

Safety Shut-Off Valve RMG 711



PRODUCT INFORMATION

**Serving the Gas Industry
Worldwide**

SAFETY SHUT-OFF VALVE RMG 711


Application, Features, Technical Data

Application

- safety device for gas pressure regulating stations
- suitable for natural gas according to G260 other gases on request

Features

- easy maintenance; easy replacement of internal parts without dismantling the valve from the line, few parts only
- integrated pressure compensating valve
- low pressure drop due to in-line flow
- manual release as a standard feature
- electric release and electric remote indication of valve position as special features
- high response accuracy and short response time
- max. flow rate should not exceed 80 m/sec
- also available according to SIL-norm IEC 61508

TECHNICAL DATA													
max. operating pressure PS_{max}	100 bar (depending on flange rating)												
sizes	DN 25, DN 50, DN 80, DN 100, DN 150, DN 200, DN 250, DN 300												
connections	DIN-flanges PN 25, PN 40, and flanges according to ANSI 300, 600 RF, RTJ												
materials	<table border="0"> <tr> <td>main valve</td> <td>A 352 LCC / G20Mn5 QT</td> </tr> <tr> <td>switch device</td> <td>aluminium forging alloy</td> </tr> <tr> <td>measuring unit</td> <td>aluminium forging alloy</td> </tr> <tr> <td>internal parts</td> <td>aluminium, stainless steel, brass, steel</td> </tr> <tr> <td>O-rings</td> <td>NBR, other materials on request</td> </tr> <tr> <td>closing spring</td> <td>spring steel</td> </tr> </table>	main valve	A 352 LCC / G20Mn5 QT	switch device	aluminium forging alloy	measuring unit	aluminium forging alloy	internal parts	aluminium, stainless steel, brass, steel	O-rings	NBR, other materials on request	closing spring	spring steel
main valve	A 352 LCC / G20Mn5 QT												
switch device	aluminium forging alloy												
measuring unit	aluminium forging alloy												
internal parts	aluminium, stainless steel, brass, steel												
O-rings	NBR, other materials on request												
closing spring	spring steel												
temperature range, class 2	-20 °C bis +60 °C (other temperature ranges on request)												
response time t_a	≤ 0,5 s (depending on service pressure, valve size and measuring unit)												
function and tightness	DIN EN 14382 (DIN 3381)												
Ex-protection	standard SSV do not apply to ATEX 95 (available electronic accessories fully comply with the ATEX requirements).												
CE-sign acc. to PED													
pressure drop Δp	flowrate coefficient K_G												
	sizes DN	K_G -value in m ³ /h											
based on the following formula:													
$\Delta p \approx \frac{Q_n^2}{p_u \cdot K_G^2}$													
pressure for the formulas to be inserted in absolute values!													
	25	1200											
	50	4790											
	80	12260											
	100	19160											
	150	43110											
	200	76650											
	250	119750											
	300	130400											

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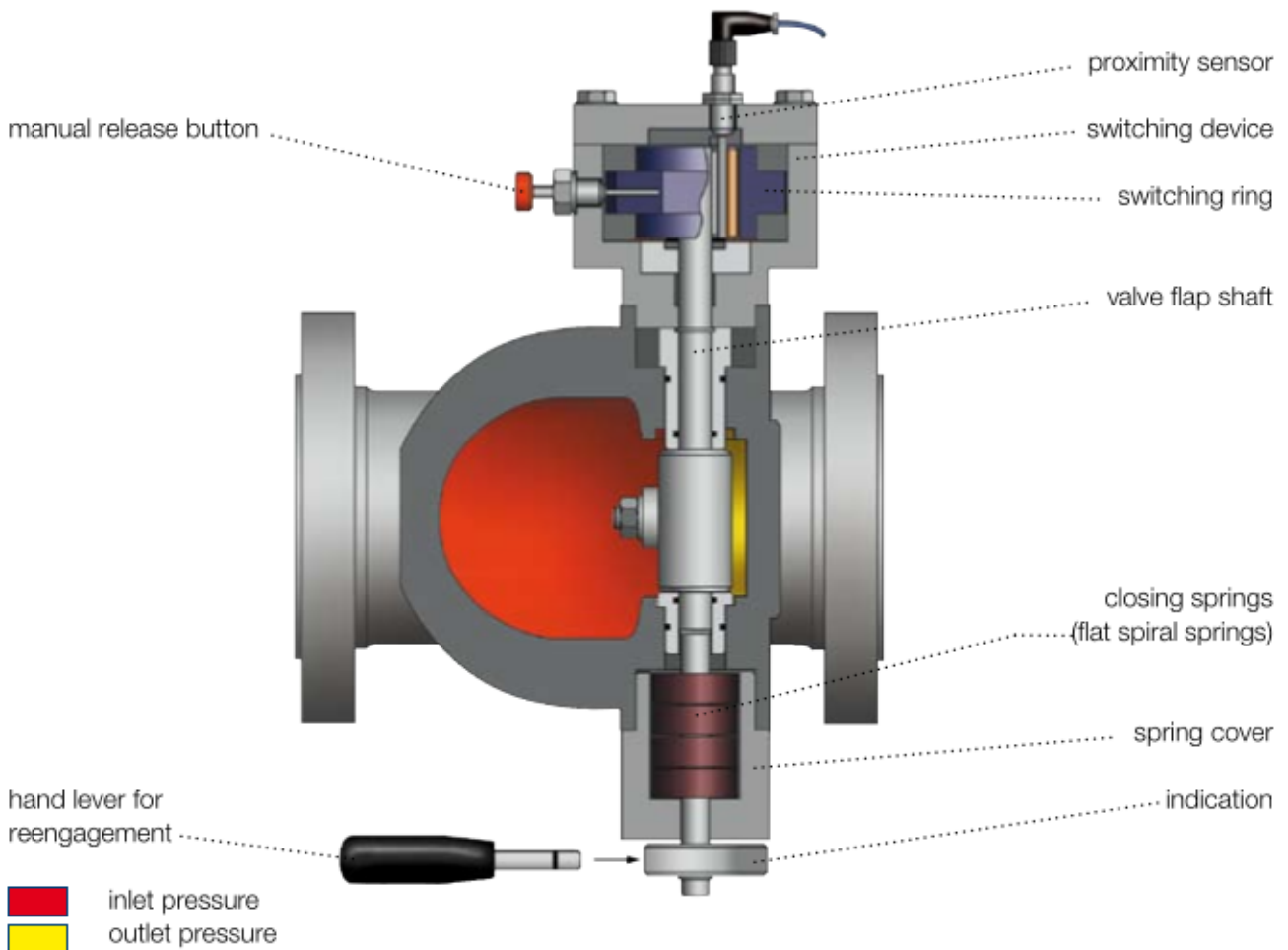
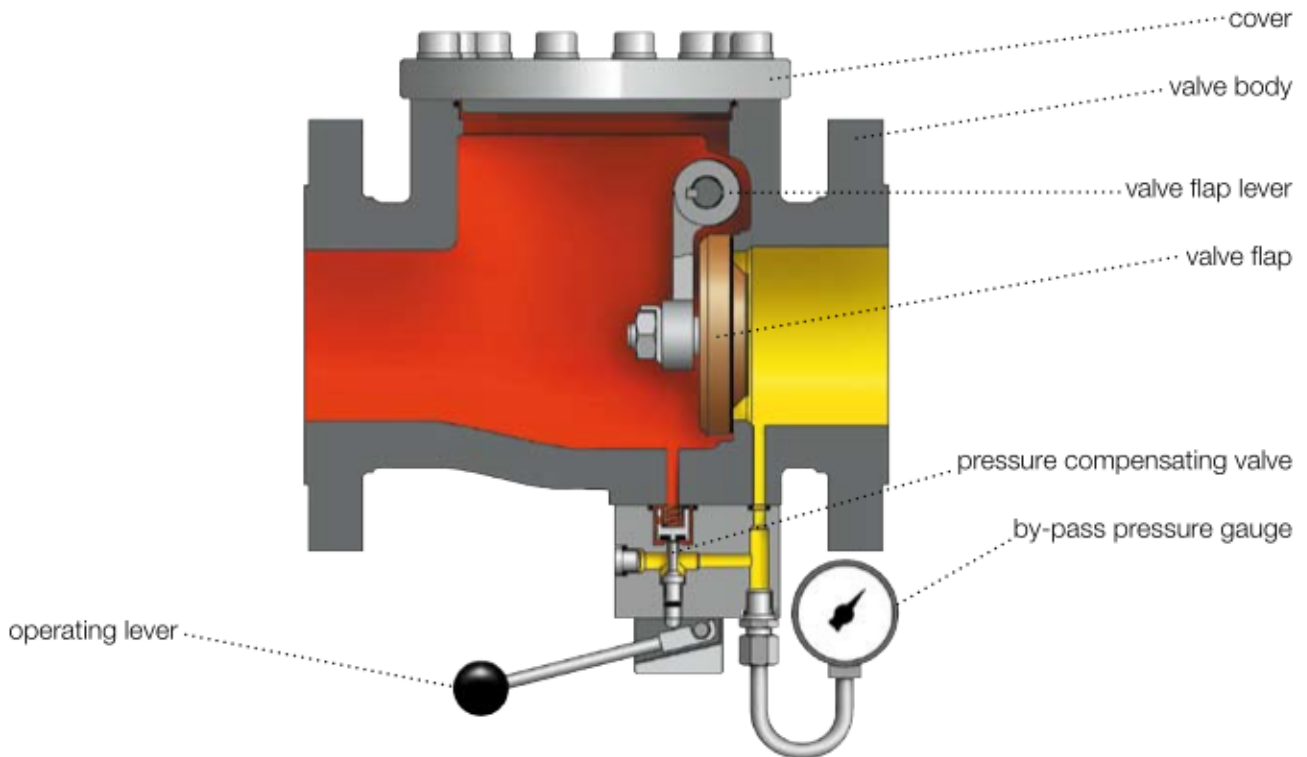
ADJUSTABLE RANGES															
control element	setpoint spring			overpressure release				underpressure release			minimum differential between over-/underpressure response points with spring no.:			re-sponse precision category	
	No.	colour	wire-ø in mm	spec. range			min. differential between rspnse pressure and service pressure	spec. range		min. differential between response pressure and service pressure	Δpw (bar)	4	5		6
				Wdso (bar)				Wdsu (bar)							
K10a	1	bright red	3.2	0.08	...	0.25				0.09 0.13			10/5		
	2	dark red	3.6	0.2	...	0.5				0.15 0.18			5/2.5		
	3	white	4.75	0.4	...	1.5				0.30 0.34			5/2.5		
	4	white	1.2				0.01	...	0.04	0.03			20/5		
	5	black	1.4				0.035	...	0.12	0.06			5		
K11a/1	1	bright red	3.2	0.4	...	0.8				0.17 0.20 0.22			10/5		
	2	dark red	3.6	0.6	...	1.6				0.28 0.31 0.33			10/5		
	3	white	4.75	1.5	...	4.5				0.39 0.42 0.44			5/2.5		
	4	light blue	1.1				0.06	...	0.15	0.05			20/5		
	5	black	1.4				0.12	...	0.40	0.08			5		
	6	red	2.25				0.35	...	1.00	0.10			5		
K11a/2	3	white	4.75	2.5	...	8.0				1.0			10/5		
	6	red	2.25				0.8	...	2.2	0.4			20/5		
K16	1	black	4.5	1	...	5							2.5/1		
	2	grey	5.0	2	...	10							1		
	3	brown	6.3	5	...	20							1		
	4	red	7.0	10	...	40							1		
K17	2	grey	5.0				2	...	10	0.4			5		
	3	brown	6.3				5	...	20	0.8			5		
	4	red	7.0				10	...	40	1.2			5		
K18	1		9.0	20	...	90							1		
K19	1		9.0				20	...	90	1.5			5		

*) The higher response category is valid for the first half, the lower response category is valid for the second half of the setting range.

SAFETY SHUT-OFF VALVE RMG 711

Design and Operation

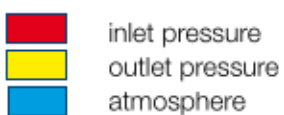
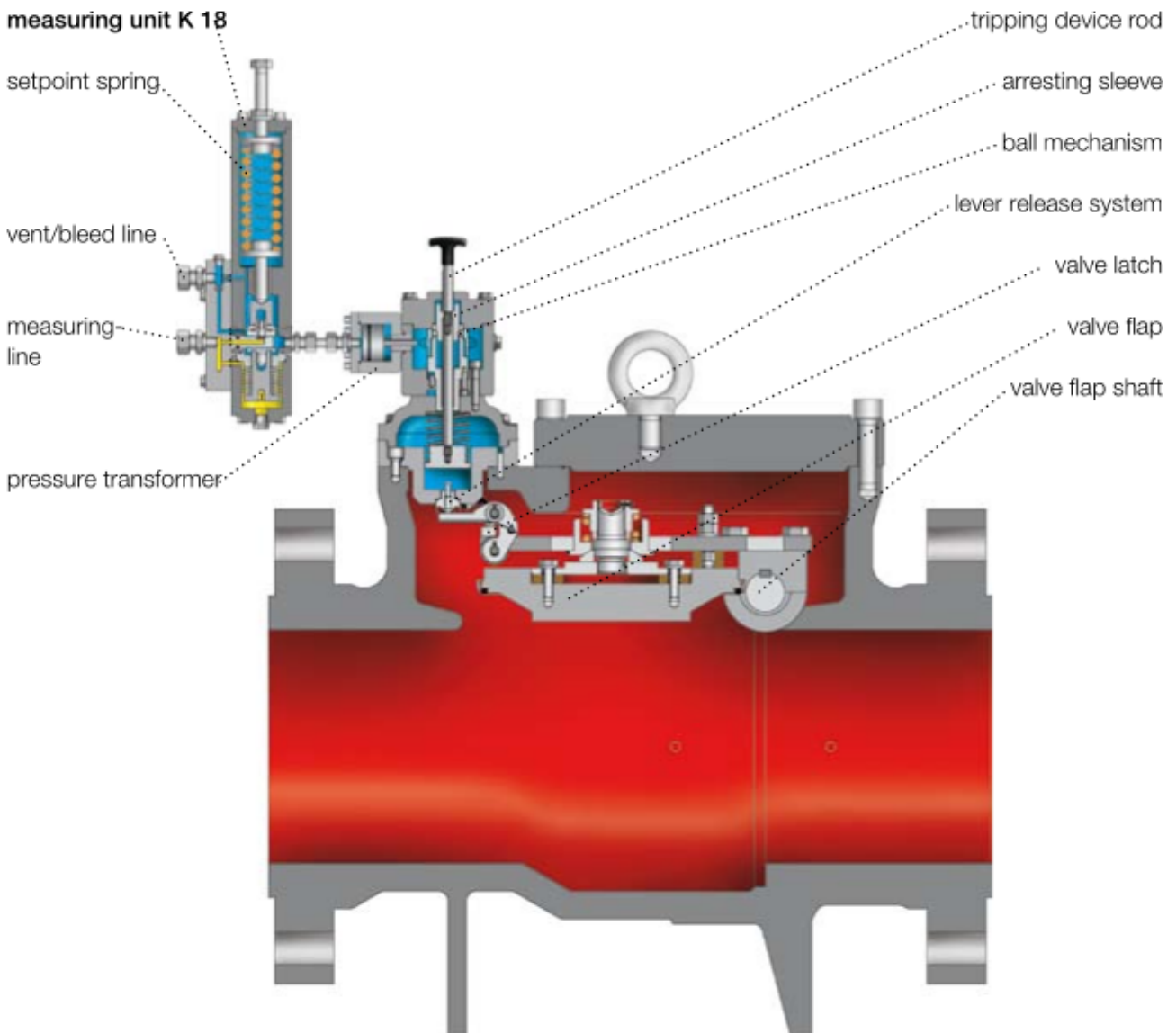
RMG 711 DN 25 - DN 150



SAFETY SHUT-OFF VALVE RMG 711

Design and Operation

RMG 711 DN 200 - DN 300



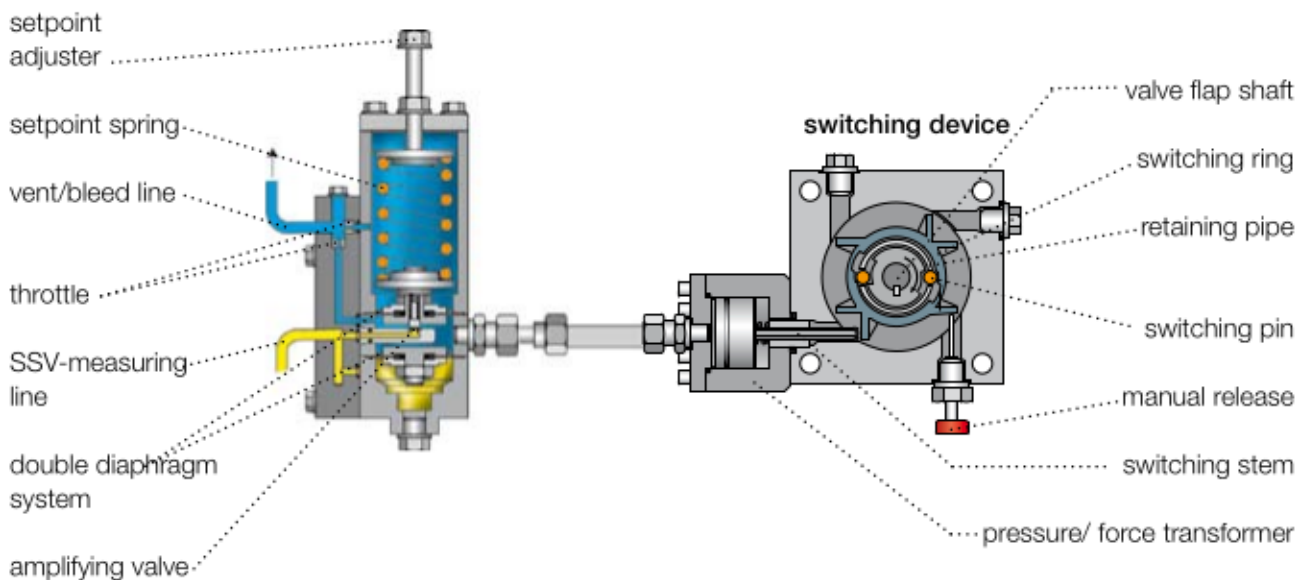
SAFETY SHUT-OFF VALVE RMG 711

Aufbau und Arbeitsweise

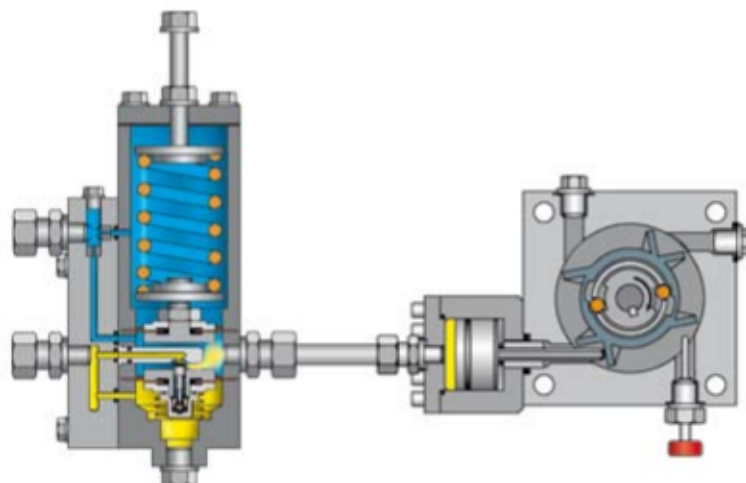
operation with control element K16, K17, K18, K19

The pressure to be monitored (service pressure) at the double diaphragm system has to be compared with a setpoint value (response pressure setpoint) which is determined by the setpoint spring. When the upper response pressure is reached, the overpressure at the control element K16 or K18 causes the amplifying valve to open. When the lower response pressure is reached, the underpressure at the control element K17/K19 equally causes the amplifying valve to open. In both cases gas flows from the monitoring system to the pressure/force transformer. The pressure increase does move the piston into the direction of the switch gear and causes that the valve flap shaft releases. The actuator springs cause the SAV to close.

control element (K16 for upper setting range)



control element (released - K17 for lower setting range)



operation with controlelements K10a, K11a

The control element is a release mechanism with a diaphragm measuring or piston measuring unit (K 10a/K 11a), which is kept in position by the setpoint springs. Both setpoint values (response pressure setpoints) for overpressure and underpressure release can be adjusted without influencing each other. When the upper or lower response pressure is reached, the release movement in the control element is transmitted via the switch stem to the switching ring of the switching device. This releases the valve flap shaft and the SAV valve flap stops the gas flow.

operation with magnetic switch (electric release)

closing on current failure

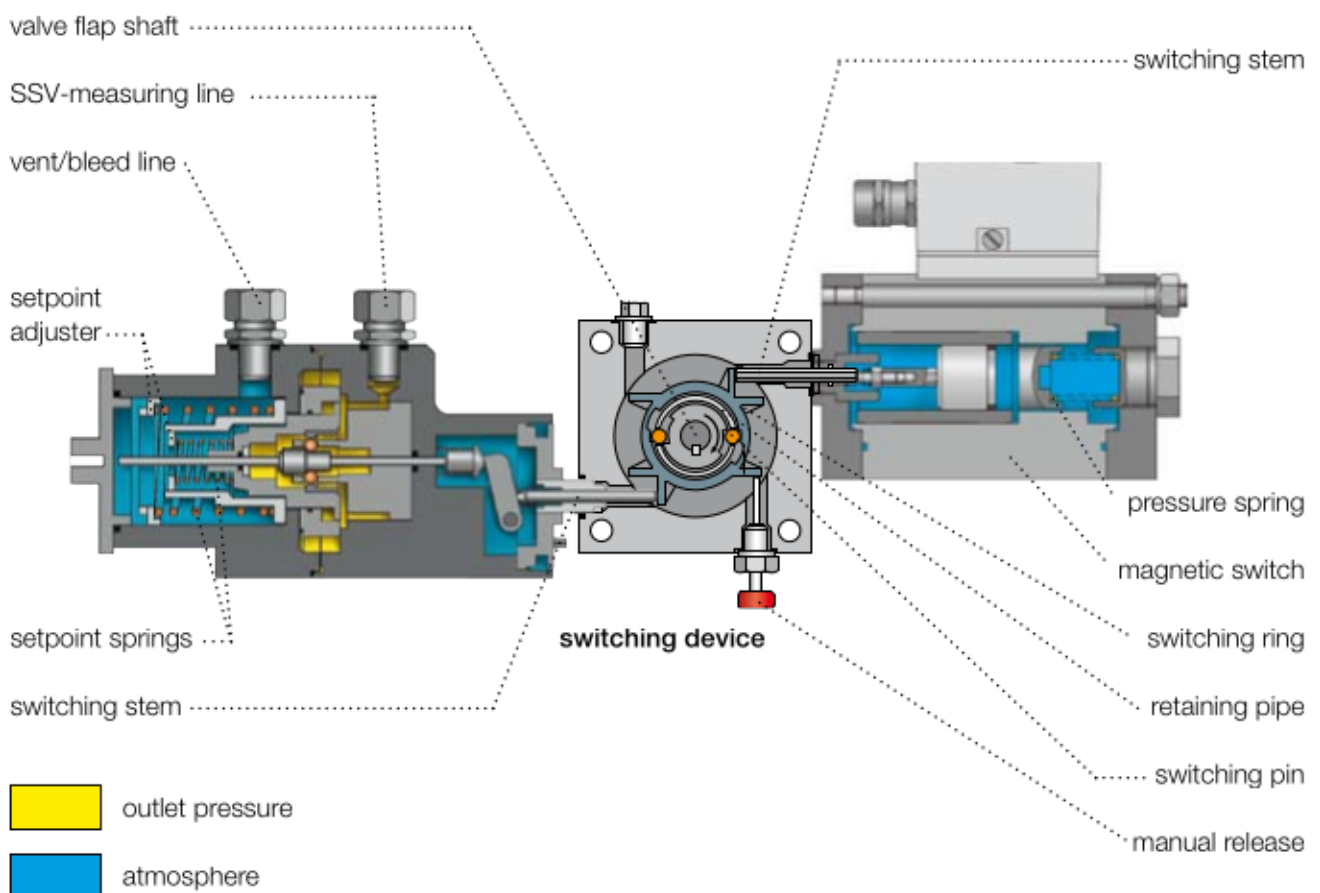
The magnetic rod is brought into opening position by means of a stroke movement of the magnet against the force of the closing spring. In operating condition the magnet is under current, should the current supply fail the closing spring operates the switch stem.

closing on current supply

The stroke movement of the magnet is transmitted to the release mechanism of the switching device via a switch stem. This causes the SAV to close.

**pneumatic release with control element
(K 11a/2 for upper and lower setting range)**

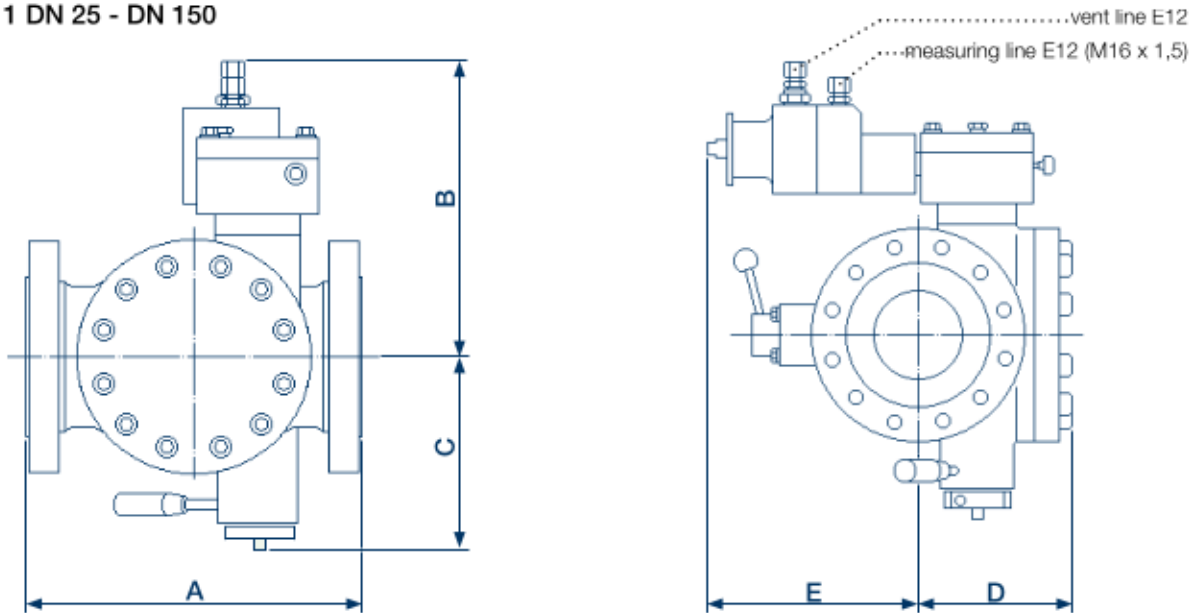
**electric release with magnetic switch
(closing on current failure)**



SAFETY SHUT-OFF VALVE RMG 711

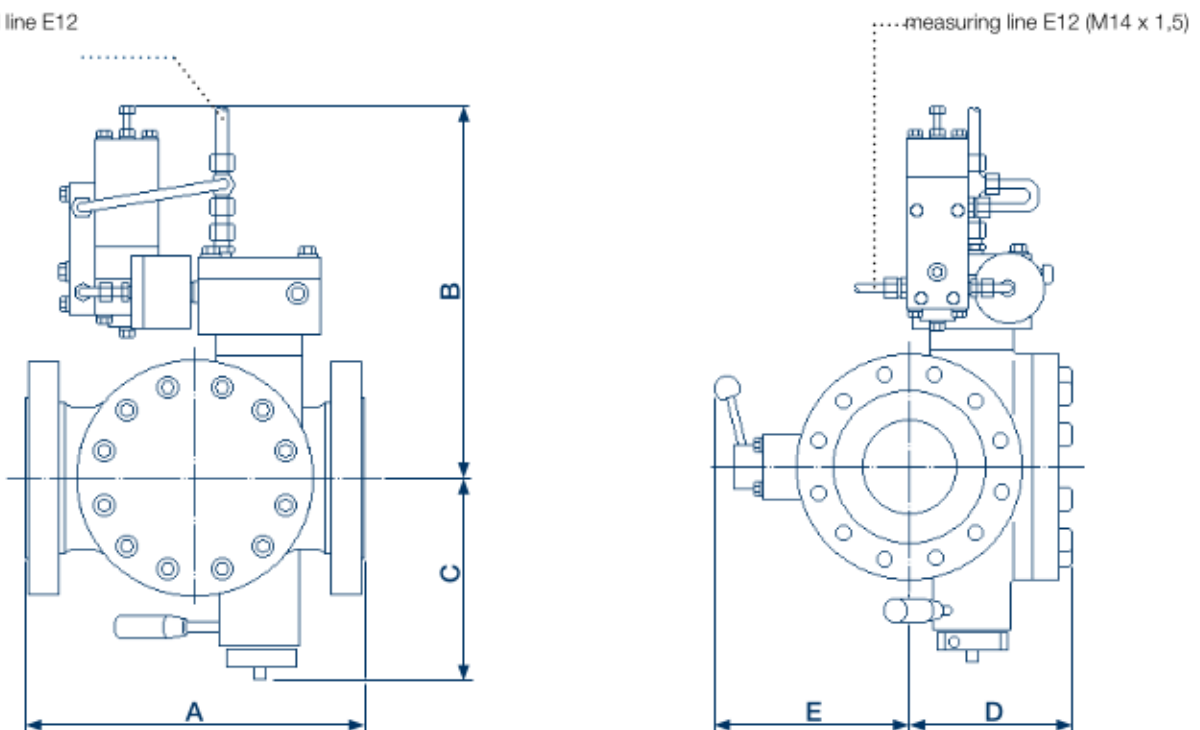
Dimensions

RMG 711 DN 25 - DN 150



safety shut-off valve RMG 711 with control element K10a / K11a

vent/bleed line E12

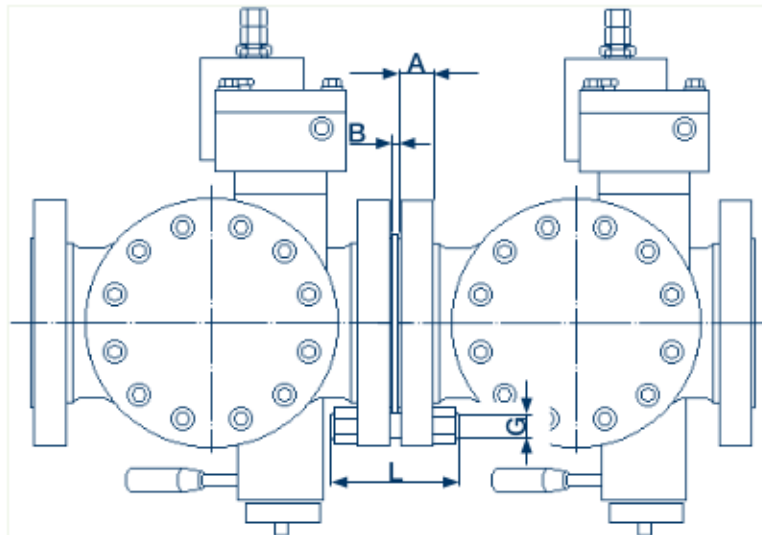


safety shut-off valve RMG 711 with control element K16 / K17 / K18 / K19

DIMENSIONS IN MM

size	A		B		C	D	E	F			
	PN	ANSI 300	ANSI 600	K 10a					K 16	K 18	
DN	25, 40	RF	RTJ	RF RTJ	K 10a K 11a	K 17	K 19	K 10a K 11a			
25	170	170	180	180	260	295	415	160	110	235	150
50	230	230	240	250	260	295	415	160	125	220	175
80	280	290	300	310	295	330	450	190	150	205	185
100	320	330	340	350	305	345	465	205	170	195	195
150	430	440	450	470	355	390	510	275	235	175	230

UN-thread bolts dimensions of the screw joint SSV/SSV



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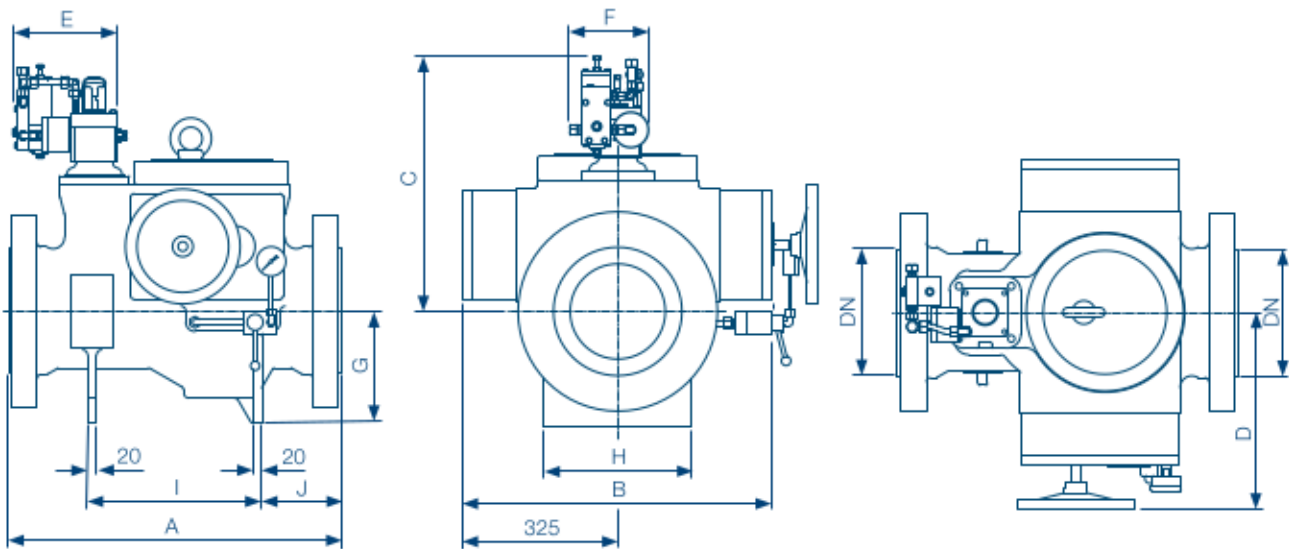
DIMENSIONS IN MM					
DN	flange type	A [mm]	B [mm]	UN-thread bolts dimensions G x L [Zoll x mm]	number of thread bolts
25	PN 25 and 40	18	2	1/2" x 70	4
	ANSI 300 RF	18	5	5/8" x 80	4
	ANSI 300 RTJ	22.5	5	5/8" x 90	4
	ANSI 600 RF	24	5	5/8" x 90	4
	ANSI 600 RTJ	24	5	5/8" x 90	4
50	PN 25 and 40	23	2	5/8" x 85	4
	ANSI 300 RF	23	5	5/8" x 90	8
	ANSI 300 RTJ	29	5	5/8" x 100	8
	ANSI 600 RF	33	5	5/8" x 110	8
	ANSI 600 RTJ	34	5	5/8" x 110	8
80	PN 25 and 40	27	2	5/8" x 95	8
	ANSI 300 RF	29	5	3/4" x 110	8
	ANSI 300 RTJ	36	5	3/4" x 125	8
	ANSI 600 RF	38.5	5	3/4" x 130	8
	ANSI 600 RTJ	40	5	3/4" x 130	8
100	PN 25 and 40	27	3	3/4" x 105	8
	ANSI 300 RF	32	5	3/4" x 115	8
	ANSI 300 RTJ	38	5	3/4" x 130	8
	ANSI 600 RF	45	5	7/8" x 150	8
	ANSI 600 RTJ	46	5	7/8" x 150	8
150	PN 25 and 40	31	3	7/8" x 120	8
	ANSI 300 RF	37	5	3/4" x 125	12
	ANSI 300 RTJ	44	5	3/4" x 140	12
	ANSI 600 RF	55	5	1" x 175	12
	ANSI 600 RTJ	56	5	1" x 180	12

When using ductile screw bolts according to DIN 2510 a spacer between the two SSVs is required!

SAFETY SHUT-OFF VALVE RMG 711

Dimensions, Weights, Connections

RMG 711 DN 200 - DN 300



DIMENSIONS IN MM

size DN	pressure stage	A	B	C max	D	E max	F max	G	H	I	J approx.
200	PN 25	725	650	750	420	230	350	242	310	380	173
	PN 40 ANSI 300 RF/RJ ANSI 600 RF/RJ										
250	PN 25	730	650	775	420	230	350	312	370	390	171
	PN 40 ANSI 300 RF/RJ ANSI 600 RF/RJ	775									193
300	PN 25	800	650	775	420	230	350	312	370	390	206
	PN 40 ANSI 300 RF/RJ ANSI 600 RF/RJ										

WEIGHTS IN KG

size DN	25	50	80	100	150	200	250	300
weight in kg	20	26	56	85	200	430	500	700

CONNECTIONS

lines	measuring lines	vent lines	bleed lines
connection	E12	E12	E12

SAFETY SHUT-OFF VALVE RMG 711

Type description

example

RMG 711 - 50 - K10a - HA - F - FA - So

type

size

SSV-control element

additional components

remote indication

outdoor type

special version

SIZE
DN
25
50
80
100
150
200
250
300

SSV-CONTROL ELEMENT		
W _{do} [bar]	W _{du} [bar]	control element
0,08 ... 1,50	0,01 ... 0,12	K10a
0,40 ... 4,50	0,06 ... 1,00	K11a/1
2,50 ... 8,00	0,80 ... 2,20	K11a/2
1,00 ... 40,0		K16
	2,00 ... 40,0	K17
20,0 ... 90,0		K18
	20,0 ... 90,0	K19

ADDITIONAL COMPONENTS	
release by	
manual release	HA
current supply	E1
loss of current	E2

REMOTE INDICATION	
	F

OUTDOORTYPE	
	FA

SPECIAL VERSION	
to be described in detail	So