

**Product Description****MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**Application**

MD200 for 3-point control 230 V AC with straight-way and 3-way valves.

MD200A90 for 3-point control 24 V AC with straight-way and 3-way valves.



Änderungen vorbehalten - Contents subject to change - Sous réserve de modifications - Reservado el derecho a modificación - Wijzigingen voorbehouden - Con riserva di modifichie - 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

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**Important Information Regarding Product Safety****Safety Instructions**

This data sheet contains information on installing and commissioning the product "MD200 und MD200A90". 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.

**MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**Product Description**

**MD200 and MD200A90 Actuators**

**Application**

The compact MD200 and MD200A90 actuators, with a positioning force of 850 N, provide for fine stroke adjustment of two-way and three-way valves of the types RK15..50/RK65K(-BF), RB15..50(-BK), RF15..50/RF65K(-BF), RGD15..40 and RWG15..40.

The actuators are controlled with a 3-point signal (Open/Stop/Closed).



**Items**

- MD200 AC 230 V actuator with 3-point control
- MD200A90 AC 24 V actuator with 3-point control

**Technical Data**

Nominal voltage	MD200	AC 230 V ± 10%, 4.1 VA
	MD200A90	AC 24 V ± 10%, 3.5 VA
Drive	Reversible synchronous motor	
End switch	Force-dependent motor switch-off via micro-switches at the valve end positions	
Control	3-point signal (Open/Stop/Closed)	
Stroke	Max. 20 mm, automatic limit stop via micro-switches	
Stroke indication	Self-adjusting position marks on the actuator	
Position indication	Bridge within the position marks on actuator	
Travel time	Approx. 9 s/mm nominal stroke	
Positioning force	850 N	
Ambient temp.	0 °C to 50 °C	
Degree of protection	IP54	
Protection class	I in accordance with EN 60730 MD200 III in accordance with EN 60730 MD200A90	
Installation position	Anywhere from vertical above the valve to a horizontal position	
Manual mode	By means of switch and handwheel on the actuator	
Maintenance	Maintenance-free	
Weight	1.45 kg	

**Accessories**

Not included in delivery.

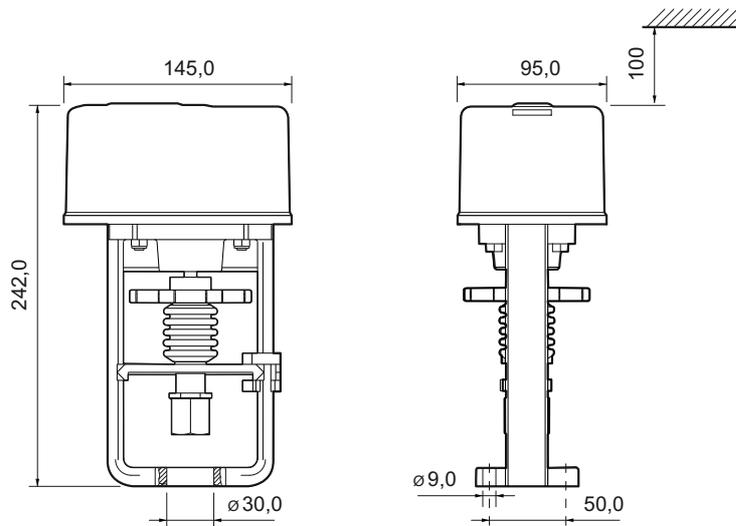
- E/MD Switch module with two additional end switches, voltage-free, max. AC 250 V; 3 A  
For open/closed valve end position feedback
- R/MD/10K Potentiometer module with potentiometer 10 kΩ for position feedback
- R/MD/100 Potentiometer module with potentiometer 100 Ω for position feedback
- R/MD/1000 Potentiometer module with potentiometer 1000 Ω for position feedback

**Product Description**

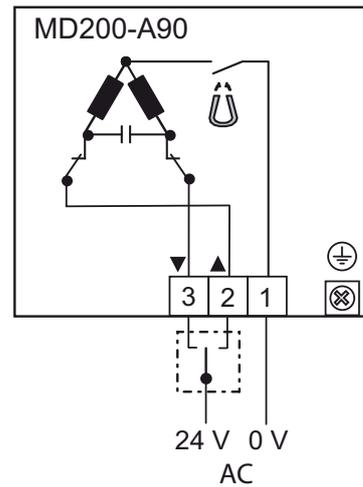
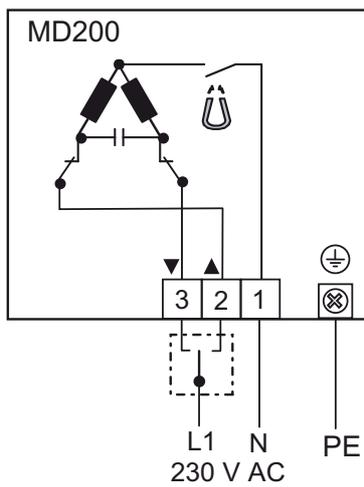
**MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**Dimensions**

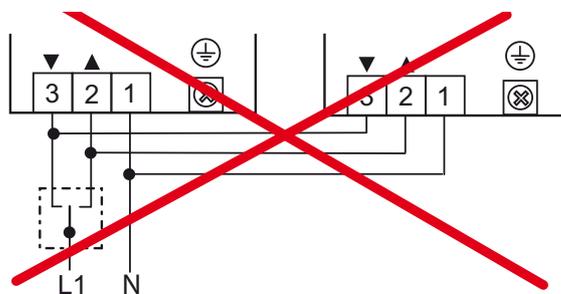


**Connection**



**CAUTION**

Connecting additional actuators in parallel is not allowed because they will affect each other.



**MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**Product Description**

**Actuator Functions**

**Manual/automatic mode**



(1) Switch  
(2) Indicator slide

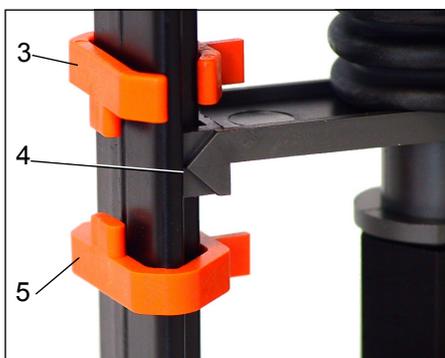
Manual/Automatic mode can be selected directly on the actuator using the manual switch on the actuator cover. □

Automatic mode: Slide the switch to position  .

Manual mode: Slide the switch to position  .

When manual mode is activated, the extended slide indicator allows this status to be recognized even in poorly lit areas. Now the actuator can be set to the desired valve position on the handwheel. After manual mode is switched off, the actuator resumes automatic positioning.

**Position indicator on the actuator**



(3) Position mark for upper valve position  
(4) Stroke position  
(5) Position mark for lower valve position

**Installation**



**WARNING**

**Warning: Mains voltage AC 230 V.**

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

The mains supply may only be connected after the electrical installation.

Be sure to comply with VDE guidelines and local wiring regulations.

The device is connected according to the obligatory wiring diagram.



**CAUTION**

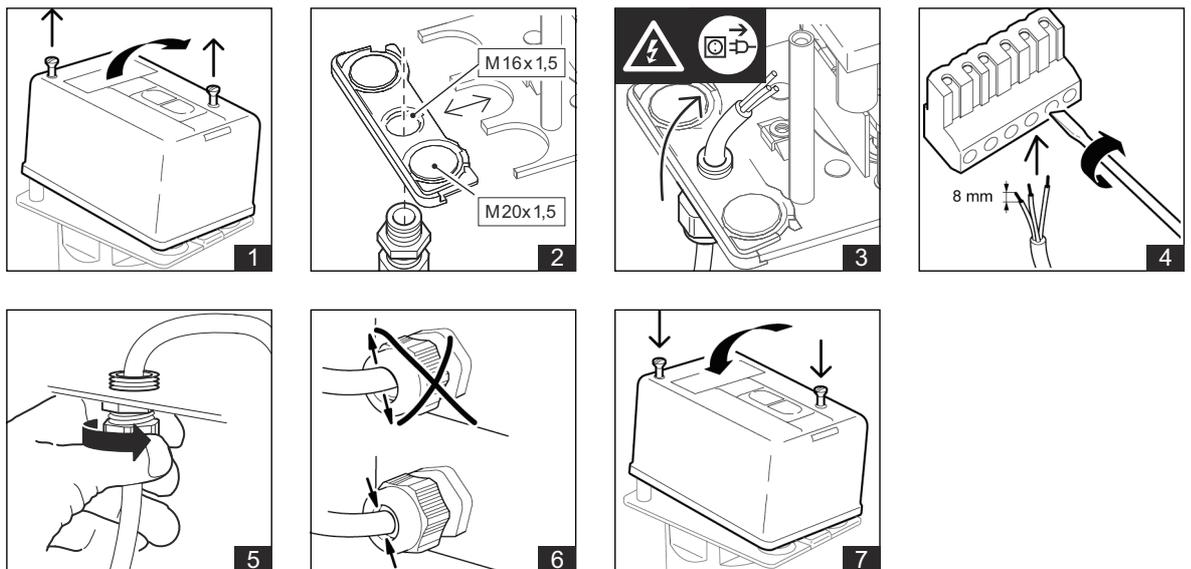
**The electrical connection of the actuator must be carried out as a fixed installation.**

An 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).



**NOTE**

For safety reasons, the actuator automatically switches to manual mode when the cover is removed.



**MD200 and MD200A90 Actuators**

**Product Description**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**Accessories**

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

**E/MD** Upgradable switch module

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

Application: The E/MD switch module provides the actuator with feedback about both valve end positions (Open/Closed).



**NOTE**

Data sheet 3.10-09.900-03-.. contains further information, including connection and installation (included with accessory E/MD).

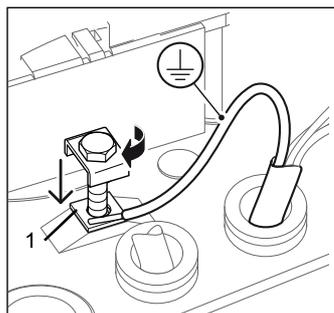


**WARNING**

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)

**R/MD/10K** Potentiometer module with 10 kΩ potentiometer

**R/MD/100** Potentiometer module with 100 Ω potentiometer

**R/MD/1000** Potentiometer module with 1000 Ω potentiometer

Application: The R/MD/.. potentiometer module is used in the MD200 actuator for position feedback.



**NOTE**

Data sheet 3.10-09.900-01-.. contains further information, including the connection and installation (included with accessory R/MD/..).

**Product Description****MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**RK15..50/RK65K(-BF)MD200Y three-way/two-way valves with actuator****Application**

The gray cast iron three-way valves and two-way valves with actuator MD200(A90) are used for mixing liquids precisely.

The valves are used as two-way valves with the BF blank flange on gate B.  
The actuator is controlled with a 3-point signal (Open/Stop/Closed).

**Types**

RK.. grey cast iron three-way valve with MD200(A90) actuator for water up to 120 °C, 6 bar

	<b>DN</b>	<b>PN</b>	<b>kvs</b>	<b>Δp (bar)</b>	<b>Positioning time (s)</b>	<b>Weight (kg)</b>
RK15/0,63MD200	15	6	0,63	6	126	3,7
RK15/1,0MD200	15	6	1,0	6	126	3,7
RK15/1,25MD200	15	6	1,25	6	126	3,7
RK15/1,6MD200	15	6	1,6	6	126	3,7
RK15/2,5MD200	15	6	2,5	6	126	3,7
RK15MD200	15	6	4,0	6	126	3,7
RK20/5,0MD200	20	6	5,0	6	126	4,4
RK20MD200	20	6	6,3	6	126	4,4
RK25/8,0MD200	25	6	8,0	6	126	5,1
RK25MD200	25	6	10	6	126	5,1
RK32/12,5MD200	32	6	12,5	6	126	6,9
RK32MD200	32	6	16	6	126	6,9
RK40/20MD200	40	6	20	4,9	126	8,2
RK40MD200	40	6	25	4,9	126	8,2
RK50/31,5MD200	50	6	31,5	3	126	9,3
RK50MD200	50	6	40	3	126	9,3
RK65/50KMD200	65	6	50	1,7	180	15,6
RK65KMD200	65	6	63	1,7	180	15,6



**MD200 and MD200A90 Actuators**

**Product Description**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

RK..-BF grey cast iron two-way valve with MD200(A90) actuator for water up to 120 °C, 6 bar

	<b>DN</b>	<b>PN</b>	<b>kvs</b>	<b>Δp (bar)</b>	<b>Positioning time (s)</b>	<b>Weight (kg)</b>
RK15/0,63-BFMD200	15	6	0,63	6	126	4,3
RK15/1,0-BFMD200	15	6	1,0	6	126	4,3
RK15/1,25-BFMD200	15	6	1,25	6	126	4,3
RK15/1,6-BFMD200	15	6	1,6	6	126	4,3
RK15/2,5-BFMD200	15	6	2,5	6	126	4,3
RK15-BFMD200	15	6	4,0	6	126	4,3
RK20/5,0-BFMD200	20	6	5,0	6	126	5,2
RK20-BFMD200	20	6	6,3	6	126	5,2
RK25/8,0-BFMD200	25	6	8,0	6	126	6,0
RK25-BFMD200	25	6	10	6	126	6,0
RK32-BFMD200	32	6	16	6	126	8,2
RK32/12,5-BFMD200	32	6	12,5	6	126	8,2
RK40/20-BFMD200	40	6	20	4,9	126	9,9
RK40-BFMD200	40	6	25	4,9	126	9,9
RK50/31,5-BFMD200	50	6	31,5	3	126	11,4
RK50-BFMD200	50	6	40	3	126	11,4
RK65/50K-BFMD200	65	6	50	1,7	180	18,0
RK65K-BFMD200	65	6	63	1,7	180	18,0

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

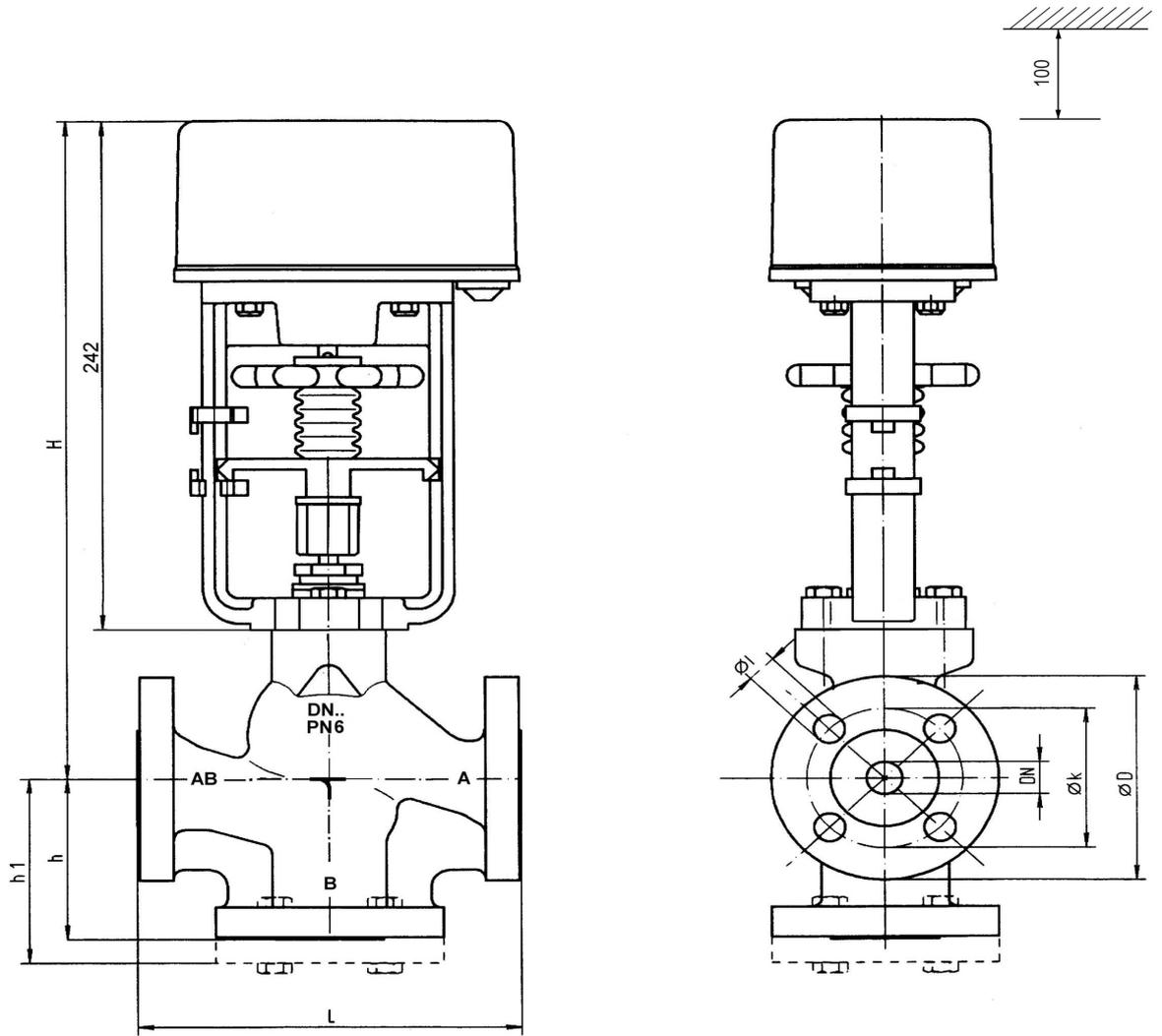
Nominal diameter	DN15 to DN65
Pressure rating	PN 6
Connection	Flange in accordance with EN 1092-2 Type 21
Characteristic curve	RK.. Gates A → AB = same percentage Gates B → AB = linear RK..-BF Gates A → AB = same percentage
Nominal stroke	RK15..50(-BF): 14 mm RK65K(-BF): 20 mm
Leak rate	In accordance 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

**Product Description**

**MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**Dimensions**



DN	L	Ø D	Ø k	Ø l	H	h	h1 (RK..-BF)
15	130	80	55	4x Ø 11	284	65	79
20	150	90	65	4x Ø 11	289	70	84
25	160	100	75	4x Ø 11	294	75	91
32	180	120	90	4x Ø 14	297	95	111
40	200	130	100	4x Ø 14	300	100	116
50	230	140	110	4x Ø 14	300	100	118
65	290	160	130	4x Ø 14	349	120	144
Measurements L through h1 in mm							

**MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**Product Description**

**RB15..50(BK)MD200(A90) three-way/two-way valves with actuator**

**Application**

The gunmetal three-way valves and two-way valves with actuator MD200(A90) are used for mixing liquids precisely.

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

The actuator is controlled with a 3-point signal (Open/Stop/Closed).

**Types**

RB.. gunmetal three-way valve with MD200(A90) actuator for water up to 120 °C, 16 bar

	<b>DN</b>	<b>PN</b>	<b>kvs</b>	<b>Δp (bar)</b>	<b>Positioning time (s)</b>	<b>Connection</b>	<b>Weight (kg)</b>
RB15/0,63MD200	15	16	0,63	16	108	G1/2	2,2
RB15/1,0MD200	15	16	1,0	16	108	G1/2	2,2
RB15/1,25MD200	15	16	1,25	16	108	G1/2	2,2
RB15/1,6MD200	15	16	1,6	16	108	G1/2	2,2
RB15/2,5MD200	15	16	2,5	16	108	G1/2	2,2
RB15MD200	15	16	4,0	16	108	G1/2	2,2
RB20/5,0MD200	20	16	5,0	16	108	G3/4	2,7
RB20MD200	20	16	6,3	16	108	G3/4	2,7
RB25/8,0MD200	25	16	8,0	12,7	126	G1	2,9
RB25MD200	25	16	10	12,7	126	G1	2,9
RB32/12,5MD200	32	16	12,5	7,8	126	G1 1/4	4,6
RB32MD200	32	16	16	7,8	126	G1 1/4	4,6
RB40/20MD200	40	16	20	4,9	126	G1 1/4	5,3
RB40MD200	40	16	25	4,9	126	G1 1/4	5,3
RB50/31,5MD200	50	16	31,5	3	126	G2	6,7
RB50MD200	50	16	40	3	126	G2	6,7



**Product Description****MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

RB..-BF gunmetal two-way valve with MD200(A90) actuator for water up to 120 °C, 16 bar

	<b>DN</b>	<b>PN</b>	<b>kvs</b>	<b>Δp (bar)</b>	<b>Positioning time (s)</b>	<b>Connection</b>	<b>Weight (kg)</b>
RB15/0,63-BKMD200	15	16	0,63	16	108	G1/2	2,2
RB15/1,0-BKMD200	15	16	1,0	16	108	G1/2	2,2
RB15/1,25-BKMD200	15	16	1,25	16	108	G1/2	2,2
RB15/1,6-BKMD200	15	16	1,6	16	108	G1/2	2,2
RB15/2,5-BKMD200	15	16	2,5	16	108	G1/2	2,2
RB15-BKMD200	15	16	4,0	16	108	G1/2	2,2
RB20/5,0-BKMD200	20	16	5,0	16	108	G3/4	2,7
RB20-BKMD200	20	16	6,3	16	108	G3/4	2,7
RB25/8,0-BKMD200	25	16	8,0	12,7	126	G1	2,9
RB25-BKMD200	25	16	10	12,7	126	G1	2,9
RB32/12,5-BKMD200	32	16	12,5	7,8	126	G1 1/4	4,5
RB32-BKMD200	32	16	16	7,8	126	G1 1/4	4,5
RB40/20-BKMD200	40	16	20	4,9	126	G1 1/4	5,2
RB40-BKMD200	40	16	25	4,9	126	G1 1/4	5,2
RB50/31,5-BKMD200	50	16	31,5	3	126	G2	6,5
RB50-BKMD200	50	16	40	3	126	G2	6,5

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

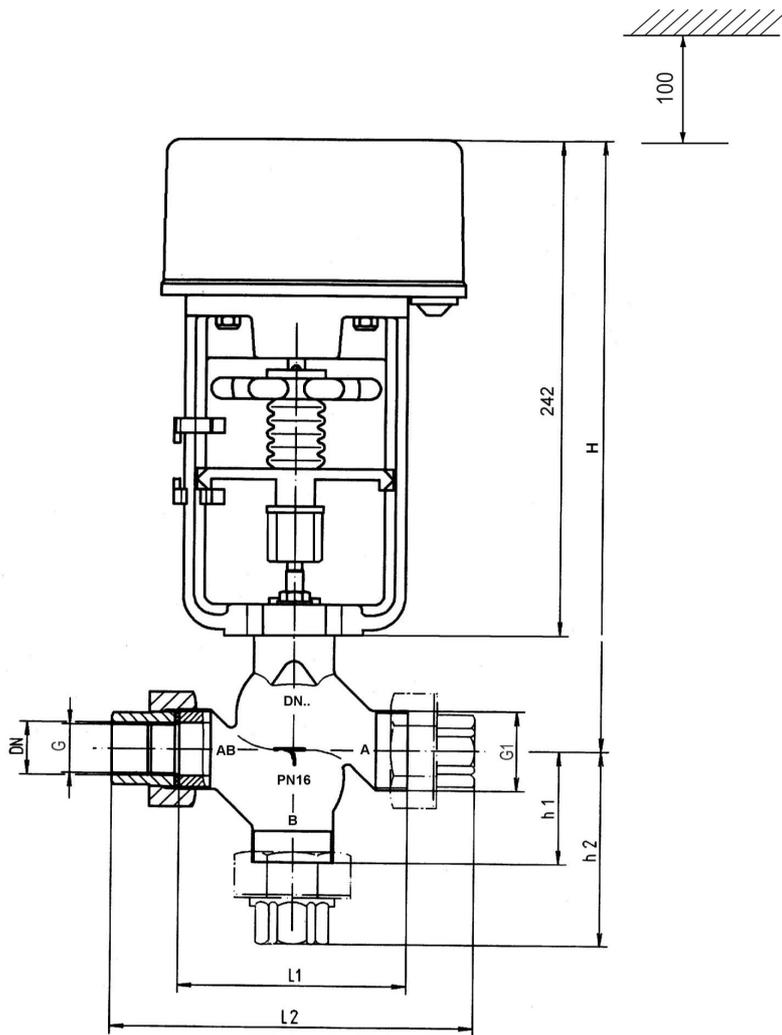
Nominal diameter	DN15 to DN50 (G1/2 to G2)
Pressure rating	PN 16
Connection	Male thread in accordance with ISO 228/1, with female thread fittings in accordance with ISO 7/1
Characteristic curve	RB.. Gates A → AB = same percentage Gates B → AB = linear RB..-BF Gates A → AB = same percentage
Nominal stroke	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

**MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**Product Description**

**Dimensions**



Model RB...BK (two-way valve) with blind 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
Measurements L1 through H in mm, connection threads G and G1 in inches							

**Product Description****MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**RB15..50T(-BK)MD200(A90) three-way/two-way valves with actuator****Application**

The gunmetal three-way valves and two-way valves with actuator MD200(A90) 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. The actuator is controlled with a 3-point signal (Open/Stop/Closed).

**Types**

Red cast-iron 3-way valve/RB...-T, DVGW certified with MD200(A90) actuating drive for drinking and service water up to 90 °C, 16 bar

	<b>DN</b>	<b>PN</b>	<b>kvs</b>	<b>Δp (bar)</b>	<b>Positioning time (s)</b>	<b>connection</b>	<b>Weight (kg)</b>
RB15/0,63TMD200	15	16	0,63	16	108	G1/2	2,2
RB15/1,0TMD200	15	16	1,0	16	108	G1/2	2,2
RB15/1,25TMD200	15	16	1,25	16	108	G1/2	2,2
RB15/1,6TMD200	15	16	1,6	16	108	G1/2	2,2
RB15/2,5TMD200	15	16	2,5	16	108	G1/2	2,2
RB15TMD200	15	16	4,0	16	108	G1/2	2,2
RB20/5,0TMD200	20	16	5,0	16	108	G3/4	2,7
RB20TMD200	20	16	6,3	16	108	G3/4	2,7
RB25/8,0TMD200	25	16	8,0	12,7	126	G1	2,9
RB25TMD200	25	16	10	12,7	126	G1	2,9
RB32/12,5TMD200	32	16	12,5	7,8	126	G1 1/4	4,6
RB32TMD200	32	16	16	7,8	126	G1 1/4	4,6
RB40/20TMD200	40	16	20	4,9	126	G1 1/4	5,3
RB40TMD200	40	16	25	4,9	126	G1 1/4	5,3
RB50/31,5TMD200	50	16	31,5	3	126	G2	6,7
RB50TMD200	50	16	40	3	126	G2	6,7



**MD200 and MD200A90 Actuators**

**Product Description**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

Red cast-iron 3-two valve/RB..T-BK DVGW certified with MD200(A90) actuating drive for drinking and service water up to 90 °C, 16 bar

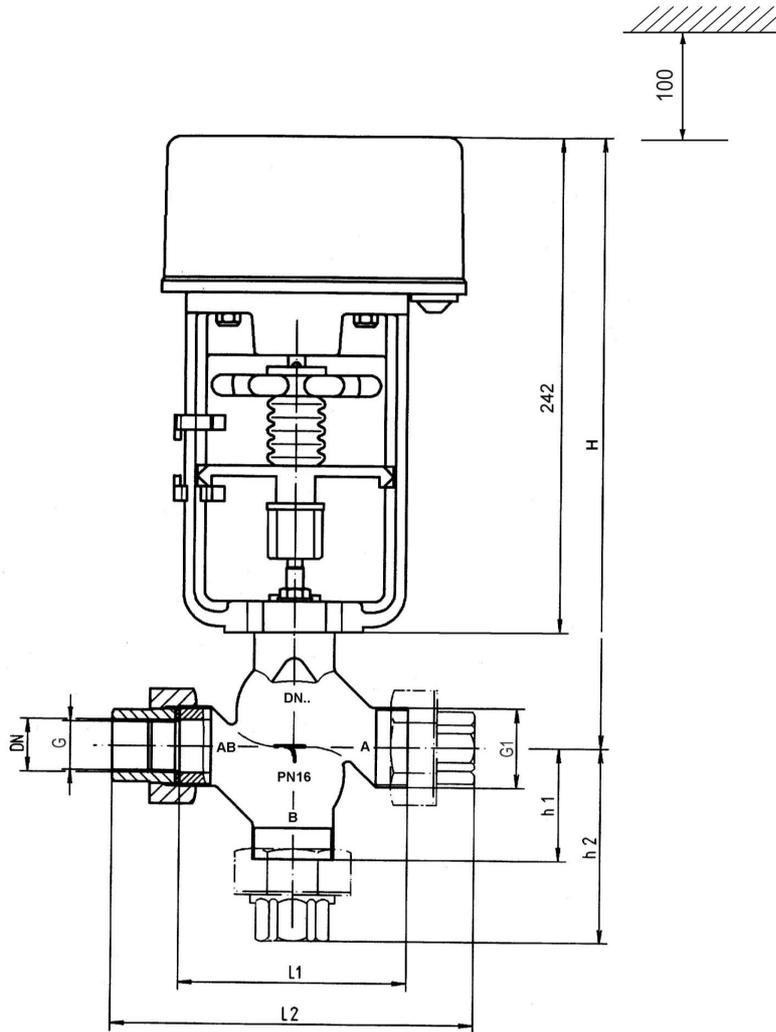
	DN	PN	kvs	$\Delta p$ (bar)	Positioning time (s)	connection	Weight (kg)
RB15/0,63T-BKMD200	15	16	0,63	16	108	G1/2	2,2
RB15/1,0T-BKMD200	15	16	1,0	16	108	G1/2	2,2
RB15/1,25T-BKMD200	15	16	1,25	16	108	G1/2	2,2
RB15/1,6T-BKMD200	15	16	1,6	16	108	G1/2	2,2
RB15/2,5T-BKMD200	15	16	2,5	16	108	G1/2	2,2
RB15T-BKMD200	15	16	4,0	16	108	G1/2	2,2
RB20/5,0T-BKMD200	20	16	5,0	16	108	G3/4	2,7
RB20T-BKMD200	20	16	6,3	16	108	G3/4	2,7
RB25/8,0T-BKMD200	25	16	8,0	12,7	126	G1	2,9
RB25T-BKMD200	25	16	10	12,7	126	G1	2,9
RB32/12,5T-BKMD200	32	16	12,5	7,8	126	G1 1/4	4,5
RB32T-BKMD200	32	16	16	7,8	126	G1 1/4	4,5
RB40/20T-BKMD200	40	16	20	4,9	126	G1 1/4	5,2
RB40T-BKMD200	40	16	25	4,9	126	G1 1/4	5,2
RB50/31,5T-BKMD200	50	16	31,5	3	126	G2	6,5
RB50T-BKMD200	50	16	40	3	126	G2	6,5

**Technical Data: RB..T(-BK) Valves**

Nominal diameter	DN15 to DN50 (G1/2 to G2)	
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..T	Gates A → AB = same percentage Gates B → AB = linear
	RB..T-BF	Gates A → AB = same percentage
Nominal stroke	RB15..20T(-BK): 12 mm RB25..50T(-BK): 14 mm	
Leak rate	EN 1349 - seat leakage VI G 1 (leak proof)	
Medium temperature	0–90 °C	
Housing	Gunmetal, Rg5 / CC491K	
Cone	CrNi steel 1.4305	
Valve stem	CrMo steel 1.4122	
Stem seal	EPDM peroxide-cured O-rings, maintenance-free	
Pipe connections	Gunmetal CC491K female thread fittings and GTW malleable iron union nuts, yellow chromated	
Blank cover for RB..T-BK	GTW malleable iron union nut, yellow chromated	
	Stainless steel gasket, CrNi 1.4305	

**Product Description**

**MD200 and MD200A90 Actuators**  
with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**Dimensions**

Model RB..T-BK (two-way valve) with blind 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
Measurements L1 through H in mm, connection threads G and G1 in inches							

**MD200 and MD200A90 Actuators**

**Product Description**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**RF15..50/RF65K(-BF)MD200(A90) three-way/two-way valves with actuator**

**Application**

The gray cast iron three-way valves and two-way valves with actuator MD200(A90) are used for mixing liquids precisely.

The valves are used as two-way valves with the BF blank cover on gate B. The actuator is controlled with a 3-point signal (Open/Stop/Closed).

**Types**

RF.. grey cast iron three-way valve with MD200(A90) actuator for water up to 120°C 120 °C, 16 bar

	<b>DN</b>	<b>PN</b>	<b>kvs</b>	<b>Δp (bar)</b>	<b>Positioning time (s)</b>	<b>Weight (kg)</b>
RF15/0,63MD200	15	16	0,63	16	126	4,5
RF15/1,0MD200	15	16	1,0	16	126	4,5
RF15/1,25MD200	15	16	1,25	16	126	4,5
RF15/1,6MD200	15	16	1,6	16	126	4,5
RF15/2,5MD200	15	16	2,5	16	126	4,5
RF15MD200	15	16	4,0	16	126	4,5
RF20/5,0MD200	20	16	5,0	16	126	5,5
RF20MD200	20	16	6,3	16	126	5,5
RF25/8,0MD200	25	16	8,0	12,7	126	6,4
RF25MD200	25	16	10	12,7	126	6,4
RF32/12,5MD200	32	16	12,5	7,8	126	9,1
RF32MD200	32	16	16	7,8	126	9,1
RF40/20MD200	40	16	20	4,9	126	10,5
RF40MD200	40	16	25	4,9	126	10,5
RF50/31,5MD200	50	16	31,5	3	126	13,4
RF50MD200	50	16	40	3	126	13,4
RF65/50KMD200	65	16	50	1,7	180	20,6
RF65KMD200	65	16	63	1,7	180	20,6



**Product Description****MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

RF...-BF grey cast iron two-way valve with MD200(A90) actuator for water up to 120 °C, 16 bar

	<b>DN</b>	<b>PN</b>	<b>kvs</b>	<b>Δp (bar)</b>	<b>Positioning time (s)</b>	<b>Weight (kg)</b>
RF15/0,63-BFMD200	15	16	0,63	16	126	4,5
RF15/1,0-BFMD200	15	16	1,0	16	126	4,5
RF15/1,25-BFMD200	15	16	1,25	16	126	4,5
RF15/1,6-BFMD200	15	16	1,6	16	126	4,5
RF15/2,5-BFMD200	15	16	2,5	16	126	4,5
RF15-BFMD200	15	16	4,0	16	126	4,5
RF20/5,0-BFMD200	20	16	5,0	16	126	5,5
RF20-BFMD200	20	16	6,3	16	126	5,5
RF25/8,0-BFMD200	25	16	8,0	12,7	126	6,4
RF25-BFMD200	25	16	10	12,7	126	6,4
RF32/12,5-BFMD200	32	16	12,5	7,8	126	9,1
RF32-BFMD200	32	16	16	7,8	126	9,1
RF40/20-BFMD200	40	16	25	4,9	126	10,5
RF40-BFMD200	40	16	25	4,9	126	10,5
RF50/31,5-BFMD200	50	16	31,5	3	126	13,4
RF50-BFMD200	50	16	40	3	126	13,4
RF65/50K-BFMD200	65	16	50	1,7	180	20,6
RF65K-BFMD200	65	16	63	1,7	180	20,6

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

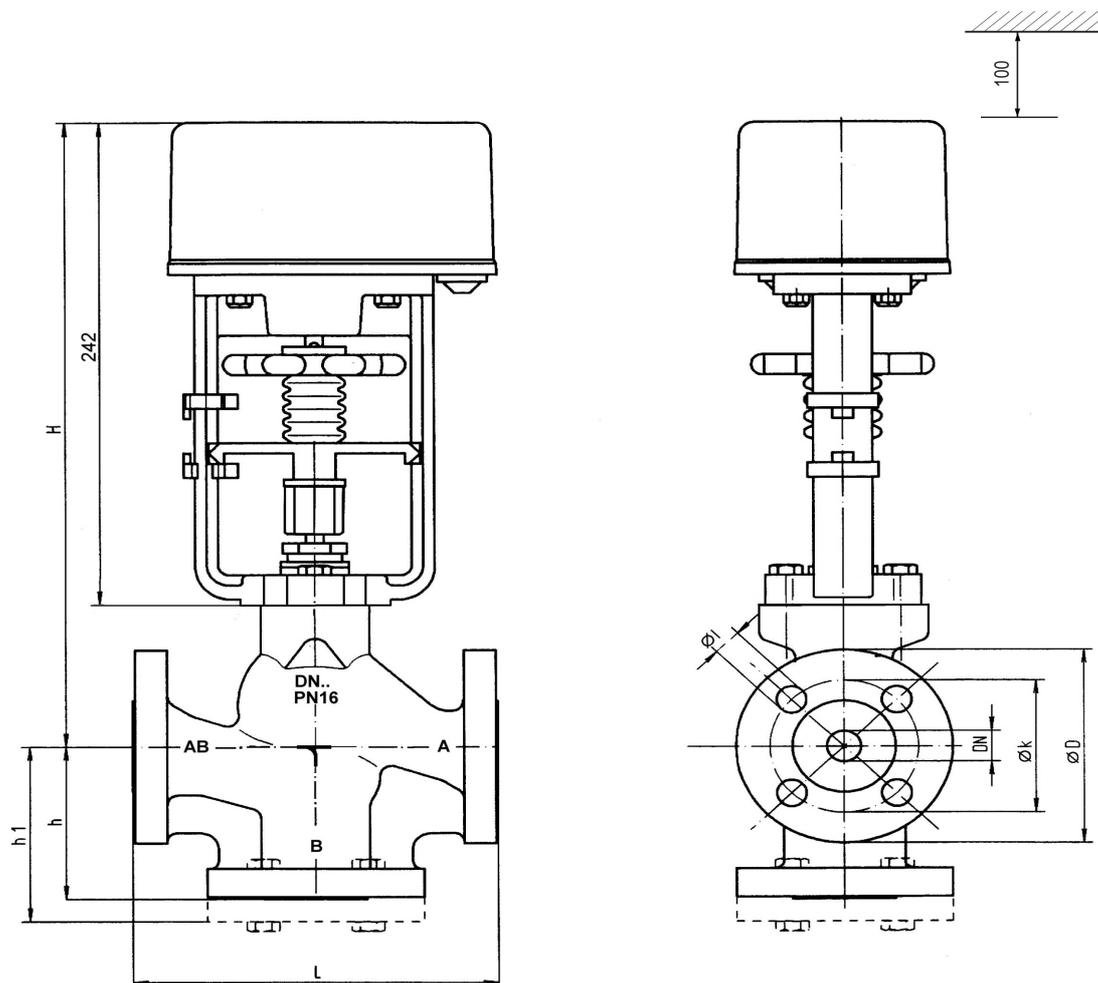
Nominal diameter	DN15 to DN65
Pressure rating	PN 16
CE marking	CE marking for RF65K
Connection	Flange in accordance with EN 1092-2, Type 21
Characteristic curve	RF.. Gates A → AB = same percentage Gates B → AB = linear RF..-BF Gates A → AB = same percentage
Nominal stroke	RF15..50(-BF): 14 mm RF65K(-BF): 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

**MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**Product Description**

**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 18	297	95	111
40	200	150	110	4x Ø 18	300	100	116
50	230	165	125	4x Ø 18	300	100	118
65	290	185	145	4x Ø 18	349	120	150
Measurements L through h1 in mm, flanges comply with DIN, PN16							

**Product Description****MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**RGD15..40MD200(A90) two-way valves with actuator****Application**

The graphite cast-iron three-way valves with actuator MD200(A90) are used for precisely regulating liquid and vapor flowrates.

The actuator is controlled with a 3-point signal (Open/Stop/Closed).

**Types**

RGD.. nodular iron two-way valve with MD200(A90) actuator for water up to 120°C, 25 bar and heating water and steam up to 200 °C, 20 bar.

	DN	PN	kvs	$\Delta p$ (bar)	Positioning time (s)	Weight (kg)
RGD15/0,4MD200	15	25	0,4	25	135	4,7
RGD15/0,63MD200	15	25	0,63	25	135	4,7
RGD15/1,0MD200	15	25	1	17	135	4,7
RGD15/1,25MD200	15	25	1,25	17	135	4,7
RGD15/1,6MD200	15	25	1,6	17	135	4,7
RGD15/2,5MD200	15	25	2,5	17	135	4,7
RGD15MD200	15	25	4	17	135	4,7
RGD25/6,3MD200	25	25	6,3	9,7	135	6,5
RGD25MD200	25	25	10	9,7	135	6,5
RGD32MD200	32	25	16	6,5	135	7,8
RGD40MD200	40	25	25	3,5	135	9,7

**Technical Data: RGD.. Valves**

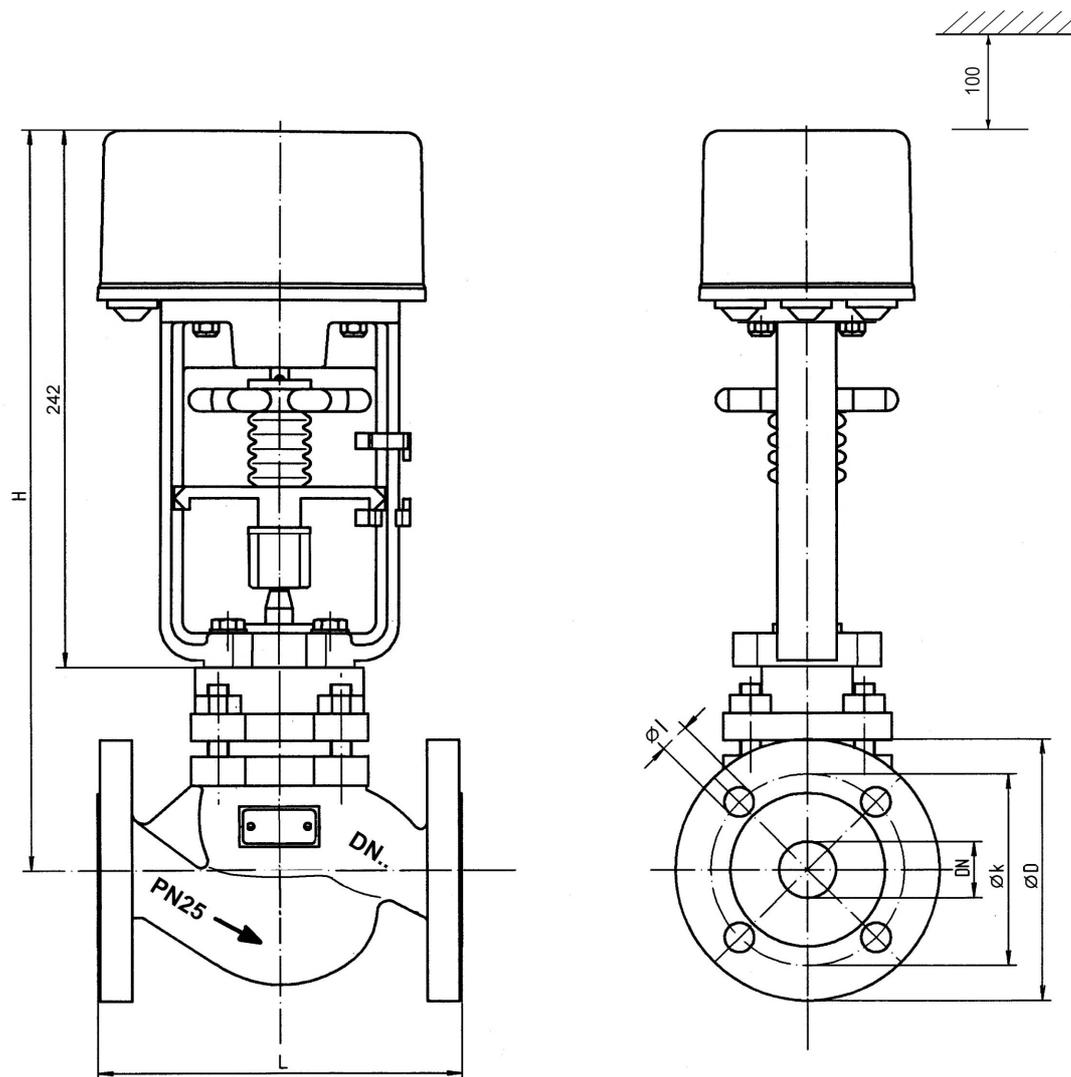
Nominal diameter	DN15 to DN40
Pressure rating	PN 25
CE marking	CE marking starting from DN32, notified body: 0525
Connection	Flange according to DIN 2501-1, raised face Form C DIN 2526
Characteristic curve	Equal percentage
Nominal stroke	15 mm
Leak rate	In accordance with EN 1349, leakage class VI
Medium 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

**MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**Product Description**

**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					

**Product Description****MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**RWG15..40MD200(A90) three-way valves with actuator****Application**

The graphite cast-iron three-way valves with actuator MD200(A90) are used for precisely regulating liquid and vapor flowrates.

The actuator is controlled with a 3-point signal (Open/Stop/Closed).

**Types**

RWG.. nodular iron three-way valve with MD200(A90) actuator for water up to 120°C, 25 bar and heating water and steam up to 200 °C, 20 bar

	<b>DN</b>	<b>PN</b>	<b>kvs</b>	<b>Δp (bar)</b>	<b>Positioning time (s)</b>	<b>Weight (kg)</b>
RWG15/1,0MD200	15	25	1	17	135	6,1
RWG15/1,25MD200	15	25	1,25	17	135	6,1
RWG15/1,6MD200	15	25	1,6	17	135	6,1
RWG15/2,5MD200	15	25	2,5	17	135	6,1
RWG15MD200	15	25	4	17	135	6,1
RWG25/6,3MD200	25	25	6,3	9,7	135	8,1
RWG25MD200	25	25	10	9,7	135	8,2
RWG32MD200	32	25	16	6,5	135	10,7
RWG40MD200	40	25	25	3,5	135	14,0

**Technical Data: RWG.. Valves**

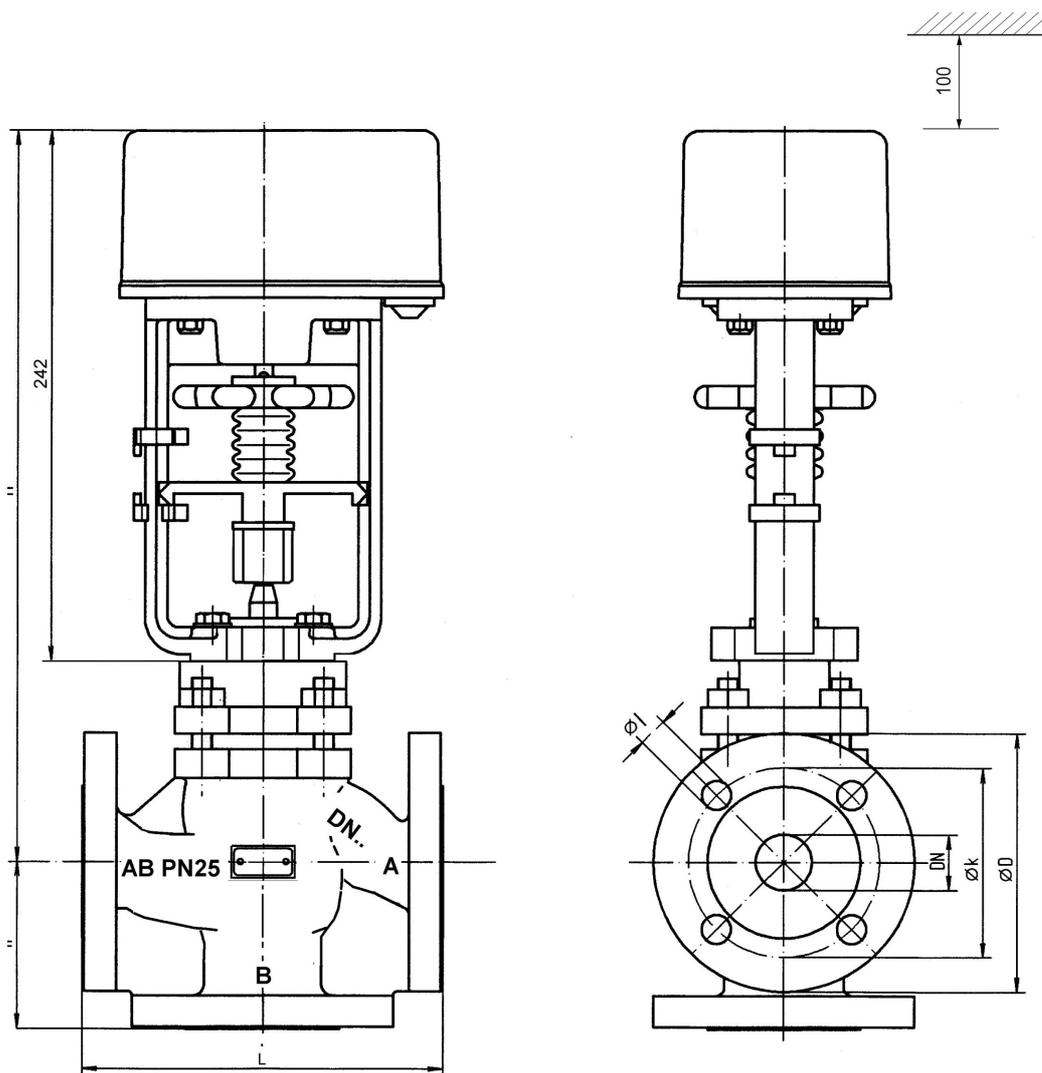
Nominal diameter	DN15 to DN40	
Pressure rating	PN 25	
CE marking	CE marking from DN32, notified body: 0525	
Connection	Flange according to DIN, PN25	
Characteristic curve	RWG..	Gates A → AB = same percentage Gates B → AB = linear
Nominal stroke	15 mm	
Leak rate	In accordance with EN 1349, leakage class 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	CrNi steel 1.4571
	DN40	CrNi steel 1.4021
Valve spindle	Stainless steel 1.4571	
Spindle seal	Univerdit gaskets with PTFE sleeve (maintenance-free)	

**MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

**Product Description**

**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
Measurements L through H in mm, flanges comply with DIN, PN25						

**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  $\Delta p$  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.

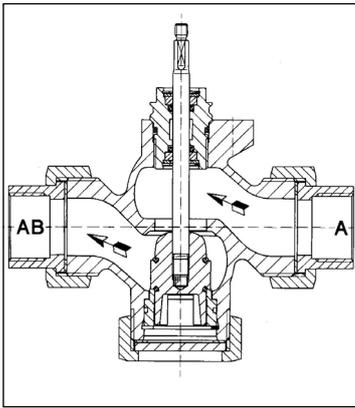
**MD200 and MD200A90 Actuators**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

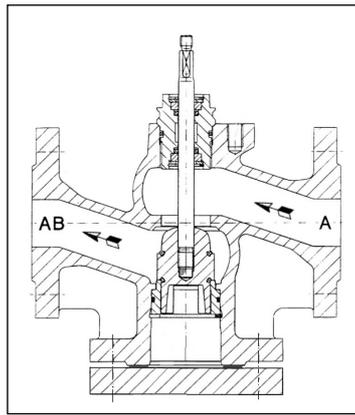
**Product Description**

**Valve Cross-Sections with Flow Directions**

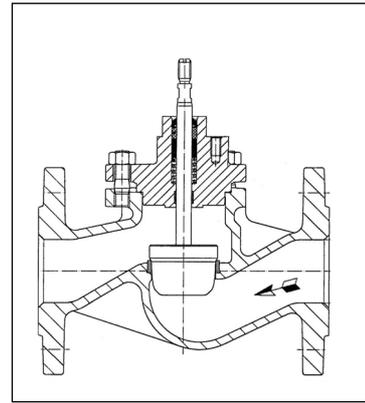
Two-way valves



RB..BK

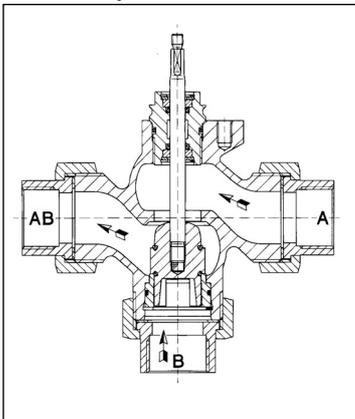


RK/RF..BF

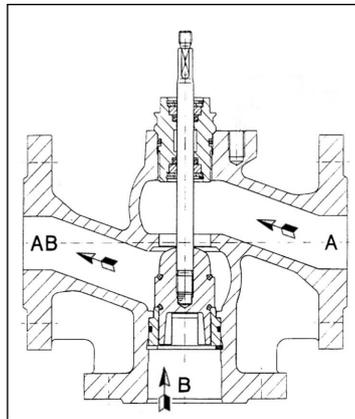


RGD..

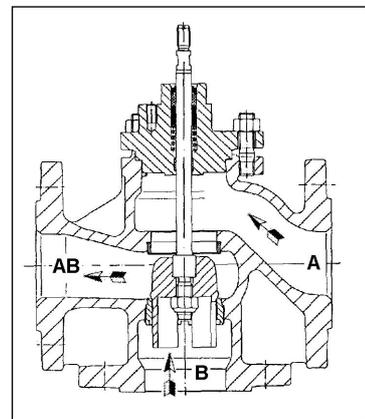
Three-way valves



RB..



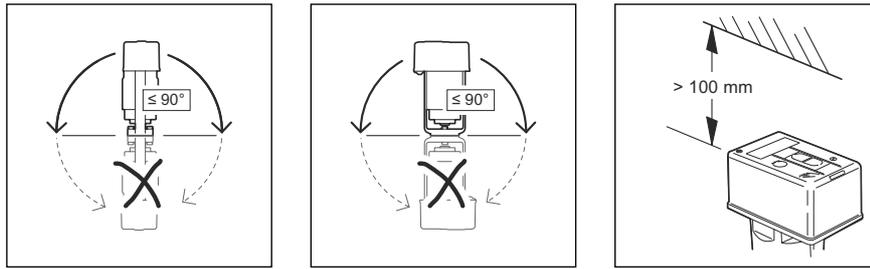
RK/RF..



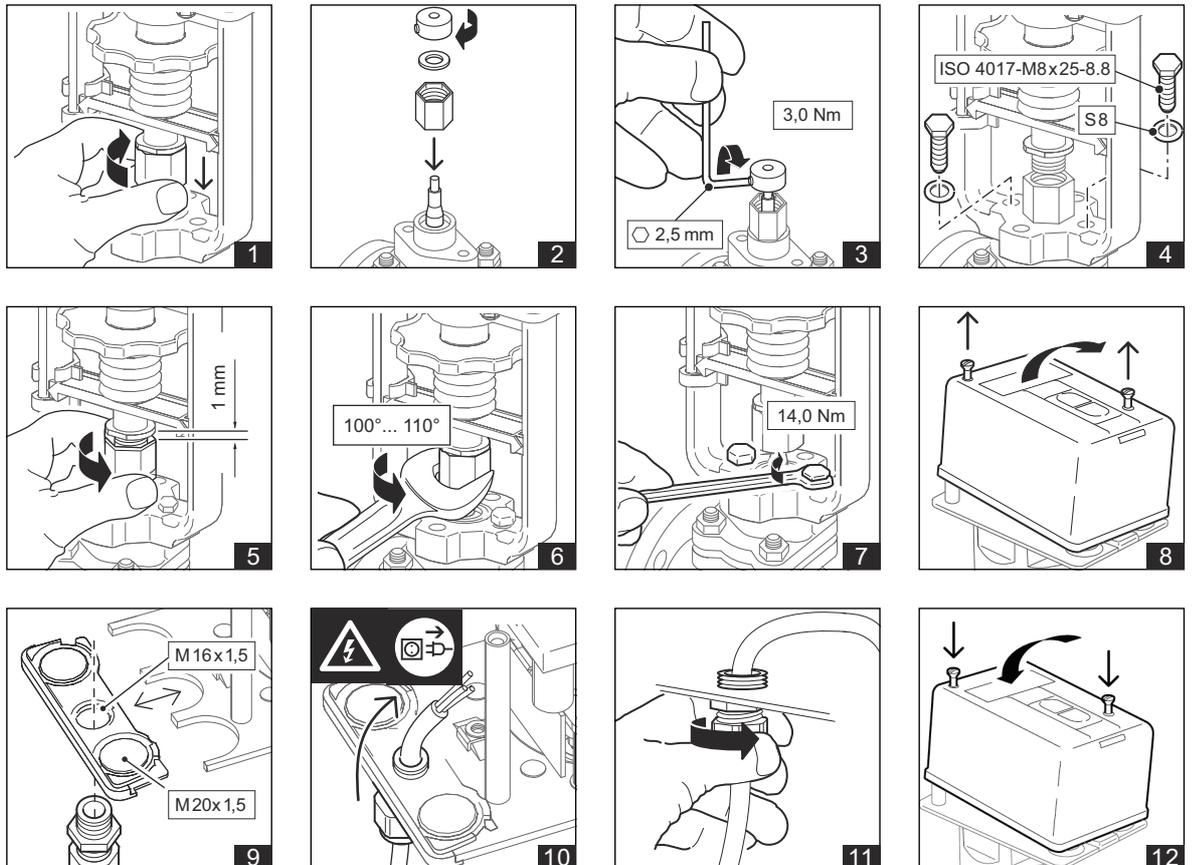
RWG..

## Installation of the MD200 and MD200A90 Actuators

## 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, the actuator can be installed.
- Push both position marks together after successful mounting and installation. During commissioning, the position marks automatically set themselves to the valve stroke.
- The actuator is dismantled in reverse order.

**Installation**

**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.



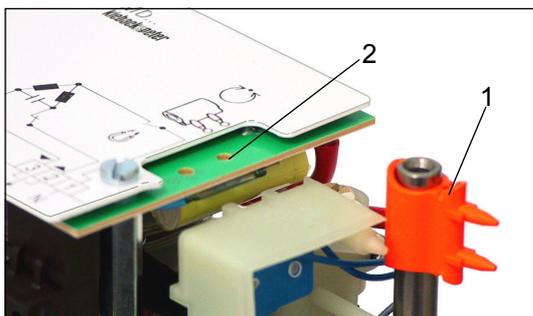
**WARNING**

Caution: 230 V mains voltage may be present at the connection terminals of the switch module when the E/MD switch module is used.

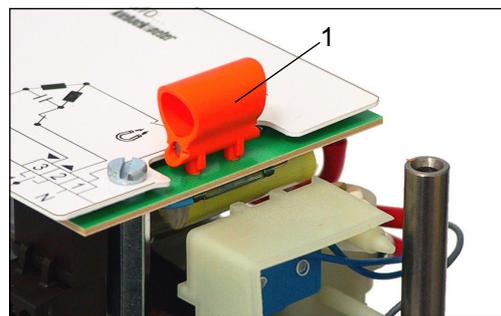


**CAUTION**

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



Knob (1) not inserted = manual mode



Knob (1) inserted = automatic mode

For safety reasons, the actuator automatically switches to manual mode when the cover is removed. To allow the commissioning technician to test functionality, the actuator can be switched to automatic mode using the included solenoid switch .

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

**Actuating direction**

The actuating direction of the valve is to be checked, and changed if necessary, according to the plant function.



**WARNING**

**Warning: Mains voltage AC 230 V.**

The connection lines must be free of voltage before the actuating direction is reversed.

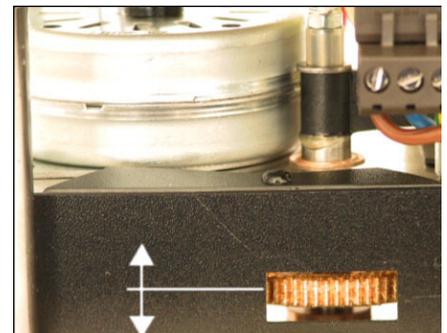
<b>Actuating direction</b>			
Voltage at Terminals 1 - 2			
Terminals 1 - 3			
	= open	= closed	= flanged off

**Overload detection**

Long-lasting, inadmissibly high pressure differences in the valve lead to overload, which can affect the life of the actuator.

During commissioning, inadmissibly high pressure differences can be recognized immediately through the window of the drive cover under the hood.

If the gear wheel is moved up or down from the middle window position outside of the two valve positions, the pressure difference in the valve is too high. The maximum pressure differences  $\Delta p$  (bar) for all nominal diameters are indicated in the valve descriptions of the individual types of valves.



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**MD200 and MD200A90 Actuators**

**Product Description**

with two-way and three-way valves of the RK/RB/RF/RGD/RWG series

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