MF200Y Emergency Actuator

with valves of the RK/RB/RF/RGD/RWG/RGDE series

Application

For AC 24 V with constant control DC 0(2)–10 V or 0(4)–20 mA
with two-way and three-way valves

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Important Information Regarding Product Safety

Safety Instructions

This data sheet contains information on installing and commissioning the product "MF200Y". Each person who carries out work on this product must have read and understood this data sheet. If you have any questions that are not resolved by this data sheet, you can obtain further information from the supplier or manufacturer.

If the product is not used in accordance with this data sheet, the protection provided will be impaired.

Applicable regulations must be observed when installing and using the device. Within the EU, these include regulations regarding occupational safety and accident prevention as well as those from the VDE (Association for Electrical, Electronic & Information Technologies). If the device is used in other countries, it is the responsibility of the system installer or operator to comply with local regulations.

Mounting, installation and commissioning work on the devices may only be carried out by qualified technicians. Qualified technicians are persons who are familiar with the described product and who can assess given tasks and recognize possible dangers due to technical training, knowledge and experience as well as knowledge of the appropriate regulations.

Legend

WARNING

Indicates a hazard of medium risk which can result in death or severe bodily injury if it is not avoided.

CAUTION

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

CAUTION

Indicates a hazard of medium risk which can result in material damage or malfunctions if it is not avoided.

NOTE

Indicates additional information that can simplify the work with the product for you.

Notes on Disposal

For disposal, the product is considered waste from electrical and electronic equipment (electronic waste) and must not be disposed of as household waste. Special treatment for specific components may be legally binding or ecologically sensible. The local and currently applicable legislation must be observed.

MF200Y Emergency Actuator

Application

The MF200Y emergency actuator, with a positioning force of 1000 N, provides for fine stroke adjustment of the RB15..50-BK, RF15..50-BF, RF65K-BF, RK15..50-BF, RK65K-BF, RGD15..40 and RGDE25..50 two-way valves as well as the RB15..50, RF15..50, RF65K, RK15..50, RK65K and RWG15..40 three-way valves.

The emergency actuator is continuously controlled using either DC 0(2)–10 V or 0(4)–20 mA.

The actuator includes an emergency function, which uses spring force to open or close valves (depending on the type of valve used) when the power supply is interrupted.

Item

MF200Y	AC 24 V emergency actuator with DC 0(2)–10 V or 0(4)–20 mA continuous control Emergency function: **Emergency actuator runs out with no power**

Technical Data

Nominal voltage	AC 24 V ± 15%, 50/60 Hz; 26 VA
Control	Continuous, optionally adjustable - with voltage signal DC 0(2)–10 V; 0.5 mA; invertible - with current signal 0(4)–20 mA; invertible Compensation of external interferences on the control signal through dynamic hysteresis
Actuator	Brushless DC motor
Priority switching	3-point direct control (open/stop/close) or 2-point priority mode (open/close) Connection parallel to control voltage Y, e.g. frost protection, limiting
Nominal stroke	Max. 20 mm, automatic stroke adjustment though initialization
Travel time	2 s/mm nominal stroke
Emergency positioning time	Approx. 1 s/mm
Positioning force	1,000 N
Position indicator	Stroke range scale
Positioning feedback	DC 0(2)–10 V, 5 mA for 0–100% nominal stroke, invertible, or 0(4)–20 mA, Ri= 0.5 kΩ for 0–100% nominal stroke, invertible
Valve monitoring	Automatic valve block monitoring with fault signal greater than approx. 12.5 V or 20 mA
Valve block protection	Optionally adjustable
Manual adjustment	Socket for hexagon socket key beneath the drive cover, key socket 4 mm, locking using knob
Ambient temp.	0 to 50 °C
Degree of protection	IP54
Protection class	III in accordance with EN 60730 I in accordance with EN 60730 with E/MF switch module
Installation position	Anywhere from vertical above the valve to a horizontal position
Maintenance	Maintenance-free
Weight	2.80 kg

NOTE

For a positioning time over the entire valve stroke of 108 s, 126 s, 180 s or 135 s, the positioning movement is performed step-by-step with periods of inactivity of approx. 5 s. This operating characteristic corresponds to normal state.

Accessories

Accessories are delivered as complete units that can be inserted into the actuator later.

You may chose from among the following accessories which are **not included in delivery**.

E/MF Upgradable switch module

with two electrically isolated switches (relay outputs), max. load AC 250 V, 3 A.

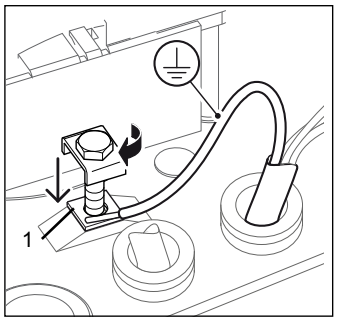
Application The E/MF switch module provides the actuator with
- feedback about both valve end positions (open/closed).

WARNING

If low voltage (AC 230 V is applied, the device must be installed to meet the requirements of protection class I.

The contacts on the end switches must only be used with voltages of the same installation category.

The wiring of the PE terminal must be connected between the terminal clip and the square washer (Cupal washer), with the copper-coated side of the washer facing the terminal clip.

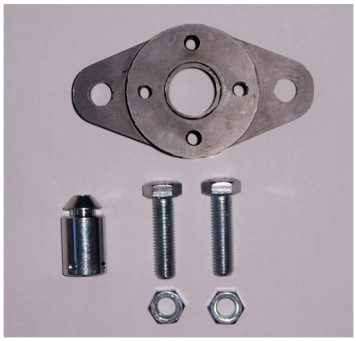


Copper-coated side (1) of the square washer (Cupal washer)

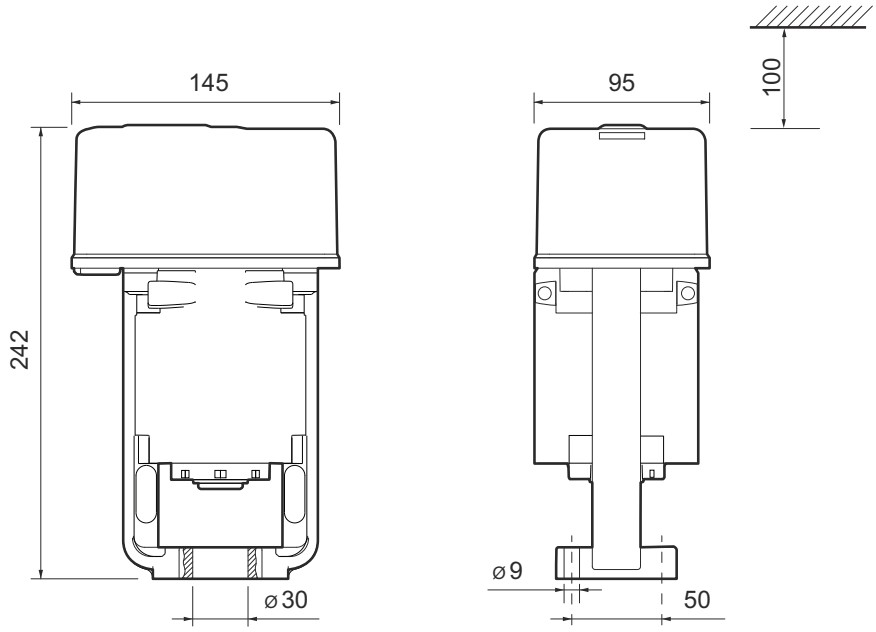
Z189 Mounting set for RGDE.. up to DN50

The actuator, Z189 mounting set and valve are pre-assembled as supplied by the factory.

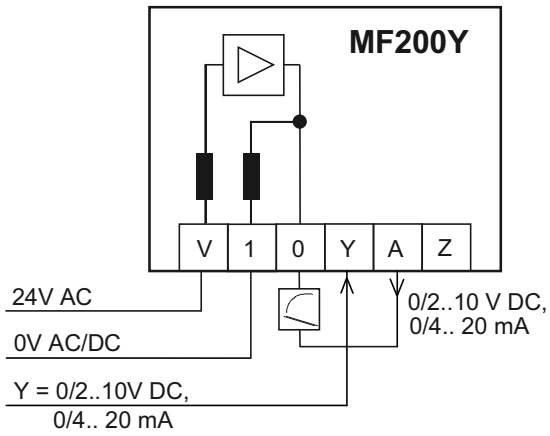
Installation note 3.10-40.299-99 contains further information on the installation (included with accessory Z189).



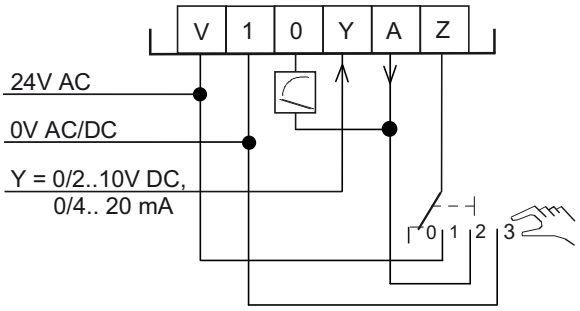
Dimensions



Connection



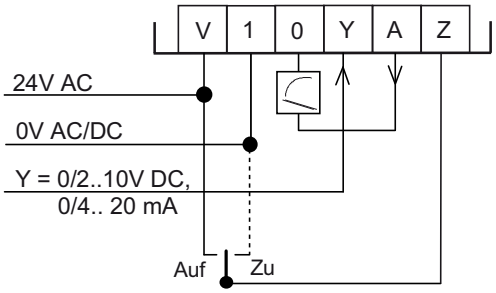
- Control with manual switch



Manual switch position
0 = Auto
1 = Open
2 = Stop
3 = Closed

- Priority switching

Priority switching for valve open or close on terminal V 1
e.g. frost protection/limiting



NOTE
When accessories are installed, the device connection changes or is augmented.
Follow the connection instructions in the datasheet of the accessory that is being used.

Actuator Functions

Automatic mode/testing the emergency function

(1) Switch
(2) Indicator slide

Automatic mode or testing the emergency function can be selected directly on the actuator using the switch on the drive hood.

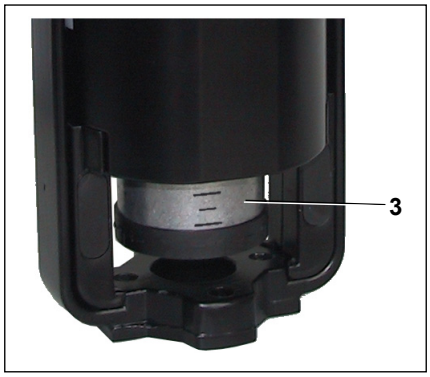
Automatic mode: Slide the switch to position .

Testing the emergency function: Slide the switch to position .

When the “emergency function test” feature is activated, the extended indicator slide allows this status to be recognized even in poorly lit areas.
After the “emergency function test” has been switched off, the emergency actuator automatically returns to automatic mode.

Position indicator on the actuator

The current stroke position of the valve is indicated by the position of the stroke range scale (3).



Automatic malfunction message

If the pipeline becomes blocked by foreign objects during a valve stroke, the drive reports this malfunction with a feedback signal, approx > DC 12.5 V (connection terminal A). The LED below the drive hood also flashes (short flashes).

The actuator then automatically tries to correct the valve block using a remedy algorithm, which repeatedly lifts the valve ball for a short time.

A manual activation of the emergency function or manual adjustment is also signaled by a feedback signal of approx. > DC 12.5 V.

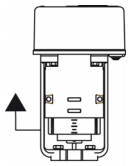
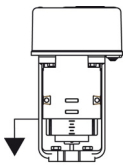
Zero crossing

The economical three-wire connection combines the zero potentials of control line Y (direct current) and of the power line (alternating current) into one wire. The Y control signal is processed by software to reduce errors in the Y control signal caused by voltage drops arising from very long cable lengths.

Run time lag after mains power recovery

After power has been lost for a longer time, the emergency actuator moves out of the safety position to the current nominal position with reduced positioning speed. When the current control position is reached, it is switched over to the positioning speed that is set. This prevents oscillations in steam systems and monitoring from being triggered when power is recovered. The run time lag is also in effect where there is direct control or priority control (also see Connection).

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 function with no power: extending**		RGD, RGDE....two-way valves close
		Two-way valves RK..-BF, RB..-BK, RF..-BF.....open
		Three-way valves RK, RB, RF, RWG.. Gate A:.....opens Gate B:.....closes

Installation

CAUTION

Electrical installation and unit connection may only be carried out by qualified technicians.

The mains supply may only be connected after commissioning.
Be sure to comply with VDE guidelines and local wiring regulations.
The device is connected according to the obligatory wiring diagram.

CAUTION

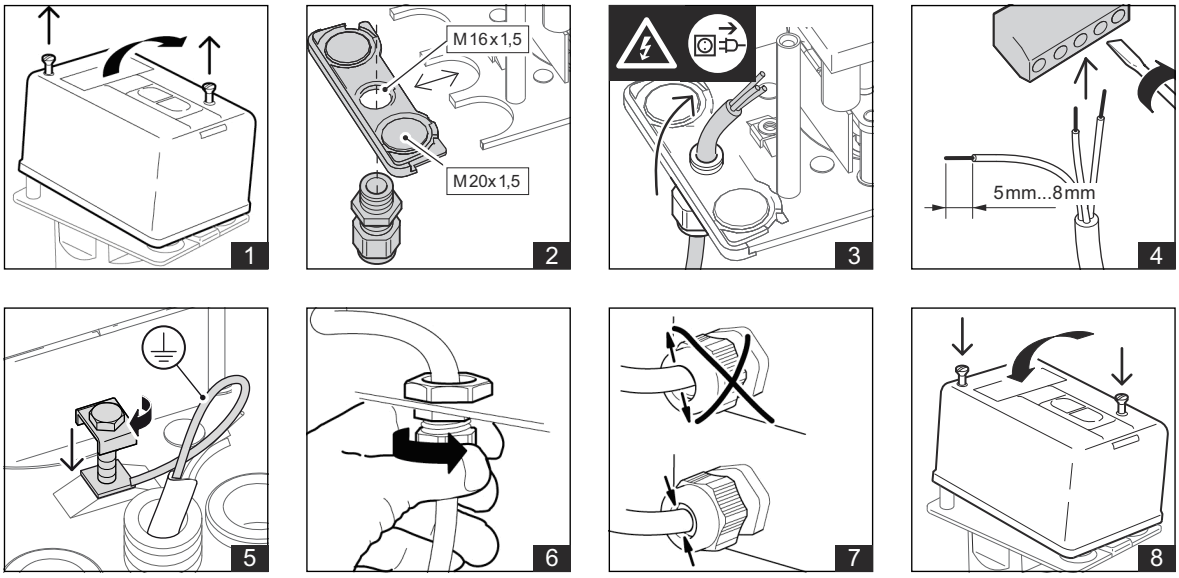
The electrical connection of the actuator must be carried out as a fixed installation.

An M16x1.5 screw fitting is enclosed in the scope of delivery of the actuator to be used as a strain relief device. The electrical connection is to be made using plug-in screw terminals (connection diameter 0.3–2.3 mm).

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.



Polarity protection

When the power supply voltage is applied, the electrical connection is immediately tested. The LED below the drive hood flashes when the connection is incorrect (AC 0 V / AC 24 V interchanged). The emergency actuator automatically begins the safety function.

Direct control/priority switching

Terminal “Z” can be used to operate the emergency actuator directly and independent of the control. Depending on the circuitry, 3-point or 2-point operation is possible.

Run time lag during priority switching

When the emergency actuator is operated in priority mode, the positioning movements are carried out after a delay. In contrast to normal controlled operation, positioning times of 126 s (14 mm stroke) and 180 s (20 mm stroke) are achieved for the entire valve stroke.

The positioning movement is carried out cyclically and with intermediate stops of about 5 s. This can be used to provide direct 2-point control for frost protection monitors or temperature limiters.

RK15..50/RK65KMF200Y Three-Way Valves and RK15..50/RK65K-BFMF200Y Two-Way Valves

Application

The gray cast iron three-way valves and two-way valves with emergency actuator MF200Y are used for the precise mixing and flow rate control of liquids.
The valves are used as two-way valves with the BF blank flange on gate B.
The emergency actuator is controlled using a continuous signal of DC 0(2)–10 V/0(4)–20 mA.
MF200Y emergency actuator includes an emergency function that automatically closes valve gate B when the power supply is interrupted = straight throughput A → AB open without power).

Types

RK15..50/RK65K gray cast iron three-way valves with the MF200Y emergency actuator for water up to 120 °C, 6 bar

	DN	PN	Kvs	Δp (bar)	Travel time (s)	Weight (kg)	Emergency function
RK15/0,63MF200Y	15	6	0.63	6	28	5.0	Gate A: Open
RK15/1,0MF200Y	15	6	1.0	6	28	5.0	Gate A: Open
RK15/1,6MF200Y	15	6	1.6	6	28	5.0	Gate A: Open
RK15/2,5MF200Y	15	6	2.5	6	28	5.0	Gate A: Open
RK15MF200Y	15	6	4.0	6	28	5.0	Gate A: Open
RK20MF200Y	20	6	6.3	6	28	5.7	Gate A: Open
RK25MF200Y	25	6	10	6	28	6.4	Gate A: Open
RK32MF200Y	32	6	16	6	28	8.7	Gate A: Open
RK40MF200Y	40	6	25	6	28	9.4	Gate A: Open
RK50MF200Y	50	6	40	3.5	28	10.7	Gate A: Open
RK65KMF200Y	65	6	63	2	40	17.6	Gate A: Open

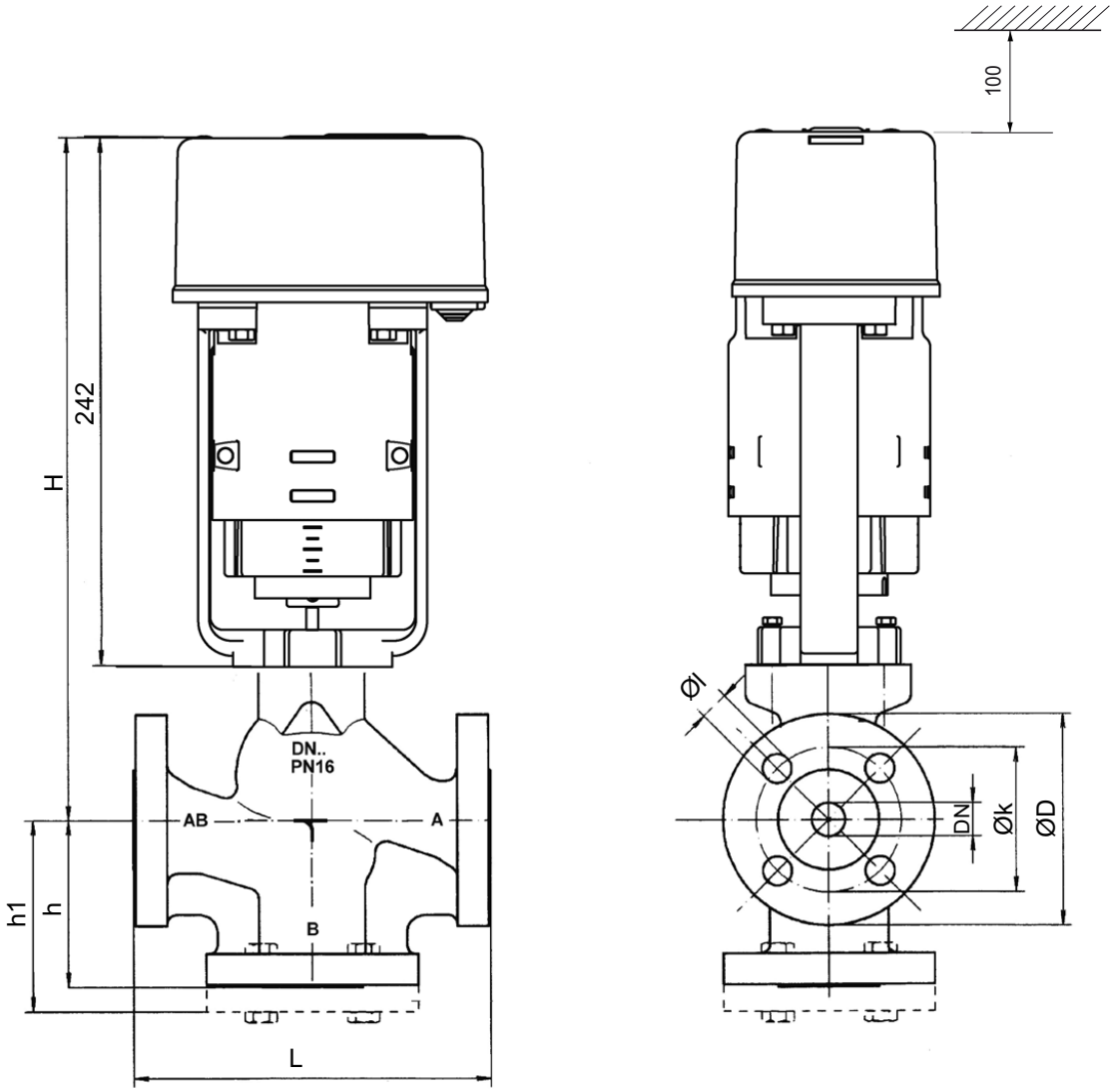
RK15..50/RK65K-BF gray cast iron two-way valves with the MF200Y emergency actuator for water up to 120 °C, 6 bar

	DN	PN	Kvs	Δp (bar)	Travel time (s)	Weight (kg)	Emergency function
RK15/0,6-BFMF200Y	15	6	0.63	6	28	5.6	Valve: Open
RK15/1,0-BFMF200Y	15	6	1.0	6	28	5.6	Valve: Open
RK15/1,6-BFMF200Y	15	6	1.6	6	28	5.6	Valve: Open
RK15/2,5-BFMF200Y	15	6	2.5	6	28	5.6	Valve: Open
RK15-BFMF200Y	15	6	4.0	6	28	5.6	Valve: Open
RK20-BFMF200Y	20	6	6.3	6	28	6.6	Valve: Open
RK25-BFMF200Y	25	6	10	6	28	7.3	Valve: Open
RK32-BFMF200Y	32	6	16	6	28	9.5	Valve: Open
RK40-BFMF200Y	40	6	25	6	28	11.3	Valve: Open
RK50-BFMF200Y	50	6	40	3.5	28	12.7	Valve: Open
RK65K-BFMF200Y	65	6	63	2	40	19.8	Valve: Open

Technical Data: RK..(-BF) Valves

Nominal diameter	DN15 to DN65	
Pressure rating	PN 6	
Connection	Flange in accordance with EN 1092-2 Type 21	
Characteristic curve	RK..	Gates A → AB = same percentage
		Gates B → AB = linear
	RK..-BF	Gates A → AB = same percentage
Nominal stroke	RK15..50(-BF): 14 mm RK65K(-BF): 20 mm	
Leak rate	In accordance with EN 1349, leakage class VI	
Medium temperature	0 °C to 130 °C (max. 120 °C at 6 bar)	
Housing	Gray cast-iron EN-JL1040	
Seat ring	CrNi steel 1.4021	
Cone	Brass CW614N	
Valve spindle	CrMo steel 1.4122	
Spindle seal	O-rings with EPDM/PTFE guide sleeves, maintenance-free	

Dimensions



DN	L	Ø D	Ø k	Ø l	H	h	h1 (RK..-BF)
15	130	80	55	4x Ø 18	284	65	79
20	150	90	65	4x Ø 18	289	70	84
25	160	100	75	4x Ø 18	294	75	91
32	180	120	90	4x Ø 18	297	95	111
40	200	130	100	4x Ø 18	300	100	116
50	230	140	110	4x Ø 18	300	100	118
65	290	160	160	4x Ø 18	349	120	144
	Dimensions L to h1 in mm						

RB15..50MF200Y Three-Way Valves and RB15..50-BKMF200Y Two-Way Valves

Application

The gunmetal three-way valves and two-way valves with emergency actuator MF200Y are used for the precise mixing and flow rate control of liquids.
The valves are installed as two-way valves using the BK blank cover on gate B.
The emergency actuator is controlled using a continuous signal of DC 0(2)–10 V/0(4)–20 mA.
The MF200Y emergency actuator includes an emergency function that automatically closes valve gate B when the power supply is interrupted = straight throughput A → AB open without power).

Types

RB15..50 gunmetal three-way valves with MF200Y emergency actuator for water up to 120 °C, 16 bar

	DN	PN	Kvs	Δp (bar)	Travel time (s)	Weight (kg)	Emergency function
RB15/0,63MF200Y	15	16	0.63	16	24	3.5	Gate A: Open
RB15/1,0MF200Y	15	16	1.0	16	24	3.5	Gate A: Open
RB15/1,6MF200Y	15	16	1.6	16	24	3.5	Gate A: Open
RB15/2,5MF200Y	15	16	2.5	16	24	3.5	Gate A: Open
RB15MF200Y	15	16	4.0	16	24	4.0	Gate A: Open
RB20MF200Y	20	16	6.3	16	24	4.2	Gate A: Open
RB25MF200Y	25	16	10	15	24	5.1	Gate A: Open
RB32MF200Y	32	16	16	9.5	28	5.9	Gate A: Open
RB40MF200Y	40	16	25	6	28	6.8	Gate A: Open
RB50MF200Y	50	16	40	3.5	28	8.1	Gate A: Open

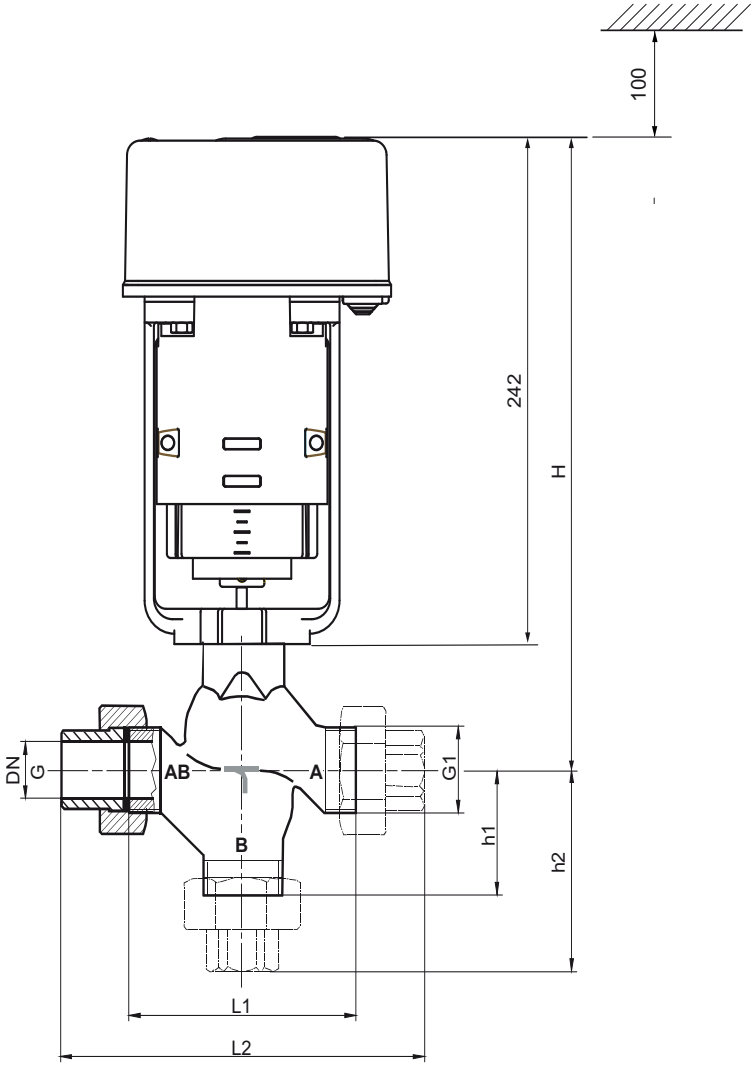
RB15..50-BK gunmetal two-way valves with the MF200Y emergency actuator for water up to 120 °C, 16 bar

	DN	PN	Kvs	Δp (bar)	Travel time (s)	Weight (kg)	Emergency function
RB15/0,63-BKMF200Y	15	16	0.63	16	24	3.4	Valve: Open
RB15/1,0-BKMF200Y	15	16	1.0	16	24	3.4	Valve: Open
RB15/1,6-BKMF200Y	15	16	1.6	16	24	3.4	Valve: Open
RB15/2,5-BKMF200Y	15	16	2.5	16	24	3.4	Valve: Open
RB15-BKMF200Y	15	16	4.0	16	24	3.4	Valve: Open
RB20-BKMF200Y	20	16	6.3	16	24	3.9	Valve: Open
RB25-BKMF200Y	25	16	10	15	24	4.1	Valve: Open
RB32-BKMF200Y	32	16	16	9.5	28	5.8	Valve: Open
RB40-BKMF200Y	40	16	25	6	28	6.5	Valve: Open
RB50-BKMF200Y	50	16	40	3.5	28	7.9	Valve: Open

Technical Data: RB..(-BK) Valves

Nominal diameter	DN15 to DN50	
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..	Gates A → AB = same percentage
		Gates B → AB = linear
	RB..-BF	Gates A → AB = same 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 °C to 150 °C (max. 120 °C at 16 bar) Horizontal drive position only permissible from 130 °C and above	
Housing	Gunmetal, Rg5 / 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 GTW malleable iron union nuts, yellow chromated	
Blank cover for RB..-BK	GTW malleable iron union nut, yellow 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 G and G1 in inches						

RF15..50/RF65KMF200Y Three-Way Valves and RF15..50/RF65-BKMF200Y Two-Way Valves

Application

The gray cast iron three-way valves and two-way valves with emergency actuator MF200Y are used for the precise mixing and flow rate control of liquids.
The valves are used as two-way valves with the BF blank cover on gate B.
The emergency actuator is controlled using a continuous signal of DC 0(2)–10 V/0(4)–20 mA.
The MF200Y emergency actuator includes an emergency function that automatically closes valve gate B when the power supply is interrupted = straight throughput A → AB open without power).

Types

RF15..50/RF65K gray cast iron three-way valves with the MF200Y emergency actuator for water up to 120 °C, 16 bar

	DN	PN	Kvs	Δp (bar)	Travel time (s)	Weight (kg)	Emergency function
RF15/0,63MF200Y	15	16	0.63	16	28	5.9	Gate A: Open
RF15/1,0MF200Y	15	16	1.0	16	28	5.9	Gate A: Open
RF15/1,6MF200Y	15	16	1.6	16	28	5.9	Gate A: Open
RF15/2,5MF200Y	15	16	2.5	16	28	5.9	Gate A: Open
RF15MF200Y	15	16	4.0	16	28	5.9	Gate A: Open
RF20MF200Y	20	16	6.3	16	28	6.8	Gate A: Open
RF25MF200Y	25	16	10	15	28	7.8	Gate A: Open
RF32MF200Y	32	16	16	9.5	28	10.3	Gate A: Open
RF40MF200Y	40	16	25	6	28	11.9	Gate A: Open
RF50MF200Y	50	16	40	3.5	28	14.8	Gate A: Open
RF65KMF200Y	65	16	63	2	40	25.9	Gate A: Open

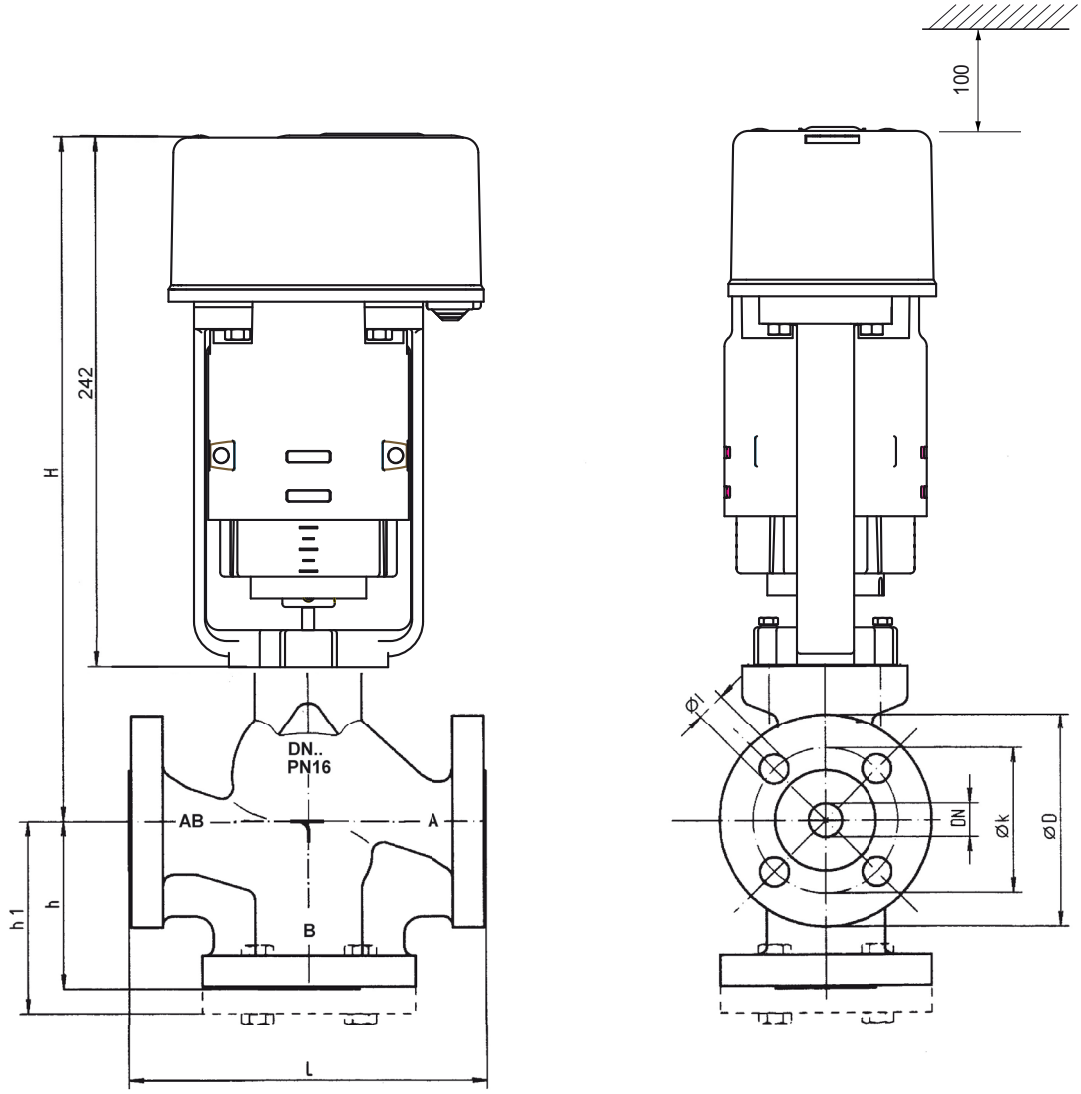
RF15..50/RF65K-BF gray cast iron two-way valves with the MF200Y emergency actuator for water up to 120 °C, 16 bar

	DN	PN	Kvs	Δp (bar)	Travel time (s)	Weight (kg)	Emergency function
RF15/0,63-BFMF200Y	15	16	0.63	16	28	6.9	Valve: Open
RF15/1,0-BFMF200Y	15	16	1.0	16	28	6.9	Valve: Open
RF15/1,6-BFMF200Y	15	16	1.6	16	28	6.9	Valve: Open
RF15/2,5-BFMF200Y	15	16	2.5	16	28	6.9	Valve: Open
RF15-BFMF200Y	15	16	4.0	16	28	6.9	Valve: Open
RF20-BFMF200Y	20	16	6.3	16	28	9.3	Valve: Open
RF25-BFMF200Y	25	16	10	15	28	9.4	Valve: Open
RF32-BFMF200Y	32	16	16	9.5	28	12.8	Valve: Open
RF40-BFMF200Y	40	16	25	6	28	14.6	Valve: Open
RF50-BFMF200Y	50	16	40	3.5	28	18.2	Valve: Open
RF65K-BFMF200Y	65	16	63	2	40	21.8	Valve: Open

Technical Data: RF..(-BF) Valves

Nominal diameter	DN15 to DN65	
Pressure rating	PN 16	
CE marking	CE marking for RF65K	
Connection	Flange in accordance with EN 1092-2, Type 21	
Characteristic curve	RF..	Gates A → AB = same percentage
		Gates B → AB = linear
	RF..-BF	Gates A → AB = same percentage
Nominal stroke	RF15..50(-BF): 14 mm RF65K(-BF): 20 mm	
Leak rate	In accordance with EN 1349, leakage class VI	
Medium temperature	0 °C to 130 °C (max. 120 °C at 16 bar)	
Housing	Gray cast-iron EN-JL1040	
Cone	Brass CW614N	
Valve spindle	CrMo steel 1.4122	
Spindle seal	EPDM O-rings, maintenance-free	

Dimensions



DN	L	Ø D	Ø k	Ø l	H	h	h1 (RF..-BF)
15	130	95	65	4x Ø 14	284	65	79
20	150	105	75	4x Ø 14	289	70	84
25	160	115	85	4x Ø 14	294	75	91
32	180	140	100	4x Ø 14	297	95	111
40	200	150	110	4x Ø 14	300	100	116
50	230	165	125	4x Ø 14	300	100	118
65	290	185	145	4x Ø 14	349	120	150
	Dimensions L to h1 in mm, flanges according to DIN, PN16						

RGD15..40MF200Y Two-Way Valves

Application

The nodular iron three-way valve with MF200Y actuator is type-tested according to DIN EN 14597 and has the DIN mark of conformity, registration number 1F162.
The actuator with emergency function is used for precisely regulating liquid and vapor flow rates.
The emergency actuator is controlled using a continuous signal of DC 0(2)–10 V/ 0(4)–20 mA.
The MF200Y emergency actuator has an emergency function that automatically closes the valve with spring force when the power supply is interrupted.

Types

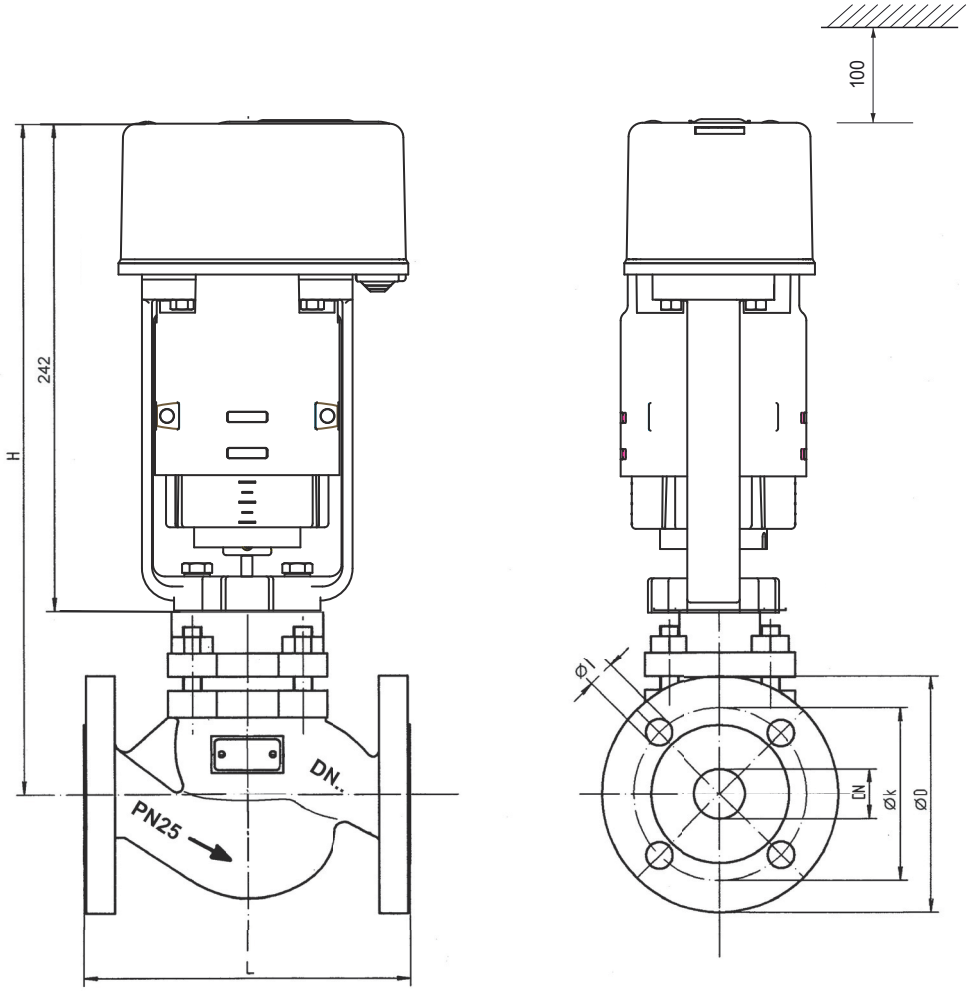
RGD15..40 nodular iron two-way valves with the MF200Y emergency actuator for water up to 120 °C, 25 bar, as well as for hot water and steam up to 200 °C, 20 bar
Type-tested according to DIN EN 14597, registration number 1F162

	DN	PN	Kvs	∆p (bar)	Travel time (s)	Weight (kg)	Emergency function
RGD15/0,4MF200Y	15	25	0.4	18	30	6.0	Valve: Closed
RGD15/0,63MF200Y	15	25	0.63	18	30	6.0	Valve: Closed
RGD15/1,0MF200Y	15	25	1.0	18	30	6.0	Valve: Closed
RGD15/1,6MF200Y	15	25	1.6	18	30	6.0	Valve: Closed
RGD15/2,5MF200Y	15	25	2.5	18	30	6.0	Valve: Closed
RGD15MF200Y	15	25	4.0	18	30	6.0	Valve: Closed
RGD25/6,3MF200Y	25	25	6.3	11	30	7.6	Valve: Closed
RGD25MF200Y	25	25	10	11	30	7.6	Valve: Closed
RGD32MF200Y	32	25	16	7	30	9.1	Valve: Closed
RGD40MF200Y	40	25	25	4.5	30	11.5	Valve: Closed

Technical Data: RGD.. Valves

Nominal diameter	DN15 to DN40	
Pressure rating	PN 25	
CE marking	CE marking starting from DN32, notified body: 0525	
Connection	Flange according to DIN 2501-1, PN25, raised face Form C DIN 2526	
Characteristic curve	Equal percentage	
Nominal stroke	15 mm	
Leak rate	In accordance with EN 1349, leakage class VI	
Medium temperature	0 °C to 200 °C	
Housing	Nodular ironGGG-40.3	
Seat ring	Stainless steel 1.4021	
Cone	DN15 to DN32	Stainless steel 1.4571
	DN40	Stainless steel 1.4021
Valve spindle	Stainless steel 1.4571	
Spindle seal	Univerdit gaskets with PTFE sleeve (maintenance-free)	

Dimensions



DN	L	Ø D	Ø K	Ø I	H
15	130	95	65	4xØ14	327
25	160	115	85	4xØ14	335
32	180	140	100	4xØ18	335
40	200	150	110	4xØ18	346
	Measurements L through H in mm				

RWG15..40MF200Y Three-Way Valves

Application

The nodular iron three-way valve with MF200Y actuator is type-tested according to DIN EN 14597 and has the DIN mark of conformity, registration number 1F162.
The actuator with emergency function is used for precisely regulating liquid and vapor flow rates.
The emergency actuator is controlled using a continuous signal of DC 0(2)–10 V/0(4)–20 mA.
The MF200Y emergency actuator includes an emergency function that automatically closes valve gate B when the power supply is interrupted = straight throughput A → AB open without power).

Types

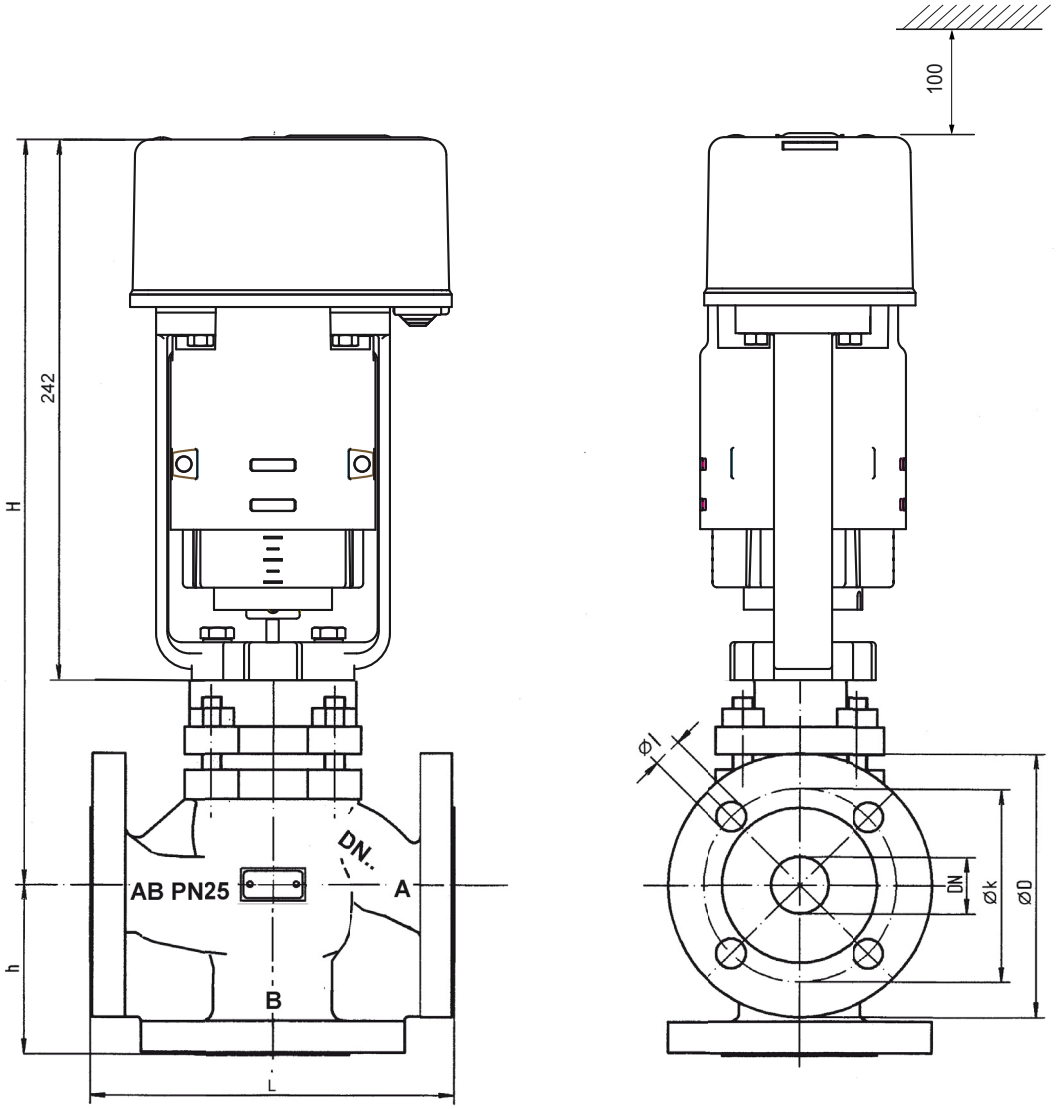
RWG15..40 nodular iron three-way valves with MF200Y emergency actuator for water up to 120 °C, 25 bar, as well as for hot water and steam up to 200 °C, 20 bar
Type-tested according to DIN EN 14597, registration number 1F162

	DN	PN	Kvs	Δp (bar)	Travel time (s)	Weight (kg)	Emergency function
RWG15/1,0MF200Y	15	25	1.0	20	30	7.5	Gate A: Open
RWG15/1,6MF200Y	15	25	1.6	20	30	7.5	Gate A: Open
RWG15/2,5MF200Y	15	25	2.5	20	30	7.5	Gate A: Open
RWG15MF200Y	15	25	4	20	30	7.5	Gate A: Open
RWG25/6,3MF200Y	25	25	6.3	11	30	7.5	Gate A: Open
RWG25MF200Y	25	25	10	11	30	9.4	Gate A: Open
RWG32MF200Y	32	25	16	7	30	12	Gate A: Open
RWG40MF200Y	40	25	25	4.5	30	15.4	Gate A: Open

Technical Data: RWG.. Valves

Nominal diameter	DN15 to DN40	
Pressure rating	PN 25	
CE marking	CE marking from DN 32, notified body: 0525	
Connection	Flange according to DIN 2501-1, PN25, raised face Form C DIN 2526	
Characteristic curve	Equal percentage	
Nominal stroke	15 mm	
Leak rate	In accordance with EN 1349, leakage class VI	
Medium temperature	0 °C to 200 °C	
Housing	Graphite cast-iron GGG-40.3	
Seat ring	Stainless steel 1.4021	
Cone	DN15 to DN32	Stainless steel 1.4571
	DN40	Stainless steel 1.4021
Valve spindle	Stainless steel 1.4571	
Spindle seal	Univerdit gaskets with PTFE sleeve	

Dimensions



DN	L	Ø D	Ø k	Ø I	h	H
15	130	95	65	4 x Ø14	65	335
25	160	115	85	4 x Ø14	75	339
32	180	140	100	4 x Ø18	80	365
40	200	150	110	4 x Ø18	90	374,5
	Measurements L through H in mm, flanges comply with DIN, PN25					

RGDE25..50MF200Y Two-Way Valves with Emergency Actuator

Application

RGDE25..50 nodular iron two-way valves with pressure-relieved cone and emergency actuator MF200Y actuator is type-tested according to DIN EN 14597 and has the DIN mark of conformity, registration number 1F162.
The actuator with emergency function is used for precisely regulating liquid and vapor flow rates.
The emergency actuator is controlled using a continuous signal of DC 0(2)–10 V/ 0(4)–20 mA.
The MF200Y emergency actuator has an emergency function that automatically closes the valve with spring force when the power supply is interrupted.

Types

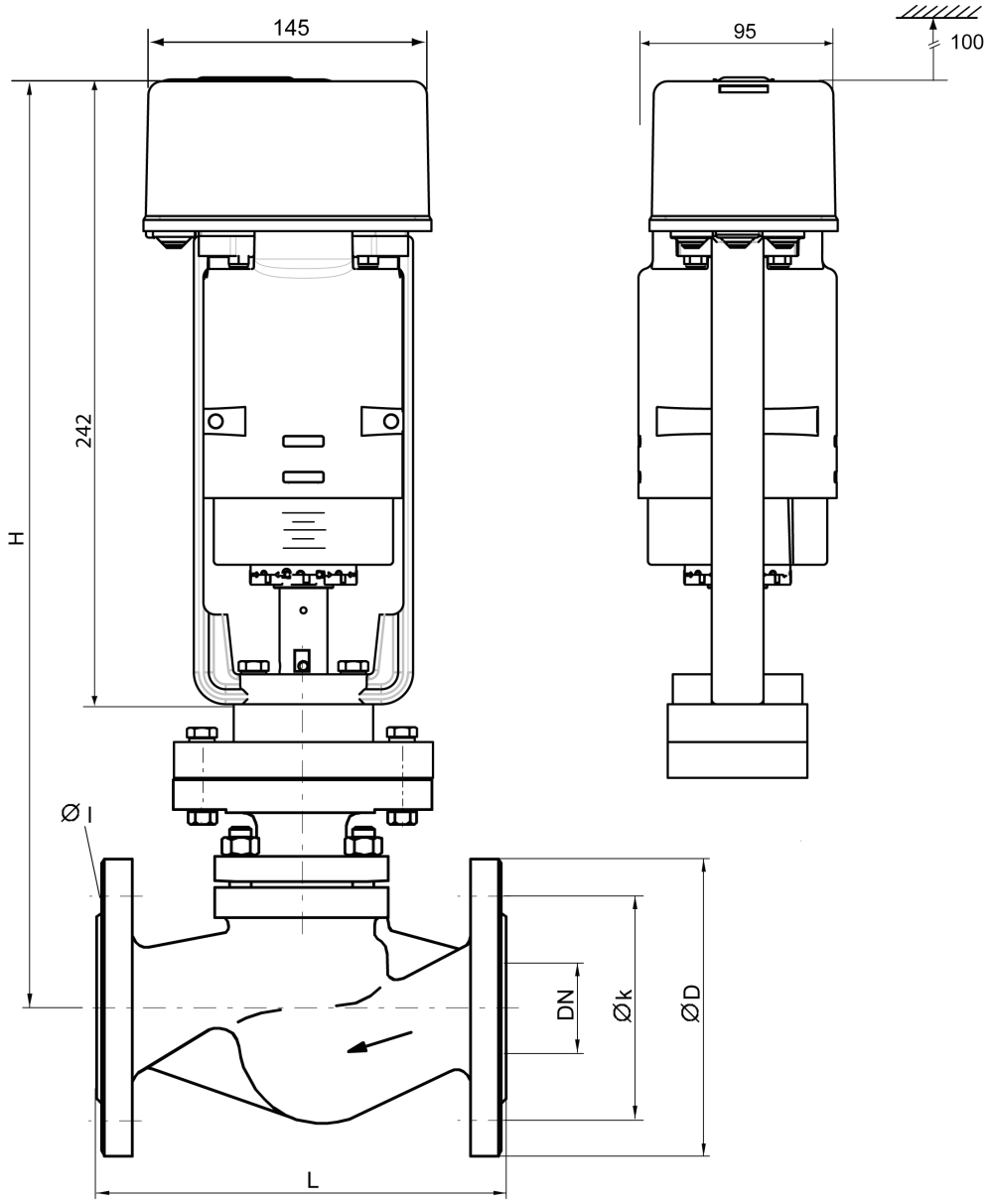
RGDE25..50 pressure-relieved nodular iron two-way valves with MF200Y emergency actuator for water up to 120 °C, 25 bar, as well as for hot water and steam up to 200 °C, 20 bar
Type-tested according to DIN EN 14597, registration number 1F162

	DN	PN	Kvs	Δp (bar)	Travel time (s)	Weight (kg)	Emergency function
RGDE25MF200Y	25	25	10	20	40	10.3	Valve closed
RGDE32MF200Y	32	25	16	20	40	11.7	Valve closed
RGDE40MF200Y	40	25	25	20	40	14.3	Valve closed
RGDE50MF200Y	50	25	40	16	40	16.3	Valve closed

Technical Data: RGDE25..50 Valves

Nominal diameter	DN25 to DN50
Pressure rating	PN 25
CE marking	CE marking, notified body: 0525
Connection	Flange according to DIN 2501-1, PN 25
Characteristic curve	Equal percentage
Nominal stroke	20 mm
Leak rate	In accordance with EN 1349, leakage class VI
Medium temperature	0 °C to 200 °C
Housing	Nodular iron GGG-40.3
Seat ring	CrNi steel 1.4021
Cone	CrNi steel 1.4021, metallically sealed, pressure-relieved cone sealing made from PTFE with stainless steel insert (max. 200 °C)
Valve spindle	CrMo steel 1.4571
Spindle seal	PTFE gaskets, maintenance-free

Dimensions



DN	L	Ø D	Ø k	Ø l	H
25	160	115	85	4x Ø 14	395,5
32	180	140	100	4x Ø 18	395,5
40	200	150	110	4x Ø 18	402,5
50	230	165	125	4x Ø 18	408,5
	Dimensions L to H in mm, flanges according to DIN, PN 25				

RGDE25..50-PN40MF200Y Two-Way Valves with Emergency Actuator

Application

RGDE25..50 graphite cast-iron two-way valves with pressure-relieved cone and emergency actuator MF200Y actuator is type-tested according to DIN EN 14597 and has the DIN mark of conformity, registration number 1F162.
The actuator with emergency function is used for precisely regulating liquid and vapor flow rates.
The emergency actuator is controlled using a continuous signal of DC 0(2)–10 V/ 0(4)–20 mA.
The MF200Y emergency actuator has an emergency function that automatically closes the valve with spring force when the power supply is interrupted.

Types

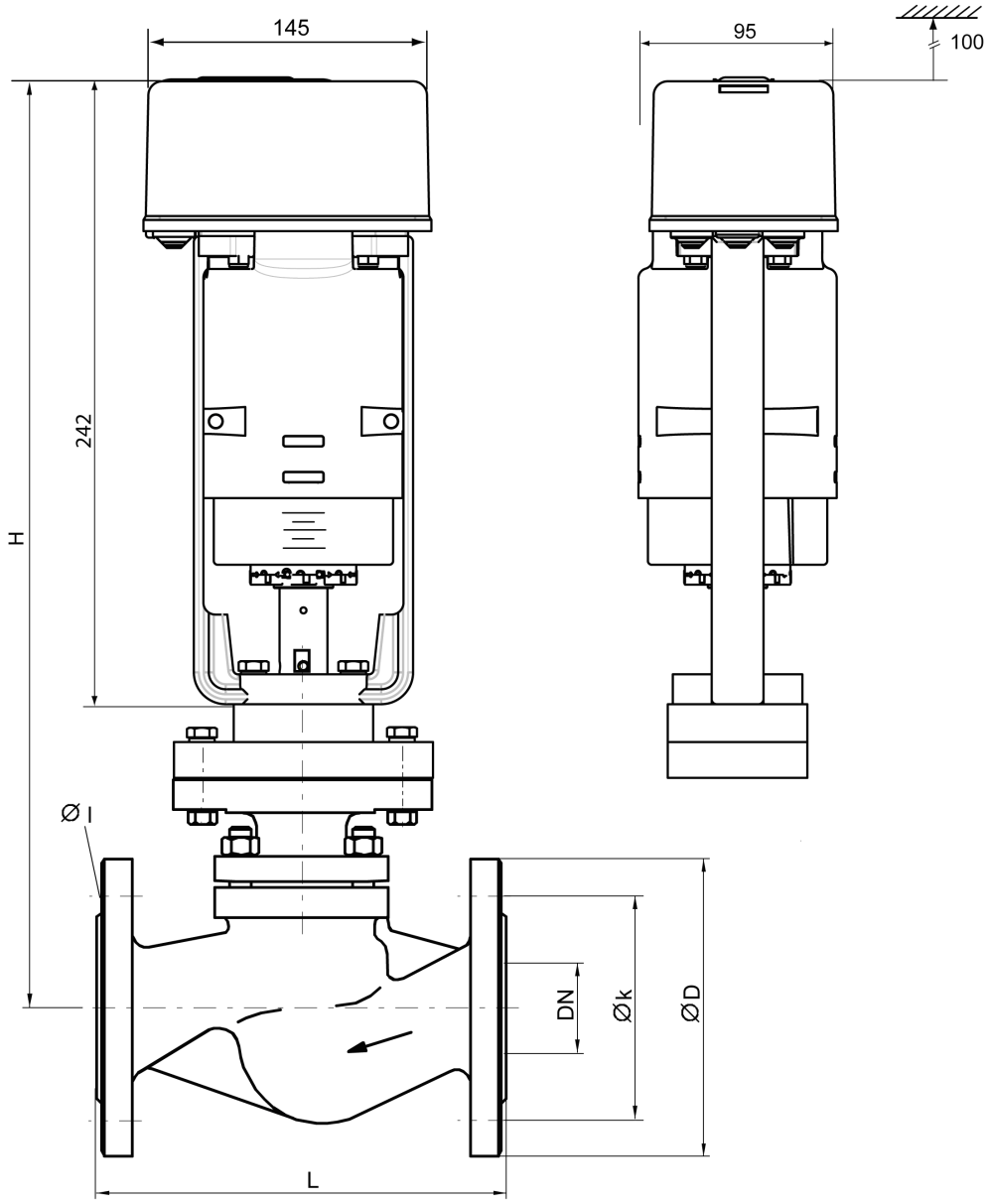
RGDE25..50 graphite cast-iron two-way valves with MF200Y emergency actuator for water up to 120 °C, 40 bar, as well as for hot water and steam up to 200 °C, 35 bar
Type-tested according to DIN EN 14597, registration number 1F162

	DN	PN	Kvs	Δp (bar)	Travel time (s)	Weight (kg)	Emergency function
RGDE25-PN40MF200Y	25	40	10	20	40	10,3	Valve closed
RGDE32-PN40MF200Y	32	40	16	20	40	11,7	Valve closed
RGDE40-PN40MF200Y	40	40	25	20	40	14,3	Valve closed
RGDE50-PN40MF200Y	50	40	40	16	40	16,3	Valve closed

Technical Data: RGDE25..50-PN40 Valves

Nominal diameter	DN25 to DN50
Pressure rating	PN 40
CE marking	CE marking, notified body: 0525
Connection	Flange according to DIN 2501-1, PN 25
Characteristic curve	Equal percentage
Nominal stroke	20 mm
Leak rate	In accordance with EN 1349, leakage class VI
Medium temperature	0 °C to 200 °C
Housing	graphite cast-iron 1.0619+N
Seat ring	CrNi steel 1.4021
Cone	CrNi steel 1.4021, metallically sealed, pressure-relieved cone sealing made from PTFE with stainless steel insert (max. 200 °C)
Valve spindle	CrMo steel 1.4571
Spindle seal	PTFE gaskets, maintenance-free

Dimensions



DN	L	Ø D	Ø k	Ø l	H
25	160	115	85	4x Ø 14	395,5
32	180	140	100	4x Ø 18	395,5
40	200	150	110	4x Ø 18	402,5
50	230	165	125	4x Ø 18	408,5
	Dimensions L to H in mm, flanges according to DIN, PN 40				

Valve Installation

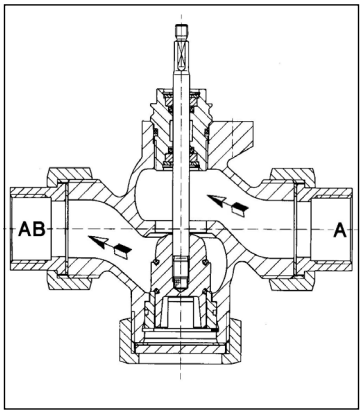
CAUTION

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

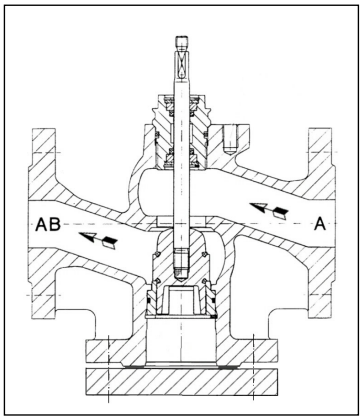
- The valve ports come with protective caps to protect against contamination. They are to be removed before installing the valves.
- The pipeline system and the interior of the fitting must be free of foreign objects. In the event of contaminated media, dirt collectors are to be inserted upstream of the valves.
- There must be no tension between the valve and the pipeline connection.
- Use only perfectly fitting flange seals, inserted centrally in the valve flanges.
- To avoid eddy formations in the valve body, the valve should be installed in a straight section of the pipe. A distance of 10 times the nominal diameter is recommended between the valve flange and manifold or other similar parts.
- The installation location is to be selected so that the ambient temperature at the actuator is kept between 0 °C and 50 °C.
- When mounting, the permissible max. pressure difference Δp and the specified direction of flow must be taken into account (see table in “Types” section, as well as the “Valve Principle”).
- The three-way valves are to be used as mixing valves. Pay attention to the direction of flow (see fig. “Valve Principle”).
- The actuator can be installed vertically above the fixture, or in any position as far as a horizontal position. When installed horizontally, the drive pillars must be one upon the other. Where applicable, turn the cross member after loosening the retaining nut.
- To remove the actuator hood, approx. 100 mm of free space is required above the drive.
- The actuator is delivered with a protective box. Up until commissioning, this cover protects the drive during the installation phase and pipeline work.
- Observe the direction of flow arrow on the valve body. Inverting the direction of flow impairs control behavior.

Valve Cross-Sections with Flow Directions

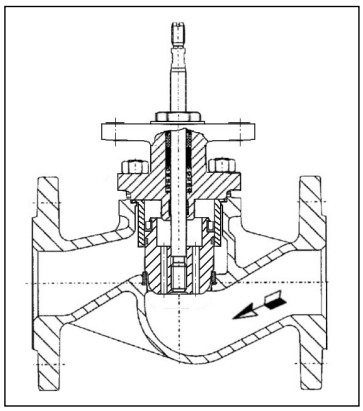
Two-way valves



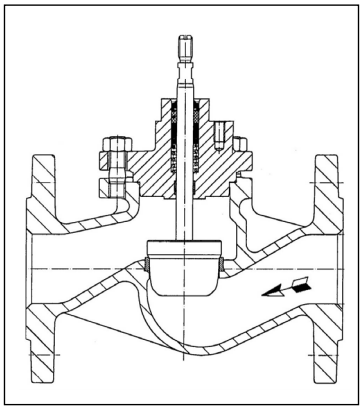
RB..-BK



RK/RF..-BF

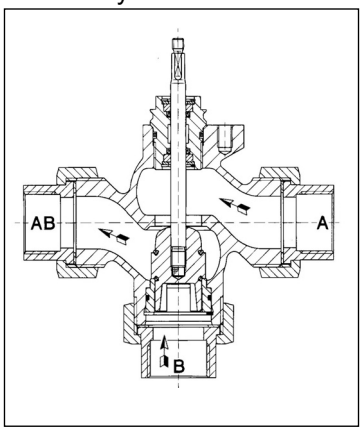


RGDE..

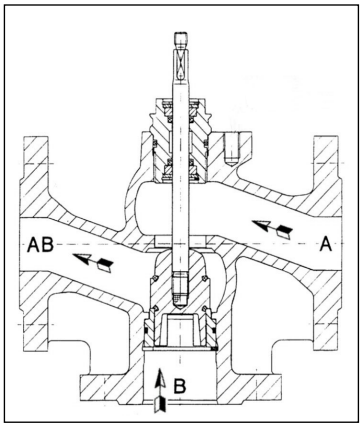


RGD..

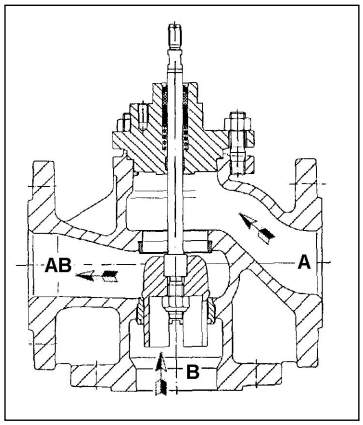
Three-way valves



RB..



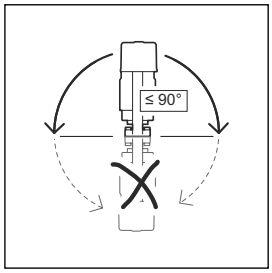
RK/RF..

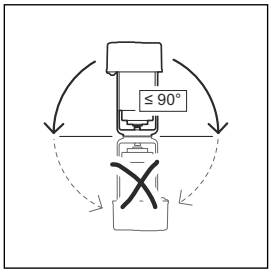


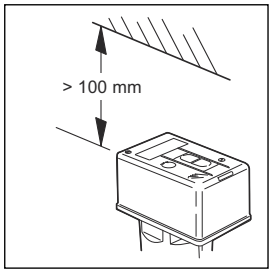
RWG..

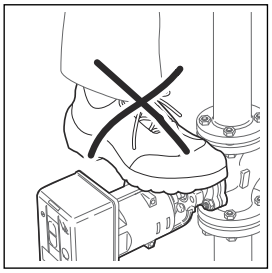
Mounting of MF200Y Emergency Actuator

Installation instructions

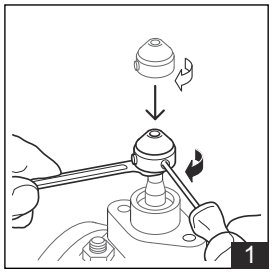


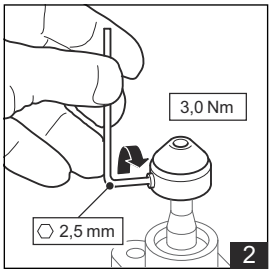


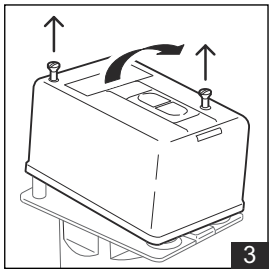


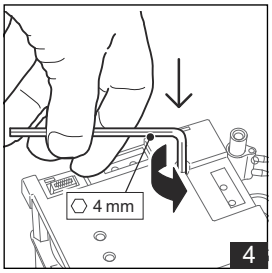


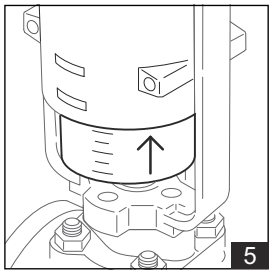
Mounting and installation

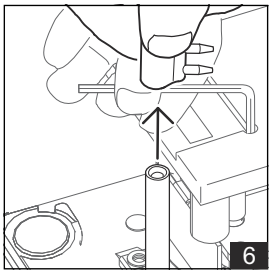


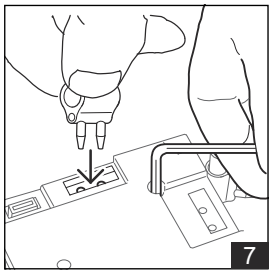


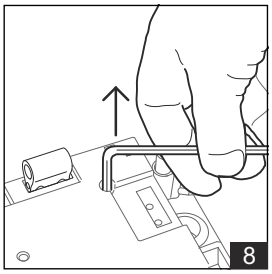


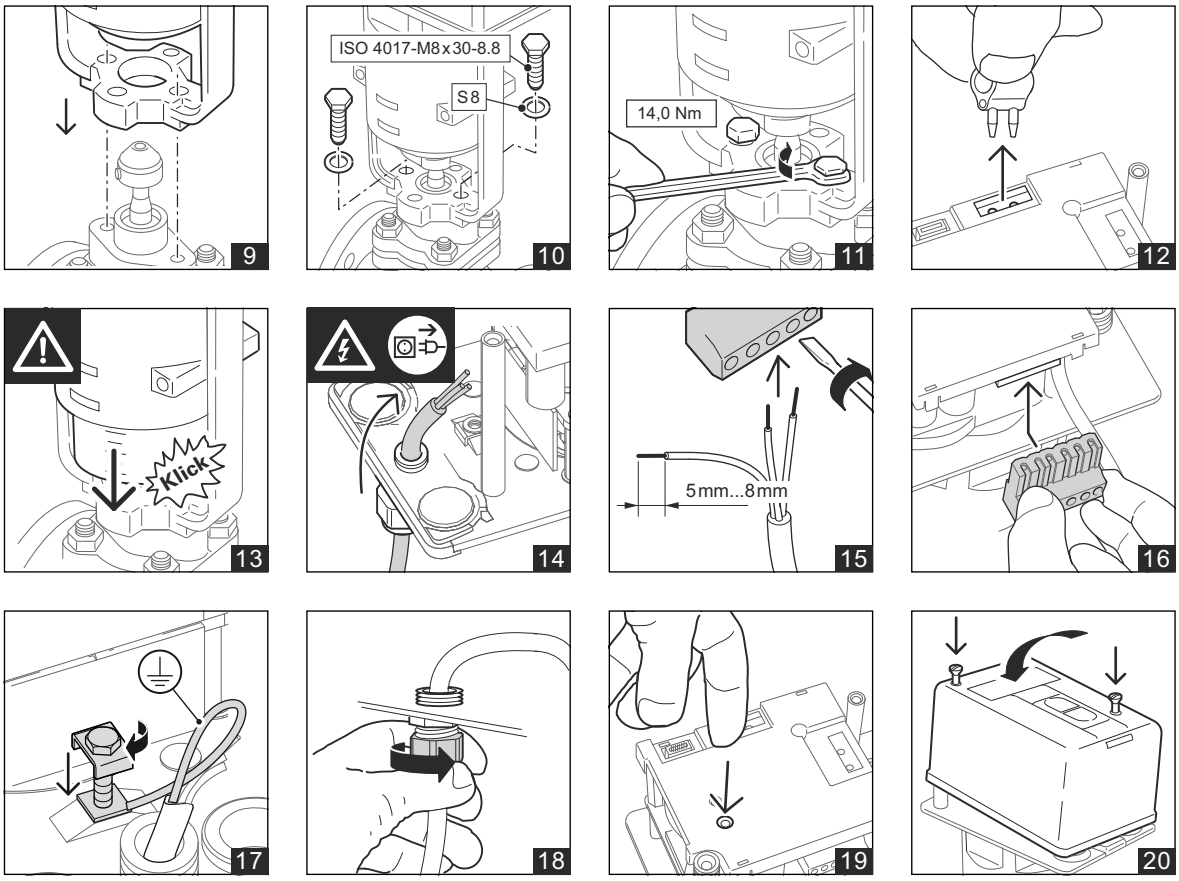










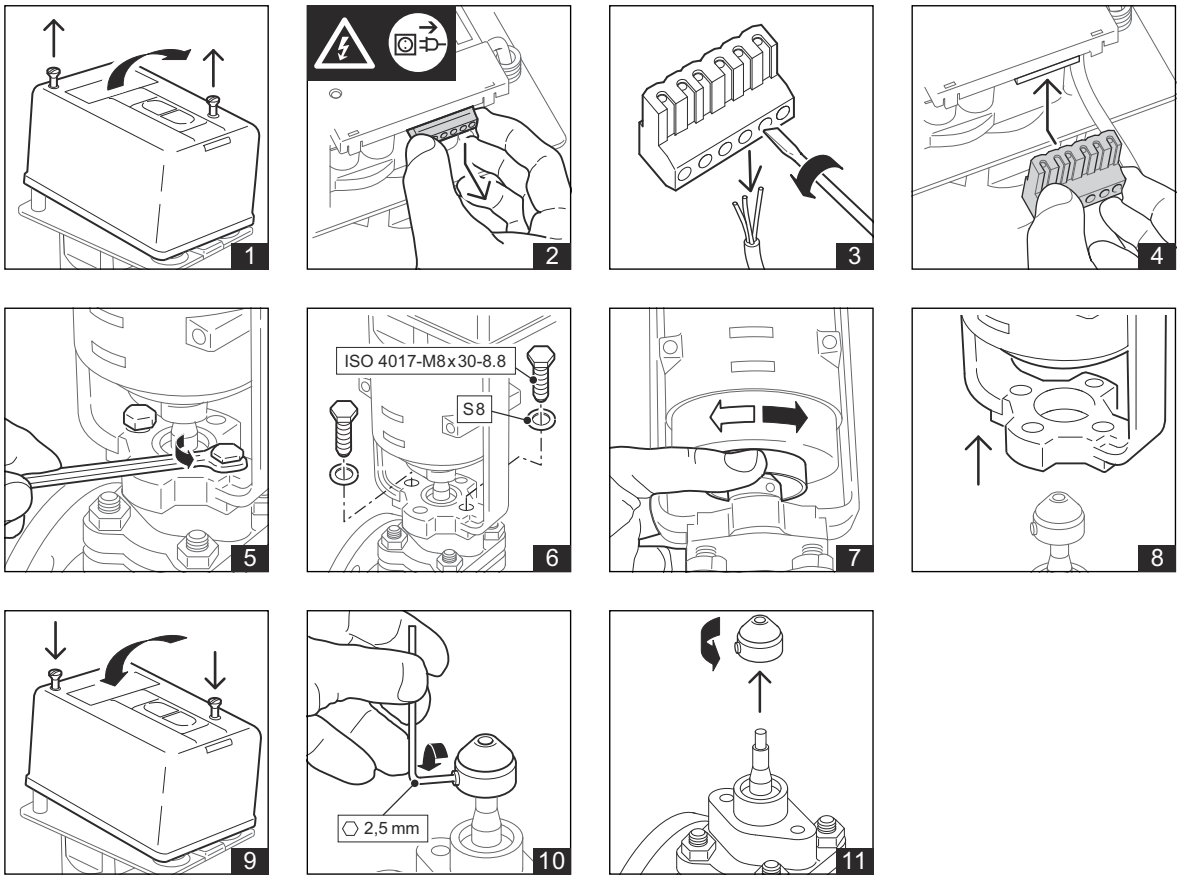


- If the valve is installed in the plant, ensure that no differential pressure builds up in the valve body before beginning work. If necessary, close the gate valve and switch off pumps.
- After the pipeline has cooled off, you can begin mounting the emergency actuator.
- Once the emergency actuator has been mounted and installed, you must trigger an automatic initialization run, see “Commissioning Steps”.

CAUTION

Both hexagon socket screws must be tightened equally with the hexagon socket key (see Fig. 2).

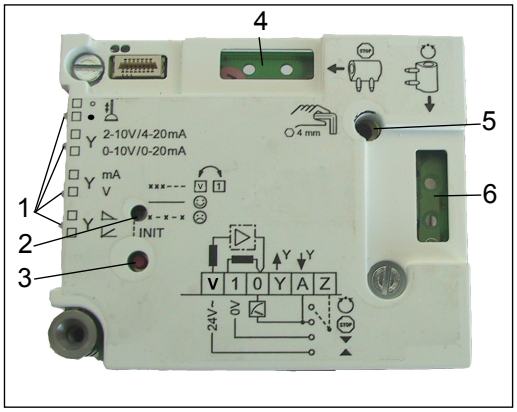
Removal of MF200Y Emergency Actuator



- Before beginning to remove 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, you can begin removal of the emergency actuator.
- Disconnect the emergency actuator from the mains power supply. Then disconnect all electrical connections.

Commissioning

Operating and functional components beneath the emergency actuator cover



(1) Switch for setting the valve function
(2) Status LED display
(3) INIT button
(4) Receptacle for the knob during manual adjustment
(5) Socket for hexagon socket key
(6) Receptacle for the knob during automatic mode without cover during commissioning

General Information

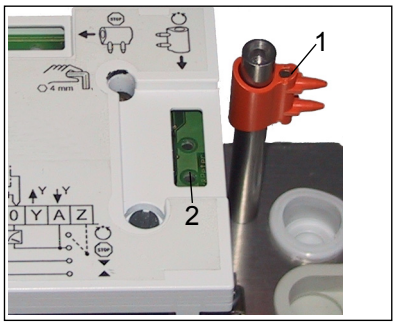
The commissioning process may change if accessories are installed. In such cases, commissioning is described in the data sheet of the accessory that is being used.

WARNING

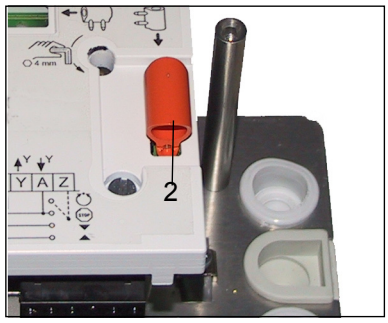
A mains voltage of AC 230 may be present at the connection terminals of the switch module when the E/MF switch module is used.

CAUTION

Automatic mode without the cover may only be used by the technician during commissioning.



Knob not inserted = emergency function triggered



Knob inserted = automatic mode

When the hood is removed, the emergency actuator automatically tests the emergency function and moves into its safety position for safety reasons. To allow the commissioning technician to test functionality, the emergency actuator can be switched to automatic mode by inserting the knob (1).

Remove the drive hood and then insert the knob (1) into the circuit board (2).

CAUTION

Observe after installing the emergency actuator

If the emergency actuator was installed on-site, the actuating stroke must be adjusted to the valve stroke using initialization (INIT).

Status of the LED displays

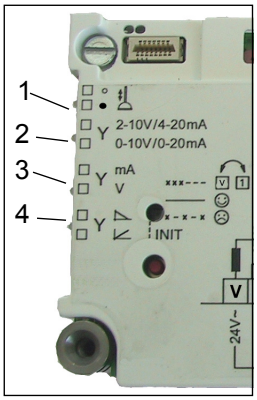
LED beneath the emergency actuator cover	**Meaning**
Constantly lit	Normal operation
Short flashes	Disabled state / voltage polarity incorrect
Long flashes	Installation run

Commissioning Steps

1. Testing for proper actuating device installation and testing the electrical connection

2. Adjusting the valve functions

The valve function is adjusted using the 4 switches beneath the emergency actuator hood.



(1) **Switch:** Switch on/switch off valve block protection — **Factory setting:** • (off)

(2) **Switch:** Setting of the control range of the actuating signal — **Factory setting:** 0–10 V/0–20 mA

(3) **Switch:** Setting of the actuating signal Y and position feedback live or energized — **Factory setting:** V

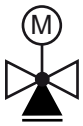
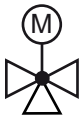
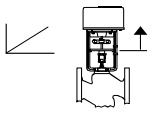
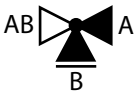
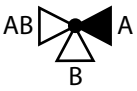
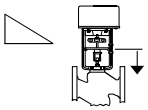
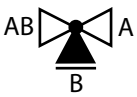
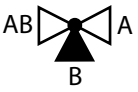
(4) **Switch:** Sequence setting for controlling the actuating direction “valve open” or “valve closed” (e.g. DC 0–10 V or DC 10–0V) — **Factory setting**:

Position feedback

NOTE

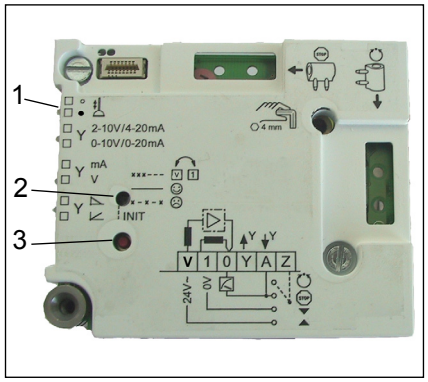
Inverting the control signal (◺ / ◿) also adjusts the sequence of the position feedback. The control signal and the actuating feedback are coupled to each other in their sequence.

(2) Switch	(3) Switch	Operating mode	Yin Terminal “Y”	Yout Terminal “A”	Notes
0-10V/0-20mA	**V**	Init/ manual mode/ valve blocking	DC 0-10 V	> approx. DC 12.5 V	
		Automatic	DC 0-10 V	DC 0-10 V	
2-10V/4-20mA	**V**	Init/ manual mode/ valve blocking	DC 2-10 V	> approx. DC 12.5 V	
		Automatic	DC 2-10 V	DC 2-10 V	
			less than DC 2 V	> approx. DC 12.5 V	"Line break"
0-10V/**0-20mA**	**mA**	Init/ manual mode/ valve blocking	0-20mA	20mA	
		Automatic	0-20mA	0-20mA	
0-10V/**4-20mA**	**mA**	Init/ manual mode/ valve blocking	4-20mA	20mA	
		Automatic	4-20mA	4-20mA	
			less than 4 mA	0 mA	“Line break”

Actuating direction	Two-way valve		Three-way valve
	 RGD..	 RK-BF/RB-BK/RF-BF..	 RK/RB/RF/RWG..
Switch position  Y = DC 10 V			
Switch position  Y = DC 10 V			
	◁ = open	◀ = closed	▲ = flanged off

3. Switching on the power supply

LED (2) flashes.



4. Initialization, adjustment to valve stroke

The initialization run is switched on by pressing the INIT key (3). The valve is completely opened and closed once during initialization. LED (2) flashes during initialization. The emergency actuator always moves first to the upper end position and then to the lower end position.

The LED remains constantly lit to signal that initialization is completed. The INIT key and the LED are located beneath the drive hood (see illustration).

5. Valve block protection

Block protection prevents the ball from jamming when the valve is not moved for a longer period of inactivity, e.g. for heating systems, during the summer. When block protection is activated, the valve ball is lifted for several seconds if there is no stroke movement for 24 hours. Block protection is not activated when the unit is delivered. If plant specifications permit, the valve block protection feature may be activated. Valve block protection can be switched on during the initialization phase.

Valve block protection is switched on and off using switch (1), which is located beneath the drive hood.

6. Manual adjustment

Remove the emergency actuator cover for manual operation. Using the hexagon socket key (key socket 4 mm), the valve can be moved into any position. The knob is then used to lock the emergency actuator.

7. Accessories

If additional components are installed on the emergency actuator (see accessories), their functionality must be tested and adjusted as necessary.

You must follow the accessories' descriptions with connection instructions when doing so.

8. Function test

Replace and tighten the screws of the emergency actuator cover after the drive settings have been made with any accessories. Test the complete functionality of the actuator, including the emergency function, in the plant control circuit.