

Product Description**MF200Z Emergency Actuator**

With two-way/three-way valves of the RK/RB/RF/RWG.. series

MF200Z Emergency Actuator

With two-way/three-way valves of the RK/RB/RF/RWG.. series

Application

For 3-point control with mains voltage of AC 230 V with two-way and three-way valves.



Änderungen vorbehalten - Contents subject to change - Sous réserve de modifications - Reservado el derecho a modificación - Wijzigingen voorbehouden - Con riserva di modifiche - Innehåll som skall ändras - Změny vyhrazeny - Zmiany zastrzeżone - Возможны изменения - A változtatások jogát fenntartjuk - 保留未经通知而改动的权力

ContentsPage

Important Information Regarding Product Safety 3

MF200Z Emergency Actuator 4

 Application..... 4

 Item 4

 Technical Data 4

 Accessories..... 5

 Dimensions 6

 Connection 7

 Actuator Functions 8

 Installation..... 9

Three-Way Valve RK15..50/RK65KMF200Z and Two-Way Valve RK15..50/RK65K-BFMF200Z 11

 Types 11

 Technical Data: RK..(-BF) Valves 12

Three-Way Valve RB15..50MF200Z and Two-Way Valve RB15..50-BKMF200Z 14

 Types 14

 Technical Data: RB..(-BK) Valves 15

Three-Way Valve RB15..50TMF200Z and Two-Way Valve RB15..50T-BKMF200Z 17

 Types 17

 Technical Data: RB..(-BK) Valves 18

Three-Way Valve RF15..50/RF65KMF200Z and Two-Way Valve RF15..50/RF65-BKMF200Z 20

 Type 20

 Technical Data: RF..(-BF) Valves 21

Three-Way Valve RWG15..40MF200Z 23

 Types 23

 Technical Data: RWG.. Valves..... 23

Mounting of Valve 25

 Valve Cross-Sections with Flow Directions 26

Mounting of Emergency Actuator MF200Z 27

Removal of Emergency Actuator MF200Z 28

Commissioning..... 29

 General Information 29

 Commissioning Steps 30

Important Information Regarding Product Safety

Safety Instructions

This data sheet contains information on installing and commissioning the product "MF200Z Emergency Actuator valves of the RK/RB/RF/RWG.. series". 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.

Meaning of the Symbols



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.



NOTICE

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.

MF200Z Emergency Actuator

With two-way/three-way valves of the RK/RB/RF/RWG.. series

Product Description

MF200Z Emergency Actuator

Application

Emergency actuator MF200Z with automatic coupling, safety function and a thrust of 1000 N provides for fine stroke adjustment of the two-way valves RB15..50-BK, RF15..50-BF, RF65K-BF, RK15..50-BF and RK65K-BF and RGD15..40 as well as three-way valves RB15..50, RF15..50, RF65K, RK15..50, RK65K and RWG15..40.

The emergency actuator is controlled with a 3-point signal (open/stop/closed).

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

MF200Z AC 230 V emergency actuator with 3-point control
Emergency function: **Emergency actuator retracts without power**

Technical Data

Nominal voltage	AC 230 V ± 15%, 50/60 Hz, 25 VA
Power consumption Idle position	10 VA
Control	3-point signal (open/stop/closed), optionally via - 230 V energized control or - contact inputs
Drive	Brushless DC motor
Priority switching	Direct control via voltage-free contact inputs "Z2"/"Z3" as - 3-point control (open/stop/closed) or - 2-point control (open/closed), e.g. frost protection, limitation (Connection parallel to energized control from the loop controller)
Actuating stroke	Max. 20 mm, automatic stroke adjustment through initialization
Positioning time	9 s/mm actuating stroke
Emergency positioning time	Approx. 1.0 s/mm
Thrust	1000 N
Position indication	Stroke range scale
Position feedback	DC 0–10 V, 5 mA for 0–100% actuating stroke
Valve monitoring	Automatic valve block control with error message greater than approx. 12.5 V
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.	0–50 °C
Degree of protection	IP54
Protection class	I in acc. with EN 60730
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

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

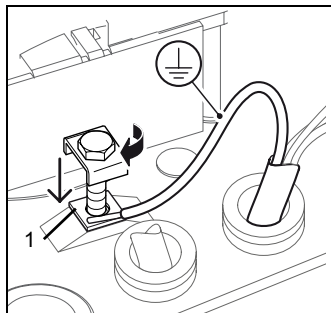
The E/MF switch module provides the actuator with
 - malfunction feedback and notification of manual mode or
 - feedback about both valve end positions (open/closed).
 This function can be switched.

**WARNING**

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

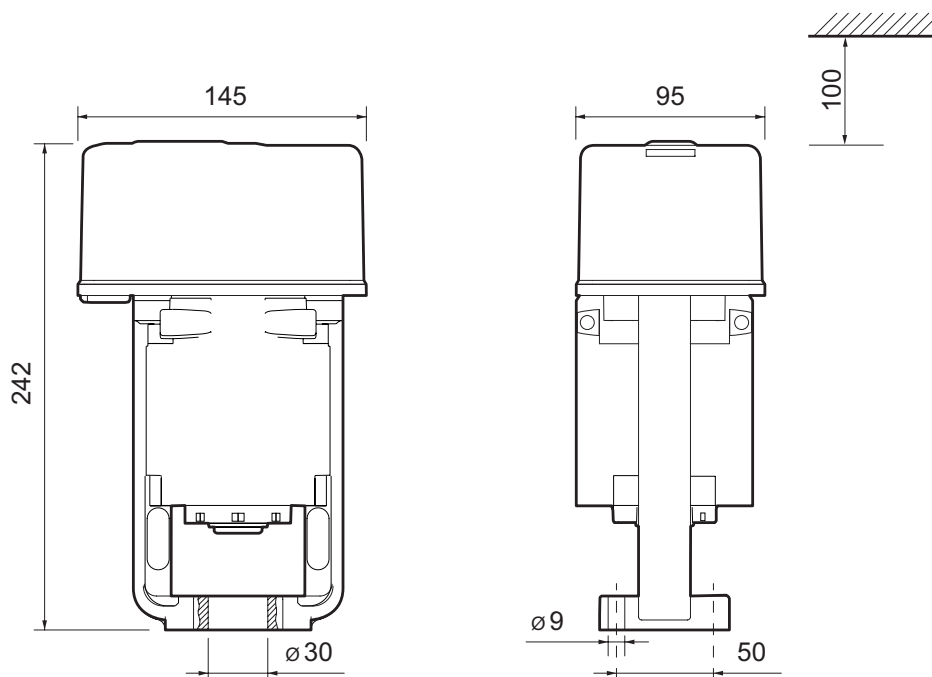
The contacts on the end switches must only be used with voltages of the same installation category.

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.



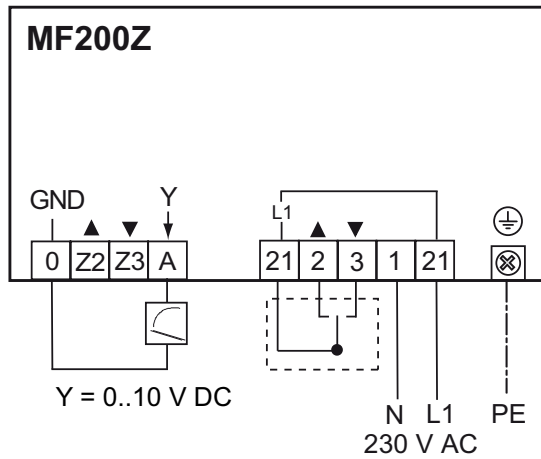
Copper-coated side (1) of the square washer (Cupal washer)

Dimensions

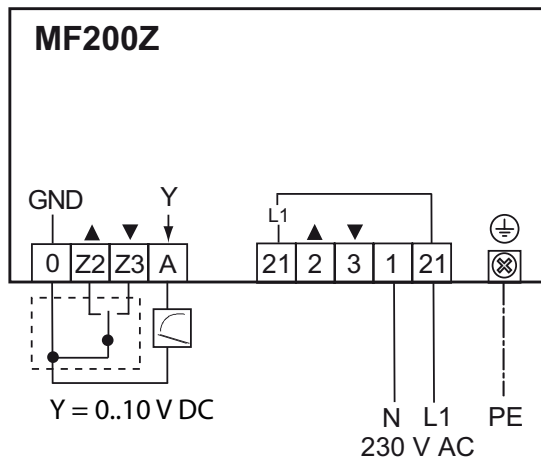


Connection

3-point control AC 230 V energized



Voltage-free 3-point control

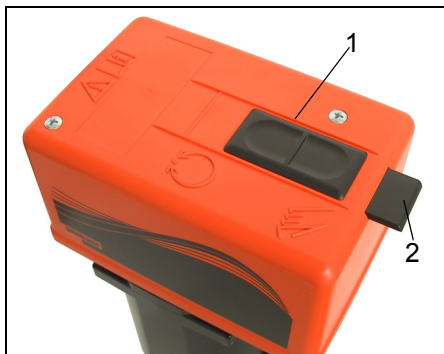


Note

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).



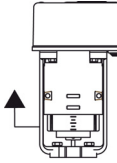
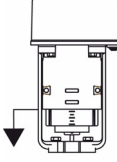
Automatic malfunction message

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.

Actuating directions

<p>Actuator retracting Emergency actuator function retracts without power</p>		<p>Two-way valves RK..-BF, RB..-BK, RF..-BF.....close</p> <p>Three-way valves RK, RB, RF, RWG.. Gate A:.....closes Gate B:.....opens</p>
<p>Actuator extending</p>		<p>Two-way valves RK..-BF, RB..-BK, RF..-BF.....open</p> <p>Three-way valves RK, RB, RF, RWG.. Gate A:.....opens Gate B:.....closed</p>

Installation



WARNING

Warning: Mains voltage 230 V AC

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 local wiring regulations. The device is connected according to the legally binding wiring diagram.



CAUTION

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

An M16 x 1.5 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 mm to 2.3 mm). Cables between the low voltage (AC 230 V) lines and the other lines (e.g. positioning feedback connection) must be routed separately. This requires an additional M16 x 1.5 screw fitting (not included in the scope of delivery).



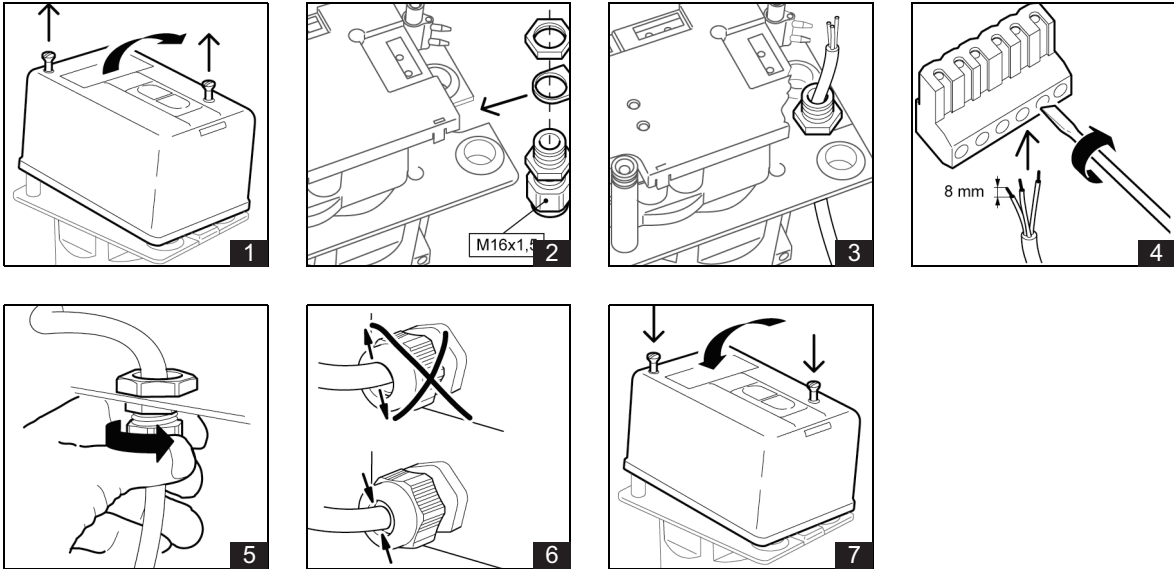
CAUTION

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 upper end position using high spring force when the power supply is interrupted.

MF200Z Emergency Actuator

With two-way/three-way valves of the RK/RB/RF/RWG.. series



Direct control/priority switching

Priority switching can be used parallel to the energized 3-point control by wiring the Z2 and Z3 terminals. Control of the actuator replaces regular control from the loop controller via terminals 2 and 3. Note the following priorities for priority switching:

Priority	Terminal Z2	Terminal Z3	Actuator
None	Open	Open	Priority switching not functioning. Control is evaluated via terminals 2 and 3.
Medium	Closed Open	Open Closed	Actuator moves into lower end position. Actuator moves into upper end position.
High	Closed	Closed	Actuator moves into upper end position.

Product Description

MF200Z Emergency Actuator

With two-way/three-way valves of the RK/RB/RF/RWG.. series

Three-Way Valve RK15..50/RK65KMF200Z and Two-Way Valve RK15..50/RK65K-BFMF200Z

Application

The gray cast iron three-way valves and two-way valves with emergency actuator MF200Z are used for mixing liquids precisely.

The valves are used as two-way valves with the BF blank flange on gate B.

A 3-point signal is used for control (open/stop/closed; AC 230 V or voltage-free contacts). Actuator MF200Z includes an emergency function that automatically opens valve gate B when the power supply is interrupted = straight throughput A → AB closed without power.



Types

Grey cast iron three-way valve RK15..50/RK65K with emergency actuator MF200Z for water up to 120 °C, 6 bar

	DN	PN	cvs	Δp (bar)	Positioning time (s)	Weight (kg)	Emergency function
RK15/0,63MF200Z	15	6	0.63	6	126	5.1	Gate A: Closed
RK15/1,0MF200Z	15	6	1.0	6	126	5.1	Gate A: Closed
RK15/1,6MF200Z	15	6	1.6	6	126	5.1	Gate A: Closed
RK15/2,5MF200Z	15	6	2.5	6	126	5.1	Gate A: Closed
RK15MF200Z	15	6	4.0	6	126	5.1	Gate A: Closed
RK20MF200Z	20	6	6.3	6	126	5.8	Gate A: Closed
RK25MF200Z	25	6	10	6	126	6.5	Gate A: Closed
RK32MF200Z	32	6	16	6	126	8.8	Gate A: Closed
RK40MF200Z	40	6	25	6	126	9.5	Gate A: Closed
RK50MF200Z	50	6	40	3.5	126	10.8	Gate A: Closed
RK65KMF200Z	65	6	63	2	180	17.7	Gate A: Closed

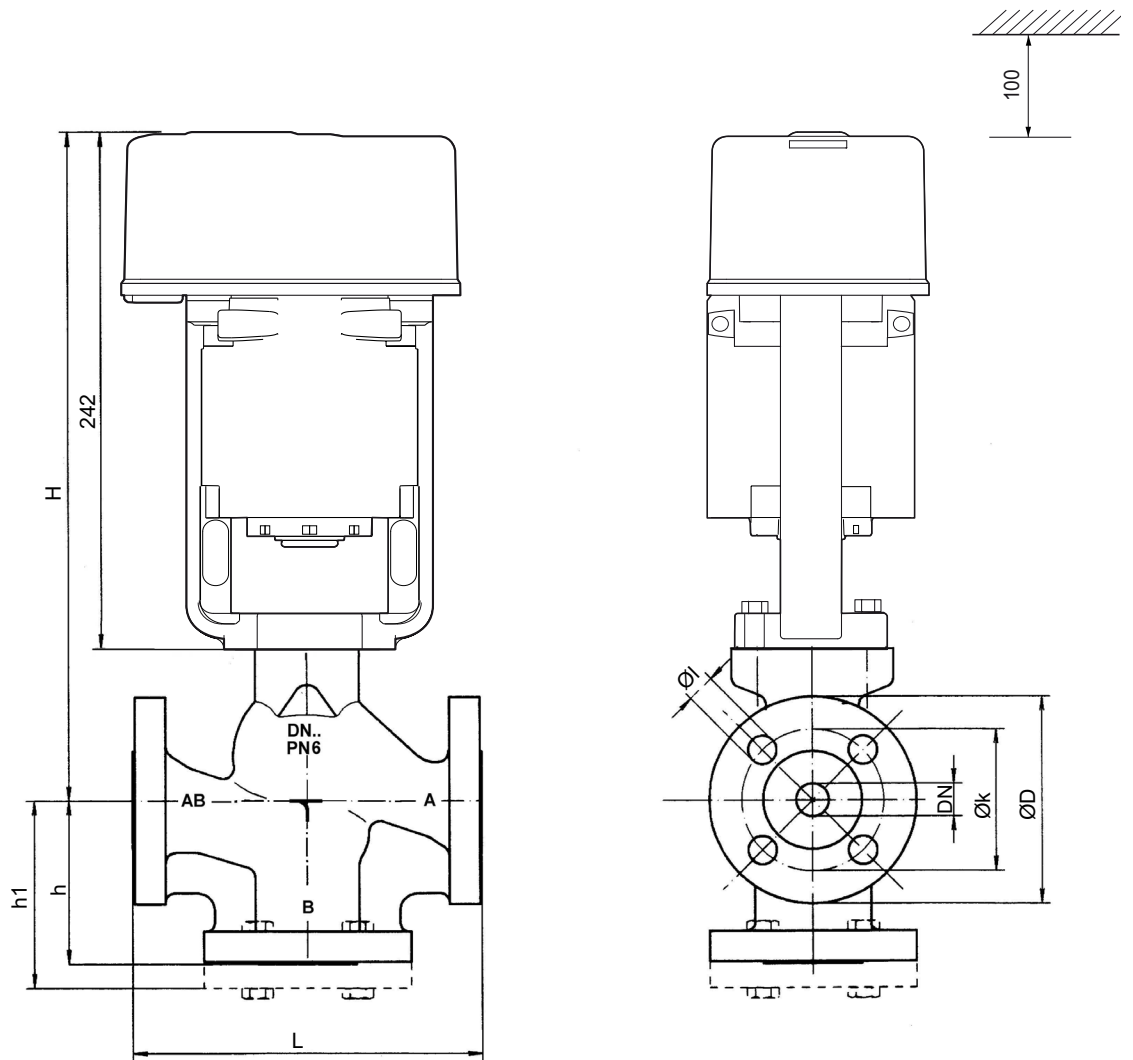
Grey cast iron two-way valve RK15..50-BF/RK65K-BF with emergency actuator MF200Z for water up to 120 °C, 6 bar

	DN	PN	cvs	Δp (bar)	Positioning time (s)	Weight (kg)	Emergency function
RK15/0,6-BFMF200Z	15	6	0.63	6	126	5.7	Valve: Closed
RK15/1,0-BFMF200Z	15	6	1.0	6	126	5.7	Valve: Closed
RK15/1,6-BFMF200Z	15	6	1.6	6	126	5.7	Valve: Closed
RK15/2,5-BFMF200Z	15	6	2.5	6	126	5.7	Valve: Closed
RK15-BFMF200Z	15	6	4.0	6	126	5.7	Valve: Closed
RK20-BFMF200Z	20	6	6.3	6	126	6.7	Valve: Closed
RK25-BFMF200Z	25	6	10	6	126	7.4	Valve: Closed
RK32-BFMF200Z	32	6	16	6	126	9.6	Valve: Closed
RK40-BFMF200Z	40	6	25	6	126	11.4	Valve: Closed
RK50-BFMF200Z	50	6	40	3.5	126	12.8	Valve: Closed
RK65K-BFMF200Z	65	6	63	2	180	19.9	Valve: Closed

Technical Data: RK..(-BF) Valves

Nominal diameter	DN15–65
Pressure rating	PN 6
Connection	Flange in accordance with DIN 2531
Characteristic curve	RK.. Gates A → AB = same percentage Gates B → AB = linear
	RK..-BF Gates A → AB = same percentage
Actuating 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	Grey cast iron GG25 0.6025
Seat ring	CrNi steel 1.4021
Cone	Brass Ms 2.0401 with soft packing
Valve spindle	CrNi steel 1.4571
Spindle seal	O-rings with EPDM/PTFE guide bushings, 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 b in mm							

Three-Way Valve RB15..50MF200Z and Two-Way Valve RB15..50-BKMF200Z

Application

The gunmetal three-way valves and two-way valves with emergency actuator MF200Z are used for mixing liquids precisely.

The valves are used as two-way valves with the BK blank cover on gate B.

A 3-point signal is used for control (open/stop/closed; AC 230 V or voltage-free contacts). Actuator MF200Z includes an emergency function that automatically opens valve gate B when the power supply is interrupted = straight throughput A → AB closed without power.



Types

Gunmetal three-way valve RB15..50 with emergency actuator MF200Z for water up to 120 °C, 16 bar

	DN	PN	cvs	Δp (bar)	Positioning time (s)	Weight (kg)	Emergency function
RB15/0,63MF200Z	15	16	0.63	16	108	3.6	Gate A: Closed
RB15/1,0MF200Z	15	16	1.0	16	108	3.6	Gate A: Closed
RB15/1,6MF200Z	15	16	1.6	16	108	3.6	Gate A: Closed
RB15/2,5MF200Z	15	16	2.5	16	108	3.6	Gate A: Closed
RB15MF200Z	15	16	4.0	16	108	4.1	Gate A: Closed
RB20MF200Z	20	16	6.3	16	108	4.3	Gate A: Closed
RB25MF200Z	25	16	10	15	108	5.2	Gate A: Closed
RB32MF200Z	32	16	16	9.5	126	6.00	Gate A: Closed
RB40MF200Z	40	16	25	6	126	6.7	Gate A: Closed
RB50MF200Z	50	16	40	3.5	126	8.2	Gate A: Closed

Gunmetal two-way valve RB15..50-BK with emergency actuator MF200Z for water up to 120 °C, 16 bar

	DN	PN	cvs	Δp (bar)	Positioning time (s)	Weight (kg)	Emergency function
RB15/0,63-BKMF200Z	15	16	0.63	16	108	3.5	Valve: Closed
RB15/1,0-BKMF200Z	15	16	1.0	16	108	3.5	Valve: Closed
RB15/1,6-BKMF200Z	15	16	1.6	16	108	3.5	Valve: Closed
RB15/2,5-BKMF200Z	15	16	2.5	16	108	3.5	Valve: Closed
RB15-BKMF200Z	15	16	4.0	16	108	3.5	Valve: Closed
RB20-BKMF200Z	20	16	6.3	16	108	4.1	Valve: Closed
RB25-BKMF200Z	25	16	10	15	108	4.2	Valve: Closed
RB32-BKMF200Z	32	16	16	9.5	126	5.9	Valve: Closed
RB40-BKMF200Z	40	16	25	6	126	6.5	Valve: Closed
RB50-BKMF200Z	50	16	40	3.5	12	7.9	Valve: Closed

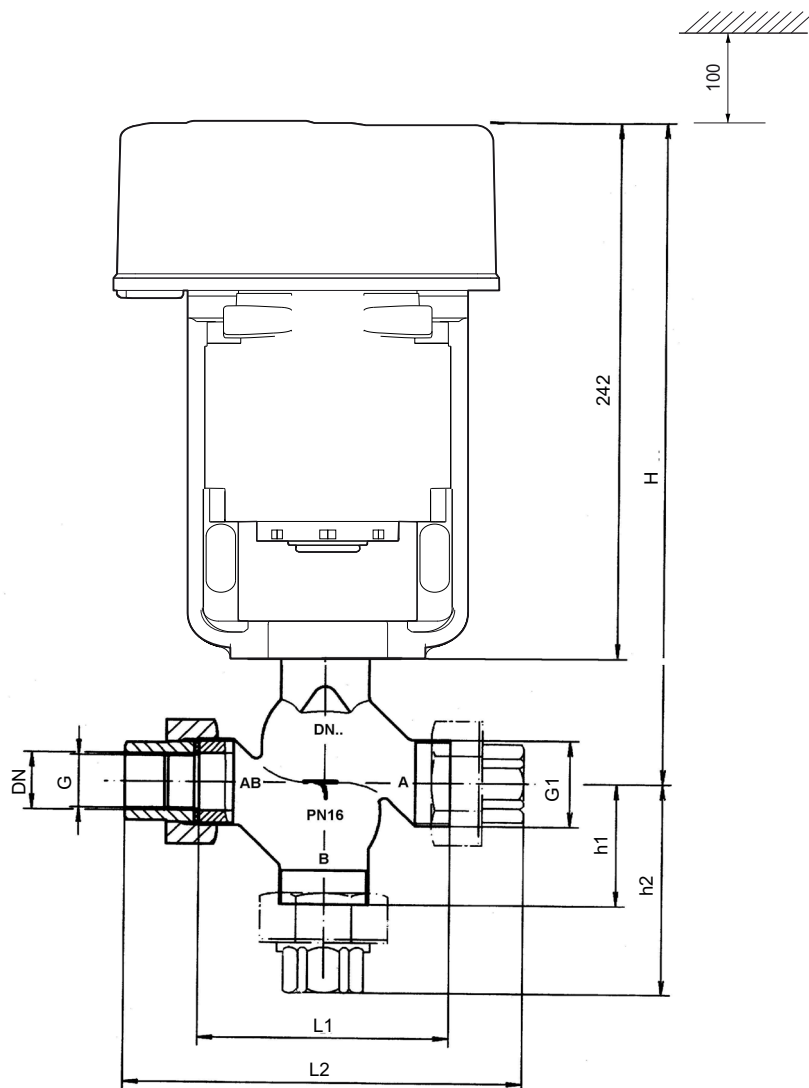
Product Description**MF200Z Emergency Actuator**

With two-way/three-way valves of the RK/RB/RF/RWG.. series

Technical Data: RB..(-BK) Valves

Nominal diameter	DN15–50 (G1/2–G2)
Pressure rating	PN 16
Connection	Male threads in accordance with DIN EN 10242 with female thread fittings
Characteristic curve	RB.. Gates A → AB = same percentage Gates B → AB = linear
	RB..-BF Gates A → AB = same percentage
Actuating stroke	RB15..20(-BK): 12 mm RB25..50(-BK): 14 mm
Leak rate	In accordance with EN 1349, leakage class VI
Medium temperature	0–150 °C (max. 120 °C at 16 bar)
Housing	Gunmetal, Rg5 2.1096
Seat ring	CrNi steel 1.4021
Cone	Brass Ms 2.0401 with soft packing
Valve spindle	CrNi steel 1.4571
Spindle seal	EPDM o-rings, maintenance-free
Pipe connections	Female thread fittings and GTW union nuts (malleable iron, yellow chromated)

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							

Product Description

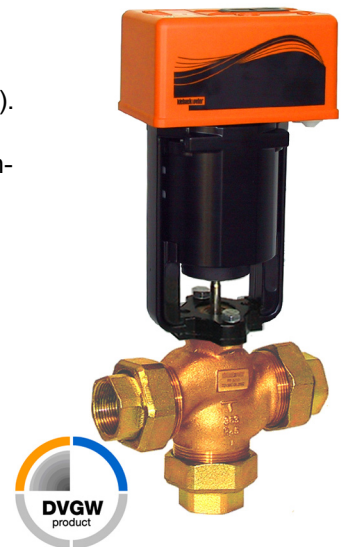
MF200Z Emergency Actuator

With two-way/three-way valves of the RK/RB/RF/RWG.. series

Three-Way Valve RB15..50TMF200Z and Two-Way Valve RB15..50T-BKMF200Z

Application

The gunmetal three-way valves and two-way valves with emergency actuator MF200Z are used for precise mixing in drinking and service water systems. The valves are certified by the DVGW construction type (reg. no. DW-6341BP0198). The valves are used as two-way valves with the BK blank cover on gate B. . A 3-point signal is used for control (open/stop/closed; AC 230 V or voltage-free contacts). Actuator MF200Z includes an emergency function that automatically opens valve gate B when the power supply is interrupted = straight throughput A → AB closed without power.



Types

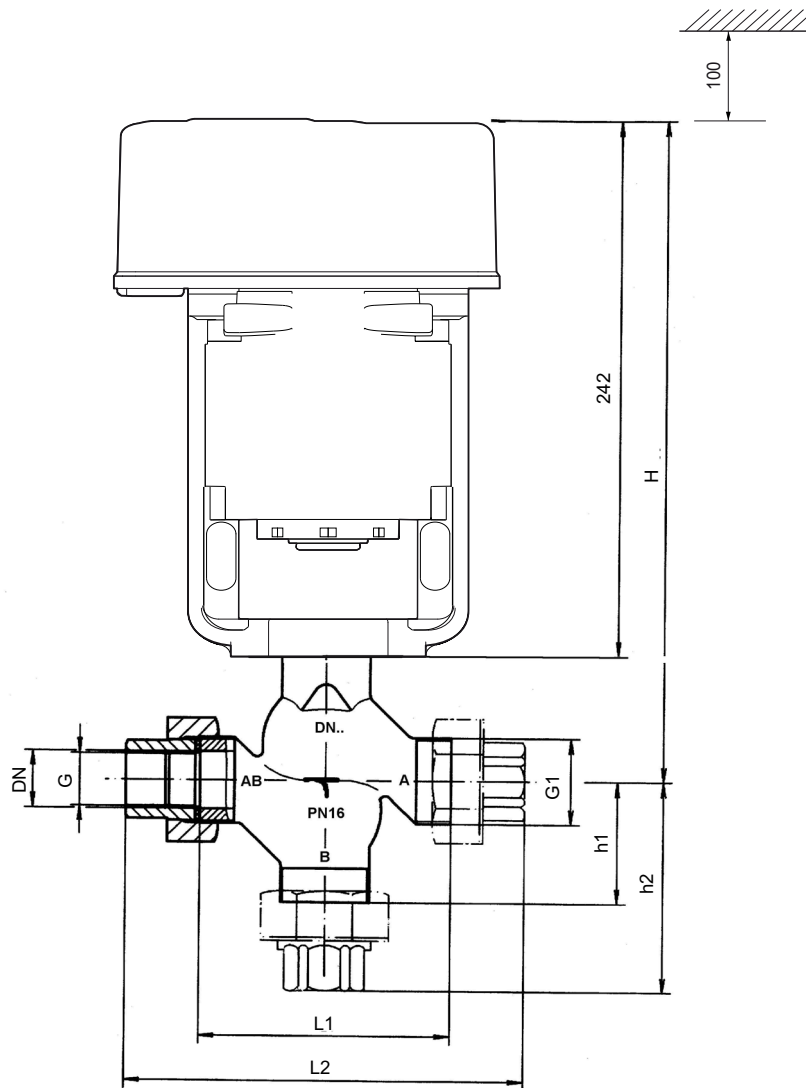
Gunmetal three-way valve RB15..50T, DVGW certified with emergency actuator MF200Z for drinking and service water up to 90 °C, 16 bar

	DN	PN	cvs	Δp (bar)	Position- ing time (s)	Weight (kg)	Emergency function
RB15/0,63TMF200Z	15	16	0.63	16	108	3.6	Gate A: Closed
RB15/1,0TMF200Z	15	16	1.0	16	108	3.6	Gate A: Closed
RB15/1,6TMF200Z	15	16	1.6	16	108	3.6	Gate A: Closed
RB15/2,5TMF200Z	15	16	2.5	16	108	3.6	Gate A: Closed
RB15TMF200Z	15	16	4.0	16	108	4.1	Gate A: Closed
RB20TMF200Z	20	16	6.3	16	108	4.3	Gate A: Closed
RB25TMF200Z	25	16	10	15	108	5.2	Gate A: Closed
RB32TMF200Z	32	16	16	9.5	126	6.0	Gate A: Closed
RB40TMF200Z	40	16	25	6	126	6.7	Gate A: Closed
RB50TMF200Z	50	16	40	3.5	126	8.2	Gate A: Closed

Gunmetal two-way valve RB15..50T-BK, DVGW certified with emergency actuator MF200Z for drinking and service water up to 90 °C, 16 bar

	DN	PN	cvs	Δp (bar)	Position- ing time (s)	Weight (kg)	Emergency function
RB15/0,63T-BKMF200Z	15	16	0.63	16	108	3.5	Valve: Closed
RB15/1,0T-BKMF200Z	15	16	1.0	16	108	3.5	Valve: Closed
RB15/1,6T-BKMF200Z	15	16	1.6	16	108	3.5	Valve: Closed
RB15/2,5T-BKMF200Z	15	16	2.5	16	108	3.5	Valve: Closed
RB15T-BKMF200Z	15	16	4.0	16	108	3.5	Valve: Closed
RB20T-BKMF200Z	20	16	6.3	16	108	4.1	Valve: Closed
RB25T-BKMF200Z	25	16	10	15	108	4.2	Valve: Closed
RB32T-BKMF200Z	32	16	16	9.5	126	5.9	Valve: Closed
RB40T-BKMF200Z	40	16	25	6	126	6.5	Valve: Closed
RB50T-BKMF200Z	50	16	40	3.5	126	7.9	Valve: Closed

Dimensions



Version RB .. T-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	288	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							

Three-Way Valve RF15..50/RF65KMF200Z and Two-Way Valve RF15..50/RF65-BKMF200Z

Application

The gray cast iron three-way valves and two-way valves with emergency actuator MF200Z are used for mixing liquids precisely.

The valves are used as two-way valves with the BF blank cover on gate B.

A 3-point signal is used for control (open/stop/closed; AC 230 V or voltage-free contacts). Actuator MF200Z includes an emergency function that automatically opens valve gate B when the power supply is interrupted = straight throughput A → AB closed without power.



Type

Grey cast iron three-way valve RF15..50/RF65K with emergency actuator MF200Z for water up to 120 °C, 16 bar

	DN	PN	cvs	Δp (bar)	Position- ing time (s)	Weight (kg)	Emergency function
RF15/0,63MF200Z	15	16	0.63	16	126	5.9	Gate A: Closed
RF15/1,0MF200Z	15	16	1.0	16	126	5.9	Gate A: Closed
RF15/1,6MF200Z	15	16	1.6	16	126	5.9	Gate A: Closed
RF15/2,5MF200Z	15	16	2.5	16	126	5.9	Gate A: Closed
RF15MF200Z	15	16	4.0	16	126	5.9	Gate A: Closed
RF20MF200Z	20	16	6.3	16	126	6.8	Gate A: Closed
RF25MF200Z	25	16	10	15	126	7.8	Gate A: Closed
RF32MF200Z	32	16	16	9.5	126	10.3	Gate A: Closed
RF40MF200Z	40	16	25	6	126	11.9	Gate A: Closed
RF50MF200Z	50	16	40	3.5	126	14.8	Gate A: Closed
RF65KMF200Z	65	16	63	2	180	25.9	Gate A: Closed

Grey cast iron two-way valve RF15..50-BF/RF65K-BF with emergency actuator MF200Z for water up to 120 °C, 16 bar

	DN	PN	cvs	Δp (bar)	Position- ing time (s)	Weight (kg)	Emergency function
RF15/0,63-BFMF200Z	15	16	0.63	16	126	6.9	Valve: Closed
RF15/1,0-BFMF200Z	15	16	1.0	16	126	6.9	Valve: Closed
RF15/1,6-BFMF200Z	15	16	1.6	16	126	6.9	Valve: Closed
RF15/2,5-BFMF200Z	15	16	2.5	16	126	6.9	Valve: Closed
RF15-BFMF200Z	15	16	4.0	16	126	6.9	Valve: Closed
RF20-BFMF200Z	20	16	6.3	16	126	9.3	Valve: Closed
RF25-BFMF200Z	25	16	10	15	126	9.4	Valve: Closed
RF32-BFMF200Z	32	16	16	9.5	126	12.8	Valve: Closed
RF40-BFMF200Z	40	16	25	6	126	14.6	Valve: Closed
RF50-BFMF200Z	50	16	40	3.5	126	18.2	Valve: Closed
RF65K-BFMF200Z	65	16	63	2	180	21.8	Valve: Closed

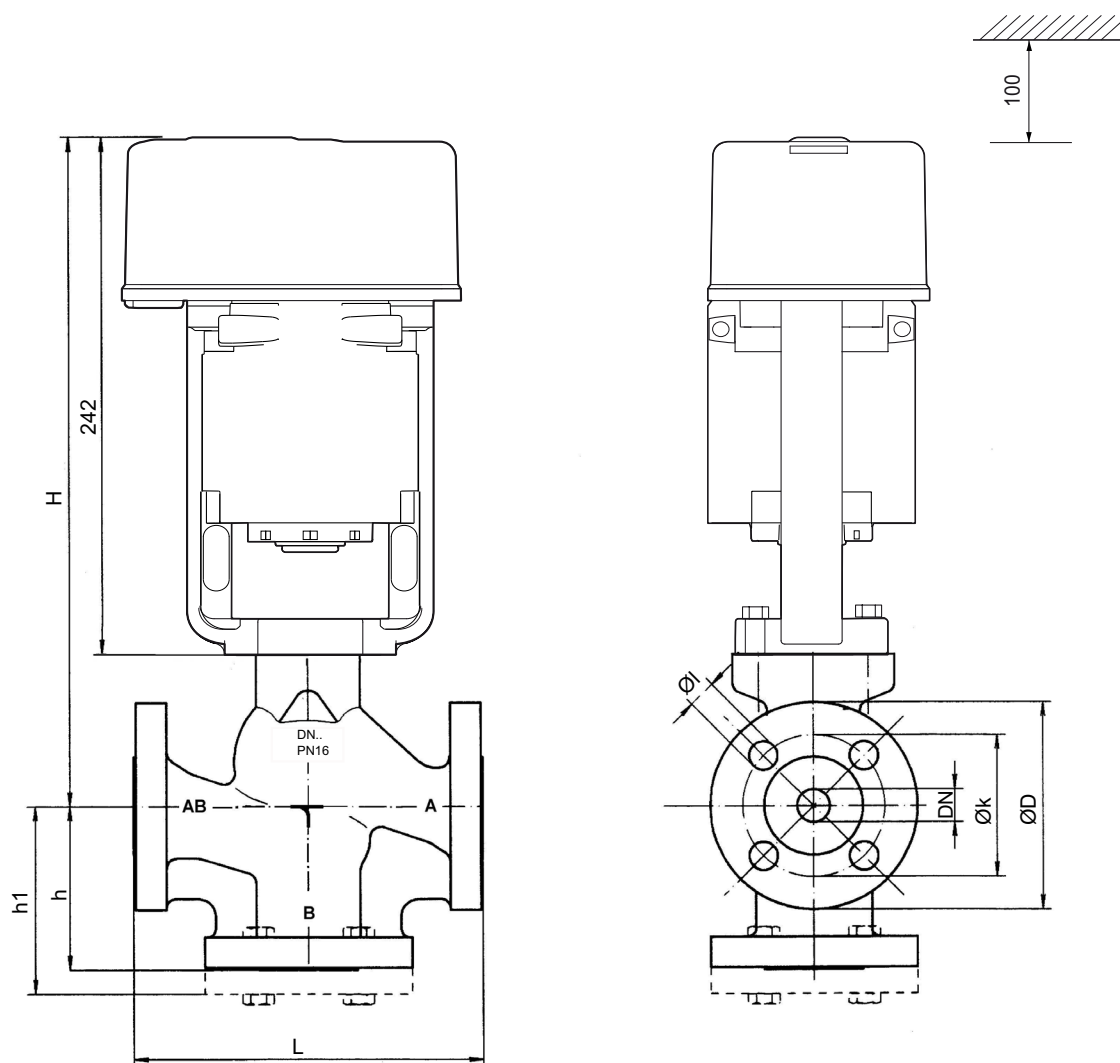
Product Description**MF200Z Emergency Actuator**

With two-way/three-way valves of the RK/RB/RF/RWG.. series

Technical Data: RF..(-BF) Valves

Nominal diameter	DN15–65
Pressure rating	PN 16
CE marking	CE marking for RF65K
Connection	Flange according to DIN 2533
Characteristic curve	RF.. Gates A → AB = same percentage Gates B → AB = linear
	RF..-BF Gates A → AB = same percentage
Actuating 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	Grey cast iron GG25 0.6025
Cone	Brass Ms 2.0401 with soft packing
Valve spindle	CrNi steel 1.4571
Spindle seal	O-rings with EPDM/PTFE guide bushings, 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							

Product Description**MF200Z Emergency Actuator**

With two-way/three-way valves of the RK/RB/RF/RWG.. series

Three-Way Valve RWG15..40MF200Z**Application**

The nodular iron three-way valves with emergency actuator MF200Z are used for fine quantity control of liquid and vapor.

A 3-point signal is used for control (open/stop/closed; AC 230 V or voltage-free contacts). Actuator MF200Z includes an emergency function that automatically opens valve gate B when the power supply is interrupted = straight throughput A → AB closed without power.

Types

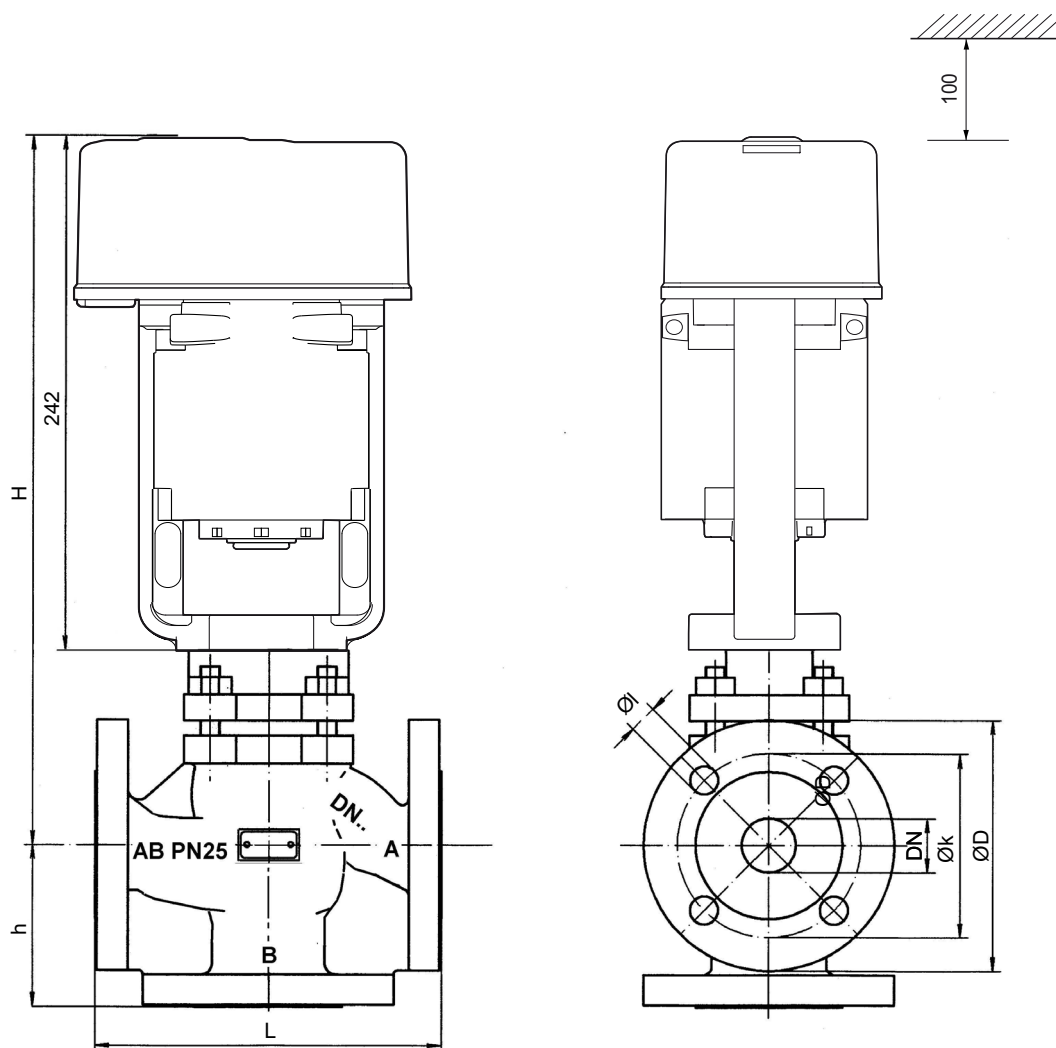
Nodular iron three-way valve RWG15..40 with actuator MF200Z for water up to 120 °C, 25 bar, as well as for hot water and steam up to 200 °C, 20 bar

	DN	PN	cvs	Δp (bar)	Position- ing time (s)	Weight (kg)	Emergency function
RWG15/1,0MF200Z	15	25	1	20	135	7.6	Gate A: Closed
RWG15/1,6MF200Z	15	25	1.6	20	135	7.6	Gate A: Closed
RWG15/2,5MF200Z	15	25	2.5	20	135	7.6	Gate A: Closed
RWG15MF200Z	15	25	4	20	135	7.6	Gate A: Closed
RWG25/6,3MF200Z	25	25	6.3	11	135	9.5	Gate A: Closed
RWG25MF200Z	25	25	10	11	135	9.5	Gate A: Closed
RWG32MF200Z	32	25	16	7	135	12.1	Gate A: Closed
RWG40MF200Z	40	25	25	4.5	135	15.5	Gate A: Closed

**Technical Data: RWG.. Valves**

Nominal diameter	DN15–20	
Pressure rating	PN 25	
CE marking	CE marking starting from DN32, notified body: 0525	
Characteristic curve	RWG..	Gates A → AB = same percentage Gates B → AB = linear
Actuating stroke	15 mm	
Leak rate	In accordance with EN 1349, leakage class VI	
Medium temperature	0–200 °C	
Housing	Gunmetal, Rg5 2.1096	
Seat ring	CrNi steel 1.4021	
Cone	DN15–32	CrNi steel 1.4571
	DN40	CrNi steel 1.4021
Valve spindle	CrNi steel 1.4571	
Spindle seal	Univerdit gaskets with PTFE sleeve (maintenance-free)	

Dimensions



DN	L	Ø D	Ø k	Ø l	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
Dimensions L to H in mm, flanges according to DIN, PN25						

Mounting of Valve

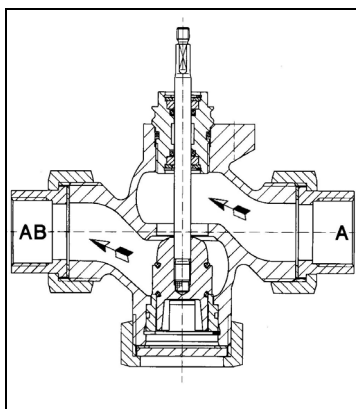
**WARNING!**

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

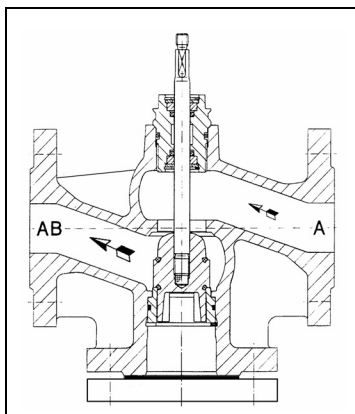
- The valve ports come with protective caps to protect against contamination. They are to be removed before installing the valves.
- The pipeline system and the interior of the fitting must be free of foreign objects. In the event of contaminated media, dirt collectors are to be inserted upstream of 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

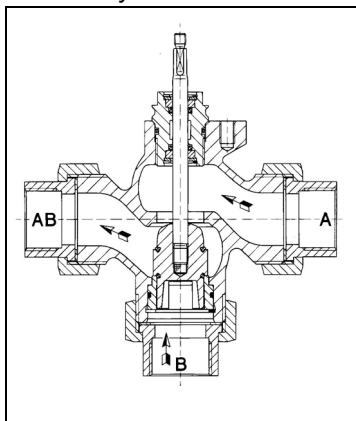


RB..-BK

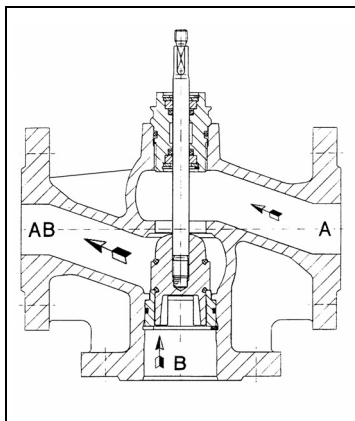


RK/RF..-BF

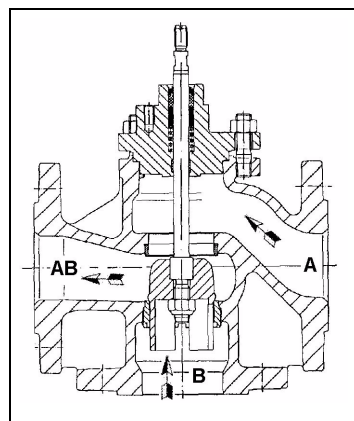
Three-way valves



RB..



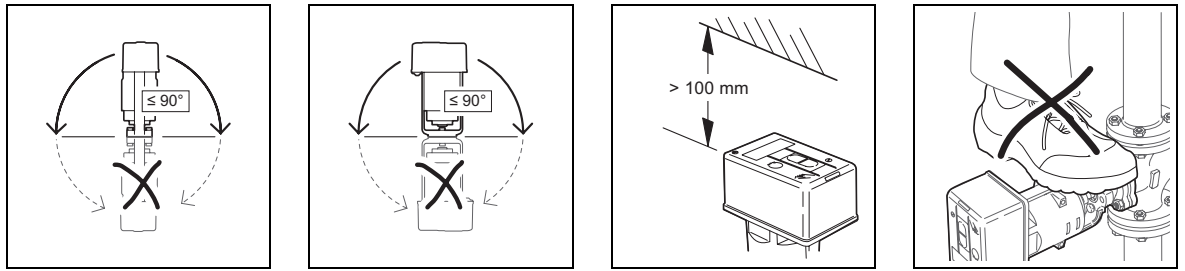
RK/RF..



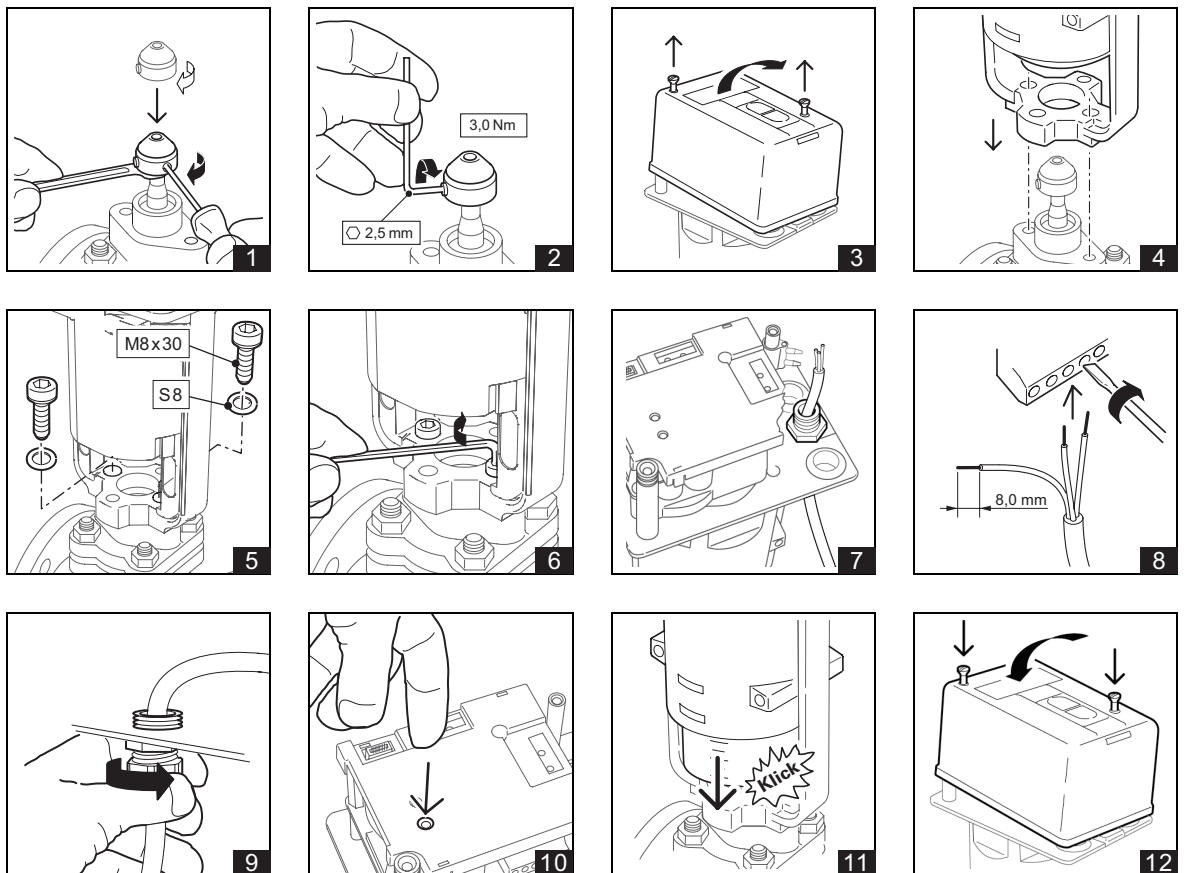
RWG..

Mounting of Emergency Actuator MF200Z

Installation instructions



Mounting and installation



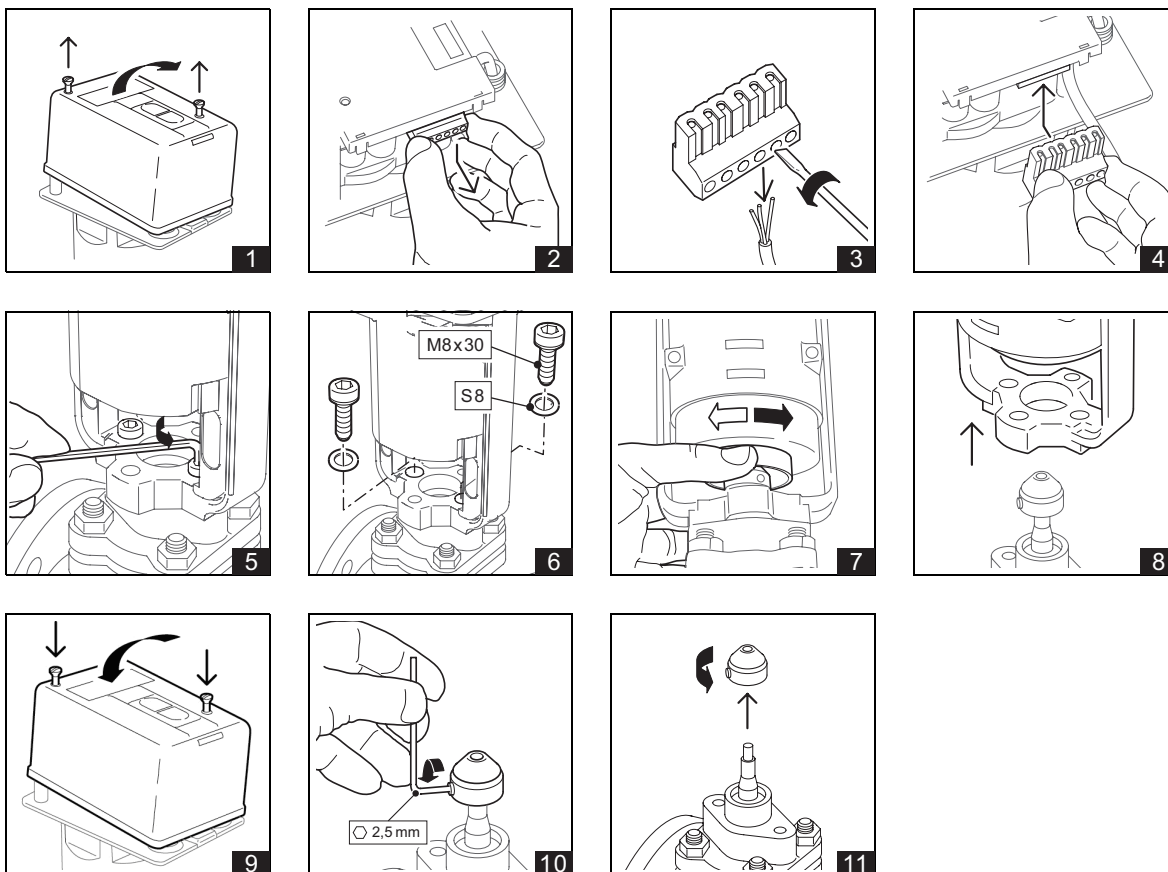
- If the valve is installed in the plant, ensure that no differential pressure builds up in the valve body before beginning work. If necessary, close the gate valve and switch off pumps.
- After the pipeline has cooled off, you can begin mounting the emergency actuator.
- Once the emergency actuator has been mounted and installed, you must trigger an automatic initialization run, see “Commissioning Steps”.
The initialization run automatically adapts the valve using an automatic coupling (see Fig. 11)

NOTICE



Both hexagon socket screws must be tightened equally with the hexagon socket key (see Fig. 6).

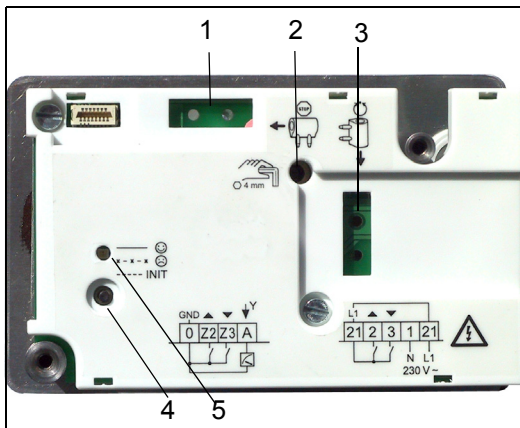
Removal of Emergency Actuator MF200Z



- 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) Receptacle for the knob during manual adjustment
- (2) Socket for hexagon socket key
- (3) Receptacle for the knob during automatic mode without the cover during commissioning
- (4) Status LED display
- (5) INIT key

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.



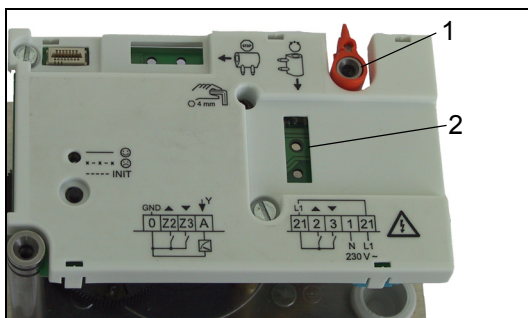
WARNING

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.

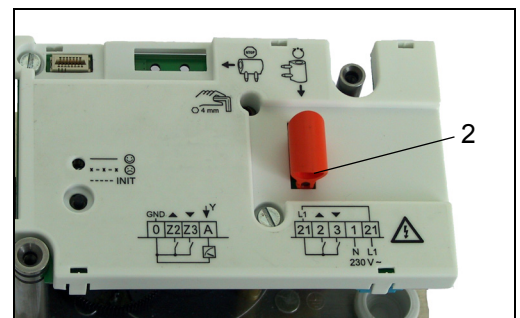


NOTICE

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 cover 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 cover and then insert the knob (1) into the PCB (2).



NOTICE

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 actuator installation and testing the electrical connection

2. Switch on the power supply

LED (2) flashes.



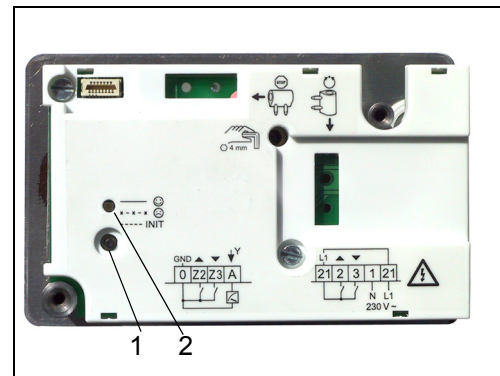
Note

In the first 10 min after switching the supply voltage on, positioning movements are carried out separately from the normal operating characteristics with idle periods of approx. 2 s.

3. Initialization, adjustment to the valve stroke

The initialization run is switched on by pressing the INIT key (1). 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 (1) and the LED (2) are located beneath the drive cover (see illustration).



4. Position feedback

At terminal "A", a constant DC 0 V to 10 V signal can be picked up for

- position feedback (=display of current position of the emergency actuator) or
- reporting an error status/ manual mode (approx. > DC 12.5 V).

5. Manual adjustment

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

6. 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.

7. Function test

Replace and tighten the screws of the emergency actuator cover after the drive settings have been made with any accessories.

Then test the complete functionality of the actuator in the control system, including the emergency function.

MF200Z Emergency Actuator

With two-way/three-way valves of the RK/RB/RF/RWG.. series
