

Shut-off valves

Ball valves

2-way



Page: Content:

2	Order code actuators
3	Order code ball valves
4 - 8	Summary ball valves / actuators types 224 and 235
9 - 15	2-way ball valves with female thread
16 - 19	2-way ball valves with male thread
20 - 38	Actuators
39	Notes
40	Your way to Gruner



GRUNER - The Friendly Alternative



Type
 z.B. 224
 235

Control

- C = Proportional (DC-Motor)
- D = Tri-state (uni directional)
- D2 = On/Off (uni directional)
- D3 = Tri-state (uni directional)
- R2 = On/Off (bi-directional)
- R3 = Tri-state (bi-directional)

Supply voltage

- 024 = 24 VAC/DC
- 230 = 230 VAC

Option Potentiometer/Auxiliary switch

- P5 = Potentiometer 4,7 kΩ
- S1 = 1 Auxiliary switch (potential free)
- S2 = 2 Auxiliary switch (potential free)
- L2 = 2 hot end switch (non potential free)

Configuration

Control signal Y

- 2...10 VDC C0
- 0...10 VDC C1
- 4...20 mA C2
- 0...20 mA C3

Feedback signal U

- follows Y C_0
- 10 VDC C_1
- 15 VDC C_2

C00 is standard (will be skipt)

Ball valve adapter

- 1 = 3/8" ... 3/4"
- 2 = 1" ... 1 1/4"
- 3 = 1 1/2" ... 2"

Applications

The motorized ball valve is used according to the version for many-sided applications of media like drinking water, industrial water and other process media, e. g. in useful plants of rain water, as area valves in feeders etc.

All actuators correspond to the DIN-VDE-Standards and CE-Principles.

B O F I 25 0 N

Ball valve adaptor

N = Novasfer

V = VIR

K_v value (number series)

0 = Open ball

Pipe connection (DN)

25 = DN25

Type of thread

B = BSPT

I = ISO 7/1 Rp

N = NPT

Screw thread

F = Female (2-way)

M = Male (2-way)

FM = Female-/Male (2-way)

L = Female (3-way, L-Form)

T = Female (3-way, T-Form)

Approvals

O = no special approval

D = drinking water (DVGW)

Material

B = Brass

S = Stainless steel

Order information

The actuators and ball valves have to be listed separately in an order in consideration to the particular order number..

Drinking water ball valves

The plumb gets removed during a patented procedure so that the valves already correspond to the new Eu standard concerning the purity of drinking water which is supposed to be established in 2013.

The advantage of these valves is the elimination of damage caused by plumb to anybody's health particularly to children.

				224D2-230	224D2-230-L2	224D2-024	224D2-024-L2	224D-230	224D-230-L2	224D-024	224D-024-L2
Type											
Running time				90 s	90 s	90 s	90 s	90 s	90 s	90 s	90 s
Control Tri-state								●	●	●	●
On/Off				●	●	●	●				
Proportional control											
(0) 2-10 VDC or											
(0) 4-20 mA											
Supply voltage											
24 VAC/DC						●	●			●	●
230 VAC				●	●			●	●		
Options											
Hand lever											
End switch					●	●		●		●	
2-way (female thread)											
k _{VS}	Thread Rp	DN mm	Type								
7,5	3/8"	12	B⊕FI120N	●	●	●	●	●	●	●	●
22	1/2"	15	B⊕FI150N	●	●	●	●	●	●	●	●
34	3/4"	20	B⊕FI200N	●	●	●	●	●	●	●	●
70	1"	25	B⊕FI250N	●	●	●	●	●	●	●	●
105	1 1/4"	32	B⊕FI320N	●	●	●	●	●	●	●	●
180	1 1/2"	38	B⊕FI380N								
260	2"	50	B⊕FI500N								
2-way (male thread)											
34	3/4"	20	BOMI200N	●	●	●	●	●	●	●	●
70	1"	25	BOMI250N	●	●	●	●	●	●	●	●
75	1 1/4"	32	BOMI320V	●	●	●	●	●	●	●	●

Legende

- ① 0 = nno special approval
D = drinking water approval (DVGW)

● = Standard
○ = Optional

Type				224-230		224-024		224R3-230		224R3-230-L2		224R3-024		224R3-024-L2	
Running time				20 s	20 s			90 s	90 s	90 s	90 s				
Control	Tri-state			●	●			●	●	●	●				
	On/Off			●	●										
Proportional control															
(0) 2-10 VDC or															
(0) 4-20 mA															
Supply voltage															
24 VAC/DC					●					●	●				
230 VAC				●				●	●						
Options															
Hand lever				●	●			●	●	●	●				
End switch									●			●			
2-way (female thread)															
k _{VS}	Thread Rp	DN mm	Type												
7,5	3/8"	12	B⊕FI120N	●	●			●	●	●	●				
22	1/2"	15	B⊕FI150N	●	●			●	●	●	●				
34	3/4"	20	B⊕FI200N	●	●			●	●	●	●				
70	1"	25	B⊕FI250N	●	●			●	●	●	●				
105	1 1/4"	32	B⊕FI320N					●	●	●	●				
180	1 1/2"	38	B⊕FI380N												
260	2"	50	B⊕FI500N												
2-way (male thread)															
34	3/4"	20	BOMI200N	●	●			●	●	●	●				
70	1"	25	BOMI250N	●	●			●	●	●	●				
75	1 1/4"	32	BOMI320V					●	●	●	●				

Legende

- ① 0 = no special approval
- D = drinking water approval (DVGW)

● = Standard

○ = Optional

Type	235D2-230	235D2-230-L2	235D2-024	235D2-024-L2	235D3-230	235D3-230-L2	235D3-024	235D3-024-L2	235R2-230	
Running time	120 s	120 s	120 s	120 s	120 s	120 s	120 s	120 s	120 s	
Control	Tri-state									
	On/Off									
Proportional control	(0) 2-10 VDC or									
	(0) 4-20 mA									
Supply voltage										
24 VAC/DC			●	●				●	●	●
230 VAC	●	●			●	●				
Options										
Feedback potentiometer										
Feedback signal (proportional)										
Auxiliary switch(es)										
2-way (female thread)										
k_{Vs}	Thread Rp	DN mm	Type							
7,5	3/8"	12	B ^⓪ FI1120N	●	●	●	●	●	●	●
22	1/2"	15	B ^⓪ FI150N	●	●	●	●	●	●	●
34	3/4"	20	B ^⓪ FI200N	●	●	●	●	●	●	●
70	1"	25	B ^⓪ FI250N	●	●	●	●	●	●	●
105	1 1/4"	32	B ^⓪ FI320N	●	●	●	●	●	●	●
180	1 1/2"	38	B ^⓪ FI380N	●	●	●	●	●	●	●
260	2"	50	B ^⓪ FI500N							
2-way (male thread)										
34	3/4"	20	BOMI200N	●	●	●	●	●	●	●
70	1"	25	BOMI250N	●	●	●	●	●	●	●
75	1 1/4"	32	BOMI320V	●	●	●	●	●	●	●

Legende

- ⓪ = no special approval
D = drinking water approval (DVGW)

● = Standard
○ = Optional

Type	235R2-230-S1	235R2-024	235R2-024-S1	235R3-230	235R3-230-S2	235R3-230-P5	235R3-024	235R3-024-S2	235R3-024-P5
Running time	120 s	120 s	120 s	120 s	120 s	120 s	120 s	120 s	120 s
Control Tri-state					●	●	●	●	
On/Off	●	●	●	●					●
Proportional control (0) 2-10 VDC or (0) 4-20 mA									
Supply voltage									
24 VAC/DC			●	●			●	●	●
230 VAC	●	●			●	●			
Options									
Feedback potentiometer					●				●
Feedback signal (proportional)									
Auxiliary switch(es)	●		●		●			●	
2-way (female thread)									
k_{VS}	Thread Rp	DN mm	Type						
7,5	3/8"	12	B①FI1120N	●	●	●	●	●	●
22	1/2"	15	B①FI150N	●	●	●	●	●	●
34	3/4"	20	B①FI200N	●	●	●	●	●	●
70	1"	25	B①FI250N	●	●	●	●	●	●
105	1 1/4"	32	B①FI320N	●	●	●	●	●	●
180	1 1/2"	38	B①FI380N	●	●	●	●	●	●
260	2"	50	B①FI500N						
2-way (male thread)									
34	3/4"	20	BOMI200N	●	●	●	●	●	●
70	1"	25	BOMI250N	●	●	●	●	●	●
75	1 1/4"	32	BOMI320V	●	●	●	●	●	●

Legende

- ① 0 = no special approval
- D = drinking water approval (DVGW)

● = Standard

○ = Optional

Type

		235-024		235-024-S2		235-024-P5		235C-024		235K-024	
Running time		25 s	25 s	25 s	25 s	25 s	25 s	120 s			
Control	Tri-state	●	●	●							
	On/Off	●	●	●							
Proportional control						●		●			
(0) 2-10 VDC or											
(0) 4-20 mA											
Supply voltage											
24 VAC/DC		●	●	●	●	●	●	●			
230 VAC											
Options											
Feedback potentiometer				●							
Feedback signal (proportional)						●		●			
Auxiliary switch(es)			●								
2-way (female thread)											
k _{VS}	Thread Rp	DN mm	Type								
7,5	3/8"	12	B⓪FI1120N	●	●	●	●	●			
22	1/2"	15	B⓪FI150N	●	●	●	●	●			
34	3/4"	20	B⓪FI200N	●	●	●	●	●			
70	1"	25	B⓪FI250N	●	●	●	●	●			
105	1 1/4"	32	B⓪FI320N	●	●	●	●	●			
180	1 1/2"	38	B⓪FI380N	●	●	●	●	●			
260	2"	50	B⓪FI500N								
2-way (male thread)											
34	3/4"	20	BOMI200N	●	●	●	●	●			
70	1"	25	BOMI250N	●	●	●	●	●			
75	1 1/4"	32	BOMI320V	●	●	●	●	●			

Legende

- ① 0 = no special approval
D = drinking water approval (DVGW)



Technical Data

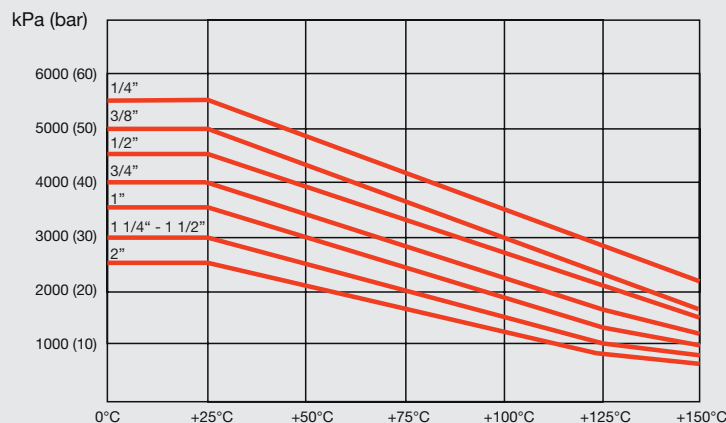
Media	heating circuit water, process water, waste water, cooling water with max. 30% vol. glycol, condensate or air
Temperature of medium	-20...+150°C (watch insulation)
Leakage rate	bubble-tight (DIN 3230-3)
Differential pressure	max. 350 kPa (3,5 bar)
Rated pressure	see temperature-pressure diagramm
Mounting position	vertical to horizontal (related to stem)
Materials	
Body	brass, vernickelt
Ball	brass, verchromt
Stem	brass
Seal of stem	NBR
Seal of ball	PTFE
Lubrication	none or according to approval
Direction of flow	any

Dimensions

k _{VS}	Thread Rp	DN mm	A* mm	B* mm	C mm	D mm	E mm	F* mm	Type
7,5	3/8"	12	93/110	45/65	30	22	46	93/110	BOFI120N
22	1/2"	15	93/110	45/65	30	26	59	98/110	BOFI150N
34	3/4"	20	93/110	45/65	30	32	68	102/115	BOFI200N
70	1"	25	93/110	45/65	30	40	78	107/120	BOFI250N
105	1 1/4"	32	93/110	45/65	30	49	92	114/127	BOFI320N

* .../... = dimensions Typ 224 / Typ 235

Temperature-pressure diagram





Technical Data

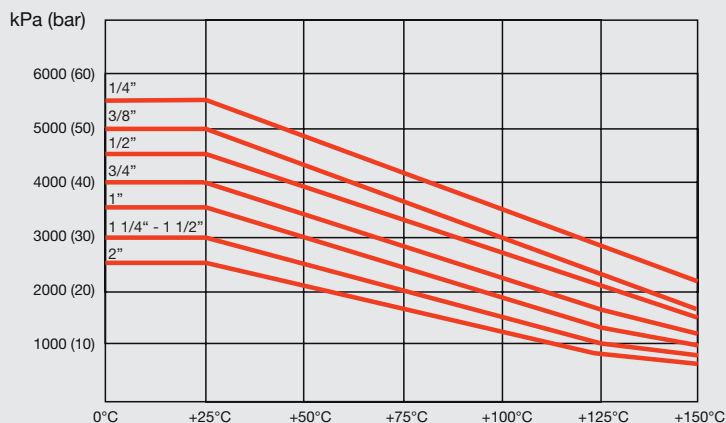
Media	drinking water
Temperature of medium	-20...+82°C (watch isolation)
Leakage rate	bubble-tight (DIN 3230-3)
Differential pressure	max. 350 kPa (3,5 bar)
Rated pressure	see temperature-pressure diagram
Mounting position	vertical to horizontal (related to stem)
Materials	
Body	brass, lead free
Ball	brass, chrome-plated
Stem	brass
Seal of stem	NBR
Seal of ball	PTFE
Lubrication	none or according to approval
Direction of flow	any

Dimensions

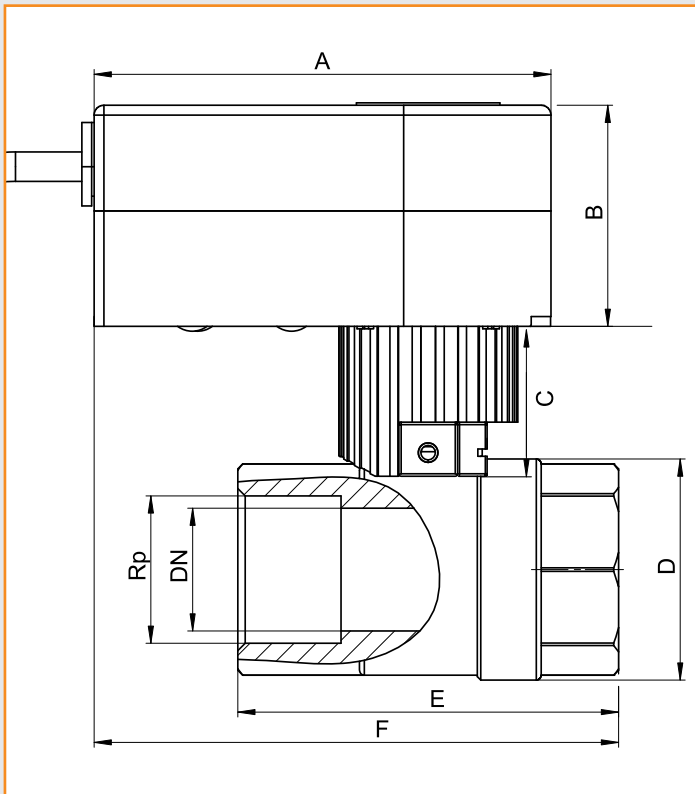
k _{VS}	Thread Rp	DN mm	A* mm	B* mm	C mm	D mm	E mm	F* mm	Type
7,5	3/8"	12	93/110	45/65	30	22	46	93/110	BDFI120N
22	1/2"	15	93/110	45/65	30	26	59	98/110	BDFI150N
34	3/4"	20	93/110	45/65	30	32	68	102/115	BDFI200N
70	1"	25	93/110	45/65	30	40	78	107/120	BDFI250N
105	1 1/4"	32	93/110	45/65	30	49	92	114/127	BDFI320N

*.../... = dimensions Typ 224 / Typ 235

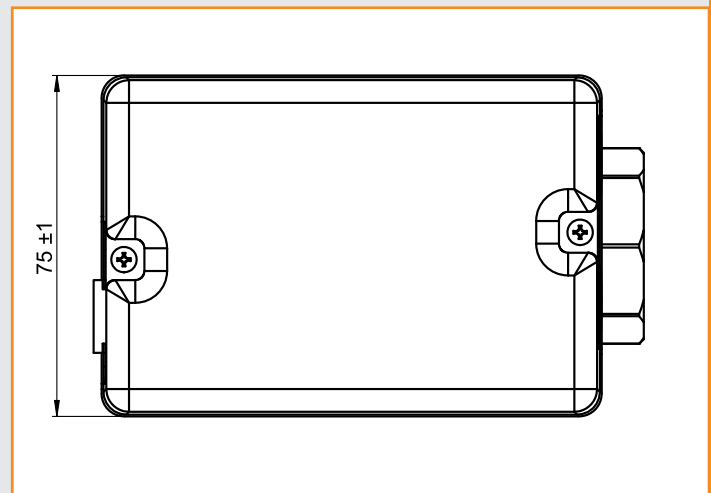
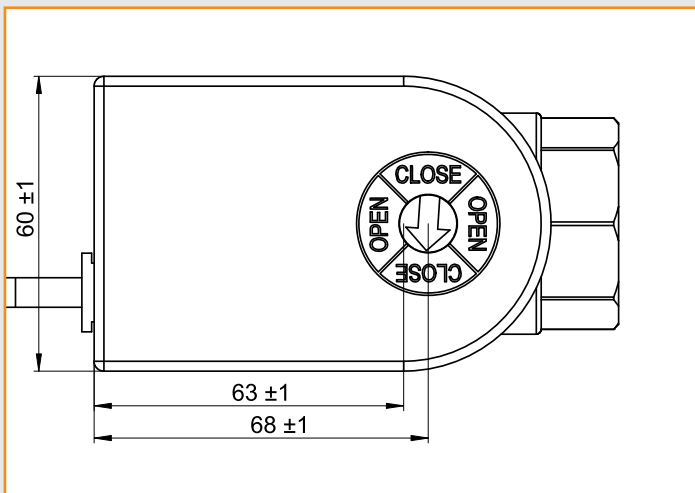
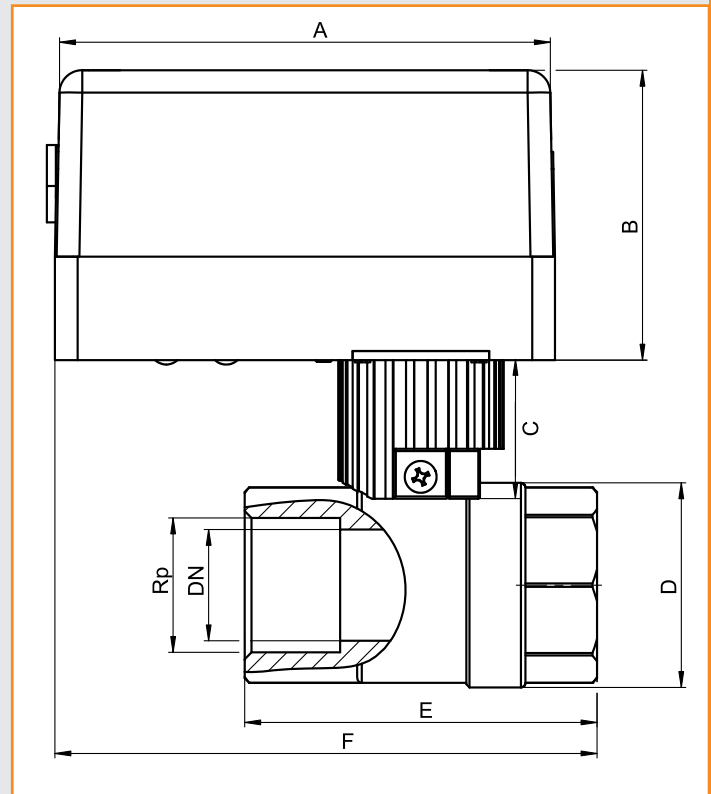
Temperature-pressure diagram



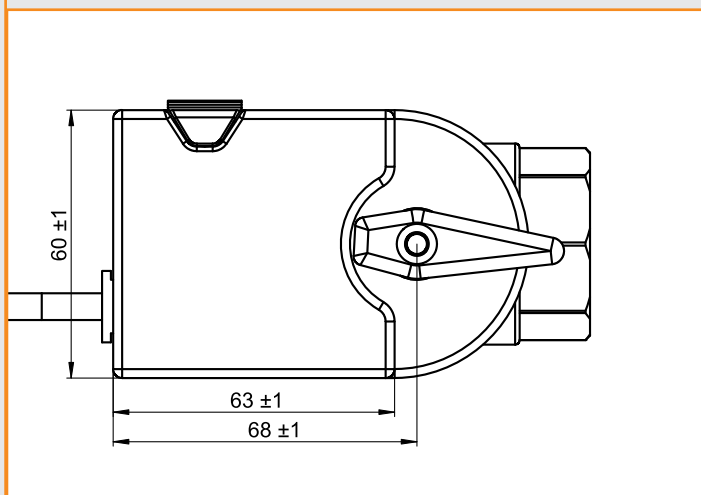
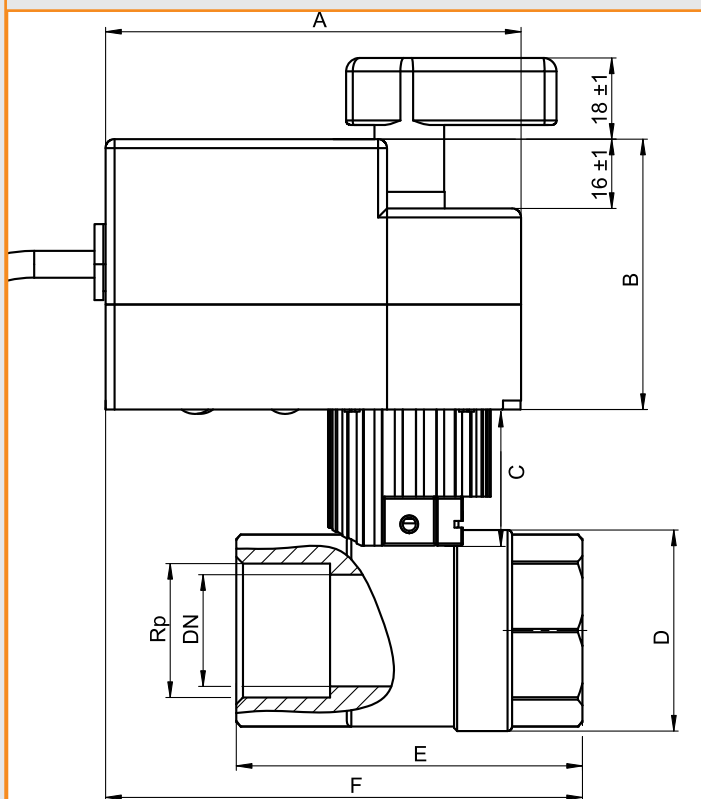
Actuator Series 224D



Actuator Series 235



Actuator Series 224 / 224D2* / 224R3



▲
▲
▲ * 224D2 comes without hand lever.



Technical Data

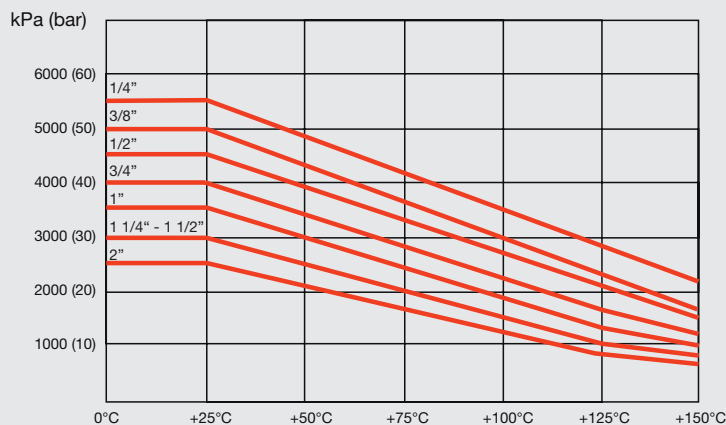
Media	heating circuit water, process water, waste water, cooling water with max. 30% vol. glycol, condensate or air
Temperature of medium	-20...+150°C (watch insulation)
Leakage rate	bubble-tight (DIN 3230-3)
Differential pressure	max. 350 kPa (3,5 bar)
Rated pressure	see temperature-pressure diagramm
Mounting position	vertical to horizontal (related to stem)
Materials	
Body	brass, vernickelt
Ball	brass, verchromt
Stem	brass
Seal of stem	NBR
Seal of ball	PTFE
Lubrication	none or according to approval
Direction of flow	any

Dimensions

k _{VS}	Thread Rp	DN mm	A* mm	B* mm	C mm	D mm	E mm	F* mm	Type
180	1 1/2"	40	93/110	45/65	30	55	102	119/132	BOFI320N
260	2"	50	93/110	45/65	30	68	123	130/142	BOFI320N

* .../... = dimensions Typ 224 / Typ 235

Temperature-pressure diagram





Technical Data

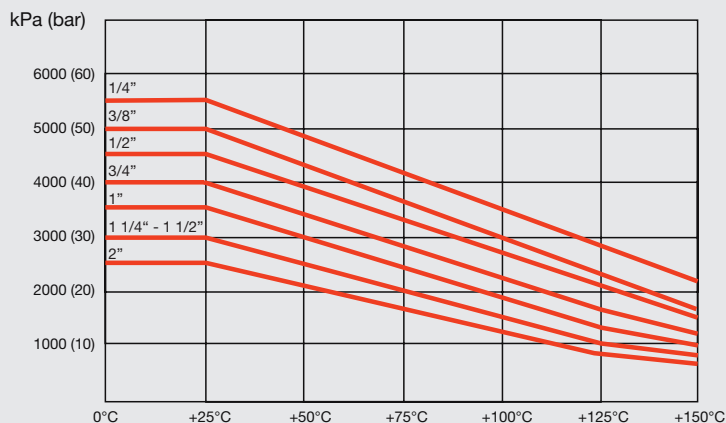
Media	drinking water
Temperature of medium	-20...+82°C (watch isolation)
Leakage rate	bubble-tight (DIN 3230-3)
Differential pressure	max. 350 kPa (3,5 bar)
Rated pressure	see temperature-pressure diagram
Mounting position	vertical to horizontal (related to stem)
Materials	
Body	brass, lead free
Ball	brass, chrome-plated
Stem	brass
Seal of stem	NBR
Seal of ball	PTFE
Lubrication	none or according to approval
Direction of flow	any

Dimensions

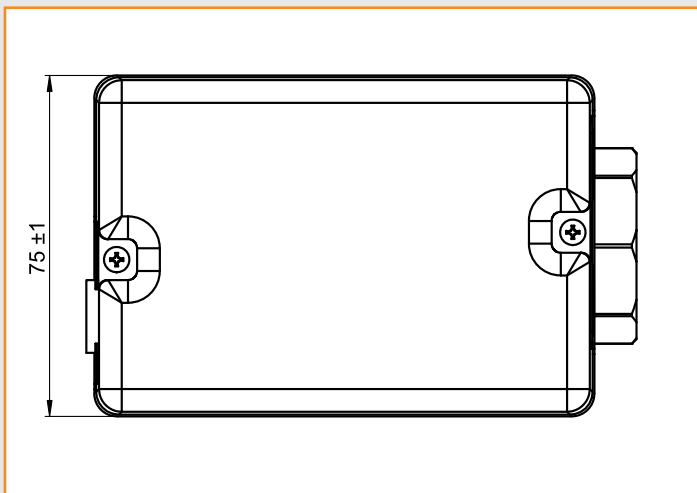
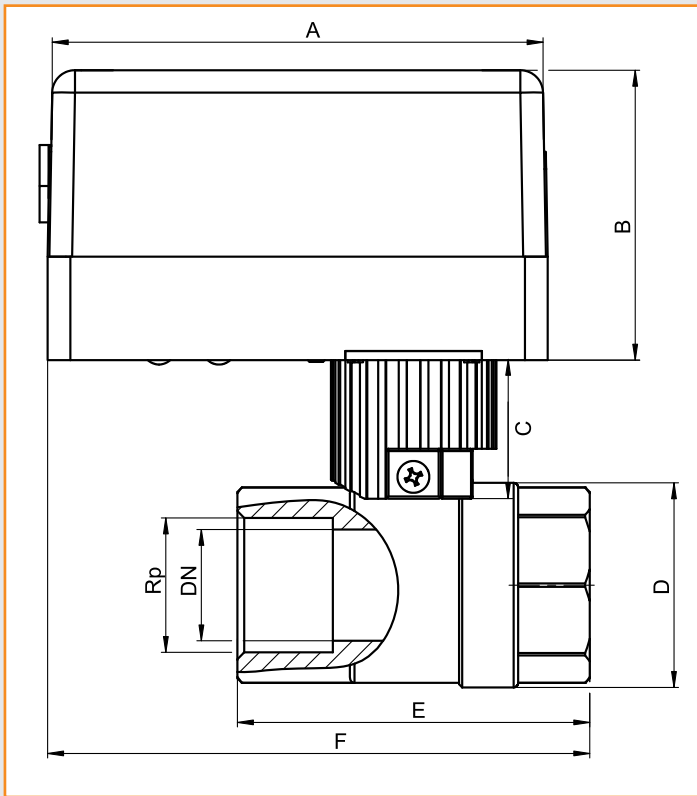
k _{VS}	Thread Rp	DN mm	A* mm	B* mm	C mm	D mm	E mm	F* mm	Type
180	1 1/2"	40	93/110	45/65	30	55	102	119/132	BDFI@320N
260	2"	50	93/110	45/65	30	68	123	130/142	BDFI320N

* .../... = dimensions Typ 224 / Typ 235

Temperature-pressure diagram



Actuator Series 235





Technical Data

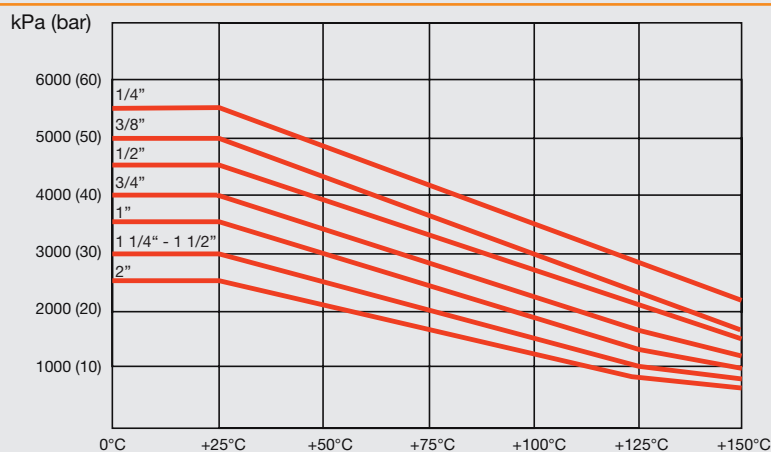
Media	heating circuit water, process water, waste water, cooling water with max. 30% vol. glycol, condensate or air
Temperature of medium	-20...+150°C (watch insulation)
Leakage rate	bubble-tight (DIN 3230-3)
Differential pressure	max. 350 kPa (3,5 bar)
Rated pressure	see temperature-pressure diagramm
Mounting position	vertical to horizontal (related to stem)
Materials	
Body	brass, vernickelt
Ball	brass, verchromt
Stem	brass
Seal of stem	NBR
Seal of ball	PTFE
Lubrication	none or according to approval
Direction of flow	any

Dimensions

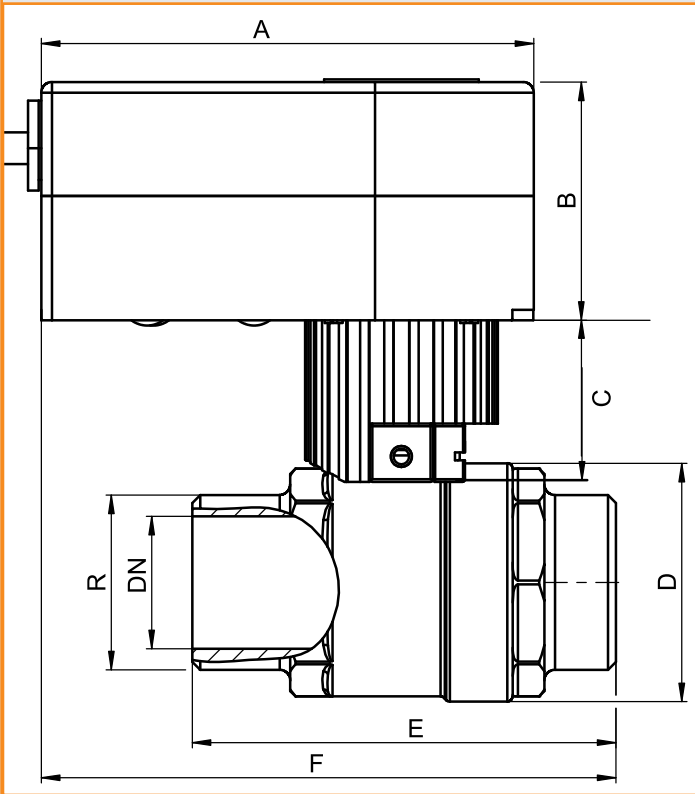
k _{VS}	Thread Rp	DN mm	A* mm	B* mm	C mm	D mm	E mm	F* mm	Type
34	3/4"	20	93/110	45/65	30	30	67	102/114	BOMI200N
70	1"	25	93/110	45/65	30	37	81	109/121	BOMI250N
75	1 1/4"	32	93/110	45/65	30	44	102	107/119	BOMI320V

* .../... = dimensions Typ 224 / Typ 235

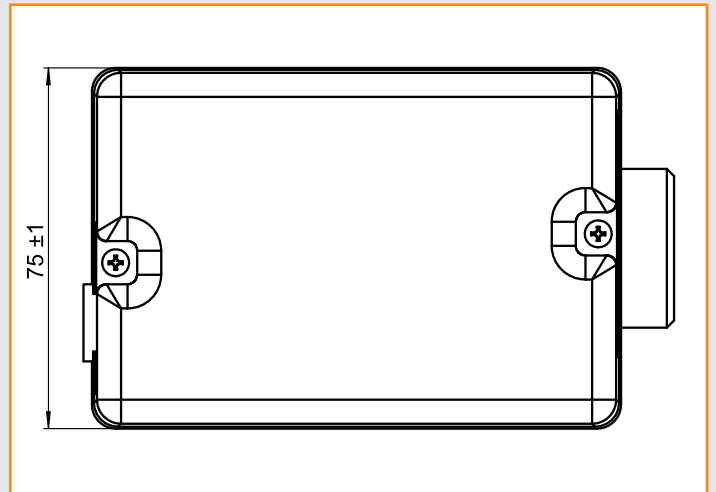
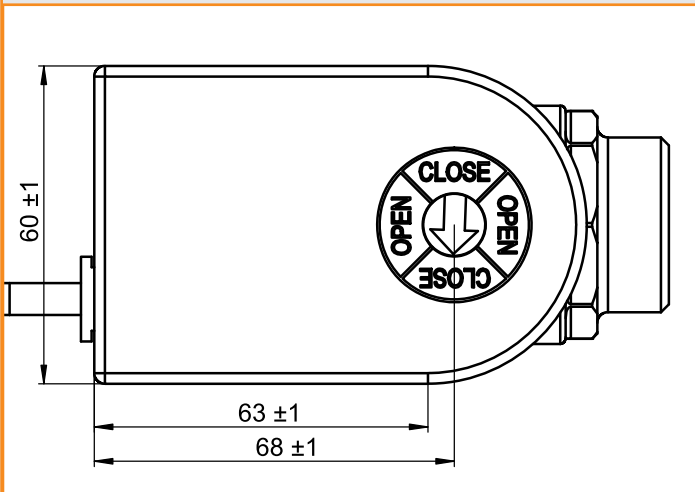
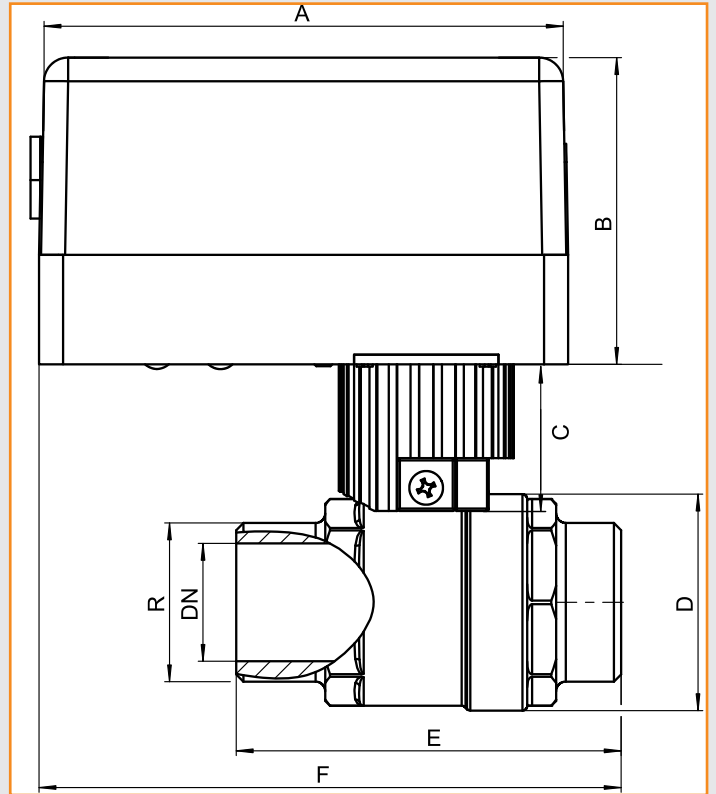
Temperature-pressure diagram



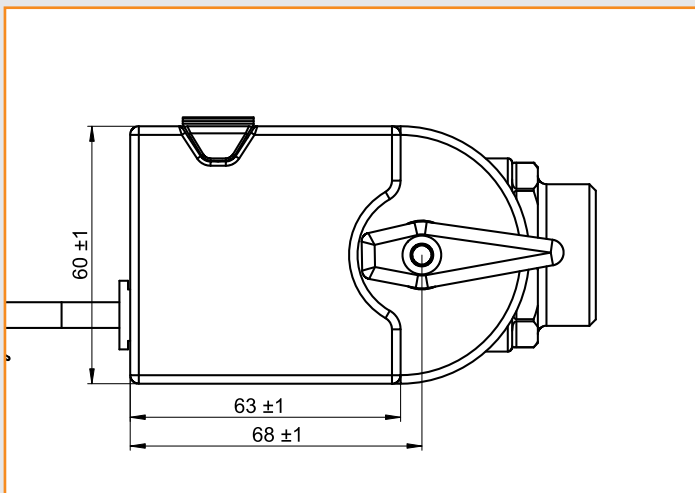
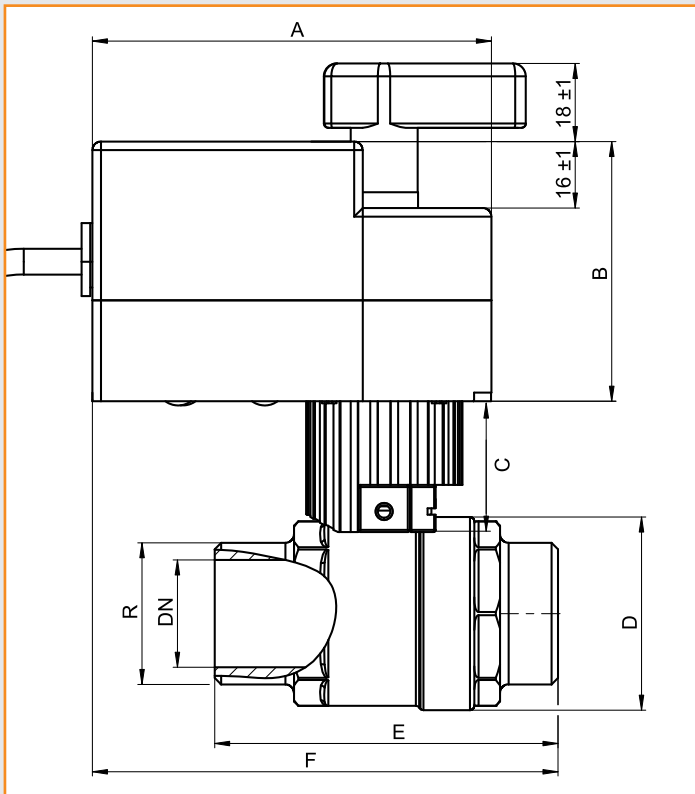
Actuator Series 224D



Actuator Series 235



Actuator Series 224 / 224D2* / 224R3



* 224D2 comes without hand lever.

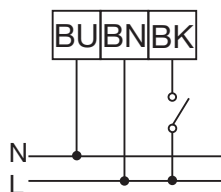


Technical Data

Control	On/Off
Connecting voltage	230 VAC (50/60 Hz) ±15%
Power consumption	2,7 W / 3,6 VA
Angle of rotation	90° / 180° / 270° / 360°
Direction of rotation	one (uni directional)
Running time (90°)	90 s @ 50 Hz / 70 s @ 60 Hz
Torque	10 Nm
Connection	cable 900 mm / 0,75 mm ²
Safety class	II
Protection	IP 42
Dimensions	93 x 60 x 61mm
Ambient temperature	-20...+60°C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 500g

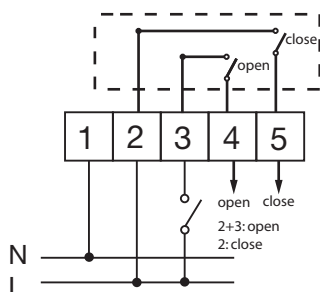
224D2-230

Connection scheme
(On/Off)



224D2-230-L2

Connection scheme
(On/Off)



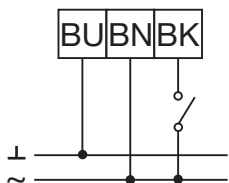


Technical Data

Control	On/Off
Connecting voltage	24 VAC (50/60 Hz) ±20%
Power consumption	2,7 W / 3,6 VA
Angle of rotation	90° / 180° / 270° / 360°
Direction of rotation	one (uni directional)
Running time (90°)	90 s @ 50 Hz / 70 s @ 60 Hz
Torque	10 Nm
Connection	cable 900 mm / 0,75 mm ²
Safety class	III
Protection	IP 42
Dimensions	93 x 60 x 61mm
Ambient temperature	-20...+60°C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 500g

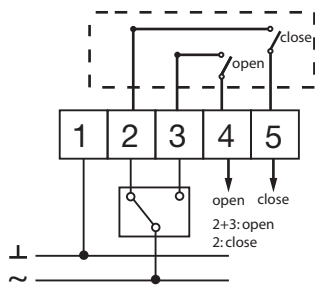
224D2-024

Connection scheme
(On/Off)



224D2-024-L2

Connection scheme
(On/Off)



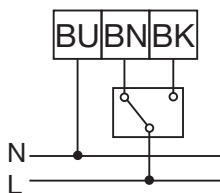


Technical Data

Control	Tri-state
Connecting voltage	230 VAC (50/60 Hz) ±15%
Power consumption	2,5 W / 3,5 VA
Angle of rotation	90° / 180° / 270° / 360°
Direction of rotation	one (uni directional)
Running time (90°)	90 s @ 50 Hz / 70 s @ 60 Hz
Torque	10 Nm
Connection	cable 900 mm / 0,75 mm ²
Safety class	II
Protection	IP 42
Dimensions	93 x 60 x 45 mm
Ambient temperature	-20...+60°C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 500g

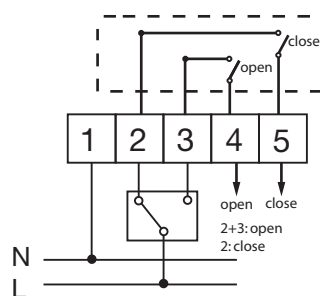
224D-230

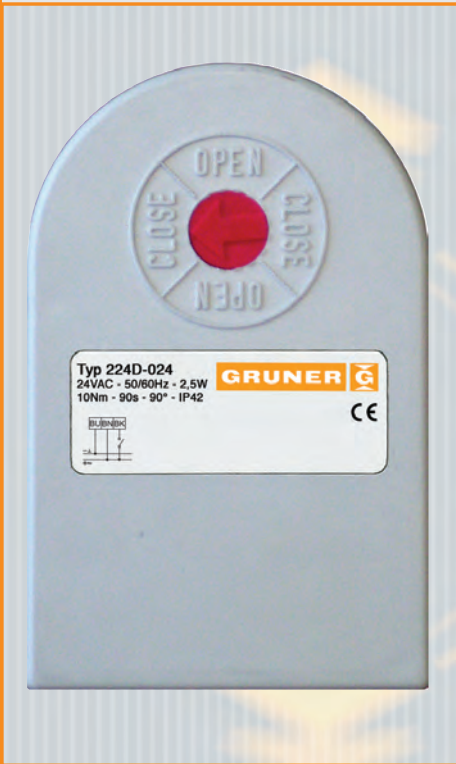
Connection scheme
(Tri-state)



224D-230-L2

Connection scheme
(Tri-state)



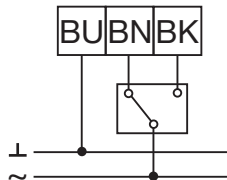


Technical Data

Control	Tri-state
Connecting voltage	24 VAC (50/60 Hz) ±20%
Power consumption	2,5 W / 3,5 VA
Angle of rotation	90° / 180° / 270° / 360°
Direction of rotation	one (uni directional)
Running time (90°)	90 s @ 50 Hz / 70 s @ 60 Hz
Torque	10 Nm
Connection	cable 900 mm / 0,75 mm ²
Safety class	III
Protection	IP 42
Dimensions	93 x 60 x 45 mm
Ambient temperature	-20...+60°C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 500g

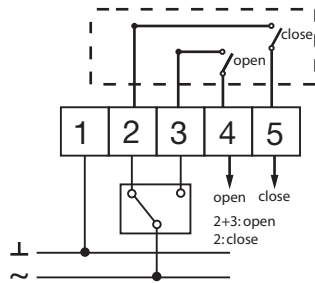
224D-024

Connection scheme
(Tri-state)



224D-024-L2

Connection scheme
(Tri-state)



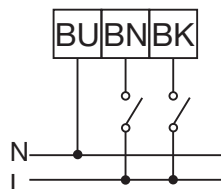


Technical Data

Control	Tri-state
Connecting voltage	230 VAC (50/60 Hz) ±15%
Power consumption	2,7 W / 3,6 VA
Angle of rotation	90°
Direction of rotation	bi-directional
Running time (90°)	90 s @ 50 Hz / 70 s @ 60 Hz
Torque	10 Nm
Connection	cable 900 mm / 0,75 mm ²
Safety class	II
Protection	IP 42
Dimensions	93 x 60 x 61mm
Ambient temperature	-20...+60°C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 500g

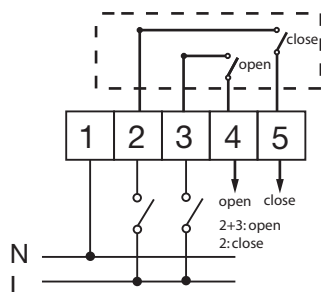
224R3-230

Connection scheme
(Tri-state)



224R3-230-L2

Connection scheme
(Tri-state)



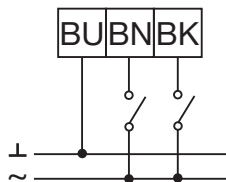


Technical Data

Control	Tri-state
Connecting voltage	24 VAC (50/60 Hz) ±20%
Power consumption	2,7 W / 3,6 VA
Angle of rotation	90°
Direction of rotation	bi-directional
Running time (90°)	90 s @ 50 Hz / 70 s @ 60 Hz
Torque	10 Nm
Connection	cabl 900 mm / 0,75 mm ²
Safety class	III
Protection	IP 42
Dimensions	93 x 60 x 61mm
Ambient temperature	-20...+60°C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 500g

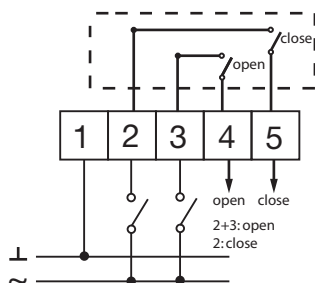
224R3-024

Connection scheme
(Tri-state)



224R3-024-L2

Connection scheme
(Tri-state)



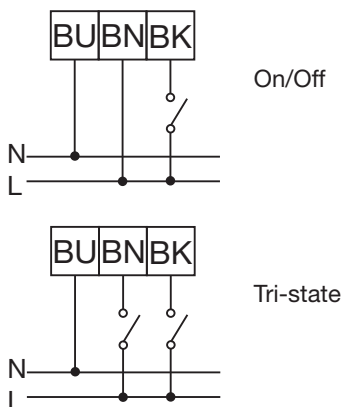


Technical Data

Control	Tri-state + On/Off
Connecting voltage	230 VAC (50/60 Hz) / DC ±15%
Power consumption	4,0 W / 7,5 VA
Angle of rotation	90°
Direction of rotation	bi-directional
Running time (90°)	15...25 s
Torque	10 Nm
Connection	cabl 900 mm / 0,75 mm ²
Safety class	II
Protection	IP 42
Dimensions	93 x 60 x 61mm
Ambient temperature	-20...+60°C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 500g

224-230

Connction scheme



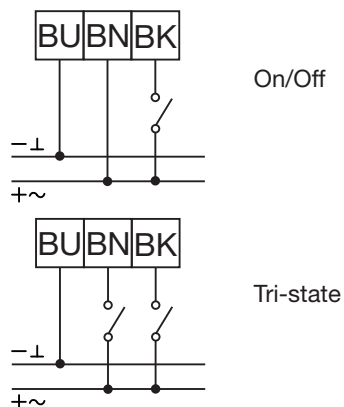


Technical Data

Control	Tri-state + On/Off
Connecting voltage	24 VAC (50/60 Hz) / 24VDC \pm 20%
Power consumption	4,0 W / 6,0 VA
Angle of rotation	90°
Direction of rotation	bi-directional
Running time (90°)	15...25 s
Torque	10 Nm
Connection	cable 900 mm / 0,75 mm ²
Safety class	III
Protection	IP 42
Dimensions	93 x 60 x 61mm
Ambient temperature	-20...+60°C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 500g

224-024

Connction scheme



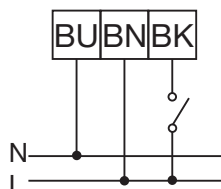


Technical Data

Control	On/Off
Connecting voltage	230 VAC (50/60 Hz) ±15%
Power consumption	max 3,5 W / 4,0 A
Angle of rotation	90° / 180° / 270° / 360°
Direction of rotation	one (uni directional)
Running time (90°)	120 s
Torque	10 Nm
Auxiliary switches	n/a
Switching power axiliary switch	-
Potentiometer	n/a
Connection	cable 900 mm / 0,75 mm ²
Safety class	II
Protection	IP 54 (cable downward)
Dimensions	110 x 75 x 65 mm
Ambient temperature	-20... +60° C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 600g

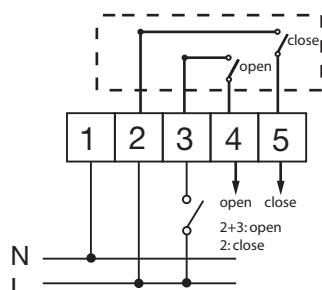
235D2-230

Connection scheme
(On/Off)



235D2-230-L2

Connection scheme
(On/Off)



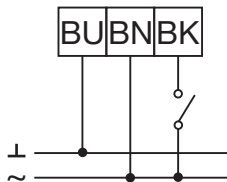


Technical Data

Control	On/Off
Connecting voltage	24 VAC (50/60 Hz) ±20%
Power consumption	max 3,5 W / 4,0 A
Angle of rotation	90° / 180° / 270° / 360°
Direction of rotation	one (uni directional)
Running time (90°)	120 s
Torque	10 Nm
Auxiliary switches	n/a
Switching power axiliary switch	-
Potentiometer	n/a
Connection	cable 900 mm / 0,75 mm ²
Safety class	III
Protection	IP 54 (cable downarwd)
Dimensions	110 x 75 x 65 mm
Ambient temperature	-20... +60° C
Maintenance	maintenace-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 600g

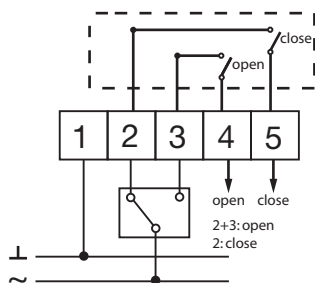
235D2-024

Connection scheme
(On/Off)



235D2-024-L2

Connection scheme
(On/Off)



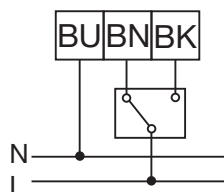


Technische Daten

Control	Tri-state
Connecting voltage	230 VAC (50/60 Hz) ±15%
Power consumption	max 3,5 W / 4,0 A
Angle of rotation	90° / 180° / 270° / 360°
Direction of rotation	one (uni directional)
Running time (90°)	120 s
Torque	10 Nm
Auxiliary switches	n/a
Switching power axiliary switch	-
Potentiometer	n/a
Connection	cable 900 mm / 0,75 mm ²
Safety class	
Protection	IP 54 (cable downward)
Dimensions	110 x 75 x 65 mm
Ambient temperature	-20... +60° C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 600g

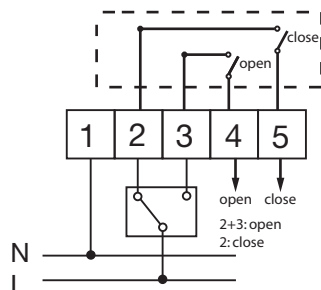
235D3-230

Connection scheme
(Tri-state)



235D3-230-L2

Connection scheme
(Tri-state)



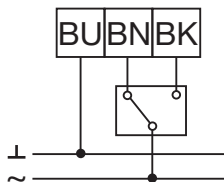


Technical Data

Control	Tri-state
Connecting voltage	24 VAC (50/60 Hz) ±20%
Power consumption	max 3,5 W / 4,0 A
Angle of rotation	90° / 180° / 270° / 360°
Direction of rotation	one (uni directional)
Running time (90°)	120 s
Torque	10 Nm
Auxiliary switches	n/a
Switching power axiliary switch	-
Potentiometer	n/a
Connection	cable 900 mm / 0,75 mm ²
Safety class	III
Protection	IP 54 (cable downward)
Dimensions	110 x 75 x 65 mm
Ambient temperature	-20... +60° C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 600g

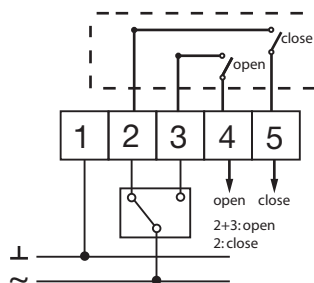
235D3-024

Connection scheme
(Tri-state)



235D3-024-L2

Connection scheme
(Tri-state)



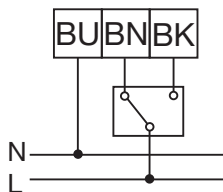


Technical Data

Control	On/Off
Connecting voltage	230 VAC (50/60 Hz) ±15%
Power consumption	max 3,5 W / 5,0 A
Angle of rotation	90°
Direction of rotation	bi-directional
Running time (90°)	120 s
Torque	10 Nm
Auxiliary switches	max. 1, adjustable from inside
Switching power axiliary switch	250 VAC / 5 (2,5) A
Potentiometer	n/a
Connection	cable 900 mm / 0,75 mm ²
Safety class	II
Protection	IP 54 (cable downward)
Dimensions	110 x 75 x 65 mm
Ambient temperature	-20... +60° C
Maintenance	maintenacne-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 600g

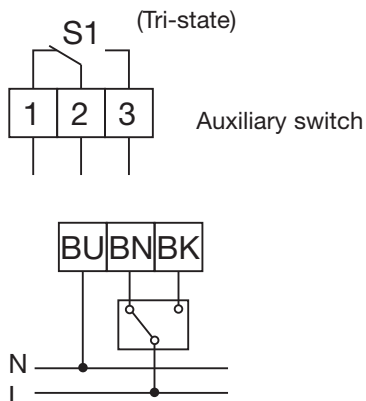
235R2-230

Connection scheme
(Tri-state)



235R2-230-S1

Connection scheme
(Tri-state)



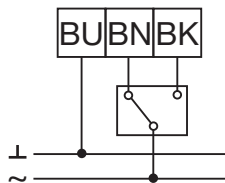


Technical Data

Control	On/Off
Connecting voltage	24 VAC (50/60 Hz) ±20%
Power consumption	max 3,5 W / 5,0 A
Angle of rotation	90°
Direction of rotation	bi-directional
Running time (90°)	120 s
Torque	10 Nm
Auxiliary switches	max. 1, adjustable from inside
Switching power axiliary switch	250 VAC / 5 (2,5) A
Potentiometer	n/a
Connection	cable 900 mm / 0,75 mm ²
Safety class	III
Protection	IP 54 (cable downward)
Dimensions	110 x 75 x 65 mm
Ambient temperature	-20... +60° C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 600g

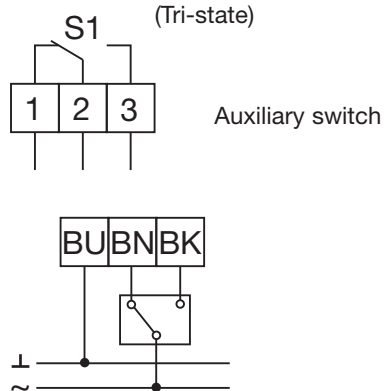
235R2-024

Connection scheme
(Tri-state)



235R2-024-S1

Connection scheme
(Tri-state)



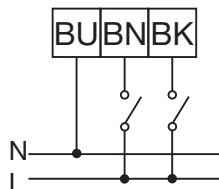


Technical Data

Control	Tri-state
Connecting voltage	230 VAC (50/60 Hz) ±15%
Power consumption	max 3,5 W / 5,0 A
Angle of rotation	90°
Direction of rotation	bi-directional
Running time (90°)	120 s
Torque	10 Nm
Auxiliary switches	max. 2, adjustable from inside
Switching power axiliary switch	250 VAC / 5 (2,5) A
Potentiometer	4,7 kΩ
Connection	cable 900 mm / 0,75 mm ²
Safety class	II
Protection	IP 54 (cable downward)
Dimensions	110 x 75 x 65 mm
Ambient temperature	-20... +60° C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 600g

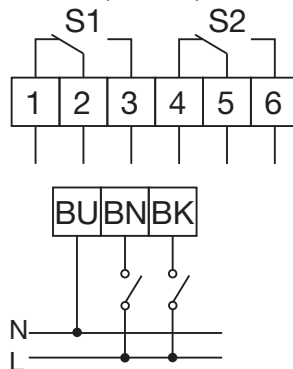
235R3-230

Connection scheme
(Tri-state)



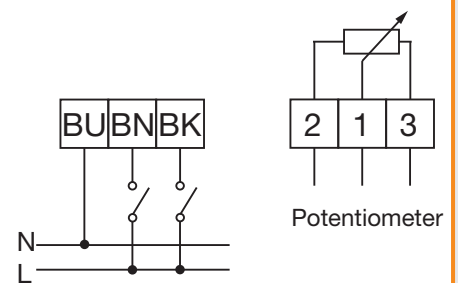
235R3-230-S2

Connection scheme
(Tri-state)



235R3-230-P5

Connection scheme
(Tri-state)



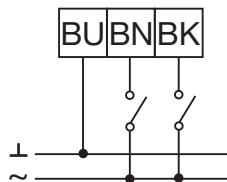


Technical Data

Control	Tri-state
Connecting voltage	24 VAC (50/60 Hz) ±20%
Power consumption	max 3,5 W / 5,0 A
Angle of rotation	90°
Direction of rotation	bi-directional
Running time (90°)	120 s
Torque	10 Nm
Auxiliary switches	max. 2, adjustable from inside
Switching power axiliary switch	250 VAC / 5 (2,5) A
Potentiometer	4.7 kΩ
Connection	cabble 900 mm / 0,75 mm ²
Safety class	III
Protection	IP 54 (acble downward)
Dimensions	110 x 75 x 65 mm
Ambient temperature	-20... +60° C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 600g

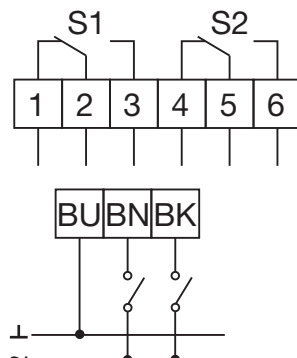
235R3-024

Connection scheme
(Tri-state)



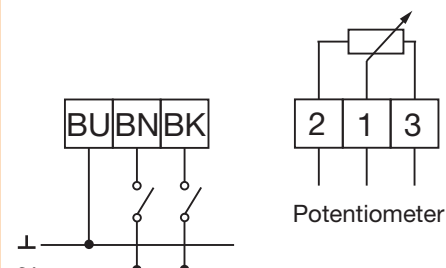
235R3-024-S2

Connection scheme
(Tri-state)



235R3-024-P5

Connection scheme
(Tri-state)

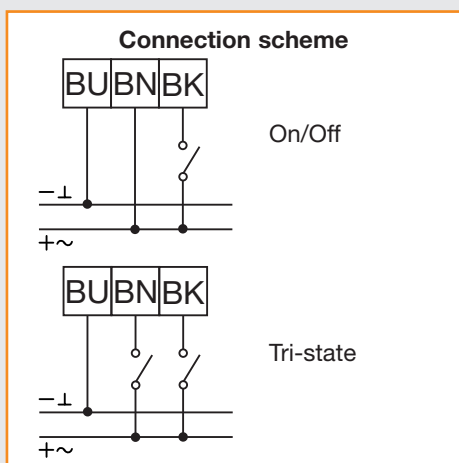




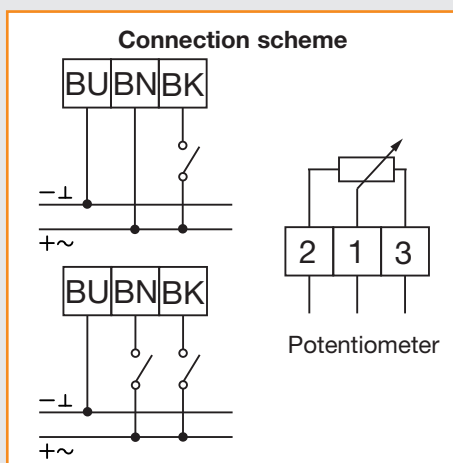
Technical Data

Control	On/Off + Tri-state
Connecting voltage	24 VAC (50/60 Hz) / DC ± 20%
Power consumption	max 3,6 W / 6,2 A
Angle of rotation	90°
Direction of rotation	bi-directional
Running time (90°)	20...30 s
Torque	10 Nm
Auxiliary switches	max. 2, adjustable from inside
Switching power axiliary switch	250 VAC / 5 (2,5) A
Potentiometer	4.7 kΩ
Connection	cabl 900 mm / 0,75 mm ²
Safety class	III
Protection	IP 54 (cable downward)
Dimensions	110 x 75 x 65 mm
Ambient temperature	-20... +60° C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 600g

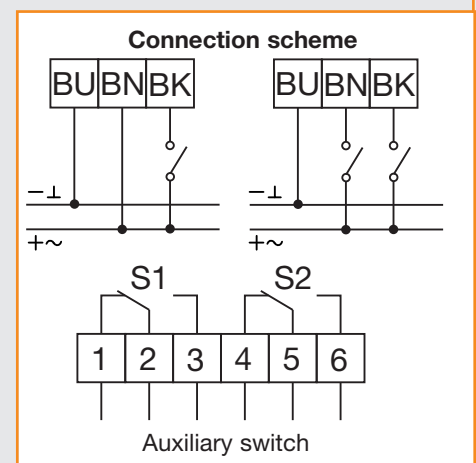
235-024



235-024-S2



235-024-P5



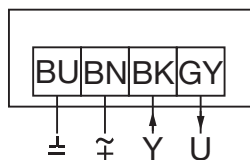


Technical Data

Control	Proportional (0)2...10 VDC
Connecting voltage	24 VAC (50/60 Hz) / DC ±20%
Power consumption	5,5 W / 7,0 VA
Angle of rotation	90°
Direction of rotation	bi-directional, changable from inside
Running time (90°)	20...30 s
Torque	15 Nm
Auxiliary switches	n/a
Switching power axiliary switch	-
Potentiometer	n/a
Connection	cabl 900 mm / 0,75 mm ²
Safety class	III
Protection	IP 54 (cable downward)
Dimensions	110 x 75 x 65 mm
Ambient temperature	-30...+50°C
Maintenance	maintenance-free
CE	72/23/EWG, 89/336/EWG
Weight	ca. 600g

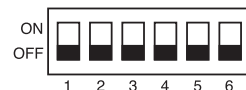
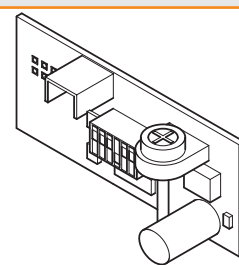
235C-024

Connection scheme (Proportional control)



Setting of functional switches

	OFF	ON
Control signal Y		
2...10 VDC (Standard)	1, 2	-
0...10 VDC	2	1
4...20 mA	1	2
0...20 mA	-	1, 2
Feedback signal U		
2...10 VDC (Standard)	4, (1)	3
0...10 VDC	4	3, (1)
15 VDC / 5 mA	3, 5	4
10 VDC / 5 mA	3	4, 5



Switches actually unused shall be set to OFF position.

The constant voltage of 15 VDC can be used for example as power supply of the setpoint device FGEB.

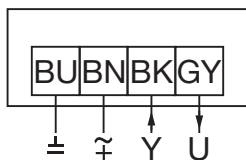


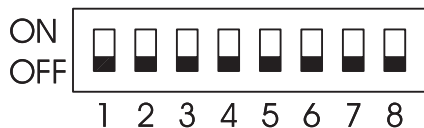
Technical Data

Control	Proportional (0)2...10 VDC
Connecting voltage	24 VAC (50/60 Hz) / DC $\pm 20\%$
Power consumption	7,0 W / 12,0 VA
Angle of rotation	90°
Special stem	235-WEAB-016-A-
Running time (90°)	120 s
Torque	10 Nm
Connection	cable 900 mm / 0,75 mm ²
Safety class	III
Protection	IP54
Dimensions	110 x 75 x 65 mm
Ambient temperature	-20...60°C
Maintenance	maintenance-free
CE	73/23/EWG, 89/336/EWG
Weight	ca. 600g

235K-024

Connection scheme
(Proportional control)





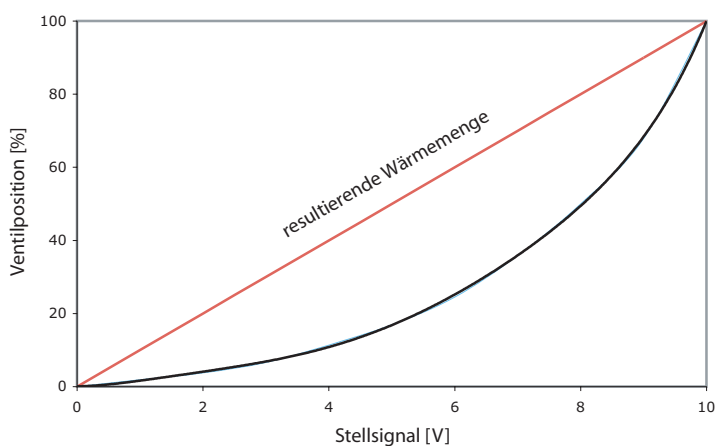
Switches actually unused shall be set to OFF position.

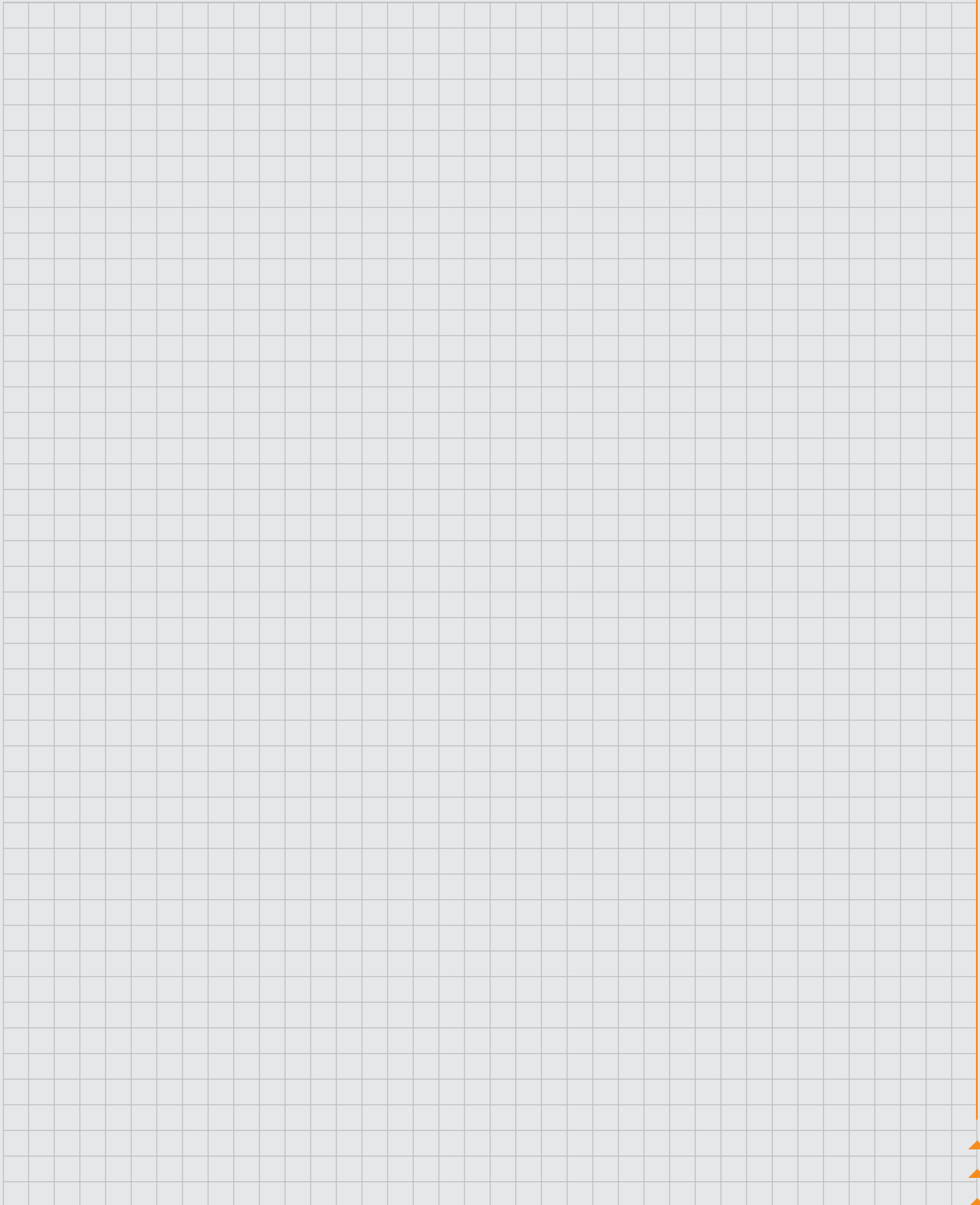
The constant voltage of 15 VDC can be used for example as power supply of the setpoint device FGEB.

Setting of functional switches

	OFF	ON
Control signal Y		
2...10 VDC (Standard)	-	1
0...10 VDC	1	-
4...20 mA	-	1, 4
0...20 mA	1	4
Feedback signal U		
2...10 VDC (Standard)	-	1, 3, 5, 6
0...10 VDC	1, 3	5, 6
15 VDC / 5 mA	5, 6, 7	8
10 VDC / 5 mA	5, 6	-
Direction of rotation		
0...90°	2	-
90...0°	-	2

Characteristic curve 235K





▶ ▶ ▶ YOUR WAY TO GRUNER

