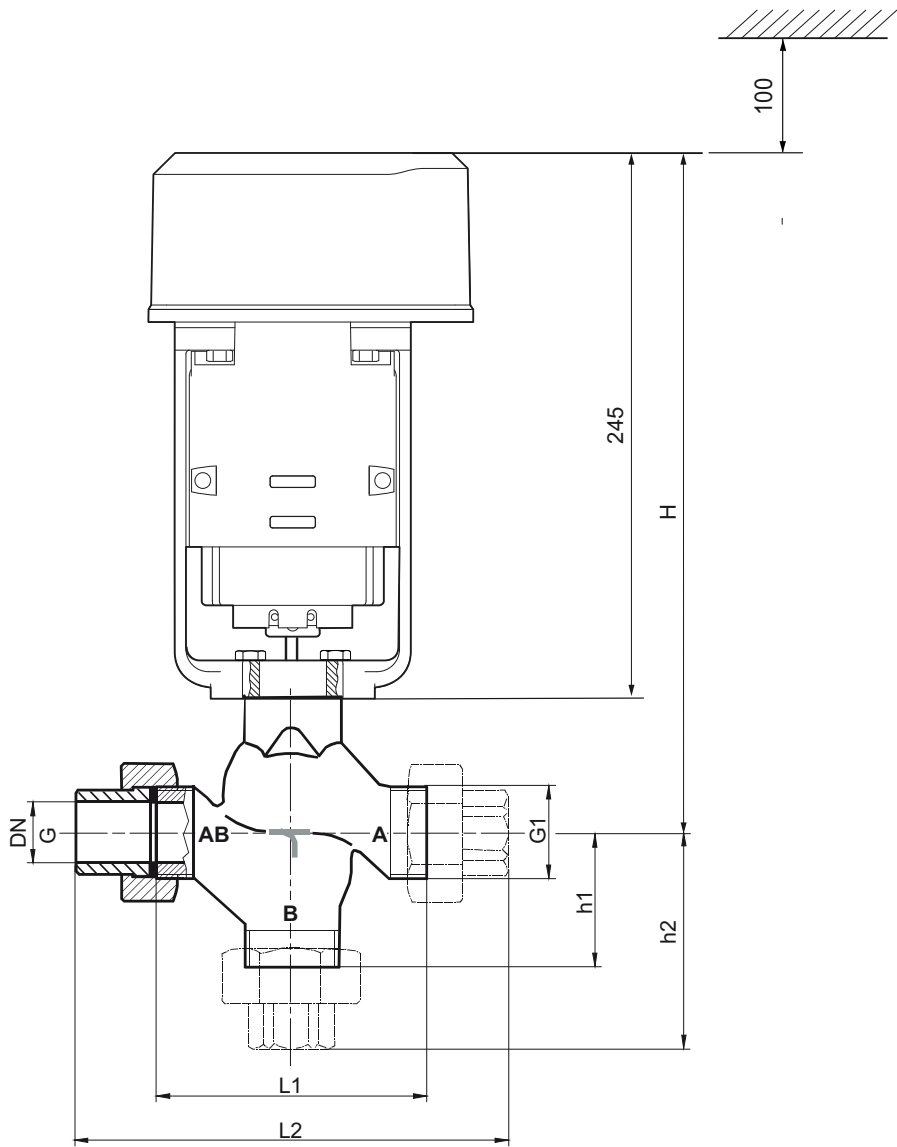
Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RB15/0,63-BK	15	16	0.63	16	0.9	Valve: Open
RB15/1,0-BK	15	16	1.0	16	0.9	Valve: Open
RB15/1,6-BK	15	16	1.6	16	0.9	Valve: Open
RB15/2,5-BK	15	16	2.5	16	0.9	Valve: Open
RB15-BK	15	16	4.0	16	0.9	Valve: Open
RB20-BK	20	16	6.3	16	1.4	Valve: Open
RB25-BK	25	16	10	15	1.7	Valve: Open
RB32-BK	32	16	16	9	3.4	Valve: Open
RB40-BK	40	16	25	5.5	4.0	Valve: Open
RB50-BK	50	16	40	3.5	5.6	Valve: Open



3.4.2 Technical Data: RB..(-BK) Valves

Nominal width	DN15..50	
Pressure rating	PN 16	
Connection	Male thread in accordance with ISO 228/1, with female thread fittings in accordance with ISO 7/1	
Characteristic curve	RB..	Ports A → AB = equal percentage
		Ports B → AB = linear
	RB..-BF	Ports A → AB = equal percentage
Nominal stroke	RB15..20(-BK): 12 mm RB25..50(-BK): 14 mm	
Leak rate	EN 1349 - seat leakage VI G 1 (leak proof)	
Medium temperature	0–150 °C (max. 120 °C at 16 bar) Horizontal drive position only permissible from 130 °C and above	
Housing	Gunmetal, Rg-5 / CC491K	
Cone	Brass CW614N	
Valve spindle	CrMo steel 1.4122	
Stem seal	EPDM peroxide-cured O-rings, maintenance-free	
Pipe connections	Female thread fittings and Union nuts malleable cast iron GTW, blue chromated	
Blank cover for RB..-BK	Union nuts malleable cast iron GTW, blue chromated; Steel gasket	

Dimensions



Version RB ...-BK (two-way valve) with blank cover on gate B

DN	L1	L2	h1	h2	H	G	G1
15	62	114	40	66	282	1/2	1
20	75	127	41	67	285	3/4	1 1/4
25	80	138	45	74	288	1	1 1/2
32	120	184	55	89	297	1 1/4	2
40	130	198	60	94	300	1 1/2	2 1/4
50	150	222	65	101	300	2	2 3/4
Dimensions L1 to H in mm, connection threads G1 in inches							

3.5 RF15..50/65K(-BF) three-way/two-way valve with actuator

Application

The gray cast iron three-way valves and two-way valves with actuator are used for the precise mixing of liquids or for regulating liquid volumes.

The valves can be used as two-way valves using the BF blank cover on gate B.

The actuator has an emergency stop function which automatically closes valve gate B in the event of a power failure = straight passage A → AB normally open.



3.5.1 Types

Gray cast iron three-way valve RF15..50/RF65K for MF100-SR or MF100-SR-E actuator for water up to 120°C, 16 bar

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RF15/0,63	15	16	0.63	16	3.1	Port A: Open
RF15/1,0	15	16	1.0	16	3.1	Port A: Open
RF15/1.6	15	16	1.6	16	3.1	Port A: Open
RF15/2,5	15	16	2.5	16	3.1	Port A: Open
RF15	15	16	4.0	16	3.1	Port A: Open
RF20	20	16	6.3	16	4.0	Port A: Open
RF25	25	16	10	15	5.0	Port A: Open
RF32	32	16	16	9.5	7.6	Port A: Open
RF40	40	16	25	6	9.1	Port A: Open
RF50	50	16	40	3.5	11.6	Port A: Open
RF65K	65	16	63	2	19.1	Port A: Open

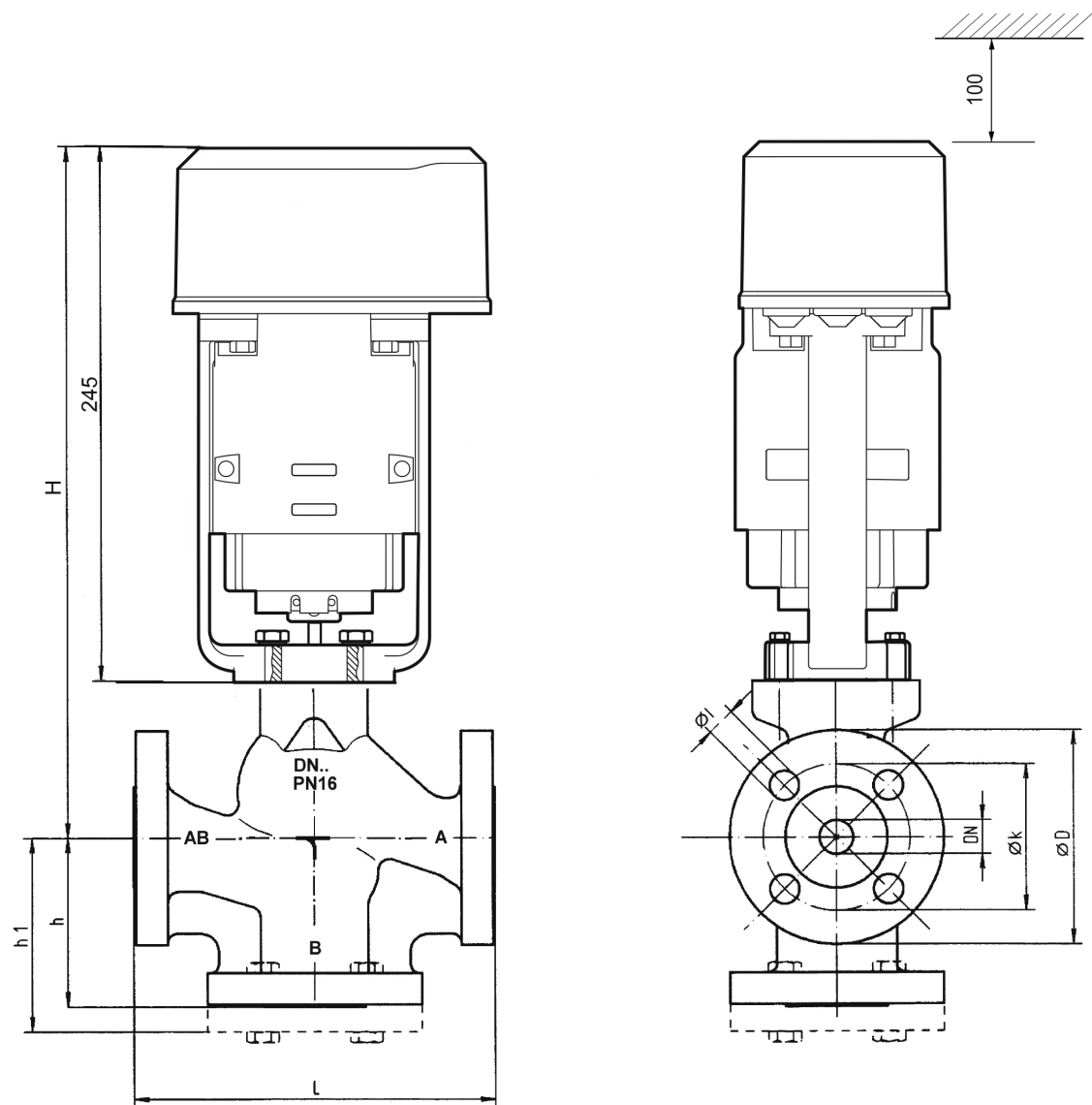
Gray cast iron two-way valve RF15..50/RF65K-BF for MF100-SR or MF100-SR-E actuator for water up to 120°C, 16 bar

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RF15/0,63-BF	15	16	0.63	16	4.1	Valve: Open
RF15/1,0-BF	15	16	1.0	16	4.1	Valve: Open
RF15/1,6-BF	15	16	1.6	16	4.1	Valve: Open
RF15/2,5-BF	15	16	2.5	16	4.1	Valve: Open
RF15-BF	15	16	4.0	16	4.1	Valve: Open
RF20-BF	20	16	6.3	16	5.3	Valve: Open
RF25-BF	25	16	10	15	6.6	Valve: Open
RF32-BF	32	16	16	9.5	10.0	Valve: Open
RF40-BF	40	16	25	6	11.8	Valve: Open
RF50-BF	50	16	40	3.5	13.3	Valve: Open
RF65K-BF	65	16	63	2	24.8	Valve: Open

3.5.2 Technical Data: RF..(-BF) Valves

Nominal width	DN15..65	
Pressure rating	PN 16	
CE marking	CE symbol for RF65K	
Connection	Flanges EN 1092-2 type 21	
Characteristic curve	RF..	Ports A → AB = equal percentage
		Ports B → AB = linear
	RF..-BF	Ports A → AB = equal percentage
Positioning stroke	RF15..50(-BF): 14 mm RF65K(-BF): 20 mm	
Leak rate	In accordance with EN 1349, leakage class VI	
Medium temperature	0..130 °C (max. 120 °C at 16 bar)	
Housing	Gray cast iron EN-JL1040	
Cone	Brass CW614N	
Valve spindle	CrMo steel 1.4122	
Stem seal	O-rings EPDM, maintenance-free	

Dimensions



DN	L	Ø D	Ø k	Ø l	H	h	h1 (RF..-BF)
15	130	95	65	4x Ø 14	287	65	79
20	150	105	75	4x Ø 14	292	70	84
25	160	115	85	4x Ø 14	297	75	91
32	180	140	100	4x Ø 14	300	95	111
40	200	150	110	4x Ø 14	303	100	116
50	230	165	125	4x Ø 14	303	100	118
65	290	185	145	4x Ø 14	352	120	150
Measurement L to h1 in mm, flanges in accordance with DIN, PN16							

3.6 RGD15..40 two-way valve with actuator

Application

The nodular iron three-way valve with actuator is used to precisely regulate liquid and vapor flow rates.

The actuator has an emergency stop function that uses spring force to close the valve automatically in the event of a power failure.



3.6.1 Types

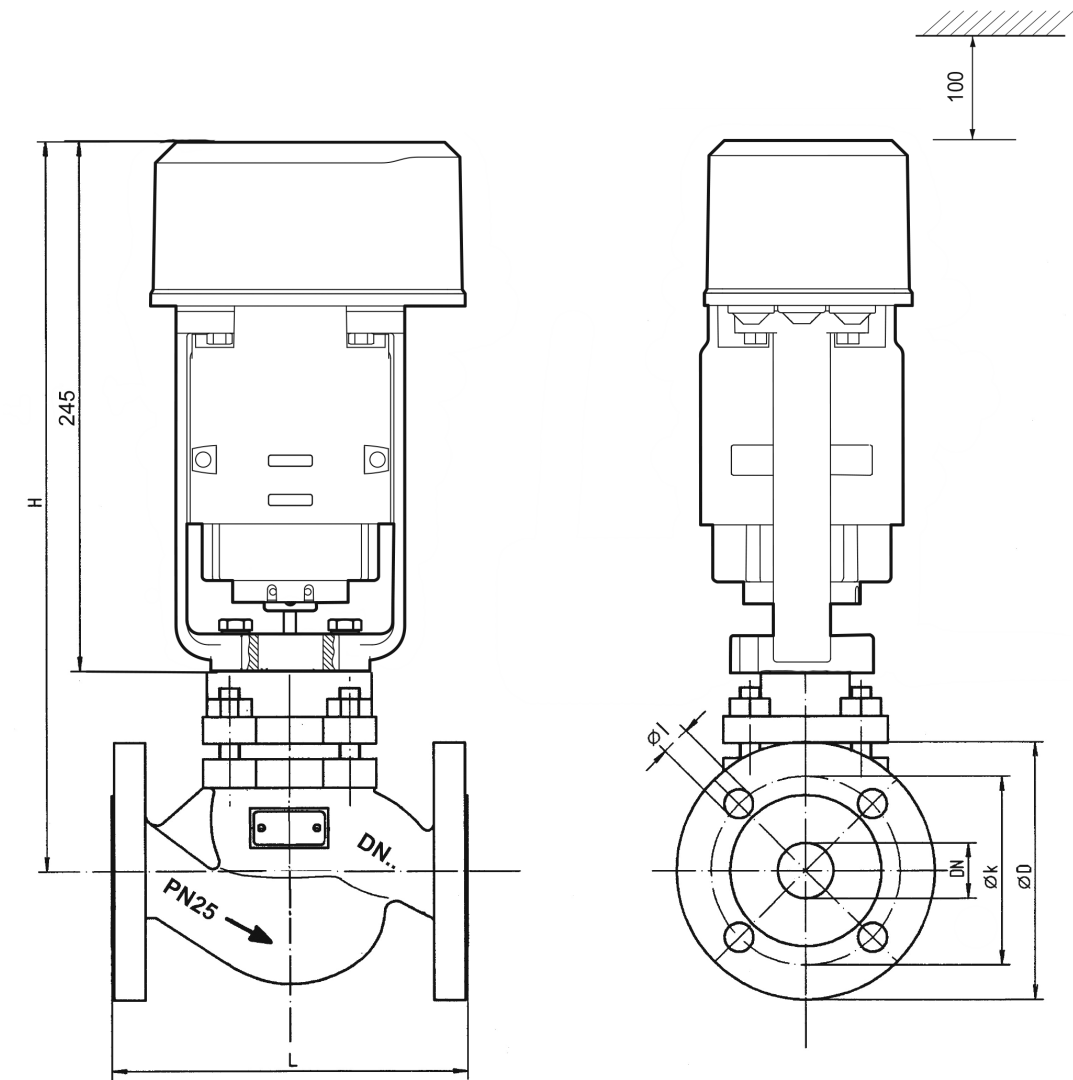
RGD15..40 nodular iron two-way valve for actuator MF100-SR or MF100-SR-E, for water up to 120°C, 25 bar and hot water and vapor up to 200°C, 20 bar.

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RGD15/0,4	15	25	0.4	25	3.2	Valve: Closed
RGD15/0,63	15	25	0.63	25	3.2	Valve: Closed
RGD15/1,0	15	25	1.0	20.5	3.2	Valve: Closed
RGD15/1,6	15	25	1.6	20.5	3.2	Valve: Closed
RGD15/2,5	15	25	2.5	20.5	3.2	Valve: Closed
RGD15	15	25	4.0	20.5	3.2	Valve: Closed
RGD25/6,3	25	25	6.3	11.8	4.8	Valve: Closed
RGD25	25	25	10	11.8	4.8	Valve: Closed
RGD32	32	25	16	8.6	6.3	Valve: Closed
RGD40	40	25	25	4.4	8.7	Valve: Closed

3.6.2 Technical Data: RGD.. Valves

Nominal width	DN15..40	
Pressure rating	PN 25	
CE designation	CE marking from DN32, notified body: 0525	
Connection	Flanges DIN 2501-1, PN25, sealing strip form C DIN 2526	
Characteristic curve	Equal percentage	
Positioning stroke	15 mm	
Leak rate	In accordance with EN 1349, leakage class VI	
Medium temperature	0..200 °C	
Housing	Spheroidal castGGG-40.3	
Valve seat	Stainless steel 1.4021	
Cone	DN15..32	Stainless steel 1.4571
	DN40	Stainless steel 1.4021
Valve spindle	Stainless steel 1.4571	
Stem seal	Chevron sleeves Univerdit with PTFE bushing, maintenance-free	

Dimensions



DN	L	ϕD	ϕK	ϕI	H
15	130	95	65	4x $\phi 14$	330
25	160	115	85	4x $\phi 14$	338
32	180	140	100	4x $\phi 18$	338
40	200	150	110	4x $\phi 18$	349
Measurement L to H in mm					

3.7 RWG15..40 three-way valves with actuator

Application

The nodular iron three-way valve with actuator is used to precisely regulate liquid and vapor flow rates.

The actuator has an emergency stop function which automatically closes valve gate B in the event of a power failure = straight passage A → AB normally open.

3.7.1 Types

RWG15..40 nodular iron three-way valve for actuator MF100-SR or MF100-SR-E, for water up to 120°C, 25 bar and hot water and vapor up to 200°C, 20 bar.

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RWG15/1,0	15	25	1	20.5	5.1	Valve: Closed
RWG15/1,6	15	25	1.6	20.5	5.1	Valve: Closed
RWG15/2,5	15	25	2.5	20.5	5.1	Valve: Closed
RWG15	15	25	4	20.5	5.1	Valve: Closed
RWG25/6,3	25	25	6.3	11.8	7.1	Valve: Closed
RWG25	25	25	10	11.8	7.1	Valve: Closed
RWG32	32	25	16	8.6	9.7	Valve: Closed
RWG40	40	25	25	4.4	13.0	Valve: Closed



3.7.2 Technical Data: RWG.. Valves

Nominal width	DN15..40	
Pressure rating	PN 25	
CE designation	CE marking from DN 32, notified body: 0525	
Connection	Flanges DIN 2501-1, PN25, sealing strip form C DIN 2526	
Characteristic curve	Equal percentage	
Positioning stroke	15 mm	
Leak rate	In accordance with EN 1349, leakage class VI	
Medium temperature	0..200 °C	
Housing	Spheroidal cast iron GGG-40.3	
Valve seat	Stainless steel 1.4021	
Cone	DN15..32	Stainless steel 1.4571
	DN40	Stainless steel 1.4021
Valve spindle	Stainless steel 1.4571	
Stem seal	Chevron sleeves Univerdit with PTFE bushing, maintenance-free	

	Measurement L to H in mm, flanges in accordance with DIN, PN25
--	--

3.8 RGDE25..50 two-way valve with actuator

Application

The nodular iron two-way valve with actuator is used to precisely regulate liquid and vapor flow rates.

The actuator has an emergency control function that uses spring force to close the valve automatically in the event of a power failure.



3.8.1 Types

RGDE25..50 pressure-relief nodular iron two-way valve for actuator MF100-SR or MF100-SR-E, for water up to 120°C, 25 bar and hot water and vapor up to 200°C, 20 bar.

Type	DN	PN	Kvs	Δp (bar)	Weight (kg)	Emergency function
RGDE25	25	25	10	20	7.0	Valve closed
RGDE32	32	25	16	20	9.0	Valve closed
RGDE40	40	25	25	20	12.0	Valve closed
RGDE50	50	25	40	16	15.0	Valve closed



NOTE

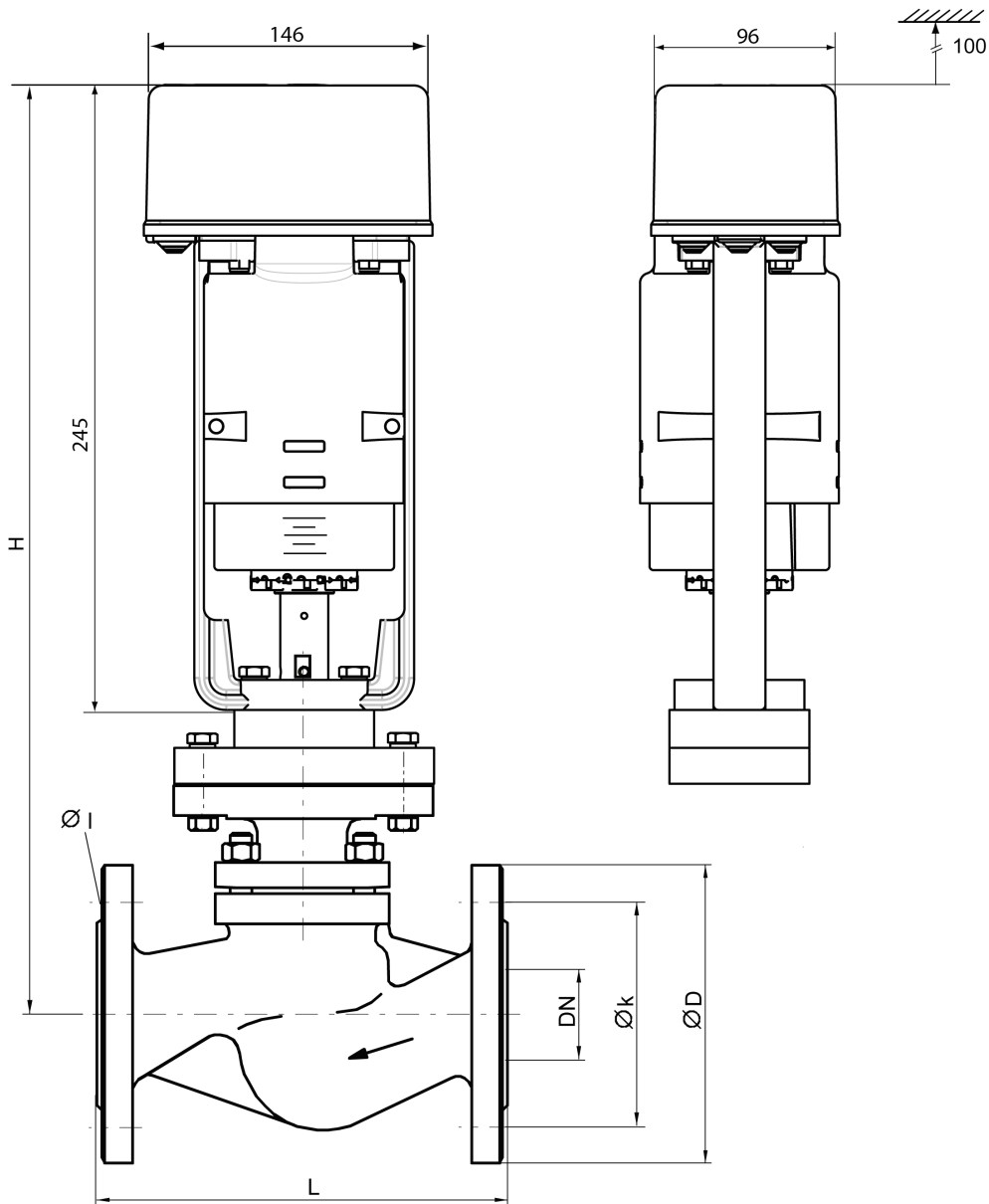
Z189 mounting kit required (see accessories page 12).

When valve/actuator combinations are delivered from the factory, the Z189 mounting kit is preassembled.

3.8.2 Technical data RGDE25..50 valves

Nominal width	DN25..50
Pressure rating	PN 25
CE marking	CE marking, notified body 0525
Connection	Flanges DIN 2501-1, PN 25
Characteristic curve	Equal percentage
Positioning stroke	20 mm
Leak rate	In accordance with EN 1349, leakage class VI
Medium temperature	0..200 °C
Housing	Spheroidal cast iron GGG-40.3
Valve seat	CrNi steel 1.4021
Cone	CrNi steel 1.4021, metallic sealing, pressure relief cone seal made from PTFE with stainless steel insert (max. 200 °C)
Valve spindle	CrMo steel 1.4571
Stem seal	Chevron sleeves PTFE, maintenance-free

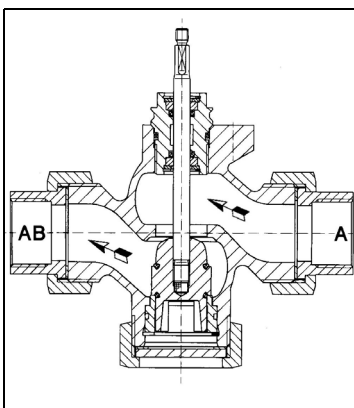
Dimensions



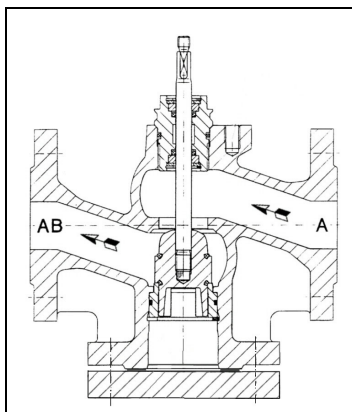
DN	L	Ø D	Ø k	Ø l	H
25	160	115	85	4x Ø 14	398.5
32	180	140	100	4x Ø 18	398.5
40	200	150	110	4x Ø 18	405.5
50	230	165	125	4x Ø 18	411.5
Measurement L to H in mm, flanges in accordance with DIN, PN 25					

3.9 Valve cross-sections with flow directions

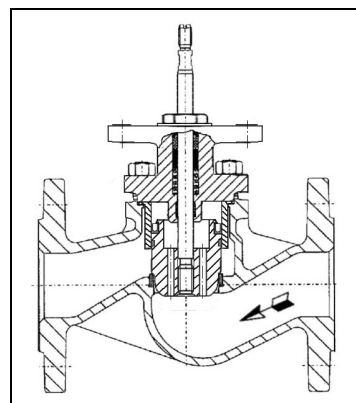
Two-way valves



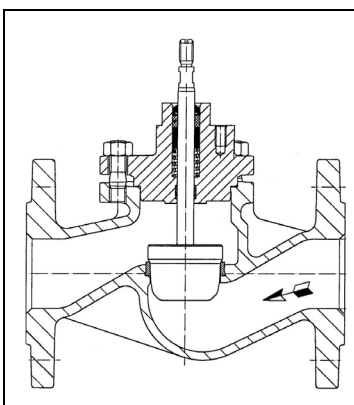
RB..-BK



RK/RF..-BF

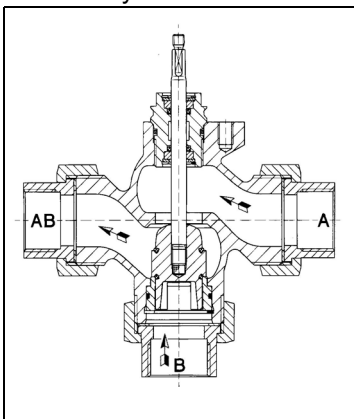


RGDE..

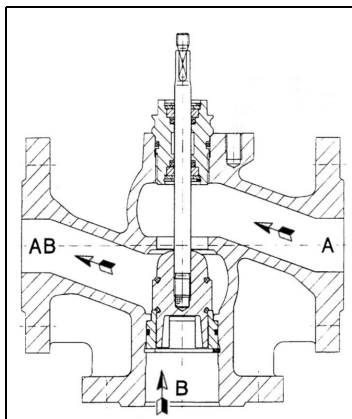


RGD..

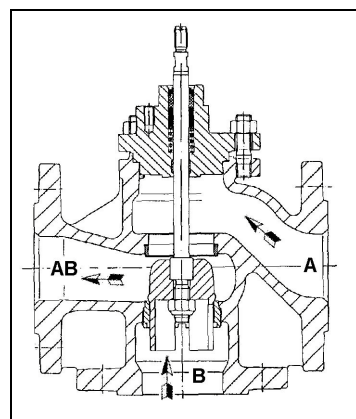
Three-way valves



RB..



RK/RF..



RWG..

4 Scope of delivery, transportation and storage

Scope of delivery

The actuator can be supplied in different combinations with the valve and valve accessories or as a standalone product.

The maximum scope of delivery includes:

- Actuator MF100-SR or MF100-SR-E
- One M16x1.5 screw connection
- One M20x1.5 screw connection, only for MF100-SR-E
- One two-way valve RB15..50-BK, RF15..50-BF, RF65K-BF, RK15..50-BF, RK65K-BF, RGD15..40, RGDE25..50 or one three-way valve RB15..50, RF15..50, RF65K, RK15..50, RK65K, RWG15..40.
- Operating instructions for the MF100-SR and MF100-SR-E actuator for the valve types listed above
- Mounting instructions MF100-SR or MF100-SR-E

Unpacking

- ▶ Unpack carefully.
- ▶ Check for damage.
- ▶ Do not use damaged deliveries and get in touch with your contact at Kieback&Peter.
- ▶ Dispose of packaging material according to local regulations.

Repackaging

- ▶ Use suitable packaging. The packaging must not be too large or too small.
- ▶ Use packing material to prevent the device from sliding in the packaging.

Transport

- ▶ Transport the actuator, valve including valve accessories in suitable packaging.
- ▶ Avoid shocks and mechanical damage.
- ▶ Do not throw or drop the product.
- ▶ Maintain the specified ambient temperature of -25..+60 °C and ambient humidity of 0..85% r.h. non-condensing.

Storage

- ▶ Only store the actuator, valve including valve accessories indoors.
- ▶ Avoid shocks and mechanical damage.
- ▶ Maintain the specified ambient temperature of -20..+60 °C and ambient humidity of 0..85% r.h. non-condensing.

5 Valve Mounting



CAUTION

The valve may only be installed by qualified technicians. In addition to the generally valid installation guidelines, the following points are to be observed:

- The valve gates come with protective caps to protect against contamination. They are to be removed before the valve is mounted.
- The pipeline system and the interior of the fitting must be free of foreign objects. In the case of contaminated media, dirt traps are to be inserted before the valves.
- There must be no tensions between the fitting and the pipeline connection.
- Only use flange seals which fit precisely and insert the valve flanges centrally.
- To prevent vortex formation in the valve bodies, these should be inserted in a straight length of pipe. The guideline value 10 x the nominal width is used as the measurement between the valve flange and the manifold.
- The installation location is to be selected so that the ambient temperature at the actuator is kept between 0°C and +55°C.
- When carrying out mounting, the permissible max. pressure difference Δp and the specified flow direction must be taken into account (see table in “Types” section as well as “Valve Principle”).
- The three-way valves are to be used as mixing valves. Please observe the flow direction (see fig. “Valve Principle”).
- The actuator can be fitted vertically above the fitting up to the horizontal position. If installed horizontally, the actuator columns must be positioned one on top of the other vertically. If necessary, turn the beam after loosening the fastening nut.
- To remove the actuator cover, you need 100 mm of free space above the actuator.
- The delivery includes a protective box for the actuator. Before commissioning, this cover serves as actuator protection during the construction phase and piping work.
- Observe the direction of flow arrow on the valve body. A reverse flow direction will impair the control performance!

5.1 Mount the actuator onto a valve



CAUTION

There is a risk of getting crushed between the cross member and the spring pan.

The emergency function of the actuator automatically moves the valve into the lower end position using high spring force when the power supply is interrupted.

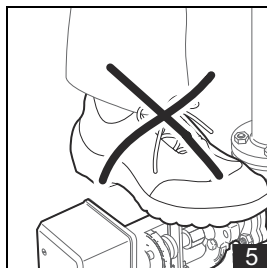
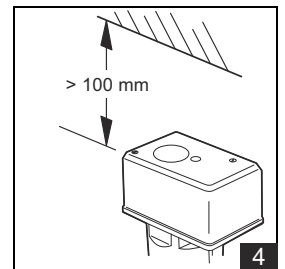
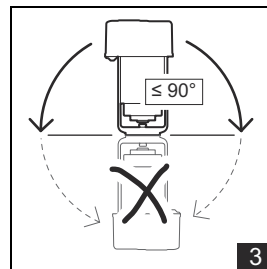
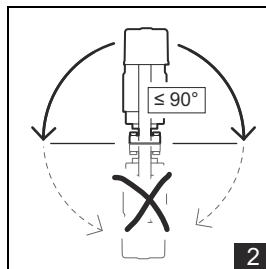
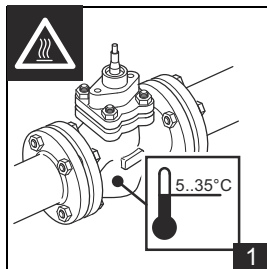


CAUTION

Risk of injury caused by unexpected movements of the actuator!

The actuator may only be mounted in the de-energized state!

Installation instructions



- ▶ **1** After the pipeline has cooled off, the actuator can be mounted.
- ▶ **2 3** Any installation positions on the upper semi-sphere are permitted.
- ▶ **4** Mount the device so that there is a clearance of at least 100 mm above it.
- ▶ **5** Do not use the actuator as a step or shelf.

Mounting

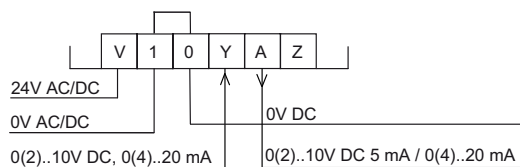


- ▶ **1** Screw the adapter onto the valve stem as far as it will go. The torque is absorbed with an open-end wrench on the valve stem.
- ▶ **2** Secure the adapter. Tighten the two hex keys evenly in alternation using a 2.5 mm hexagon socket and a torque of 3 Nm.
- ▶ **3** Loosen both screws and remove the actuator cover.
- ▶ **4** **5** Move actuator to upper position by adjusting this manually (turn with 4 mm hex key).
- ▶ **6** **7** Insert toggle to lock manual adjustment.
- ▶ **8** Remove the 4 mm hex key for manual adjustment.
- ▶ **9** Attach the actuator to the valve.
- ▶ **10** Screw in both console screws using washers.
- ▶ **11** Tighten the console screws with a torque of 14 Nm.
- ▶ **12** **13** Remove the toggle from the lock and guide it into the toggle holder.
- ▶ **14** The actuator will close due to its reset function. The valve is adapted automatically thanks to the automatic coupling.
- ▶ **15** Return the actuator cover to its original position and tighten both screws.

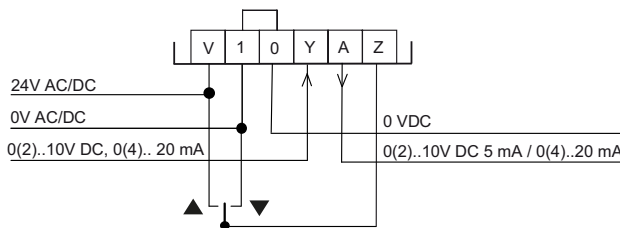
6 Connecting the actuator and putting it into operation

6.1 Circuit diagrams

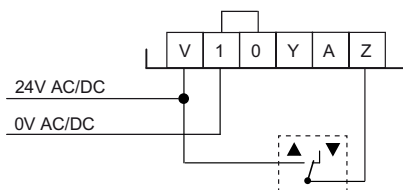
Continuous operation mA / V (0..100%)



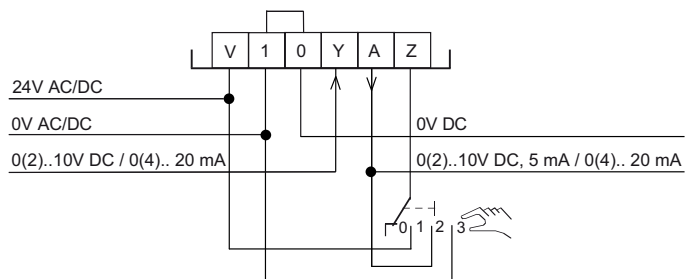
Priority switching (open / closed)



2-point operation (open / close)



Manual operation with operating mode switch (Auto, Open, Stop, Close)



Manual switch position:

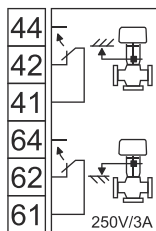
0 = Auto

1 = Open (valve spindle pulled)

2 = Stop

3 = Closed (valve spindle pressed)

Connection of auxiliary switch only for MF100-SR-E



6.2 Electrical connection



CAUTION

Electrical installation and device connection may only be carried out by qualified technicians, e.g. an electrician. Ensure that this process complies with guidelines from the VDE (Association for Electrical, Electronic & Information Technologies) and local wiring regulations.



NOTE

The cable cross-section has to be at least 0.75 mm². You may need to consider adjusting the cable cross-section, depending on the length of the cables. Please observe the applicable installation specifications outlined in the applicable VDE guidelines for each respective use case.

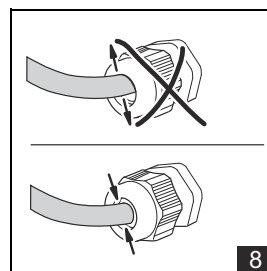
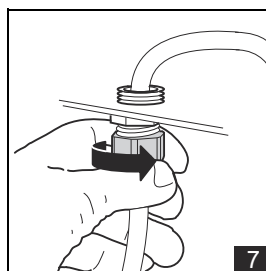
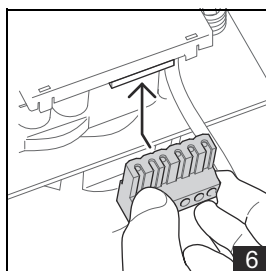
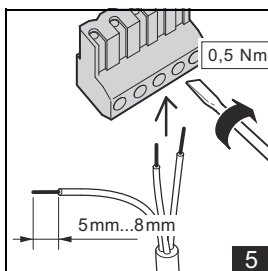
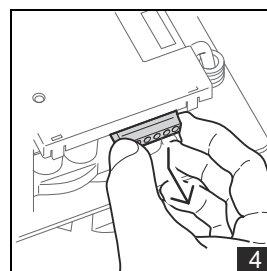
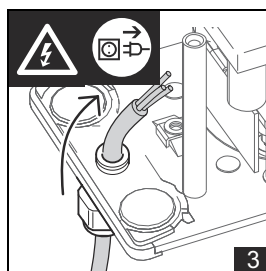
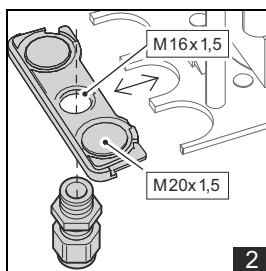
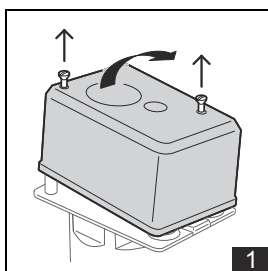


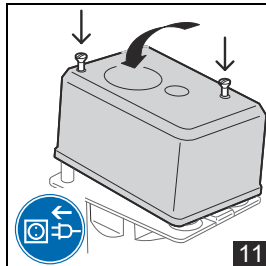
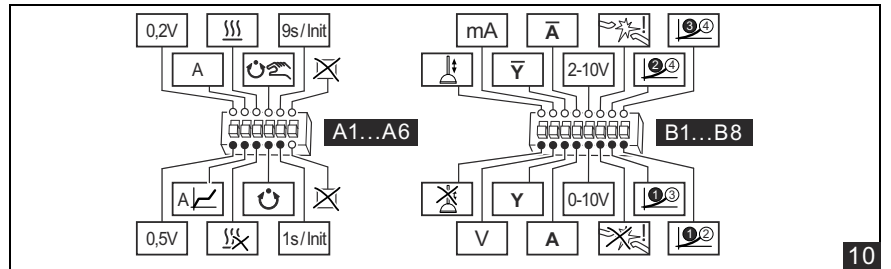
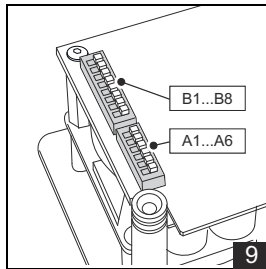
CAUTION

The electrical connection for the actuator must be a fixed installation and connected to a valve.

An M16x1.5 screw fitting is included with the delivery of the actuator as a strain relief device. For the actuator with auxiliary switches, the scope of delivery also includes an M20x1.5 screw connection. The electrical connection is established using screw terminals (connection diameter 0.3..2.3 mm).

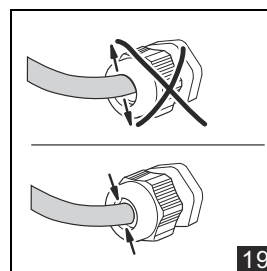
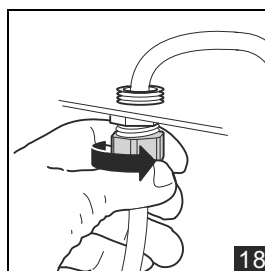
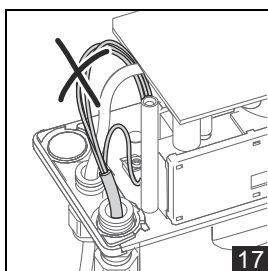
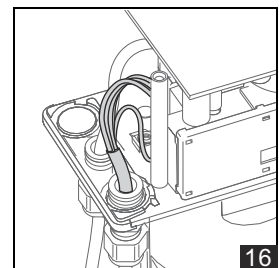
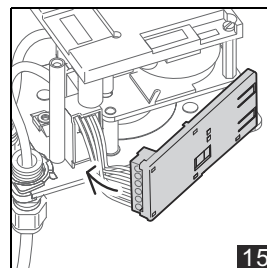
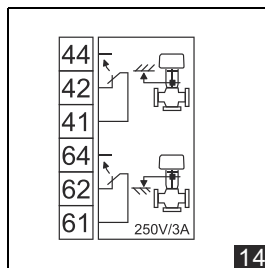
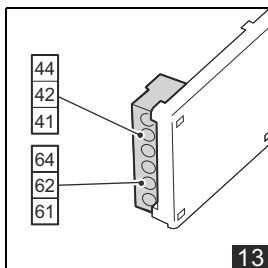
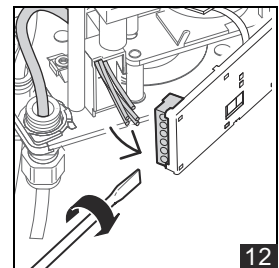
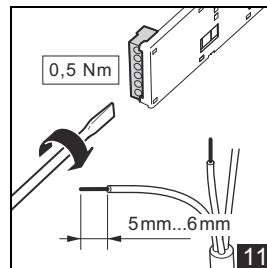
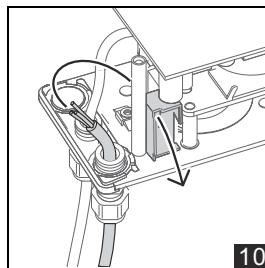
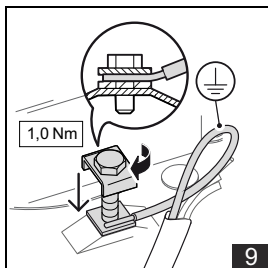
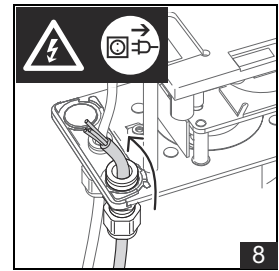
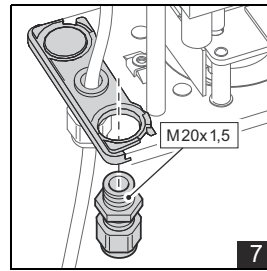
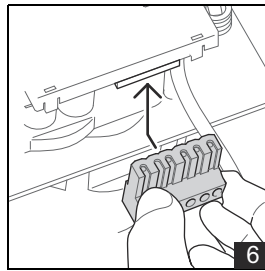
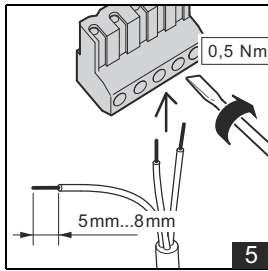
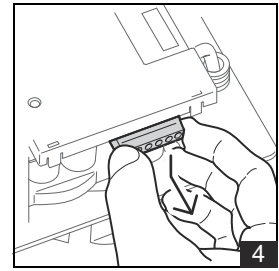
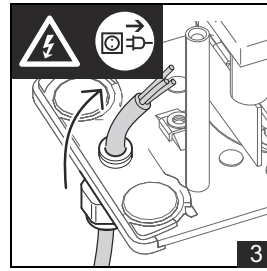
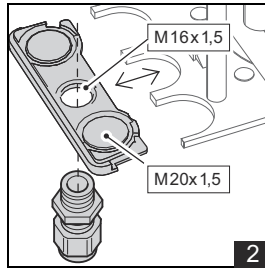
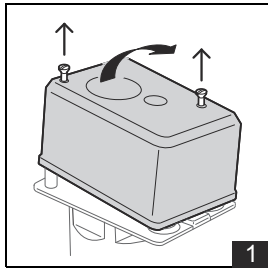
■ Electrical connection MF100-SR

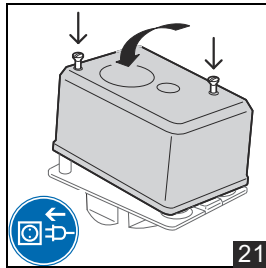
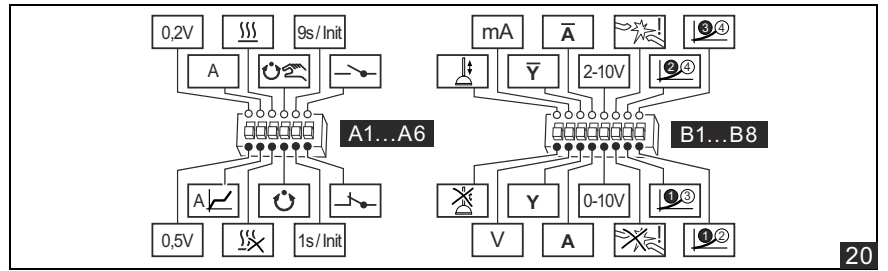
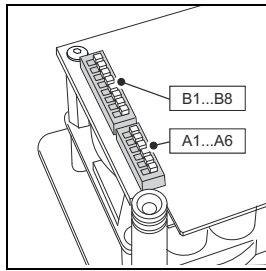




- ▶ **1** Loosen both screws and remove the actuator cover.
- ▶ **2** Install the cable gland.
- ▶ **3** Insert the connection line through the cable gland.
- ▶ **4** Remove the connector from the actuator.
- ▶ **5** Carry out the electrical connection of the actuator as a fixed installation.
- ▶ **6** Insert the pre-assembled connection plug.
- ▶ **7 8** Tighten the cable gland by hand until it tightly closes the cable.
- ▶ **9 10** Adjust the actuator functions using the DIP switches (see page S.38).
- ▶ **11** Return the actuator cover to its original position and fasten with two screws. Switch on the power supply.

■ Electrical connection MF100-SR-E

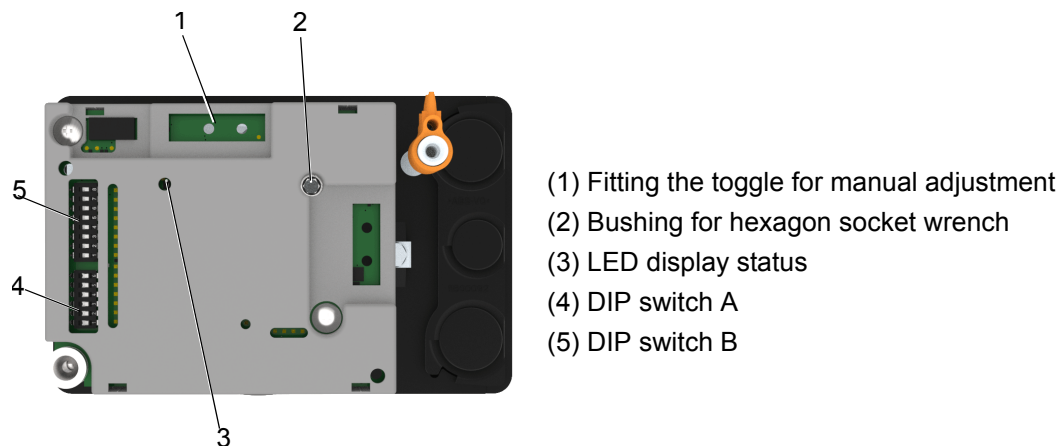




- ▶ **1** Loosen both screws and remove the actuator cover.
- ▶ **2** Install the first cable gland.
- ▶ **3** Insert the connection line (board) through the cable gland.
- ▶ **4** Remove the connector from the actuator.
- ▶ **5** Carry out the electrical connection of the actuator as a fixed installation.
- ▶ **6** Insert the pre-assembled connection plug.
- ▶ **7** Install the second cable gland.
- ▶ **8** Insert the connection line (auxiliary switch) through the cable gland.
- ▶ **9** Connect the PE cable of the PE terminal between the terminal clip and the square washer (Cupal washer), with the copper-coated side of the washer facing the terminal clip.
- ▶ **10** Insert the connection line (auxiliary switch) through the auxiliary switch bracket.
- ▶ **11 to 14** Carry out the electrical connection of the auxiliary switch as a fixed installation.
- ▶ **15** Insert the auxiliary switch into the bracket.
- ▶ **16 17** Do not cross the connection lines.
- ▶ **18 19** Tighten the cable glands by hand until they tightly close the cable.
- ▶ **20 21** Adjust the actuator functions using the DIP switches (see page ,38).
- ▶ **22** Return the actuator cover to its original position and fasten with two screws. Switch on the power supply.

6.3 Commissioning

Operating and functional components beneath the actuator cover



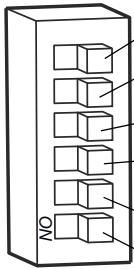
6.3.1 Commissioning steps

Adjustment of the actuator functions

The preset actuator functions can be adapted with DIP switches A and B.
The switches are located under the actuator cover on the side of the circuit board.



CAUTION
Risk of short circuit! The tool used to actuate the DIP switches must not contact any conductive areas of the printed circuit board.

Function switch position ON	Switch (A)	Function switch position OFF (factory setting)
Auxiliary switch inverted *1)		Auxiliary switch not inverted
Actuating speed: 9 s/mm *2) (triggers init.)		Actuating speed: 1 s/mm (triggers init)
Manual adjustment		Automatic mode
Actuator heating: On (is switched on at approx. < 8 °C)		Actuator heating: Off
Feedback: absolute position *3)		Feedback: relative position *4)
Hysteresis: 0.2 V (0.4 mA)		Hysteresis: 0.5 V (1 mA)

*1) **only** for MF100-SR-E
When inverted (A6 at ON), the auxiliary switch associated with an end position is no longer switched on in the end position. It is now switched on outside the associated end position.



NOTE
In the case of inversion, A6 at ON, both auxiliary switches in the end positions are switched off when the actuator is de-energized.
This means that the actuator is in the final safety position and the respective contact can be used as an operating message.

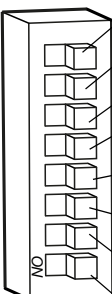
*2) The value 9 s/mm is reached via interval travel (1.5 s travel at 1 s/mm / 6 s break).

***3) Absolute position:**

Depending on the set valve characteristic, Yout can deviate from Yin when the valve position is reached. The absolute position of the valve position is mapped in the position feedback Yout.
Example: equal percentage characteristic curve: Yin=4 V → Yout=3.5 V

***4) Relative position:**

Regardless of the set valve characteristic curve Yin = Yout when the setting position is reached.

Function switch position ON	Switch (B)	Function switch position OFF (factory setting)
Characteristic curve *5)		Characteristic curve *5)
Characteristic curve *5)		Characteristic curve *5)
Wire breakage detection: ON *6)		Wire breakage detection: Off
Setting range (Yin + Yout): 2..10 V (4..20 mA) → 0..100 %		Setting range (Yin + Yout): 0..10 V (0..20 mA) → 0..100 %
Inversion Yout: 0..100 % → 10..0 V (20..0 mA) 		Yout: 0..100 % → 0..10 V (0..20 mA) 
Inversion Yin: 0..10 V (0..20 mA) → 100..0 % 		Yin: 0..10 V (0..20 mA) → 0..100 % 
Signal (Yin + Yout): mA		Signal (Yin + Yout): V
VBS: On		VBS: Off

***5) Adjusting the characteristic curve**

DIP switch B7	DIP switch B8	Characteristic curve
OFF	OFF	Characteristic curve 1
ON	OFF	Characteristic curve 2
OFF	ON	Characteristic curve 3
ON	ON	Characteristic curve 4



NOTE

The characteristic curve to be set always depends on the system hydraulics and must be adapted individually. In most use cases, the characteristic curve 1 is recommended, not inverted (DIP switch B3 = OFF).

*6) The function is only available for the set actuating range 2..10 V or 4..20 mA.

Switching on the power supply

The LED (1) flashes green.

Initialization, adjustment to the valve stroke

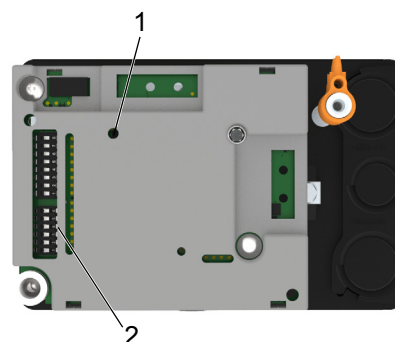
The one-off initialization run for adjusting to the valve stroke starts automatically during initial commissioning.

Initialization takes place only when the DIP switch A4 is in the OFF position.

During the initialization the valve is opened once fully. The stroke is learned.

In this case, the feedback is passed via Yout with a signal of approx. 12.5 V or 0 mA

The LED (1) flashes green during the initialization. The completed initialization is indicated with a constant light.



- 1 LED
- 2 DIP switch A4



NOTE

When the unit is remounted (or after any settings for the maximum flow value on the valve have been changed), you must adapt the valves again by performing a reinitialization.

- ▶ To do this, switch DIP switch A5 back and forth (change the switch position).

6.3.2 Status of the LED displays

LED under the actuator cover	Meaning
LED constant green	Normal operation / automatic mode
LED flashing green	VBS (valve blocking protection)
	Initialization (valve adaption)
LED constant green + LED fast flashing red = LED fast flashing orange	Wire break at DIP switch B6 = ON, B5 = ON and Yin < 1 V or 2 mA
LED constant green + LED flashing red = LED flashing orange	Safety end position, priority switching or manual operation / actuator does not follow the actuating signal
LED constant red	Insoluble blockage
LED flashing red	Initialization failed / actuator not following the actuating signal
LED quick flashing red	Operating voltage is too low

6.4 Actuator functions

Position display at the actuator

The current stroke position of the valve is indicated by the position of the stroke scale (1).



Automatic blocking logarithm

If a blocking by foreign bodies in the pipeline occurs within the valve lift, the actuator signals this fault at the connection terminal A by the following feedback signals:

- approx. 12.5 V DC, if the signal is set to V (B2=OFF)
- 0 mA if the signal is set to mA (B2=ON)

Using an automatic rectification algorithm, the actuator then attempts to remove the valve blockage itself several times by raising the poppet for a brief period of time.

Switchable limit position hysteresis

The limit position hysteresis is the point at which the actuator travels to the limit position.

For the hysteresis, the values 0.5 V (1 mA) or 0.2 V (0.4 mA) are set via DIP switch A1.

Example: At hysteresis 0.5 V, the limit position is approached at $Y_{in} < 0.5 \text{ V}$ and $> 9.5 \text{ V}$. In this case, the feedback is passed with a signal of 0 V or 10 V.

Feedback

The feedback is inverted separately from Y_{in} via DIP switch B4.

The feedback output can be switched between absolute and relative position via DIP switch A2. The signal is output in 2..10 V or 4..20 mA when DIP switch B5 is in the ON switch position.

Actuator heating

The actuator heating is for preventing the buildup of condensation at low temperatures.

This function is activated via DIP switch A3.

Manual mode

You can switch from automatic operation to manual operation using an external operating mode switch (see page 33). The actuator is then activated or set to stop via the electrical connections on terminal V or 1. The continuous Y input signal is overridden in this case. Manual mode includes the states **automatic operation / stop / shut / open**.

Manual adjustment

For manual adjustment, remove the actuator cover and set switch A4 to the ON position (manual adjustment). The valve can be adjusted to any position using an Allen key (4 mm wrench socket)..

Then use the toggle to lock the actuator. See section Mounting the actuator on a valve - Installation Figs. 3 to 8 (see page 32).

Priority switching

Priority switching (page 33) is a direct control and overlays the constant Y input signal for a valve position Open or Closed at terminal Z (e.g. frost protection or limitation).

VBS (valve blocking protection)

If plant specifications permit, the valve blocking protection feature may be activated during commissioning.

Valve blocking protection prevents the poppet from jamming when the valve is not moved for a long period of inactivity, e.g. for heating systems during the summer.

If the valve blocking protection is activated, the valve poppet is raised one half stroke and back if no stroke movement has been performed within 21 days.

This functionality can be switched on via DIP switch B1.

Safety limit position / resynchronizing the limit position

After a voltage reset or after ending manual operation using the DIP switch, the limit position is resynchronized by way of movement to the safety limit position.

In addition, the safety limit position is approached if a wire breakage is detected (see wire breakage detection).

The safety limit position is the end position which the actuator automatically starts with spring force in the event of a power failure.

In this case, the feedback is passed via Yout with a signal of approx. 12.5 V or 0 mA, depending on the position of DIP switch B2.

Dynamic Yin damping / compensation for external interferences

To prevent the actuator from linking external interferences on control line Y, the input hysteresis band is automatically enlarged.

If the fault no longer occurs, the hysteresis is reset to minimal values again.

This function largely prevents external interferences, and unnecessary temperature fluctuations and actuator and valve wear are avoided.

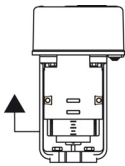
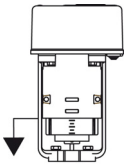
Wire breakage detection

This function is only available with activated wire break detection (B6 = ON) and with the set actuating range 2..10 V or 4..20 mA (B5 = ON).

If no input signal is detected in continuous operation, the actuator moves into the safety limit position.

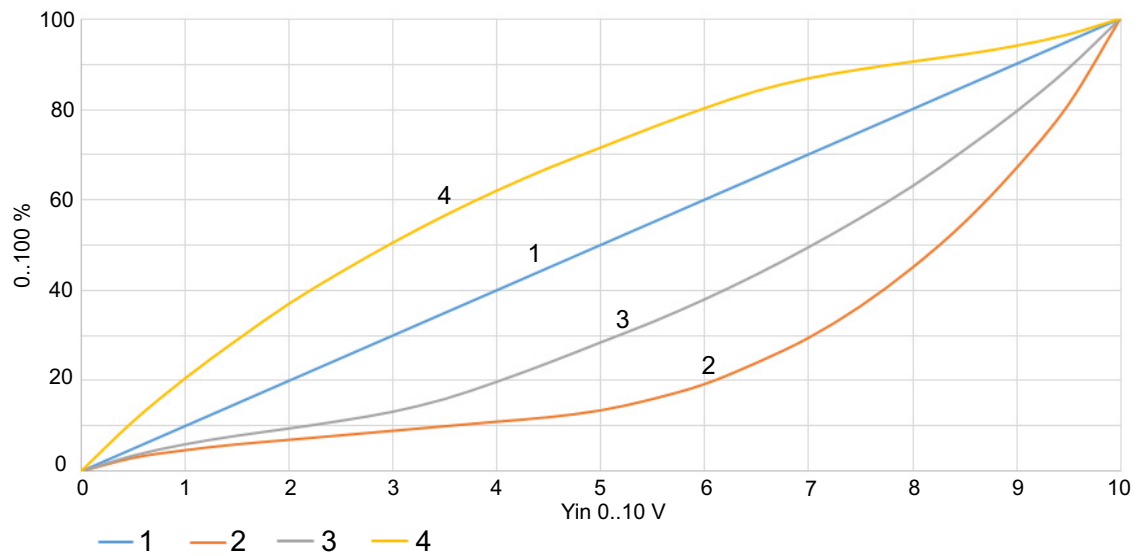
In this case, the feedback is passed via Yout with a signal of approx. 12.5 V or 0 mA.

Actuating directions

Actuator retracting		Two-way valves RGD, RGDE.....open
		Two-way valves RK.-BF, RB.-BK, RF..-BF.....close
		Three-way valves RK, RB, RF, RWG. Gate A:.....closes Gate B:opens
Actuator extending Emergency stop function, extending without power		Two-way valve RGD, RGDE... close
		Two-way valves RK.-BF, RB.-BK, RF..-BF.....open
		Three-way valves RK, RB, RF, RWG. Gate A:.....opens Gate B:closes

Characteristic curves 1 to 4

- DIP switch B3 = OFF

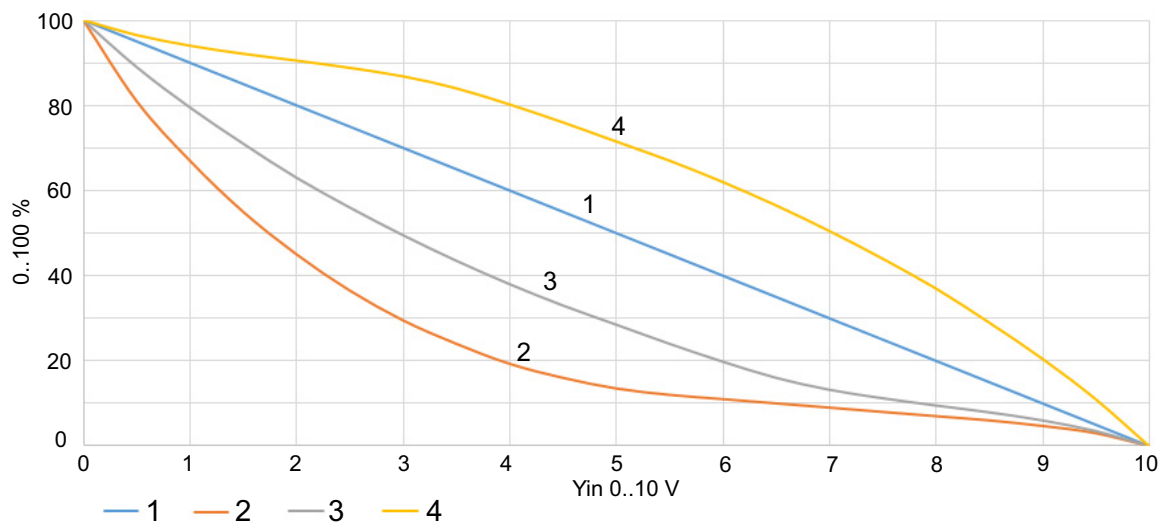


NOTE

Characteristic curves can be inverted at any time using DIP switch B3

Characteristic curves 1 to 4 inverted

- DIP switch B3 = ON



6.5 Priorities of operating mode feedback

Priority	Operating mode	Feedback signal
1	Manual adjustment (via DIP switch)	12.5 V or 0 mA
2	Init. (Automatic or via DIP switch)	12.5 V or 0 mA
3	Wire break detection / safety end position	12.5 V or 0 mA
4	Priority switching / manual operation	Position 0..100 %
5	VBS	Position 0..100 %
6	Constant control (Yin)	Position 0..100 %

7 Maintenance

Maintenance

The actuator does not require maintenance.

Cleaning

The actuator does not require cleaning.



NOTE

Regular inspection of the plant, including functional testing of the actuator, is recommended.

8 Faults and remedial measures



WARNING

Hot and cold surfaces!

If a hardware or software error occurs, there may be unexpected movements and the valve may open. There is a risk of severe burns or hypothermia from contact with hot or cold surfaces on the valves and pipelines.

- ▶ Wear protective gloves

Error	Cause	Rectification
Actuator does not regulate in automatic mode	Power outage	▶ Determine the cause and rectify it.
	Actuator is connected incorrectly	▶ Check the connection and correct.
	Short circuit due to incorrect connection	▶ Check the connection and correct.
Actuator instable when running	Voltage drop due to the connection line being too long and/or the cross section being too small	▶ Measure the operating voltage. Recalculate the electrical connection lines and replace.
	Power supply fluctuations greater than the permitted tolerance	▶ Improve the electrical system conditions.
Actuator stops every so often	Supply line has a loose connection	▶ Check and tighten the connections to the terminal strip.
Actuator not moving or not moving correctly to the valve position dictated by the input signal, valve not closing or opening	Valve is jammed	▶ Ensure the valve can travel freely or replace the valve.
	Pressure difference too high	▶ Have the hydraulic system and differential pressure checked and adjusted.
	Main circuit board defective	▶ Get in touch with your contact at Kieback&Peter.

9 Repair

At the installation location, the valve/actuator combination can only be repaired by replacing the valve or actuator. Get in touch with your contact at Kieback&Peter.

10 Decommissioning, Removal and Disposal

10.1 Decommissioning and dismantling the actuator



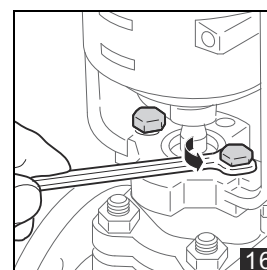
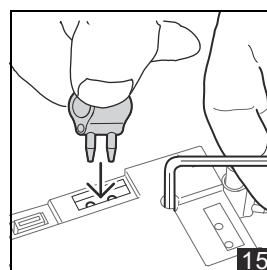
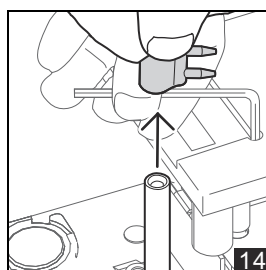
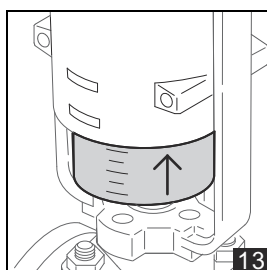
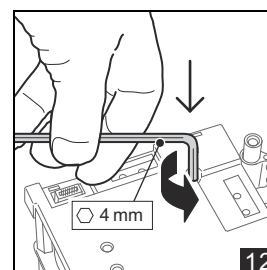
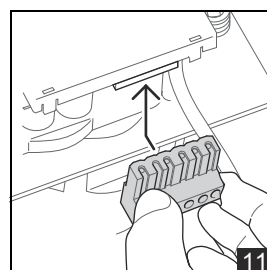
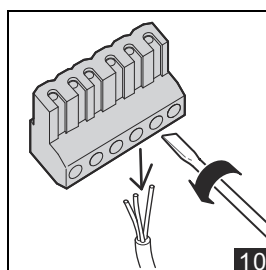
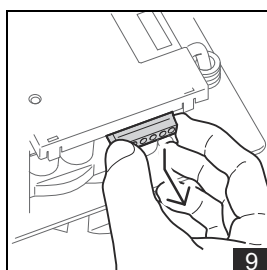
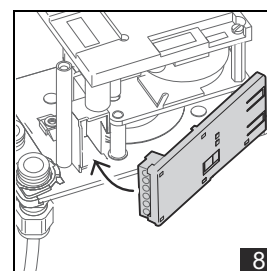
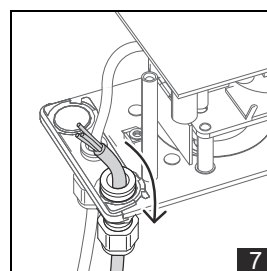
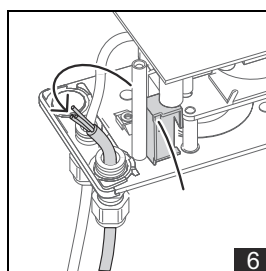
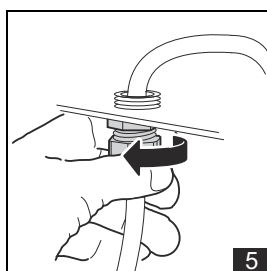
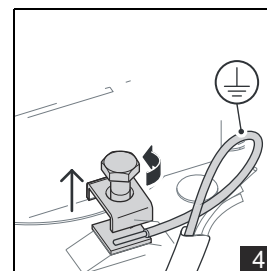
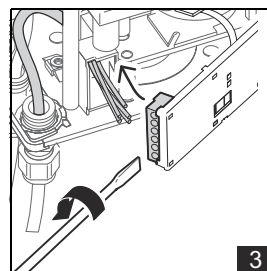
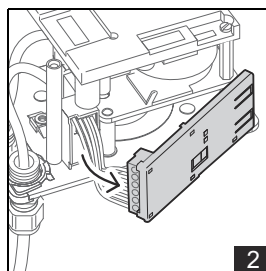
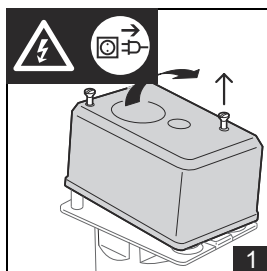
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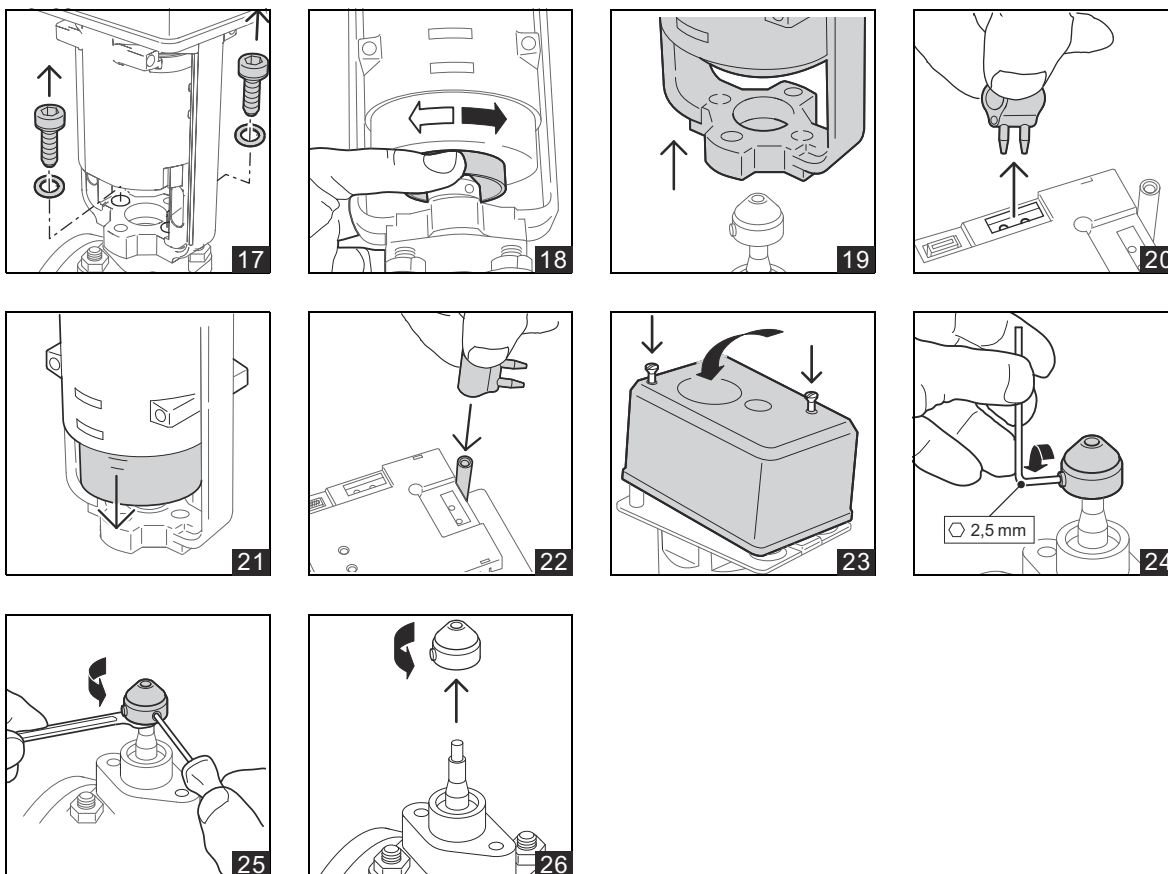
Hot and cold surfaces!

If a hardware or software error occurs, there may be unexpected movements and the valve may open. There is a risk of severe burns or hypothermia from contact with hot or cold surfaces on the valves and pipelines.

- ▶ Wear protective gloves

- Before beginning to dismantle the unit, make sure that no differential pressure builds up in the valve body before beginning work. If necessary, close the gate valve and turn off pumps. After the pipeline has cooled off, the actuator can be dismantled.
- Disconnect the actuator from power. Then disconnect all electrical connections.





NOTE

Disassembly steps 2 to 8 are only required for MF100-SR-E.

- ▶ **1** Disconnect the actuator from power.
Loosen both screws and remove the actuator cover.
- ▶ **2** Remove the auxiliary switch from the bracket.
- ▶ **3** Disconnect the electrical connections from the connector of the auxiliary switch.
- ▶ **4** Disconnect the PE line from the PE terminal.
- ▶ **5 6 7** Remove the cable gland and disconnect the connection cable from the actuator.
- ▶ **8** Reconnect the auxiliary switch.
- ▶ **9** Remove the connector from the actuator.
- ▶ **10** Loosen the electrical connections from the connector.
- ▶ **11** Re-insert the connector.
- ▶ **12 13** Move actuator to upper position by adjusting this manually (turn with 4 mm hex key).
- ▶ **14 15** Insert the toggle to lock manual adjustment and remove the hex key again.
- ▶ **16** Loosen the console screws.
- ▶ **17** Remove both console screws with washers.
- ▶ **18** Turn the automatic coupling to the right and remove the actuator from the valve.
- ▶ **19** Remove the actuator from the valve.

- ▶ **20** Remove the toggle from the board.
- ▶ **21** The actuator moves into the lower position
- ▶ **22** Guide the toggle to the toggle bracket.
- ▶ **23** Return the actuator cover to its original position and fasten with two screws.
- ▶ **24** Loosen the hex key on the adapter using a 2.5 mm hexagon socket.
- ▶ **25 26** Unscrew the adapter from the valve stem and remove it.

10.2 Remove the valve

- ▶ No differential pressure must occur on the valve body. Close the gate valve and turn off pumps.
- ▶ Loosen the screw fittings between the pipeline and the valve connections.
- ▶ Remove the valve from the pipeline.

10.3 Notes on disposal

In accordance with the applicable laws and directives of the European Union countries, the product should not be disposed of with household waste. This ensures environmental protection and sustainable recycling or raw materials. Commercial users should contact their supplier and observe the conditions of the purchase agreement. This device may not be disposed of together with other commercial waste.

11 Contact persons

Orders and questions

If you want to submit an order, have questions or require technical information, please contact your Kieback&Peter contact person.

Repair service

If your device has a defect, contact your Kieback&Peter contact person to clarify how to proceed.

12 Declaration of conformity

Kieback&Peter



DECLARATION OF CONFORMITY

Kieback&Peter GmbH & Co. KG
Tempelhofer Weg 50
12347 Berlin / Germany

Authorized Representative for Documentation:
Logicboks Limited
12 Greenway Farm
BS30 5RL UK

declares in sole responsibility that the designated product

actuator

MF100-SR

in combination with the **valves** of the series

RK/ RB/ RF/ RGD/ RWG/ RGDE

to which this declaration refers, corresponds to the requirements which are stipulated in the following directives:

- Supply of Machinery (Safety) Regulations 2008
- The Pressure Equipment (Safety) Regulations 2016
- Electromagnetic Compatibility Regulations 2016
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Harmonised standards applied:

DIN EN 60730-2-14:2019-10
DIN EN ISO 12100:2011-03

Signed for and on behalf of:

Berlin,
19/04/2023

(Rainer Mahling)
Managing Director
Solution & Support Center

(Frank Külich)
Head of
Product Development

QM-F-061| Rev. 1.1 vom 30.05.2022
Template: QM-T-034, Rev 1.3

Klassifizierung: Öffentlich



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Signed for and on behalf of:

Berlin,
23/05/2023

(Rainer Mahling)
Managing Director
Solution & Support Center

(Frank Külich)
Head of
Product Development

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