

Safety Shut-Off Valve HON 711 S2



PRODUCT INFORMATION

**Serving the Gas Industry
Worldwide**

Honeywell

SAFETY SHUT-OFF VALVE HON 711 S2


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
- Integrated pressure equalisation valve with forced reset
- Low pressure loss thanks to axial flow
- Four release options, standard design with manual release
- Electrical release and electrical position indicator possible
- High activation accuracy and short response time
- Installation length equivalent to SSV type HON 710 and HON 711

TECHNICAL DATA													
Max. operating pressure p_{max}	100 bar (depending on flange version)												
Nominal widths	DN 25, DN 50, DN 80, DN 100												
Type of connection	Flange according to DIN PN 25 and PN 40, and ANSI 300, ANSI 600												
Valve diameter	Corresponds to nominal width of the main valve												
Material	<table><tbody><tr><td>Main valve</td><td>Cast steel/steel</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>Diaphragms, O-rings</td><td>Rubber-like plastic (NBR)</td></tr><tr><td>Closing spring</td><td>Niro</td></tr></tbody></table>	Main valve	Cast steel/steel	Switching device	Aluminium alloy	Control device	Aluminium alloy	Internal parts	Al, Niro, brass, steel	Diaphragms, O-rings	Rubber-like plastic (NBR)	Closing spring	Niro
Main valve	Cast steel/steel												
Switching device	Aluminium alloy												
Control device	Aluminium alloy												
Internal parts	Al, Niro, brass, steel												
Diaphragms, O-rings	Rubber-like plastic (NBR)												
Closing spring	Niro												
Temperature range class 2	-20 °C to +60 °C												
Response time	0.1 ... 0.3 s (the response time depends on the main valve nominal width and the control device)												
Function and strength	DIN EN 14382 (DIN 3381)												
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													

ADJUSTMENT RANGE OF CONTROL DEVICES								
Control device	Setpoint spring			Overpressure**		Underpressure**		Accuracy group ***
	No.	Colour	Wire Ø in mm	Special adjustment range	Re-engage differential *	Special adjustment range	Re-engage differential *	
				W_{dso} (bar)	Δp_{wo} (bar)	W_{dsu} (bar)	Δp_{wu} (bar)	
K16	2	grey	5.0	2.0 ... 10.0	0.4			1
	3	brown	6.3	5.0 ... 20.0	0.8			1
	4	red	7.0	10.0 ... 40.0	1.2			1
K17	2	grey	5.0			4.0 ... 10.0	0.4	5
	3	brown	6.3			5.0 ... 20.0	0.8	5
	4	red	7.0			10.0 ... 40.0	1.2	5
K18	1		9.0	20.0 ... 90.0	1.5			1
K19	1		9.0			10.0 ... 90.0	1.5	1

*) The re-engage differential is the pressure interval between the tripping point and the outlet pressure value, at which a safe re-engage is ensured:

- After shut down due to overpressure (p_{dso}) the pressure in the line must be reduced the upper switch point by the amount of the re-engage differential (Δp_{wo}).
- After shut down due to underpressure (p_{dsu}) the pressure in the line must be increased from the upper switch point by the amount of the re-engage differential (Δp_{wu}).

**) Please note: When using control units for both overpressure and underpressure release, the difference between the two setpoints p_{so} and p_{su} must be at least 10% greater than the sum of the re-engagement differences Δp_{wo} and Δp_{wu} .

$$p_{dso} - p_{dsu} \geq 1.1 (\Delta p_{wo} + \Delta p_{wu})$$

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

WEIGHTS AND CONNECTIONS			
Weights		Connections	
Nominal width DN	Weight in kg	Line	Connection
25	20		
50	26	Measuring line	E 12
80	56	Vent/bleed line	E 12
100	85		

SAFETY SHUT-OFF VALVE HON 711 S2

Construction and mode of operation

The safety shut-off valve essentially consists of the single-piece main valve, switching device, control device and pressure equalisation valve.

The valve flap with O-ring seal provides for a tight seal in the closed position.

The necessary closing force is applied by anti-corrosion-protected spiral springs. The flanged pressure equalisation valve works according to the force position principle. After actuation, the 'closed' position is automatically assumed again.

The locking and release mechanism is in the switching device. The switching mechanism is unlocked and the SSV closes after the specified release pressure is reached or by pulling the T-handle (manual release).

The opening takes place by means of the valve flap shaft turning with a handle bar. In the process, the valve flap shaft with locking disc is locked in the open position by the spring-mounted switching rod.

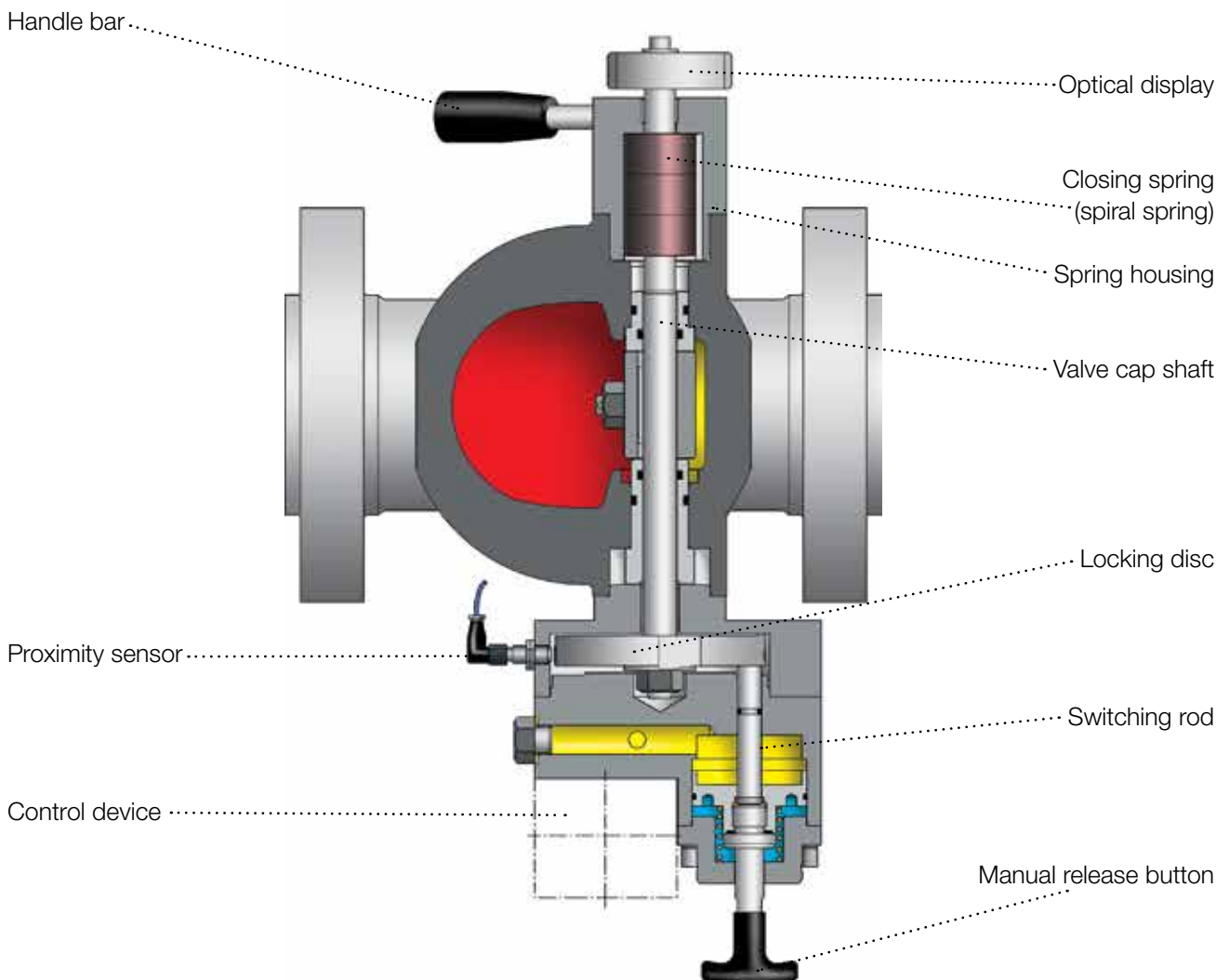
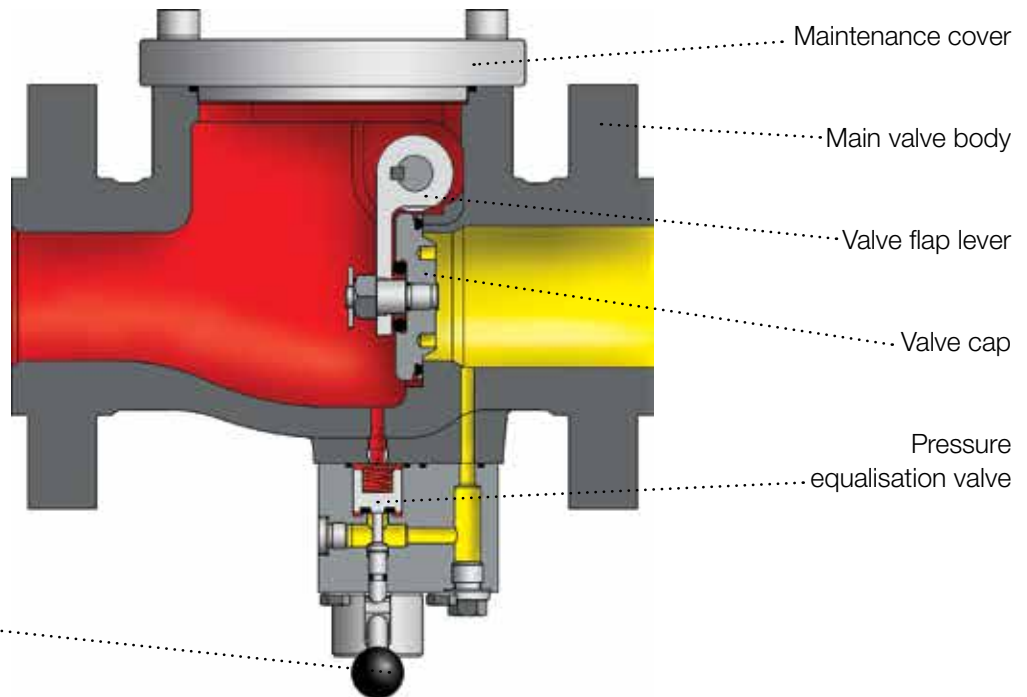
After the SSV locking process is finished, a resetting spring automatically pushes the handle bar out of the receptacle.

The device is designed for ease of maintenance:

- the valve flap can be pivoted outward from the valve body after loosening the spring housing for maintenance work.
- entirely identical versions are used with the exterior functional parts for the nominal widths DN 25, DN 50, DN 80 and DN 100.

SAFETY SHUT-OFF VALVE HON 711 S2

Construction and mode of operation



SAFETY SHUT-OFF VALVE HON 711 S2

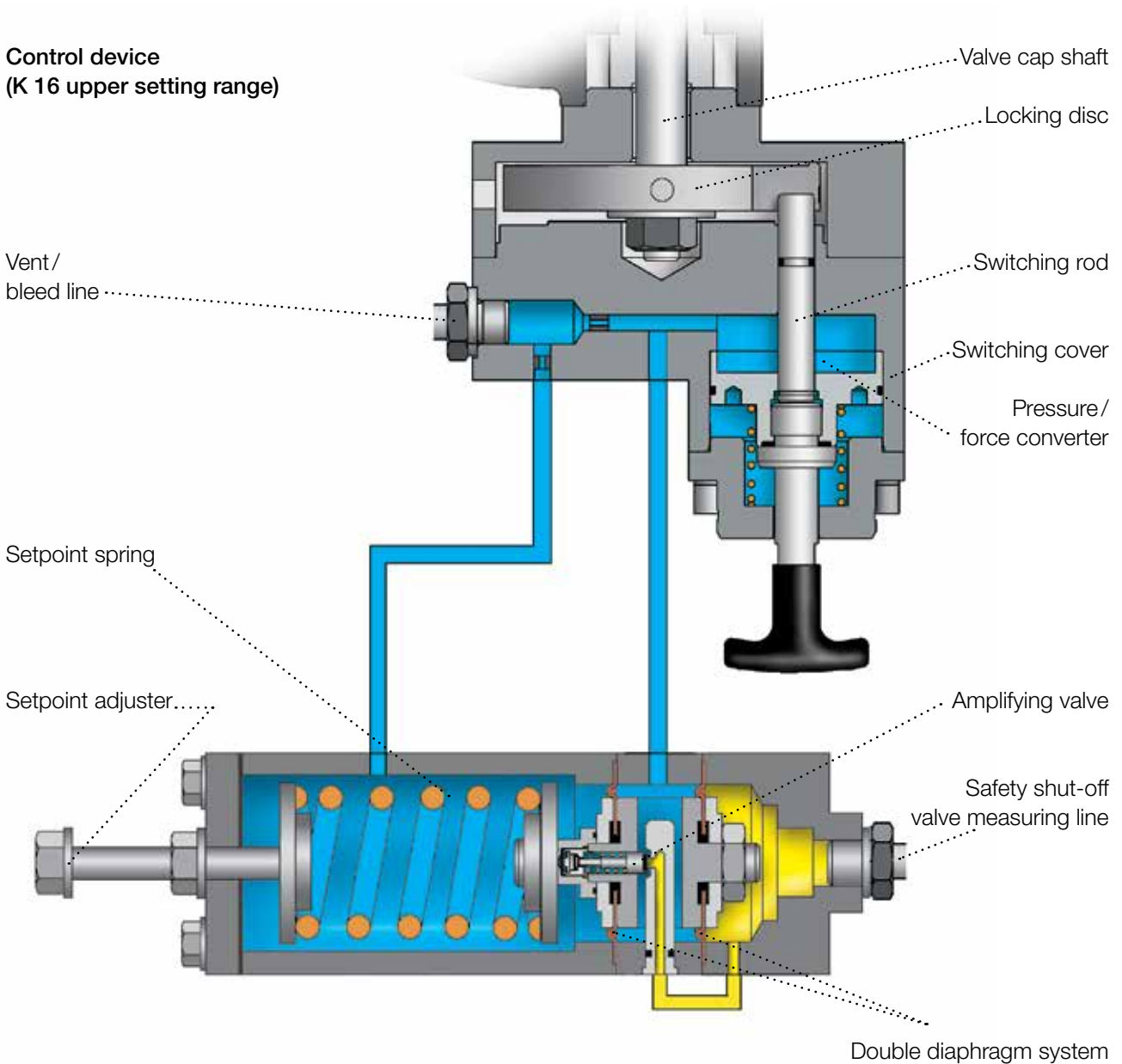
Construction and mode of operation



Mode of operation with control devices K 16, K 17, K 18, 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 K 18 (overpressure) or the lower response pressure is reached with K17 or K19, the amplifier valve opens. Gas flows out of the system to be monitored to the force/pressure converter integrated in the switch cover. The pressure accumulated there releases the switching rod/locking disc switching mechanism and the SSV closes.

6

Control device (K 16 upper setting range)

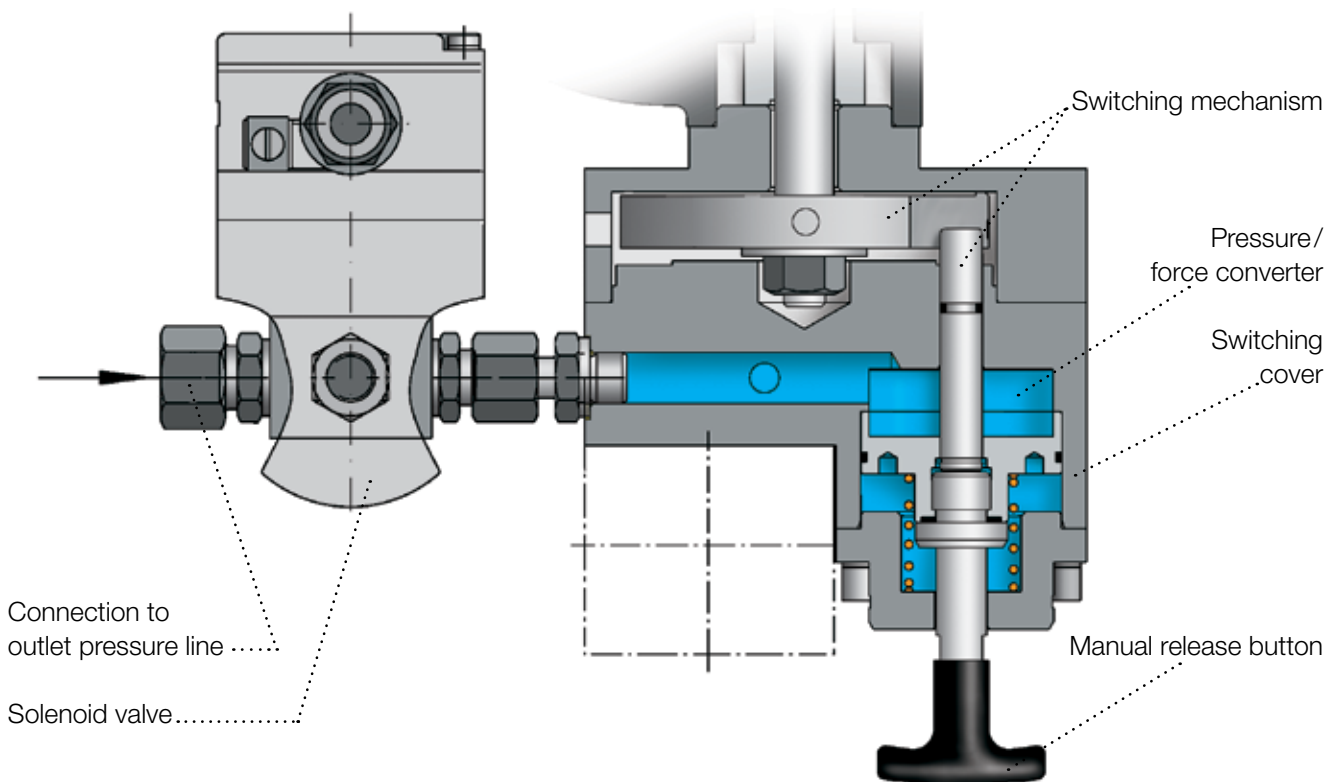


-  Outlet pressure
-  Atmosphere

Mode of operation with solenoid valve (electrical release)

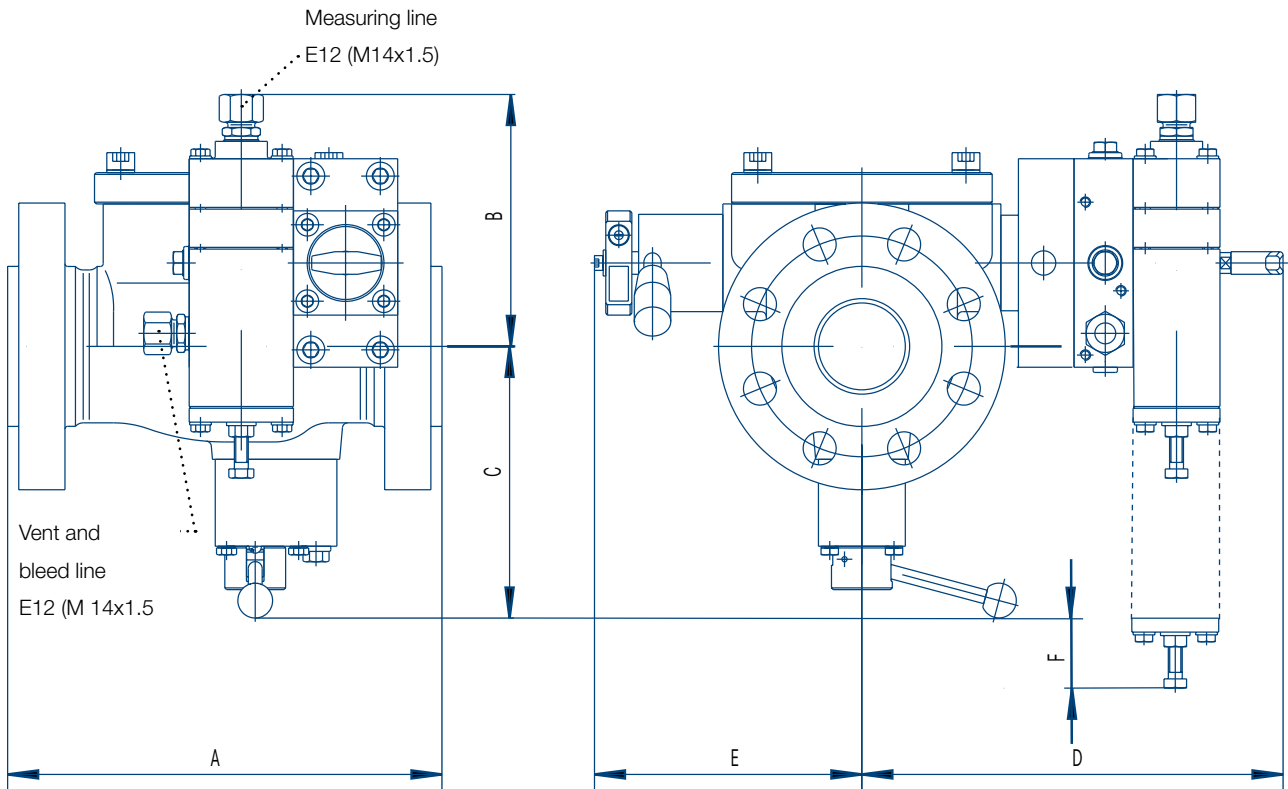
The gas pressure from the monitoring system is applied upstream from the solenoid valve. The solenoid valve opens in case of a current failure or application of current, depending on the design variant. The gas flows to the pressure/force converter integrated in the switching lid, unlocks the switching mechanism and the SSV closes.

Electrical release with solenoid valve

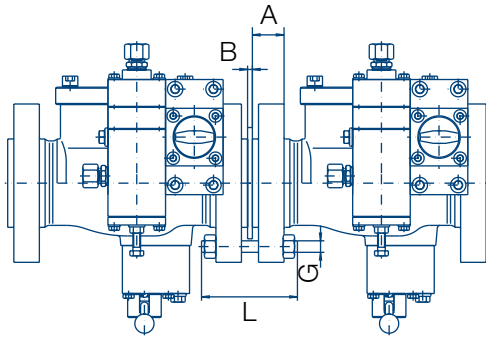


SAFETY SHUT-OFF VALVE HON 711 S2

Dimensions



DIMENSIONS IN MM											
Nominal width DN	A				B		C	D	E	F	
	PN	ANSI 300		ANSI 600	K16	K18				K16 or K17 Wh 10-40 bar	K18 K19
	25, 40	RF	RJ	RF, RJ	K17	K19					
25	170	170	180	180	130	160	135	245	160	30	55
50	230	230	240	250	145	175	160	245	160	-	15
80	280	290	300	310	165	195	175	270	190	-	-
100	320	330	340	350	175	205	185	285	205	-	-

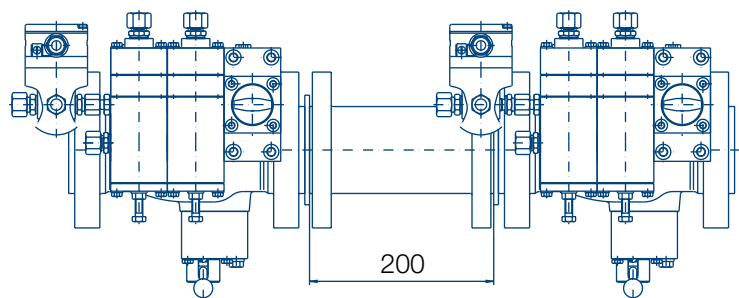


UN THREADED PIN DIMENSIONS FOR SSV/SSV SCREW CONNECTION

Nominal width DN	Flange version	A	B	UN threaded pin Dimensions G x L	Number
25	PN 25 and 40	18	2	1/2" x 70	4
	ANSI 300 RF	18	5	5/8" x 80	4
	ANSI 300 RJ	22.5	5	5/8" x 90	4
	ANSI 600 RF	24	5	5/8" x 90	4
	ANSI 600 RJ	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 RJ	29	5	5/8" x 100	8
	ANSI 600 RF	33	5	5/8" x 110	8
	ANSI 600 RJ	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 RJ	36	5	3/4" x 125	8
	ANSI 600 RF	38.5	5	3/4" x 130	8
	ANSI 600 RJ	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 RJ	38	5	3/4" x 130	8
	ANSI 600 RF	45	5	7/8" x 150	8
	ANSI 600 RJ	46	5	7/8" x 150	8

Attention! For spatial considerations, an adapter is required with:

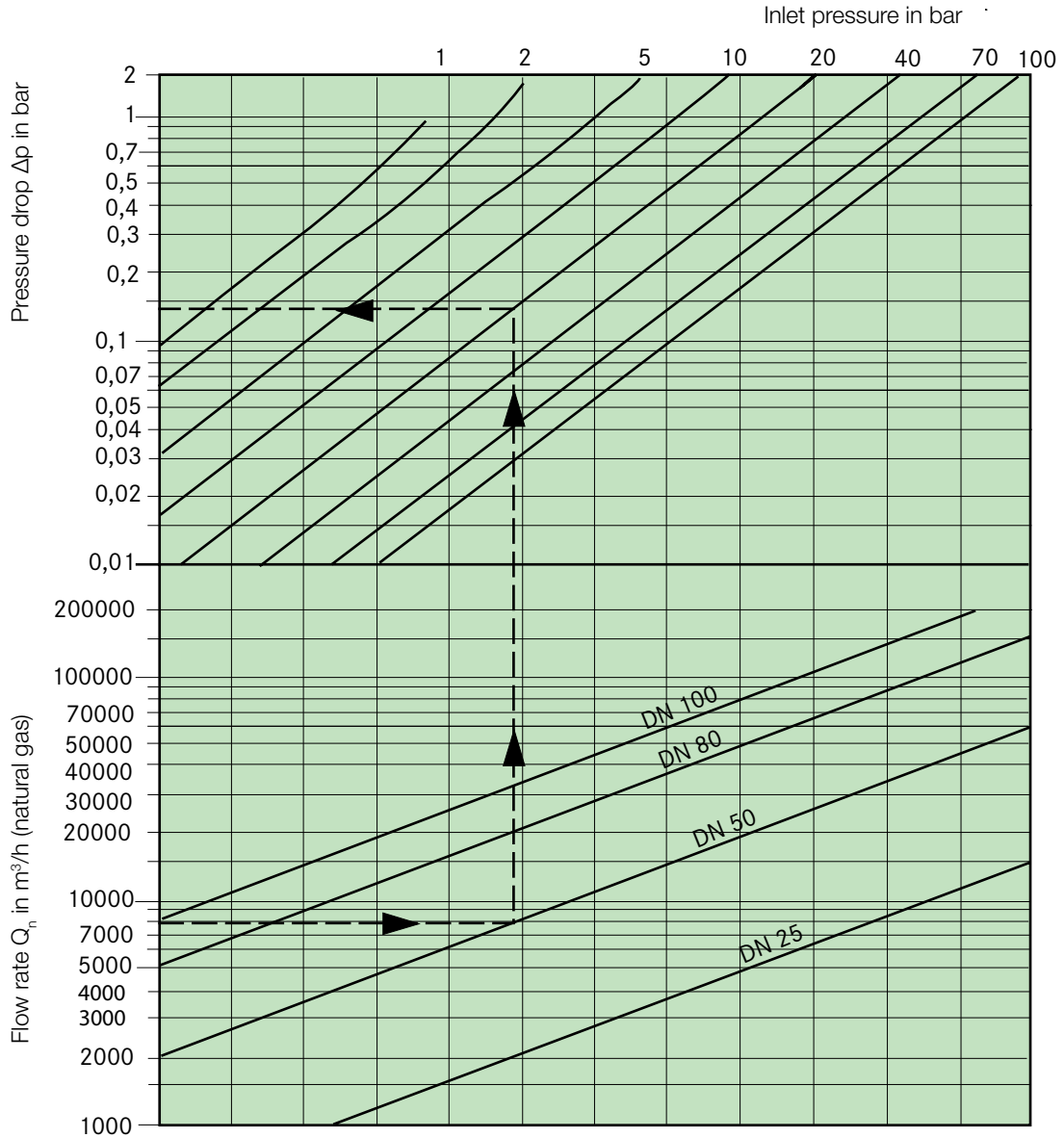
1. Use of stud bolts with an expanding shaft according to DIN 2510
2. Device variants with the following release devices:
 - Control device and solenoid valve
 - Two control devices
 - Two control devices and solenoid valve



SAFETY SHUT-OFF VALVE HON 711 S2

Pressure drop diagram

Pressure drop depending on the flow rate with different inlet pressures and nominal widths



Calculation example:

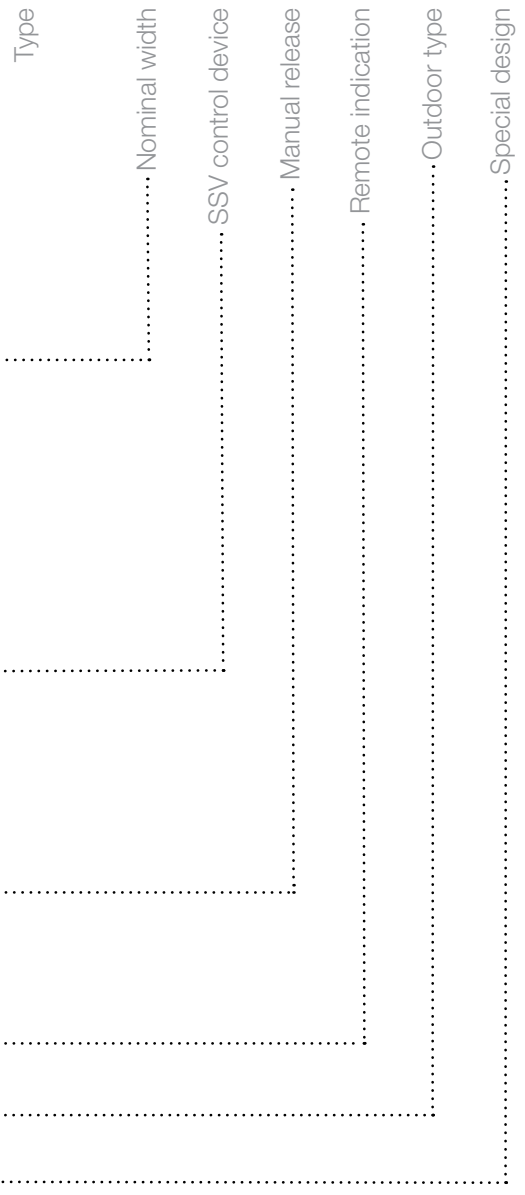
Assumptions: $Q_n = 8000 \text{ m}^3$ (natural gas); $p_u = 20 \text{ bar}$; DN 50

Results: Pressure drop $\Delta p = 0.14 \text{ bar}$

Example

HON 711/S2 - 50 - K16 - HA - F - FA - So

NOMINAL HOUSING WIDTH		
Nominal width DN		
	25	
	50	
	80	
	100	
SSV CONTROL DEVICE		
W _{do} in bar	W _{du} in bar	Control device
2.00 ... 40.0	4.00 ... 40.0	K16
		K17
20.0 ... 90.0	20.0 ... 90.0	K18
		K19
SUPPLEMENTAL FIXTURE		
Release by		
Manual release		HA
Current supply		E1
Current failure		E2
REMOTE INDICATION		
		F
OUTDOOR TYPE		
		FA
SPECIAL DESIGN (MUST BE EXPLAINED IN MORE DETAIL)		
		So



For More Information

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

GERMANY**Honeywell Process Solutions**

Honeywell Gas Technologies GmbH
Osterholzstrasse 45
34123 Kassel, Germany
Phone: +49 (0) 561 5007-0
Fax: +49 (0) 561 5007-107

HON 711 S2
2017-01
© 2017 Honeywell International Inc.

The Honeywell logo, consisting of the word "Honeywell" in a bold, red, sans-serif font.