Gas Pressure Regulator HON 370

PRODUCT INFORMATION

Serving the Gas Industry Worldwide

Honeywell

Applications

- Direct-acting gas pressure regulator for commercial and industrial applications and local supply stations.
- Especially suitable for dynamic regulating lines (e.g. gas furnaces, burner switching, gas engine operation)
- Can also be used as a component for gas consumption devices according to EC Directive (90/396/EEC)
- As a gas pressure regulating device with electrical consequential value (motorised actuator) and pneumatic consequential setpoint
- Suitable for gases in accordance with DVGW Worksheet G 260 and neutral, non-aggressive gases; other gases on request

Characteristics

- Version with integral overpressure protection (IS)
- Fail open (FO) error type
- Gas pressure regulator with incorporated axial safety shut-off valve (SSV) – optional designs with safety relief valve (SRV) for the relief of leakage gases or with safety diaphragm
- Large inlet pressure range
- Optional installation of different valve seat diameters is possible
- Easy to maintain, thanks to interchangeable functional units (plug-in modules)
- SSV optionally available in function class A or B
- Pressure equalisation valve (internal bypass) integrated in the SSV actuator

Versions (options)

- Without SSV
- SSV with manual release
- Electromagnetic remote release with SSV
- With electric SSV ‘CLOSED’ position indicator by means of inductive proximity initiator or reed sensors and intrinsically safe current circuit
- Regulating device with leak gas SRV (p_d up to 0.8 bar) or safety diaphragm (p_d up to 1.0 bar)
- With vent valve HON 915 (SSV/RA) or tripping valve HON 919 (SSV)
- With noise reduction

Technical data												
Version	with integral overpressure protection											
Max. permissible pressure PS	up to 20 bar											
Max. inlet pressure $p_{u\ max}$	up to 20 bar											
Specific set range	Regulating assembly RA 0			Regulating assembly RA 1			Regulating assembly RA 2			Regulating assembly RA 3		
	Setpoint spring			Setpoint spring			Setpoint spring			Setpoint spring		
W_{ds}	No.	Wire dia-meter (mm)	Colour coding	No.	Wire dia-meter (mm)	Colour coding	No.	Wire dia-meter (mm)	Colour coding	No.	Wire dia-meter (mm)	Colour coding
<20 mbar on enquiry												
20 mbar to 30 mbar				1	3.6	signal blue	1	5	signal blue	1	7	signal blue
25 mbar to 50 mbar				2	4	grey	2	6.3	grey	2	7.5	grey
45 mbar to 75 mbar				3	4.5	gentian blue	3	7	gentian blue	3	9	gentian blue
70 mbar to 100 mbar				4	4.5	yellow	4	7	yellow	4	9.5	yellow
90 mbar to 160 mbar				5	5.3	bright red	5	8	bright red	5	11	bright red
150 mbar to 200 mbar*				6	5.3	brown	6	8	brown	6	12	brown
190 mbar to 260 mbar				7	6.3	hazel	7	9	hazel			
250 mbar to 300 mbar				8	6.3	light red	8	9	light red			
290 mbar to 360 mbar				9	7	rape yellow	9	10	rape yellow			
350 mbar to 400 mbar				10	7	dark red	10	10	dark red			
390 mbar to 500 mbar				11	7.5	light blue	11	11	light blue			
490 mbar to 560 mbar				12	8.5	rape yellow	12	11	rape yellow			
550 mbar to 660 mbar				13	9	cream white	13	12	cream white			
650 mbar to 760 mbar				14	9.5	gentian blue	14	12	gentian blue			
750 mbar to 800 mbar				15	9.5	emerald green	15	13	emerald green			
790 mbar to 900 mbar				16	9.5	bright red	16	13	bright red			
890 mbar to 1,000 mbar				17	10	black	17	14	black			
1,000 mbar to 2,000 mbar	1	12	cream white									
1,500 mbar to 3,000 mbar	2	13	emerald green									
2,500 mbar to 3,500 mbar	3	14	black									
3,000 mbar to 4,500 mbar	3+4	14/8	black/silver grey									
4,000 mbar to 5,000 mbar	3+5	14/9.3	black/black									
Accuracy class AC and lock-up pressure class SG with Outlet pressure range p_d	AC	SG		AC	SG		AC	SG		AC	SG	
20 mbar to 100 mbar				10	30		10	20		10	20	
> 100 mbar to 500 mbar				5	20		5	10		5	10	
> 500 mbar to 1,000 mbar				5	20		2.5	5				
> 1,000 mbar to 4,000 mbar	2.5	5										
Closing pressure zone group	SZ 2.5											
Nominal width	DN 25, DN 50, DN 80, DN 100, DN 150											
Type of connection	DIN flanges PN 16, class 150 accor. to ANSI 16.5 Other flanges on enquiry.											
Material	Main valve body	Ductile iron, cast steel										
	Main valve body	Cast aluminium alloy										
	Diaphragms, sealing rings	NBR / ECO										
	Internal parts	Al alloy, steel, brass										
Temperature range class 2	Ambient and operating temperature range –20 °C to +60 °C											
Function and strength	According to DIN EN 334 and DIN EN 14382											
CE mark in accordance with PED	Honeywell CE 0085											
Type approval test according to	• PED (DGRL) • GAD (GGRL) as a component for gas consumption devices											
Explosion protection	All mechanical components of this device are without potential ignition sources and/or hot faces. They are not subject to ATEX 95 (94/9/EC). All electronic accessories, on the other hand, meet ATEX requirements.											

*) RA 3: 150 mbar to 250 mbar

Applications, characteristics, technical data

Valve specifications

Nominal width	Valve seat ø	Flow rate coefficient K_G* value in (m^3/h)/bar)		Inlet pressure range** $\Delta p_{u\,max}$ (bar) with regulating device			
	(mm)	without noise reduction	with noise reduction	RA 0	RA 1	RA 2	RA 3
DN 25	25	370	360	20	20***	20	
	31	460	440	20	20***	20	
DN 50	25	520	500	20	20***	20	
	31	900	800	20	20***	20	
	50	1500	1300	20	20***	20	
DN 80	60	2500	2300	20		20***	20
	80	3400	3100	20		20***	20
DN 100	60	3200	2900	20		20***	20
	80	4000	3300	20		20***	20
	100	5300	4400	20		20***	10
DN 150	100	6100	5300				10
	140	12800	11300				10

*) Valve flow rate coefficient for natural gas: d = 0.64 (ρ_n = 0.83 kg/m^3), t_u = 15° C

**) The limitation of the maximum inlet pressure range $\Delta p_{u\,max}$ does not occur due to strength reasons; it is intended to maintain the accuracy class AC.

***) For outlet pressures p_d > 200 mbar, otherwise $p_{u\,max}$ = 10 bar

Other pressures on enquiry.

SSV-E setting ranges for Control devices of the TYPE HON 673, K1a and K2a

Control unit	Setpoint spring No.	Wire Ø (mm)	Colour coding	Upper response pressure* Upper setting range W_{dso} (mbar)	Min. re-engage differential* between response pressure and normal operating pressure* Δp_{wo} (mbar)	Lower response pressure* Lower setting range W_{dsu} (mbar)	Min. re-engage differential* between normal operating pressure* and response pressure Δp_{wu} (mbar)	Accuracy group AG***
K1a	01	2.25	green	25 to 50	20			10/5
	1	2.60	yellow	50 to 100	20			10/5
	2	3.20	light red	80 to 250	50			5
	3	3.60	dark red	200 to 500	80			2.5
	4	4.75	white	500 to 1,500	100			2.5
	5	1.00	yellow			10 to 15	12	10
	6	1.20	white			14 to 40	30	10/5
	7	1.40	black			35 to 120	60	5
	8	2.25	bright red			100 to 300	100	5
K2a	4	4.75	white	1,500 to 4,500	250			5/2.5
	9	5.30	ivory	4,000 to 7,000	300**			1
	5	1.10	light blue			60 to 150	50	10/5
	6	1.40	black			120 to 400	100	5
	8	2.25	bright red			350 to 1,000	150	5

*) PLEASE NOTE: If the control device is configured to handle both overpressure and underpressure release, the difference between the setpoints of (p_{dso} and p_{dsu}) must exceed the sum of the values set for Δp_{wo} and Δp_{wu} by at least 10 %. $(p_{dso} - p_{dsu})_{min} = 1.1 \cdot (\Delta p_{wo} + \Delta p_{wu})$

**) We recommend a maximum re-engage differential of < 4.5 bar to facilitate engaging the control device.

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

Integrated safety relief valve (leakage gas SRV) can only be used up to $p_{ds\,max}$ = 0.8 bar

Setpoint spring No.	Setpoint spring Wire Ø (mm)	Regulating assembly	Response pressure * Adjustment via p_{ds} (mbar)
1	3.5	RA 1	15 to 90
1	3.5	RA 2	15
2	3.6		30
3	4.5		60
2	3.6	RA 3	15
3	4.5		30

*) selectable setting

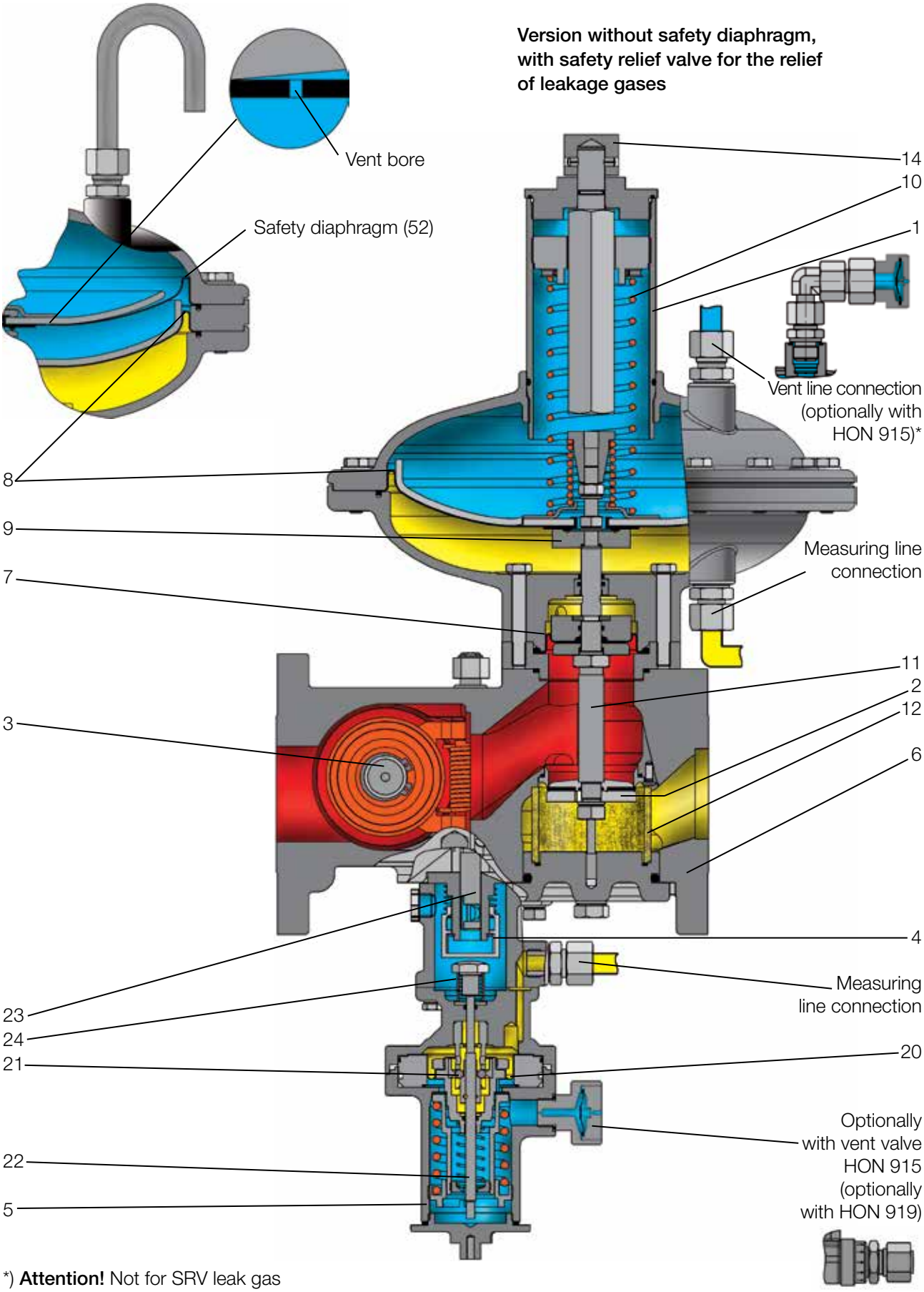
Construction and mode of operation

The purpose of the direct-acting gas pressure regulator HON 370 is to substantially stabilise the outlet pressure independently of any inlet and outlet pressure changes in the regulating line. The device consists of a regulating assembly (1), final control element (2), SSV final control element (3) with tripping device (4) and control device (5) and the main valve body (6). The required setpoint is adjusted via the setpoint adjuster (14).
The control element of the regulating assembly is equipped with a pressure-compensating diaphragm (7). The regulating assemblies RA 1, RA 2 and RA 3 may be optionally equipped with a safety relief valve (9). The outlet pressure you want to control is fed to the measuring diaphragm unit via the measuring line connection. The measuring unit compares the actual value to the setpoint defined by the force of the setpoint spring (10). If a deviation is detected, the valve stem (11) will adjust the control element (2) in order to match the actual value to the setpoint again. At zero drop, the device will seal bubble-tight.
The version with a safety diaphragm RE 1, RE 2 and RE 3) has an extra diaphragm (52) across the measuring diaphragm (8) which will seal the upper part of the diaphragm body in case the diaphragm (8) breaks so that the gas cannot escape into the atmosphere.
A metal foam cylinder (12) may be inserted into the control element to reduce noise.
If the outlet pressure exceeds or falls below the predefined limit values, the upstream safety shut-off valve will stop the gas flow. To accomplish that, the measuring diaphragm (20) of the control device (5) is shifted according to the comparison of set and actual values in such a way that the balls (21) of the release mechanism release the switch stem (22). Through the spring force of the spring (24), the switch stem will flip against the bush of the tripping device (4), thus unblocking the axle (23) of the SSV control element (3) so that the SSV closes. Now the SSV may be opened only by hand. For this, the outlet pressure at the measuring point must be reduced below the overpressure release / increased above the underpressure release by a value that must correspond at least to the re-engage differential (Δp).

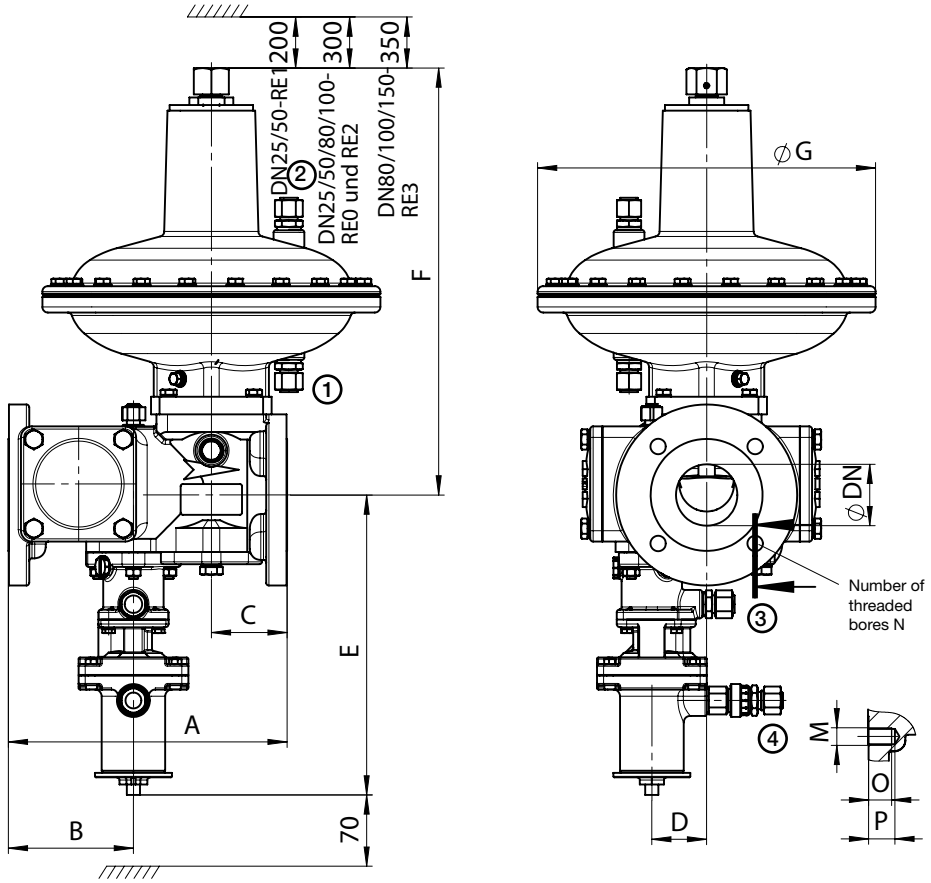
Assembly, commissioning and maintenance

For assembly and maintenance, please refer to DVGW Worksheets G 491, G 495 and G 600, and the manual.
The “Operating and maintenance instructions ; spare parts” contain detailed information on installation, start-up, maintenance and the most important spare and replacement parts.
The gas pressure regulator should preferably be installed in the pipework in a horizontal position.

Version with safety diaphragm



*) **Attention!** Not for SRV leak gas



Dimensions (mm)																	
DN	A	B	C	D	E	F				G				Weight (approx.)			
						Regulating assembly				Regulating assembly				Regulating assembly			
						RE0	RA1	RA2	RA3	RE0	RA1	RA2	RA3	RE0	RA1	RA2	RA3
	(mm)													(kg)			
25	184*	80	52	40	286	477	360	477	---	398	308	398	---	35	23	35	---
50	254*	114	69	50	273	506	389	506	---				---	46	34	46	---
80	298	143	83	65	320	550	---	550	600		---		558	63	---	63	83
100	352	158	95	72	314	550	---	550	600		---			77	---	77	96
150	451	227	120	106	339	---	---	---	692	---	---	---		---	---	---	140

*) Optional for DN 25 installation length 180 mm, optional for DN 50 installation length 230 mm and 250 mm

Flange version					
	DN	**M****	**N**	**O**	**P**
PN 16/Class 150	**25**	M 12	4	16	19
	50	M 16		21	24
	80		8 (4)*	21	24
	100		8	21	24
	150	M 20		25	29

*) Measurement in brackets for class 150

**) Connection element: DN 25: Screws M12 x L EN 24014 - 5.6 DN 50 to 100: Screws M16 x L EN 24014 - 5.6
DN 150: Screws M20 x L EN 24014 - 5.6 L varies depending on version

Connection of the Measuring line and Vent line			
	Actuator		SSV control device
	Measuring line ①	Vent / discharge line ②	Measuring ③ and vent line ④
RA 0 DN 25/50/80/100	Connection* for: Pipe Ø 12 x 1.5 (thread G 3/8)	Connection* for: Pipe Ø 12 x 1.5 (thread G 3/8)	Connection* for:
RA 1 DN 25/50	Pipe Ø 12 x 1.5 (thread G 3/8)	Pipe Ø 12 x 1.5 (thread G 3/8)	Pipe Ø 12 x 1.5 (thread G 3/8)
RA 2 DN 25/50/80/100	Pipe Ø 12 x 1.5 (thread G 3/8)	Pipe Ø 12 x 1.5 (thread G 3/8)	
RA 3 DN 80/100/150	Pipe Ø 16 x 2 (thread G 1/2)	Pipe Ø 12 x 1.5 (thread G 3/8)	

*) Screw connections without brazing with compression joint accor. to DIN EN ISO 8434-1 (DIN 2353)

Device designation

Example **HON 370 – 50 – K1a / E1 / HA / F1 – 50 / 2S / 3 – So**

Type | Nominal width DN | SSV control device | Electromagnetic release | Manual release | Electrical remote indication of the "Closed" position | Valve seat diameter | Regulating assembly design | Regulating assembly setpoint spring no. | Special design (must be explained in more detail)

Nominal width	
DN 25	25
DN 50	50
DN 80	80
DN 100	100
DN 150	150

Control device	Setting range (bar) W_{dso}	Setting range (bar) W_{dsu}	
K1a	0.025 to 1.5	0.01 to 0.30	K1a
K2a	1.5 to 7.0	0.06 to 1.0	K2a

Electromagnetic remote release		
Triggering at:	current supply/current failure	E1 / E2

Manual release	
Manual release	HA

Remote indication	
Electrical remote indication of the valve position "CLOSE" proximity initiator/reed sensor	F1 / F2

Regulating assembly

DN	Value	Valve	SRV blocked	With SRV	With safety diaphragm	Valve seat ø	
25	RA 0	25	0	--	--	25	0 –
		31	0	--	--	31	0 –
	RA 1	25	1	1L	1S	25	1 –
		31	1	1L	1S	31	1 –
	RA 2	25	2	2L	2S	25	2 –
		31	2	2L	2S	31	2 –
50	RA 0	25	0	--	--	25	0 –
		31	0	--	--	31	0 –
		50	0	--	--	50	0 –
	RA 1	25	1	1L	1S	25	1 –
		31	1	1L	1S	31	1 –
		50	1	1L	1S	50	1 –
	RA 2	25	2	2L	2S	25	2 –
		31	2	2L	2S	31	2 –
		50	2	2L	2S	50	2 –
80	RA 0	60	0	--	--	60	0 –
		80	0	--	--	80	0 –
	RA 2	60	2	2L	2S	60	2 –
		80	2	2L	2S	80	2 –
	RA 3	60	3	3L	3S	60	3 –
		80	3	3L	3S	80	3 –
100	RA 0	60	0	--	--	60	0 –
		80	0	--	--	80	0 –
		100	0	--	--	100	0 –
	RA 2	60	2	2L	2S	60	2 –
		80	2	2L	2S	80	2 –
		100	2	2L	2S	100	2 –
	RA 3	60	3	3L	3S	60	3 –
		80	3	3L	3S	80	3 –
		100	3	3L	3S	100	3 –
150	RA 3	100	3	3L	3S	100	3 –
		140	3	3L	3S	140	3 –

Specific outlet pressure range

W_{ds}	Setpoint spring no. RA 0	RA 1	RA 2	RA 3	Setpoint spring no.
20 mbar to 30 mbar		1	1	1	1
25 mbar to 50 mbar		2	2	2	2
45 mbar to 75 mbar		3	3	3	3
70 mbar to 100 mbar		4	4	4	4
90 mbar to 160 mbar		5	5	5	5
150 mbar to 200 mbar*		6	6	6	6
190 mbar to 260 mbar		7	7		7
250 mbar to 300 mbar		8	8		8
290 mbar to 360 mbar		9	9		9
350 mbar to 400 mbar		10	10		10
390 mbar to 500 mbar		11	11		11
490 mbar to 560 mbar		12	12		12
550 mbar to 660 mbar		13	13		13
650 mbar to 760 mbar		14	14		14
750 mbar to 800 mbar		15	15		15
790 mbar to 900 mbar		16	16		16
890 mbar to 1 bar		17	17		17
1,000 mbar to 2,000 mbar	1				1
1,500 mbar to 3,000 mbar	2				2
2,500 mbar to 3,500 mbar	3				3
3,000 mbar to 4,500 mbar	3+4				3+4
4,000 mbar to 5,000 mbar	3+5				3+5

*) RA 3: 150 mbar to 250 mbar

Subject to technical changes

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 370.00
2017-01

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