

Safety SHUT-OFF Valve HON 711



PRODUCT INFORMATION

**Serving the Gas Industry
Worldwide**

Honeywell

Safety Shut-Off Valve HON 711


Applications, characteristics, technical data

Applications

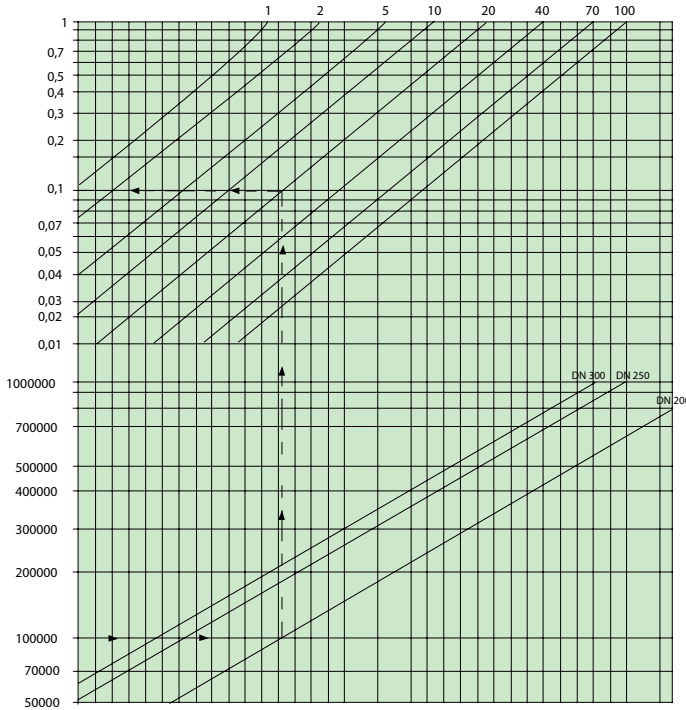
- Safety device in gas pressure regulating stations
- Applicable for use with natural gas according to DVGW G 260; other gases available upon request

Characteristics

- Maintenance-friendly, interior parts accessible without device removal, made up of few parts
- Integrated pressure equalisation valve
- Low pressure loss thanks to axial flow
- Standard design with manual release
- Electrical release and electrical position indicator possible
- High activation accuracy and short response time
- The maximum flow speed should not exceed 80 m/s
- Version available in accordance with SIL standard IEC61508

TECHNICAL DATA																					
Max. operating pressure PS_{max}	100 bar (depending on flange version)																				
Nominal width	DN 25, DN 50, DN 80, DN 100, DN 150, DN 200, DN 250, DN 300																				
Type of connection	DIN flange PN 25, PN 40 and flange according to ANSI 300, 600 RF, RTJ, 900 RTJ (PS = 130bar) on request																				
Material	<table border="0"> <tr> <td>Main valve</td> <td>A 352 LCC / G20Mn5 QT</td> </tr> <tr> <td>Switching device</td> <td>Aluminium alloy</td> </tr> <tr> <td>Control device</td> <td>Aluminium alloy</td> </tr> <tr> <td>Internal parts</td> <td>Al, Niro, brass, steel</td> </tr> <tr> <td>O-rings</td> <td>NBR, other materials on request</td> </tr> <tr> <td>Closing spring</td> <td>Steel</td> </tr> </table>	Main valve	A 352 LCC / G20Mn5 QT	Switching device	Aluminium alloy	Control device	Aluminium alloy	Internal parts	Al, Niro, brass, steel	O-rings	NBR, other materials on request	Closing spring	Steel								
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Switching device	Aluminium alloy																				
Control device	Aluminium alloy																				
Internal parts	Al, Niro, brass, steel																				
O-rings	NBR, other materials on request																				
Closing spring	Steel																				
Temperature range class 2 / Function class	-20 to +60°C (Other temperature ranges on enquiry) Function class A																				
Response time t_a	<p>≤ 0.5 s (The response time depends on the operating pressure, the main valve nominal width and the control device)</p> <p>DN 25–DN 150: 0.1–0.3 sec DN 200–DN 300: 0.1–0.5 sec</p>																				
Function and strength	DIN EN 14382																				
Explosion protection	Since the device is not fitted with potential ignition sources of its own, it is not subject to ATEX 95 regulations (use electronic accessories used satisfy ATEX requirements).																				
CE mark in accordance with PED	 CE mark in accordance with PED DVGW/GOST/GOSTTECHNADSOR																				
Pressure drop Δp	<p>calculated as follows: $\Delta p \approx \frac{Q_n^2}{p_u \cdot K_G^2}$</p> <p>$Q_n$ [m³/h]: Volume flow under standard conditions p_u [bar]: Inlet pressure</p>																				
	<table border="1"> <thead> <tr> <th colspan="2">Valve flow rate coefficient K_G^*</th> </tr> <tr> <th>Nominal width DN</th> <th>K_G value in (m³/h)/bar</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>1200</td> </tr> <tr> <td>50</td> <td>4790</td> </tr> <tr> <td>80</td> <td>12260</td> </tr> <tr> <td>100</td> <td>19160</td> </tr> <tr> <td>150</td> <td>43110</td> </tr> <tr> <td>200</td> <td>76650</td> </tr> <tr> <td>250</td> <td>119750</td> </tr> <tr> <td>300</td> <td>130400</td> </tr> </tbody> </table>	Valve flow rate coefficient K_G^*		Nominal width DN	K_G value in (m³/h)/bar	25	1200	50	4790	80	12260	100	19160	150	43110	200	76650	250	119750	300	130400
Valve flow rate coefficient K_G^*																					
Nominal width DN	K_G value in (m³/h)/bar																				
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Pressure drop depending on the flow rate with different inlet pressures and nominal widths



The diagram applies for natural gas. Conversion to the equivalent natural gas flow must take place first for other gases.

$$q_n \text{ Natural gas} = \frac{q_n \text{ Gas}}{f} \quad [\text{m}^3/\text{h}]$$

Example:

Assumptions:
 $q_n = 100000 \text{ m}^3/\text{h}$ (natural gas)
 $p_U = 20 \text{ bar}$
 DN 200

Results:
 Pressure drop 90 mbar

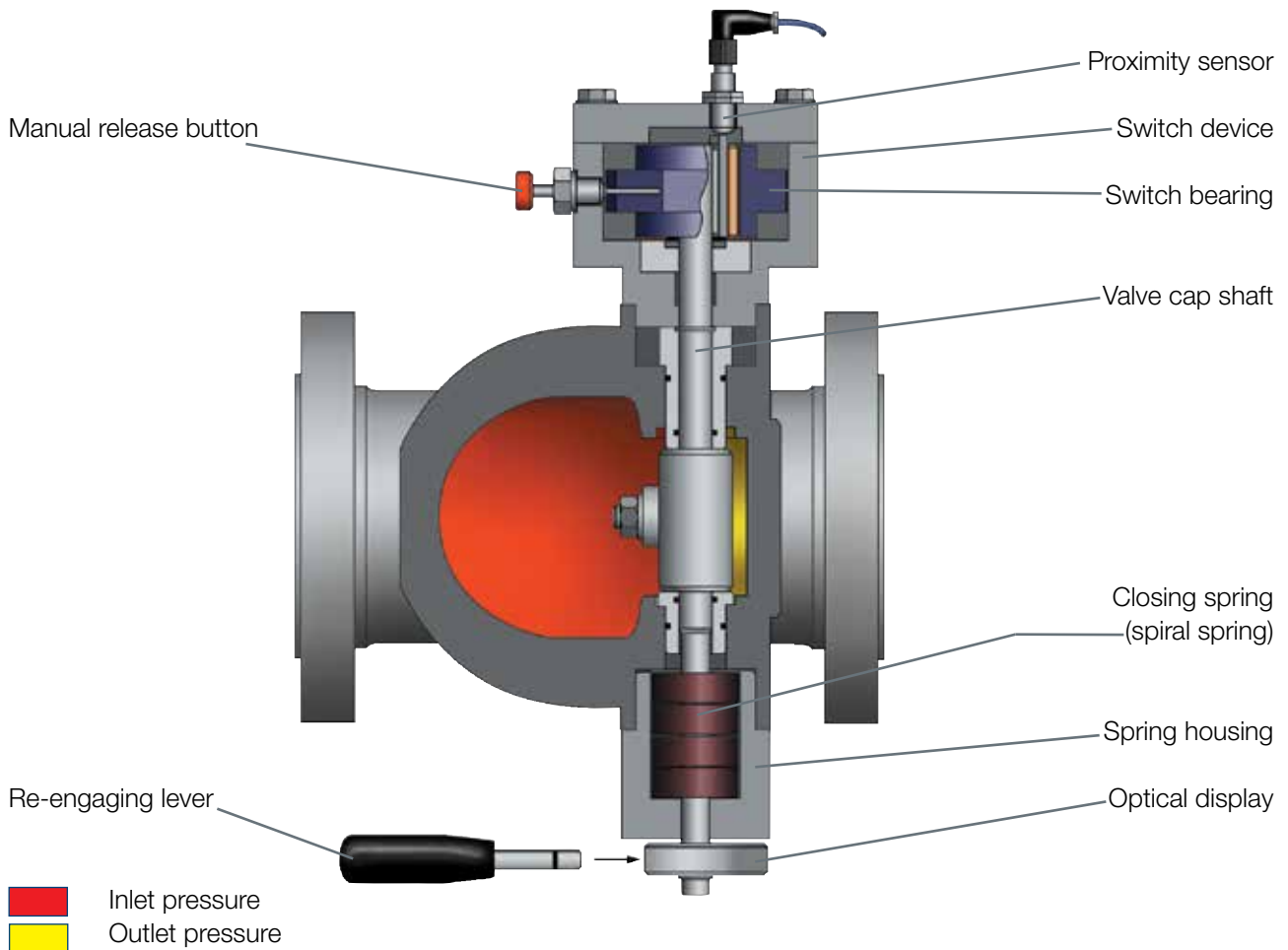
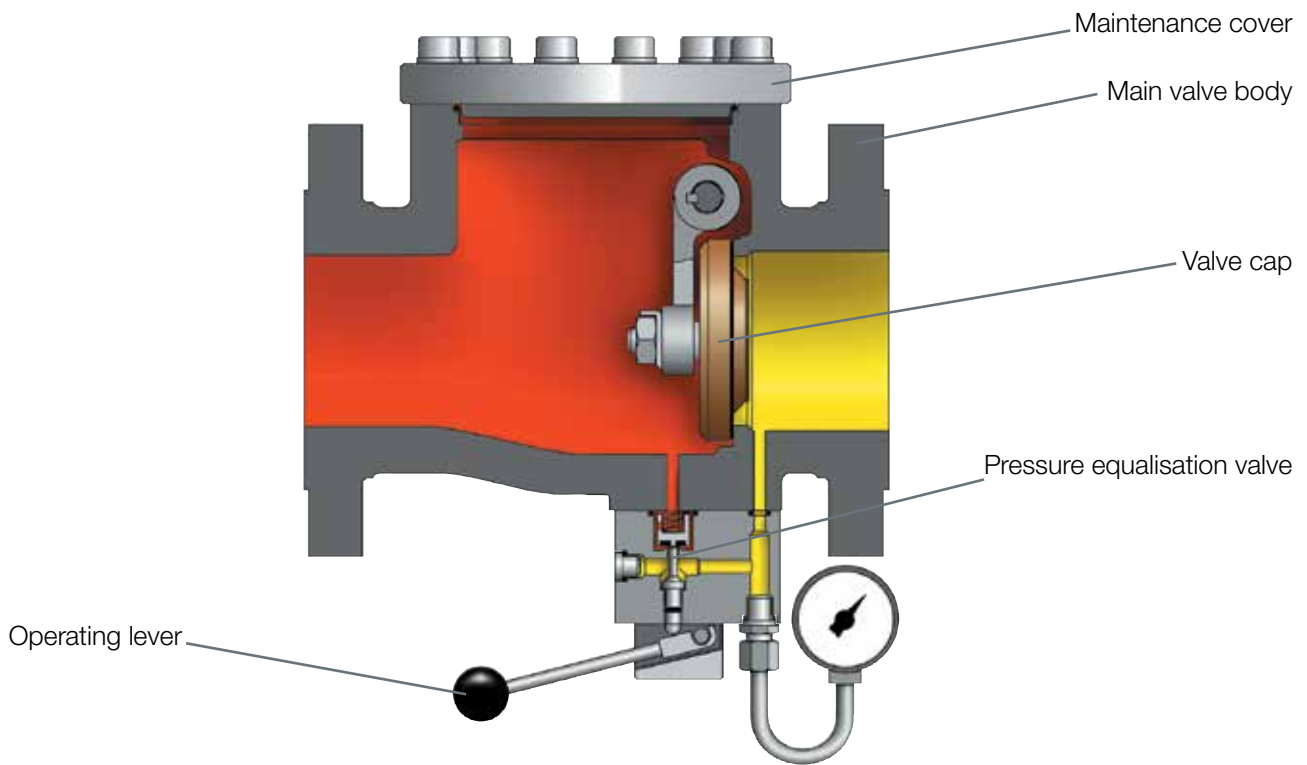
ADJUSTMENT RANGE OF CONTROL DEVICES														
Actuator	Setpoint spring			Overpressure			Underpressure			Accuracy group				
	No.	Colour	Wire Ø in mm	Special adjustment range Wdso (bar)	Smallest difference between response pressure and normal operating pressure Δpw (bar)	Special adjustment range Wdsu (bar)	Smallest difference between response pressure and normal operating pressure Δpw (bar)	Smallest difference between upper and lower response pressure with spring no.:			AG*			
								4	5	6				
HON 672	K10a	1	light red	3.2	0.08 – 0.25		0.05			0.09	0.13		10/5	
		2	dark red	3.6	0.2 – 0.5		0.10			0.15	0.18		5/2.5	
		3	white	4.75	0.4 – 1.5		0.25			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	light red	3.2	0.4 – 0.8	0.1				0.17	0.20	0.22	10/5	
		2	dark red	3.6	0.6 – 1.6	0.2				0.28	0.31	0.33	10/5	
		3	white	4.75	1.5 – 4.5	0.3				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	0.5						1.0	10/5		
	6	red	2.25			0.8 – 2.2	0.4					20/5		
HON 670	K16	1	black	4.5	1 – 5		0.2						2.5/1	
		2	grey	5.0	2 – 10		0.4						1	
		3	brown	6.3	5 – 20		0.8						1	
		4	red	7.0	10 – 40		1.2						1	
	K17	2	grey	5.0			2 – 10	0.4					1	
		3	brown	6.3			5 – 20	0.8					1	
		4	red	7.0			10 – 40	1.2					1	
	K18	1		9.0	20 – 90		1.5						1	
	K19	1		9.0			20 – 90	1.5					1	

*) The higher AG group applies to the first half, the lower AG group to the second half of the setting range.

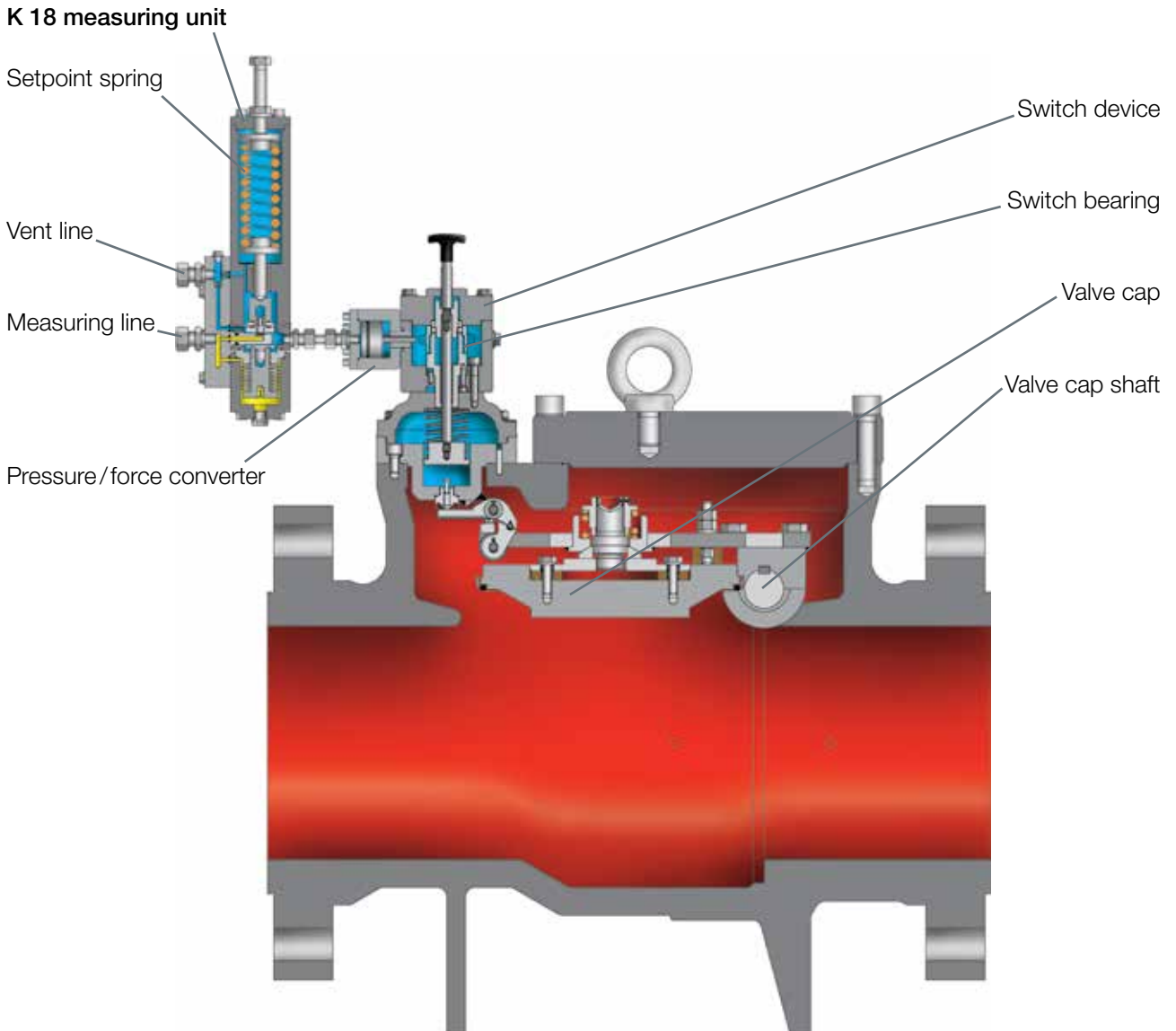
Safety Shut-Off Valve HON 711




Construction and mode of operation

HON 711 DN 25 - DN 150



HON 711 DN 200 - DN 300



-  Inlet pressure
-  Outlet pressure
-  Atmosphere

5

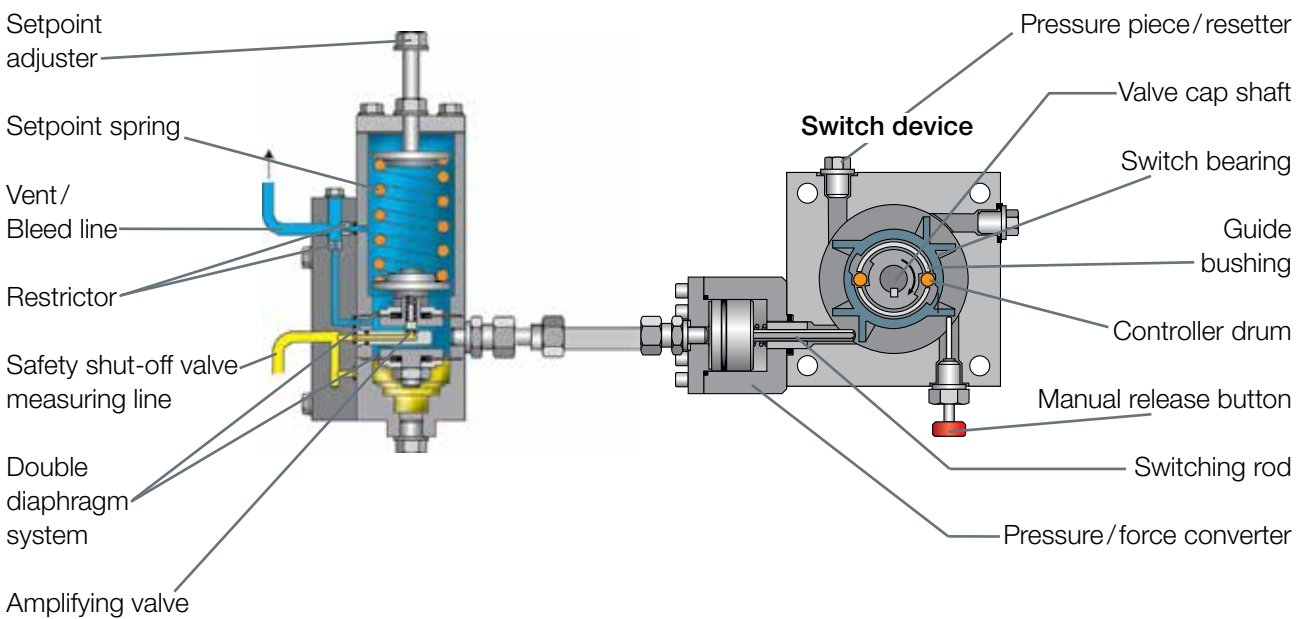
Safety Shut-Off Valve HON 711

Construction and mode of operation

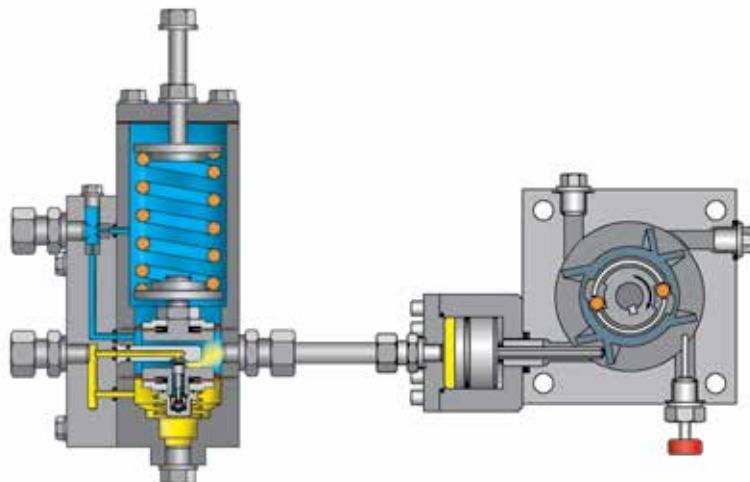
Mode of operation with control devices K16, K17, K18, K19

The pressure to be monitored (operating pressure) is applied on the double diaphragm system and is compared with the setpoint specified by the setpoint springs (response setpoint). If the upper response pressure is reached with control device K16 or K18 (overpressure) or the lower response pressure is reached with K17/K19, the amplifier valve opens. Gas flows out of the system to be monitored to the force/pressure converter. The pressure accumulating there slides the piston towards the switching devices and causes a release of the locking device of the valve flap shaft. The springs of the actuator close the SSV.

6 Actuator (K16 for upper setting range)



Control device in released state (K17 for lower setting range)



-  Outlet pressure
-  Atmosphere

Mode of operation with control device K10a, K11a

The control device is a release mechanism with diaphragm measuring unit and/or piston measuring unit (K10a/K11a), which is held in position by the setpoint springs. The two setpoints (release pressure setpoints) for overpressure and underpressure can be adjusted with the control devices K10a and K11a without influencing each other. If the upper or lower release pressure is reached, the release movement in the control device is transferred over the switching rod to the switching bearing of the switching device. In the process, the locking device of the valve flap shaft is released and the SSV valve flap interrupts the gas flow.

Mode of operation with solenoid (electrical release)

Closing in case of current failure:

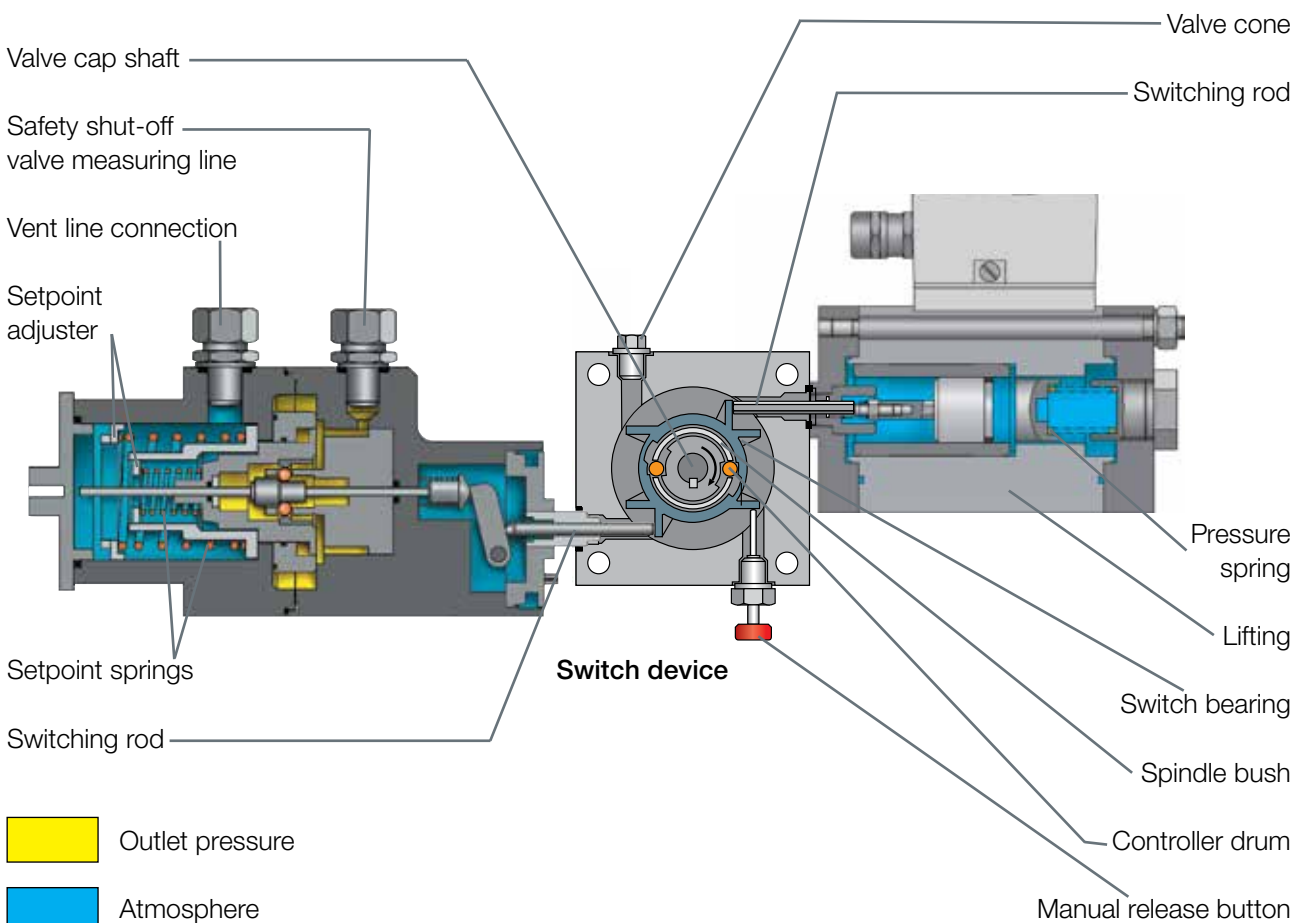
With the lifting movement of the magnet, the pressure spring in the magnet is pre-tensioned. If the current circuit is interrupted, the switching rod is moved suddenly towards the switching device by means of the spring pressure and triggers the closing process.

Closing with application of current:

The lifting movement of the magnet unlocks the release mechanism in the switching device via the switching rod and the SSV closes.

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

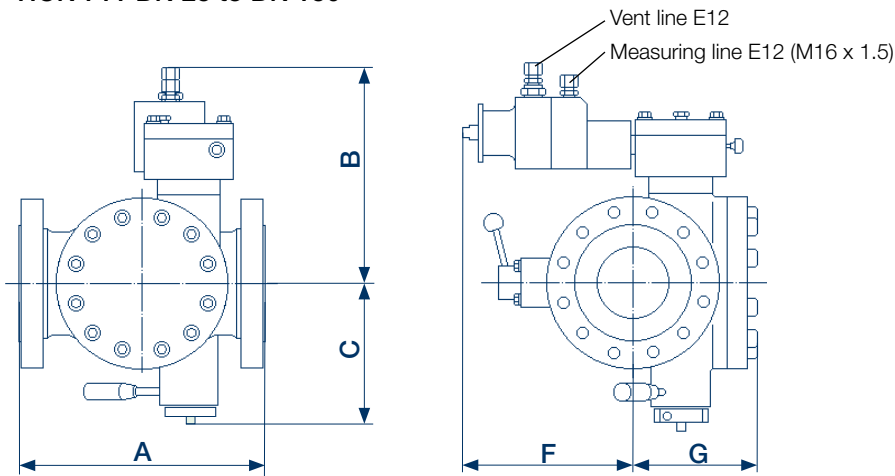
**Electrical release with lifting magnet
(Closing in case of current failure)**



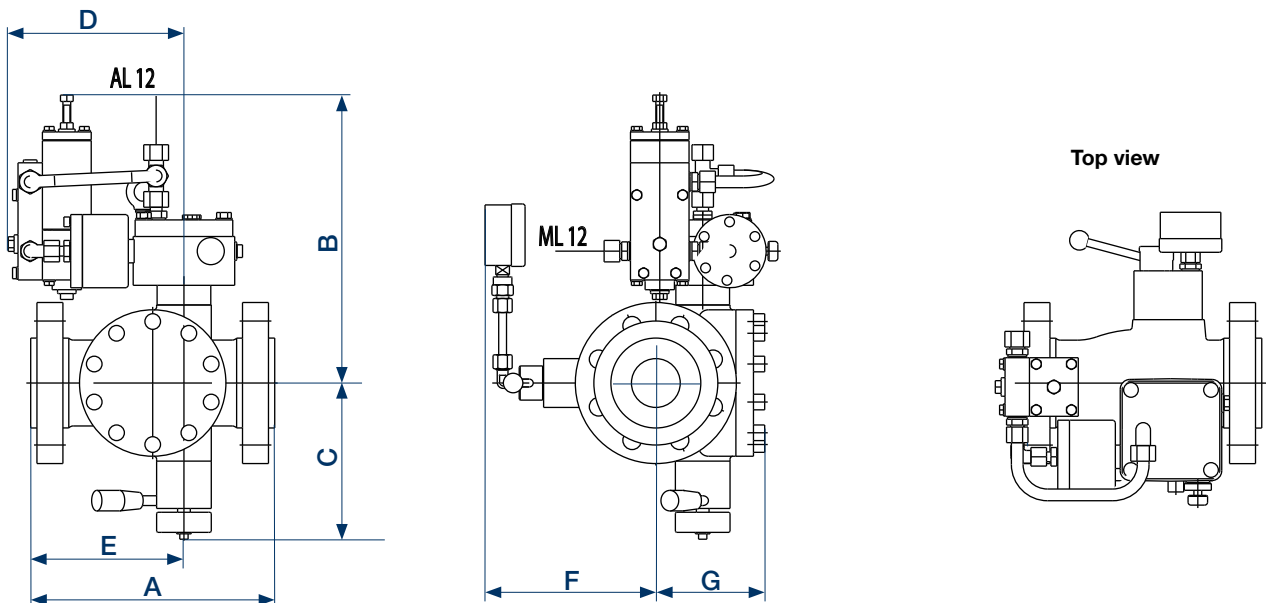
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Dimensions, weight and connection

HON 711 DN 25 to DN 150

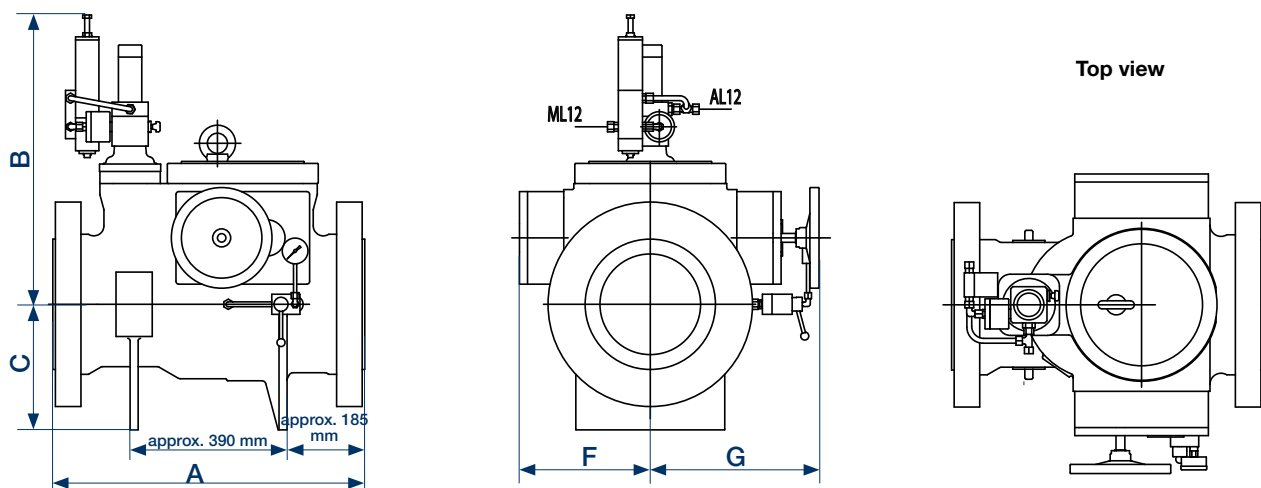


Safety shut-off valve HON 711 with control device K10a / K11a



Safety shut-off valve HON 711 with control device K16 / K17 / K18 / K19

HON 711 DN 200 to DN 300



Safety shut-off valve HON 711 with control device K18

Safety Shut-Off Valve HON 711

Dimensions, weight and connection

DIMENSIONS IN MM									
Nominal width	Pressure stage	Actuator	Dimensions in mm						
			A	B	C	D	E	F	G
DN 25	ANSI 600	HON 672 (K10a)	180	260	160	–	109	235	110
DN 25	ANSI 600	HON 670 (K16)	180	295	160	176	109	150	110
DN 50	ANSI 600	HON 672 (K10a)	250	260	160	–	157	220	125
DN 50	ANSI 600	HON 670 (K16)	250	295	160	180	157	175	125
DN 80	ANSI 600	HON 672 (K10a)	310	295	190	–	205	216	150
DN 80	ANSI 600	HON 670 (K16)	310	330	190	186	205	191	147
DN 100	ANSI 600	HON 672 (K10a)	350	308	205	–	229	195	164
DN 100	ANSI 600	HON 670 (K16)	350	343	205	–	235	226	164
DN 150	ANSI 600	–	470	280	275	–	325	240	235
DN 150	ANSI 600	HON 672 (K10a)	470	355	275	–	325	240	235
DN 150	ANSI 600	HON 670 (K16)	470	390	275	–	325	240	235
DN 200	ANSI 600	HON 670 (K18)	725	695	242	–	–	325	420
DN 250	ANSI 600	HON 670 (K18)	775	720	312	–	–	325	420
DN 300	ANSI 600	HON 670 (K18)	800	720	312	–	–	325	420

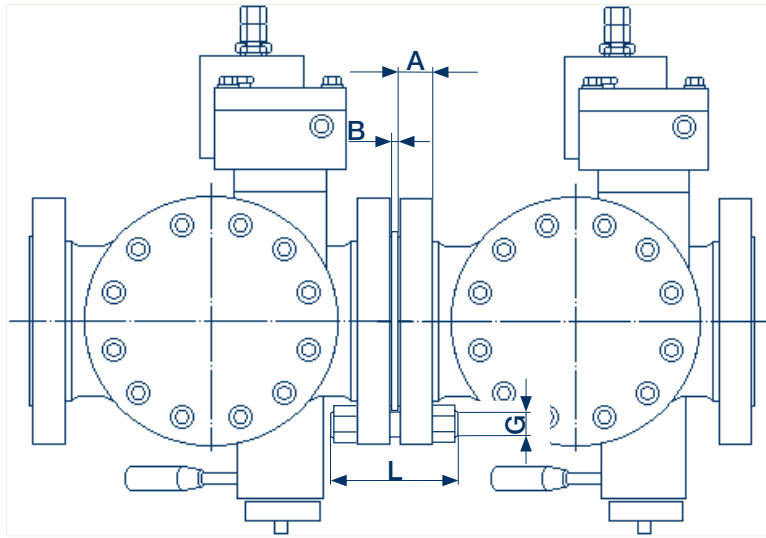
WEIGHT IN KG								
Nominal width DN	25	50	80	100	150	200	250	300
Weight in kg	20	26	56	85	200	430	500	700

CONNECTIONS			
Lines	Measuring lines	Bleed lines	Vent lines
Connection	E12	E12	E12
HON 670	M 14 x 1.5	M 14 x 1.5	M 14 x 1.5

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Dimensions, weight and connection

UN threaded pin dimensions for SSV/SSV screw connection



DIMENSIONS IN MM					
DN	Flange version	A [mm]	B [mm]	UN threaded pin dimensions G x L [inches x mm]	Number of pins
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

With use of stud bolts with expansion shafts according to DIN 2510, an adapter is required between the devices!

Example

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

Type

Nominal width

SSV control device

Supplemental fixture

Remote indication

Outdoor type

Special design

NOMINAL WIDTH

DN
25
50
80
100
150
200
250
300

SSV CONTROL DEVICE

Actuator
K10a
K11a/1
K11a/2
K16
K17
K18
K19

SUPPLEMENTAL FIXTURES

Release by:	
Manual release	HA
Current supply	E1
Current failure	E2

REMOTE INDICATION

	F
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OUTDOOR TYPE

	FA
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SPECIAL DESIGN

must be explained in more detail	So
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For More Information

To learn more about Honeywell's
Advanced Gas Solutions, visit
www.honeywellprocess.com or contact
your Honeywell account manager

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HON 711.00
2017-01
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