ESKA

Gas Technologies

ERG EH

SINGLE STAGE GAS PRESSURE REGULATOR

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About Us

With a deep understanding of the need for manufacturers to be close to gas distribution companies understanding their requirements and providing tailored solutions, ESKA grew to become a leading manufacturer of gas stream equipment. We start every day with a belief that change is constant, and the flexibility to follow that change and provide up to date solutions is crucial in the energy sector.

We manufacture gas stream equipment that are designed based on the needs of our partners. We strive to help gas distribution companies provide safe energy to their clients and to assist our partners with flexible business models that promote mutual growth.

Our commitment is to continually improve our products, ensuring the highest standards of safety and quality at an affordable cost, protecting end users while supporting our partners' success.

60 Years Know-how

Global Reach in 65 Countries

Localized Support

Application Area

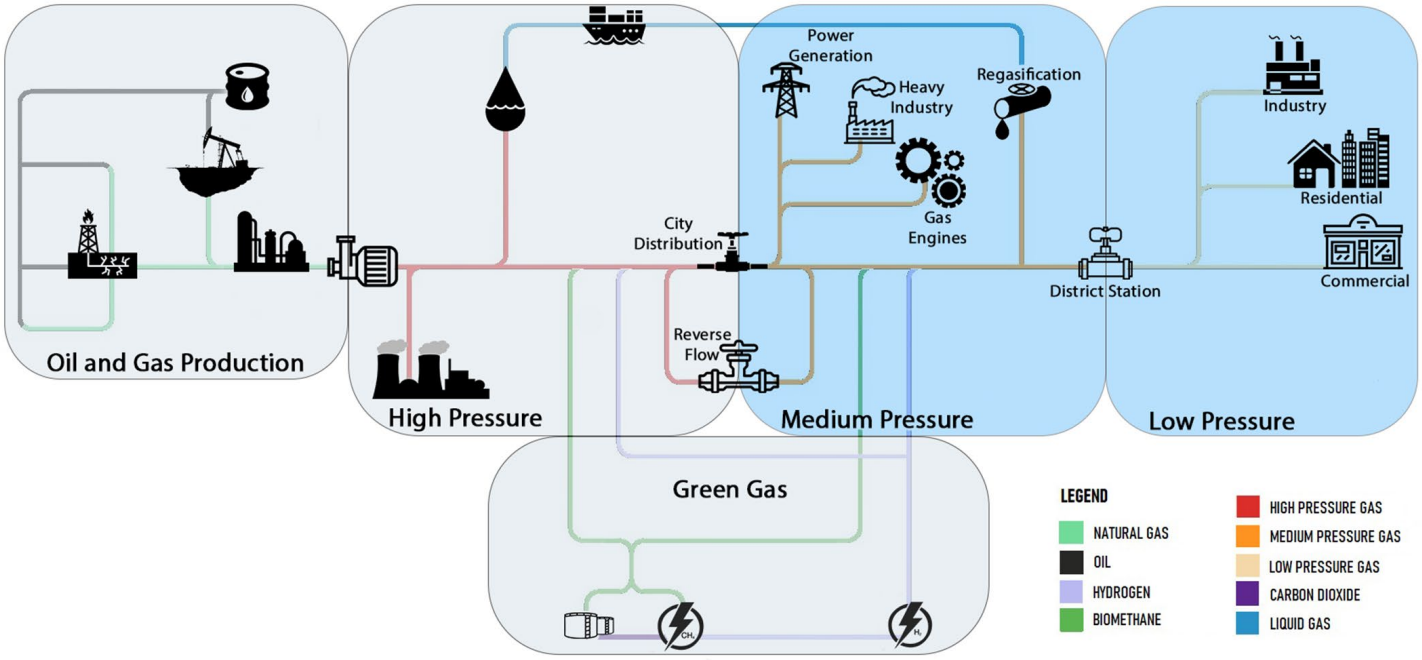


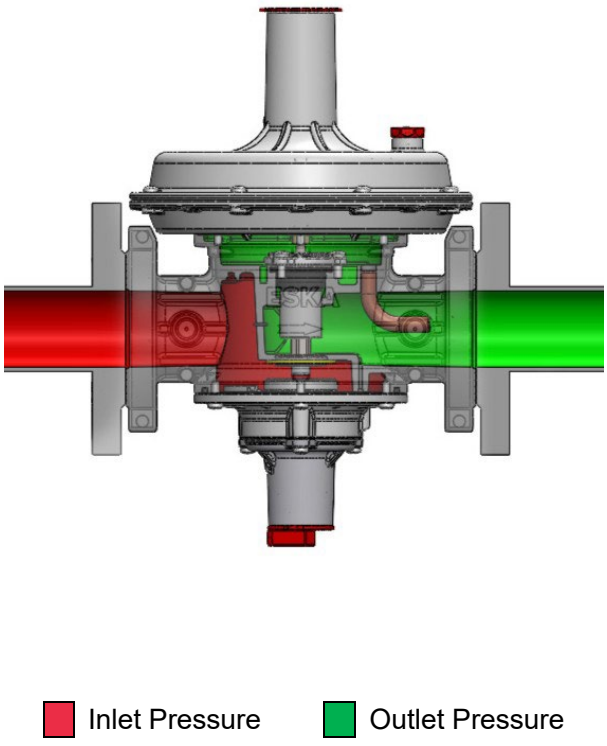
Figure 1: Gas Distribution Map

Area of Service:

Introduction

The ERG-EH Series is a high-performance, direct-acting gas pressure regulator designed for efficient control of inlet pressure to achieve a stable, desired outlet pressure. It is ideally suited for medium and low-pressure natural gas distribution networks and is also compatible with pretreated non-corrosive gaseous fluids. Widely used in commercial and industrial applications, the ERG-EH offers optional safety features such as a relief valve, UPSO, and OPSO systems, ensuring reliable and secure operation. Classified as Fail Open, ERG-EH complies with the European Standard EN334 and is engineered for versatility and durability in demanding environments.

Figure 2: ERG-EH DN50 Pressure Regulation



Features

The ERG-EH is a single stage gas pressure regulator designed for medium to high-pressure applications in both domestic and industrial settings. It effectively reduces inlet pressures ranging from 1 to 5 bar to desired outlet pressures between 21 mbar and 500 mbar, ensuring precise control with an accuracy class of AC10 (±10%). The regulator features a lock-up pressure tolerance of up to +20% and can be equipped with safety mechanisms such as overpressure shut-off (OPSO), under pressure shut-off (UPSO), and a relief valve. Operating efficiently within a standard temperature range of -20°C to +60°C, the ERG-EH also offers a low-temperature variant capable of functioning at temperatures as low as -40°C.

In practical applications, the ERG-EH is particularly beneficial in natural gas distribution networks, where maintaining consistent pressure is crucial for safety and efficiency. For instance, in industrial facilities utilizing gas-fired equipment, the ERG-EH ensures that machinery receives gas at optimal pressures, thereby enhancing performance and reducing the risk of equipment damage due to pressure fluctuations.

Figure 3: ERG-EH DN50 Flanged Version

Characteristics

Table 1: ERG EH Series characteristics

Feature	Values		
Design Pressure	5 bar		
Inlet Pressure	0,1 to 5 bar		
Flow	0 to 1400 m^3/h		
	LPO Version	**HPO Version**	
Outlet Pressure Range (Wd)	10-169	170-500	
Safety shut-off Pressure Range (Wdo)	30-1000 mbar		
Accuracy Class (AC)	±10% AC10, ±5% AC5[1] or ±20% AC20[1]		
Lock-up over pressure (SG)	+%10 SG10[1], +%20 SG20, +%30 SG30[1]		
	Standard Versions		LT Version[2]
Ambient temperature	-10°C to 60°C	-20°C to 60°C	-40°C to 60°C[3]
Configuration	Inline		
Connections	Flanged DN50 PN16		

[1] Upon request
[2] The stated value is the temperature at which the device's mechanical resistance and leakage are tested. Extra body parts may not be suitable for that version.
[3] The standard inlet and outlet pressure are set as per EN 334 standard

Figure 4: ERG-H DN50 Flanged Version

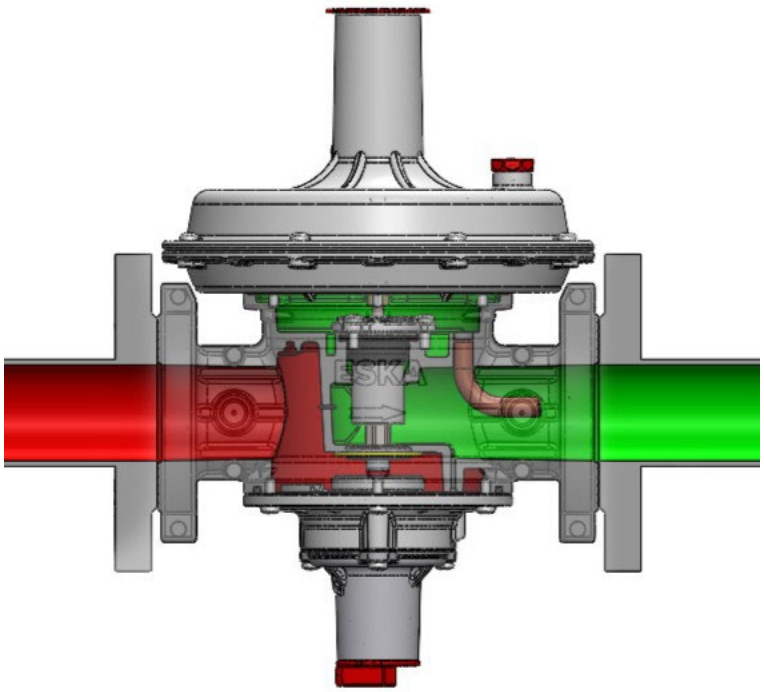
Materials

Table 2: ERG EH Series Materials

Part	Material*	Standard
Body	Aluminum EN AC 46100	EN 1706
Seat	Brass	EN 12164 and/or 12165
Cover	Aluminum EN AC 46100	EN 1706
Diaphragm	Elastomer, Fabric-Reinforced and Non-Reinforced NBR	EN 549
*Above materials are listed for standard models. For other request please refer to our sales team or your local distributer.		

Approvals

The ERG EH regulator is meticulously designed in compliance with the European standard EN 334, guaranteeing exceptional performance and reliability. It incorporates a fail-open mechanism that ensures safety and efficiency, responding dynamically to pressure variations as per EN 334 requirements. Furthermore, the ERG EH is certified under the European Directive 2014/68/EU (PED), demonstrating its conformity to rigorous safety and pressure equipment standards.



Technical Data

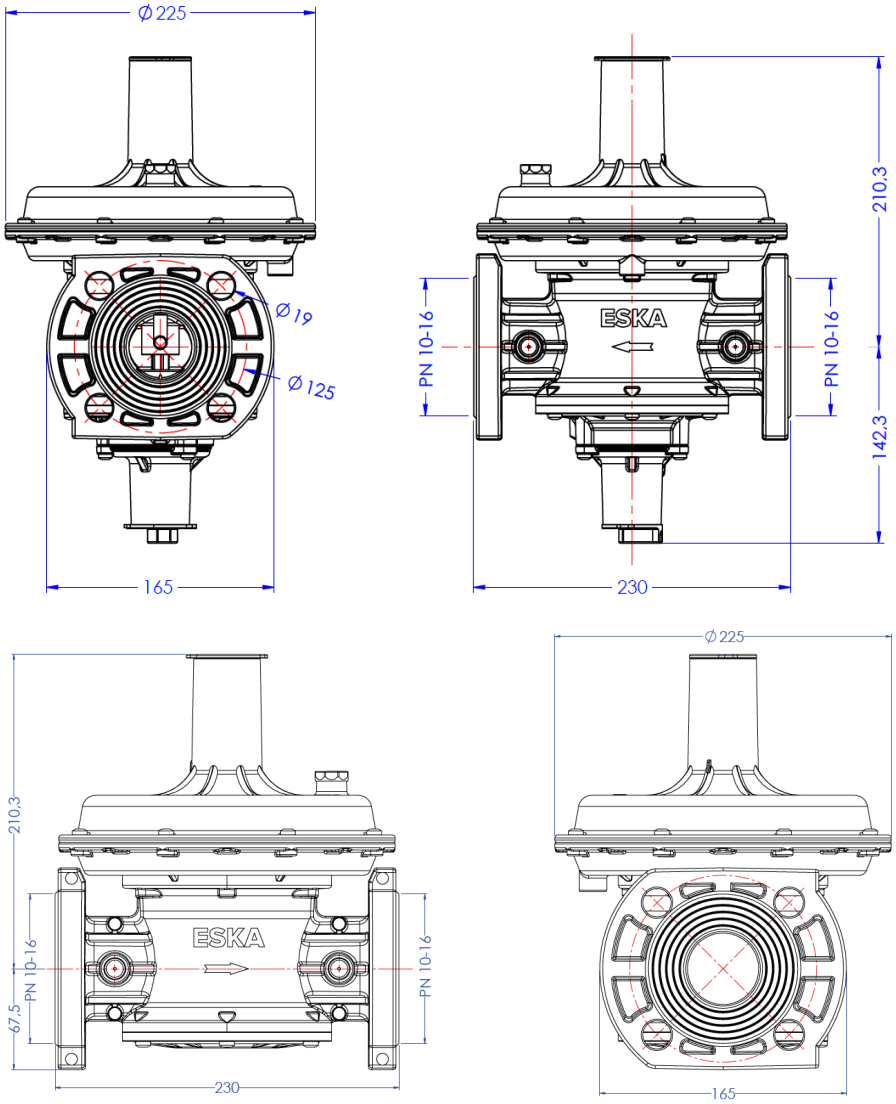


Figure 5: ERG-H DN50 Flanged Version Outside Dimensions

2" Flanged			Outlet Pressure																			
Inlet Pressure			21 mbar / 2,1 kPa		30 mbar / 3 kPa		50 mbar / 5 kPa		75 mbar / 7,5 kPa		100 mbar / 10 kPa		160 mbar / 16 kPa		170 mbar / 17 kPa		200 mbar / 20 kPa		300mbar / 30 kPa		500 mbar / 50 kPa	
barg	PSI	mPa	Sm³/h	Scfh	Sm³/h	Scfh	Sm³/h	Scfh	Sm³/h	Scfh	Sm³/h	Scfh	Sm³/h	Scfh	Sm³/h	Scfh	Sm³/h	Scfh	Sm³/h	Scfh	Sm³/h	Scfh
0,1	1,45	0,01	160	5649,6	135	4766,85	160	5649,6	150	5296,5	-	-	-	-	-	-	-	-	-	-	-	-
0,2	2,9	0,02	250	8827,5	240	8474,4	200	7062	230	8121,3	220	7768,2	120	4237,2	100	3531	-	-	-	-	-	-
0,3	4,3	0,03	315	11122,65	285	10063,35	225	7944,75	230	8121,3	280	9886,8	195	6885,45	170	6002,7	190	6708,9	-	-	-	-
0,5	7,2	0,05	370	13064,7	380	13417,8	310	10946,1	330	11652,3	350	12358,5	310	10946,1	300	10593	300	10593	240	8474,4	-	-
1	14,5	0,1	370	13064,7	380	13417,8	330	11652,3	470	16595,7	560	19773,6	535	18890,85	560	19773,6	460	16242,6	470	16595,7	350	12358,5
2	29	0,2	380	13417,8	450	15889,5	510	18008,1	650	22951,5	630	22245,3	870	30719,7	830	29307,3	750	26482,5	900	31779	775	27365,25
3	43,5	0,3	430	15183,3	510	18008,1	510	18008,1	710	25070,1	700	24717	1250	44137,5	950	33544,5	850	30013,5	1150	40606,5	1050	37075,5
4	58	0,4	430	15183,3	600	21186	600	21186	750	26482,5	800	28248	1250	44137,5	1000	35310	1050	37075,5	1350	47668,5	1400	49434
5	72,5	0,5	290	10239,9	270	9533,7	340	12005,4	430	15183,3	430	15183,3	430	15183,3	600	21186	600	21186	800	28248	850	30013,5
* Values in the table are for AC10.																						

Table 3: ERG EH Series DN50 Flanged Capacity Table

To find the flows for other types of gases, the following formula should be used:

Adjustment Factor K at 15ºC	
Butane	0,55
Propene	0,64
Oxygen	0,76
Air	0,78
Nitrogen	0,81
Biogas	0,85
City Gas	1,23
Hydrogen	3,04
LPG	1,3

Condition: +15°C, 1013 mbar,

Q (n)m³/h (Natural Gas) x K = Q (n)m³/h (x Gas)

Example: Q (n)m³/h (Natural Gas) x 0,78 = Q (n)m³/h (Air)

Regulation Spring Table

Regulation Spring			Dimensions			MP		HP	
Spring Code	Spring Name	Spring Color	d	Lo	Do	Min.	Max.	Min.	Max.
PDM00003843	6 BR 5Bar Regulation Spring 10,5N-52N	White	2,2 mm	115 mm	33,5 mm	10	25	-	-
PDM00003825	6 BR 5Bar Regulation Spring 25,3N-57,7N	Green	2,2mm	142 mm	33,5 mm	18	30	-	-
PDM00003829	6 BR 5Bar Regulation Spring 32N-144N	Yellow	2,8 mm	115 mm	33,5 mm	30	60	-	-
PDM00003832	6 BR 5Bar Regulation Spring 84N-250N	Blue	3 mm	126 mm	33,5mm	60	100	170	300
PDM00003835	6 BR 5Bar Regulation Spring 90N-	Red	3,5 mm	115 mm	33,5 mm	100	170	300	500

Table 4: ERG EH Series Regulation Spring Table

OPSO Spring Table

OPSO Springs						Spring Range (mbar)	
Spring Code	Spring Name	Spring Color	d	Lo	Do	Min.	Max.
PDM00002303	6 SR Regülasyon Yayı 13N-20,5N	-	1,8 mm	43 mm	33,5 mm	30	60
PDM00002229	6 SR Regülasyon Yayı 22N-31N	-	1,8 mm	59 mm	33,5 mm	60	100
PDM00002306	6 SR Regülasyon Yayı 54N-96N	-	2,5 mm	40 mm	33,5 mm	100	300
PDM00003764	6 H5 Opso Max. Yayı 45N-160N	-	3,2 mm	48 mm	33,5 mm	300	700
PDM00004254	H Opso yayı 5 107N-205N	-	3,5 mm	50 mm	34 mm	600	1000
PDM00002172	6 SR Regülasyon Yayı 15N-85N	-	2,5 mm	50,5 mm	33,5 mm	260	430
PDM00002102	6 SR Regülasyon Yayı 36N-52N	-	2 mm	51 mm	33,5mm	100	160

Table 5: ERG EH OPSO Spring Table

Relief Spring Table

Relief Springs						LP		HP	
Spring Code	Spring Name	Spring Color	d	Lo	De	Min.	Max.	Min.	Max.
PDM00003729	6 H Tav Yayı 4 32N-64N	-	1,5 mm	45 mm	15 mm	7	14	30	50
PDM00003726	6 H Tav Yayı 3 85N-165N	-	2 mm	40 mm	15 mm	15	50	50	140
PDM00003810	6 H Tav Yayı 130N-260N	-	2,2 mm	40 mm	15,2mm	50	80	140	240

Table 6: ERG EH Series Relief Spring Table