ESKA

Gas Technologies

# ERG H1

**Direct Actine Gas Pressure Regulator**


**ESKA**

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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

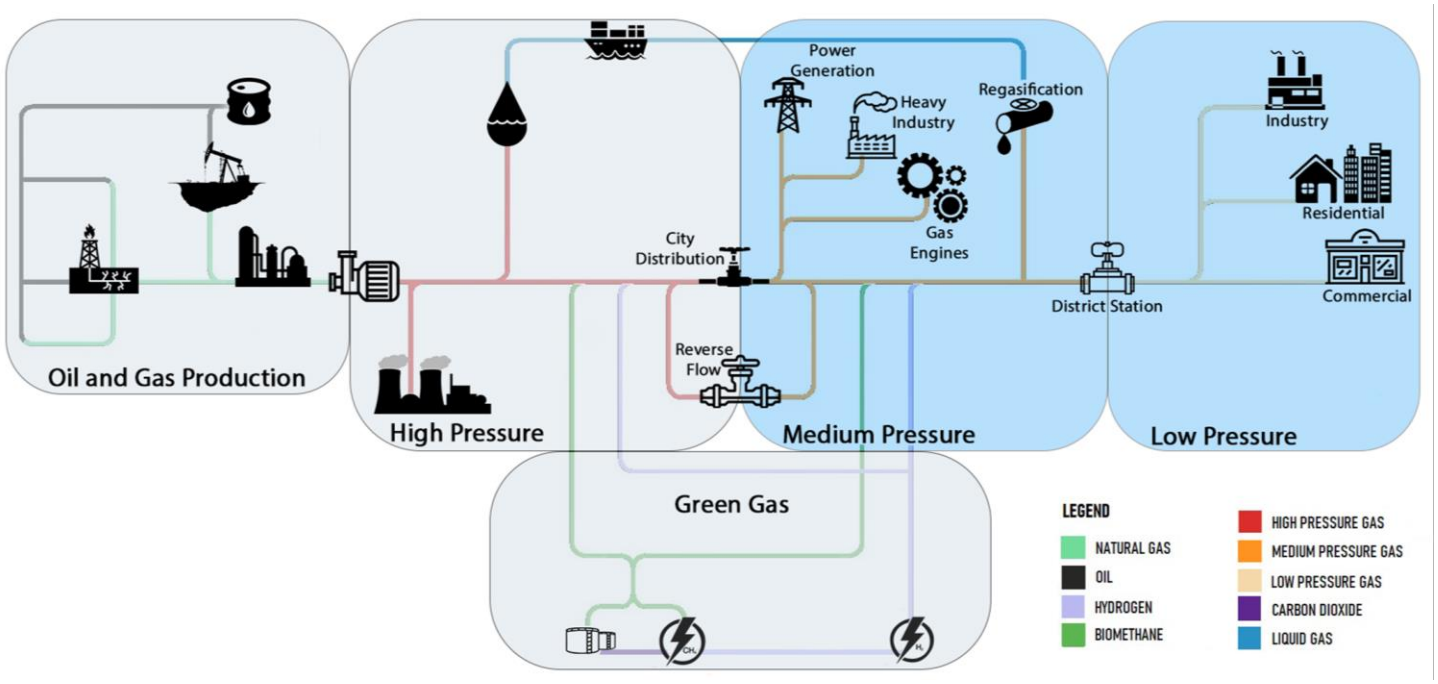


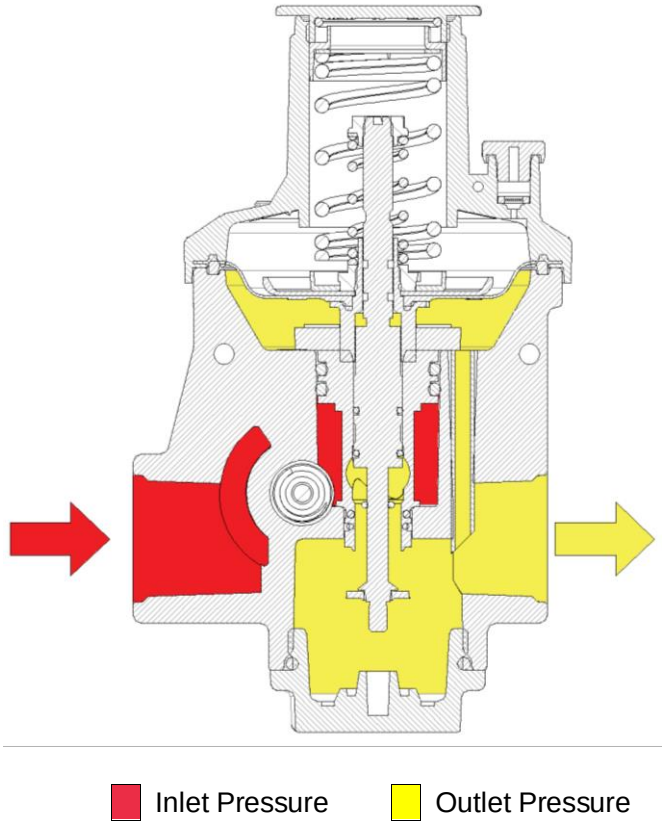

Figure 1: Gas Distribution Map

Area of Service:

# Introduction

The ERG-H1 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-H1 offers optional safety features such as a relief valve, UPSO, and OPSO systems, ensuring reliable and secure operation. Classified as Fail Open, the ERG-H1 complies with the European Standard EN334 and is engineered for versatility and durability in demanding environments.

Figure 2: ERG-H1 Pressure Display



# Features

The ERG-H1 is a direct-acting gas pressure regulator designed for medium to high-pressure applications in both domestic and industrial settings. It effectively reduces inlet pressures ranging from 0,5 to 20 bar to desired outlet pressures between 21 mbar and 2.5 bar, ensuring precise control with an accuracy class of AC10 (±10%). The regulator features a lock-up pressure tolerance of up to +10% and can be equipped with safety mechanisms such as overpressure shut-off (OPSO), underpressure shut-off (UPSO), and a relief valve. Operating efficiently within a standard temperature range of -20°C to +60°C, the ERG-H1 also offers a low-temperature variant capable of functioning at temperatures as low as -40°C. In practical applications, the ERG-H1 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-H1 ensures that machinery receives gas at optimal pressures, thereby enhancing performance and reducing the risk of equipment damage due to pressure fluctuations.

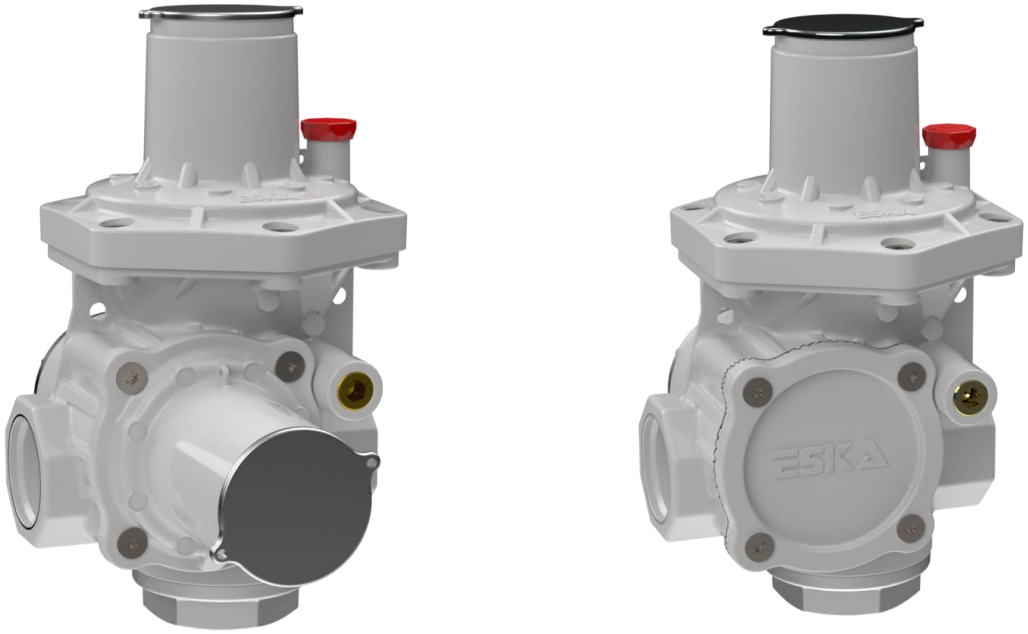



Figure 3: ERG-H1/HZ1

# Characteristics

Table 1: ERG H1 Series characteristics

| Feature | Values | | |
|---|---|---|---|
| Design Pressure | PS6, PS10, PS20 | | |
| Inlet Pressure | 1 to 20 bar | | |
| Flow | Up to 250 m3/hour (natural gas) | | |
| | **LPO Version** | **MPO Version** | **HPO Version** |
| Outlet Pressure Range (Wd) | 200-399 mbar | 400-799 mbar | 800-4500 mbar |
| Safety shut-off Pressure Range (Wdo) | 300-499 mbar | 500-1199 mbar | 1200-7000 mbar |
| Safety shut-off Pressure Range (Wdu) | 100-600 mbar | | 550-3000 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 or Angle | | |
| Connections | Standard Threaded Inlet: DN25, inline outlet DN25, angle outlet DN40 with different modular connection options[4] | | |

[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 TS EN 10624, EN 88-1, EN 88-2 standard.
[4] Threaded connections as EN 10266-2, TS EN ISO 228-1, ASME B1.20.1 NPT Standards.

# Materials and Approvals

Table 2: ERG-H1 Series Materials

| Part | Material* | Standard |
|---|---|---|
| Body | Aluminum | EN 1706 |
| Seat | Brass | EN 12164 and/or 12165 |
| 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.

The ERG-H1 Series regulator is designed according to European standard EN 334 and The regulator reacts in opening (Fail Open) according to EN 334. The product is certified according to European Directive 2014/68/EU (PED)

**EN334**

**PED**

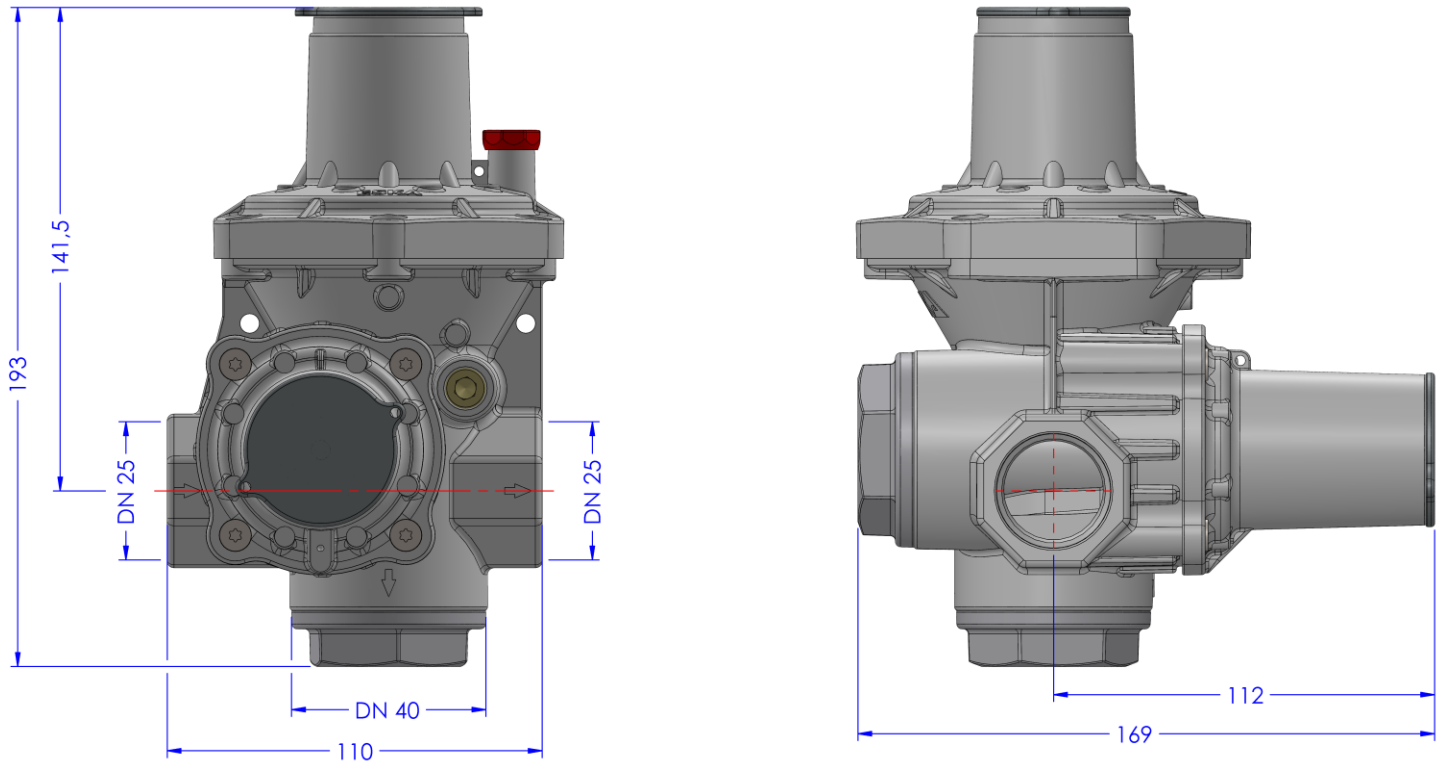



Figure 4: ERG H1 Technical Dimensions

# Capacity Table

Table 3: ERG-H1 Series Capacity Tables

| ERG-H1 AC5 | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Inlet Pressure | | | Outlet Pressure | | | | | | | | | | | | | |
| | | | 200(mbar)/20kPa | | 300(mbar)/30kPa | | 800(mbar)/80kPa | | 1000(mbar)/100kPa | | 3000(mbar)/250kPa | | 4000(mbar)/400kPa | | 4500(mbar)/450kPa | |
| barg | PSI | MPa | Sm³/h | Kg/h(LPG) | Sm³/h | Kg/h(LPG) | Sm³/h | Kg/h(LPG) | Sm³/h | Kg/h(LPG) | Sm³/h | Kg/h(LPG) | Sm³/h | Kg/h(LPG) | Sm³/h | Kg/h(LPG) |
| 1 | 14,5 | 0,1 | 35 | 39,9 | 30 | 34,2 | 10 | 11,4 | - | - | - | - | - | - | - | - |
| 1,5 | 21,75 | 0,15 | 65 | 74,1 | 60 | 68,4 | 30 | 34,2 | 25 | 28,5 | - | - | - | - | - | - |
| 2 | 29 | 0,2 | 70 | 79,8 | 67,5 | 76,95 | 60 | 68,4 | 50 | 57 | - | - | - | - | - | - |
| 3 | 43,5 | 0,3 | 80 | 91,2 | 80 | 91,2 | 70 | 79,8 | 70 | 79,8 | - | - | - | - | - | - |
| 4 | 58 | 0,4 | 80 | 91,2 | 80 | 91,2 | 80 | 91,2 | 100 | 114 | 50 | 57 | - | - | - | - |
| 5 | 72,5 | 0,5 | 80 | 91,2 | 80 | 91,2 | 80 | 91,2 | 120 | 136,8 | 70 | 79,8 | 50 | 57 | 25 | 28,5 |
| 6 | 87 | 0,6 | 80 | 91,2 | 80 | 91,2 | 80 | 91,2 | 120 | 136,8 | 110 | 125,4 | 70 | 79,8 | 67,5 | 76,95 |
| 8...20 | 116...290 | 0,8...2 | 80 | 91,2 | 80 | 91,2 | 80 | 91,2 | 120 | 136,8 | 120 | 136,8 | 120 | 136,8 | 120 | 136,8 |

| ERG-H1 AC10 | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Inlet Pressure | | | Outlet Pressure | | | | | | | | | | | | | |
| | | | 200(mbar)/20kPa | | 300(mbar)/30kPa | | 800(mbar)/80kPa | | 1000(mbar)/100kPa | | 3000(mbar)/250kPa | | 4000(mbar)/400kPa | | 4500(mbar)/450kPa | |
| barg | PSI | MPa | Sm³/h | Kg/h(LPG) | Sm³/h | Kg/h(LPG) | Sm³/h | Kg/h(LPG) | Sm³/h | Kg/h(LPG) | Sm³/h | Kg/h(LPG) | Sm³/h | Kg/h(LPG) | Sm³/h | Kg/h(LPG) |
| 1 | 14,5 | 0,1 | 70 | 79,8 | 60 | 68,4 | 20 | - | - | - | - | - | - | - | - | - |
| 1,5 | 21,75 | 0,15 | 130 | 148,2 | 120 | 136,8 | 60 | 68,4 | 50 | - | - | - | - | - | - | - |
| 2 | 29 | 0,2 | 140 | 159,6 | 135 | 153,9 | 120 | 136,8 | 100 | 114 | - | - | - | - | - | - |
| 3 | 43,5 | 0,3 | 160 | 182,4 | 160 | 182,4 | 140 | 159,6 | 140 | 159,6 | - | - | - | - | - | - |
| 4 | 58 | 0,4 | 160 | 182,4 | 160 | 182,4 | 160 | 182,4 | 200 | 228 | 100 | 114 | - | - | - | - |
| 5 | 72,5 | 0,5 | 160 | 182,4 | 160 | 182,4 | 160 | 182,4 | 240 | 273,6 | 140 | 159,6 | 100 | 114 | 50 | 57 |
| 6 | 87 | 0,6 | 160 | 182,4 | 160 | 182,4 | 160 | 182,4 | 240 | 273,6 | 220 | 250,8 | 140 | 159,6 | 130 | 148,2 |
| 8...20 | 116...290 | 0,8...2 | 160 | 182,4 | 160 | 182,4 | 160 | 182,4 | 240 | 273,6 | 240 | 273,6 | 240 | 273,6 | 240 | 273,6 |

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

| Adjustment Factor K at 15°C | |
|---|---|
| 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 | 0,62 |

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)

**Debi Çevrimi**
**(Nm³/h)= Sm³/h x 0,947**

# Regulation Spring Table

Table 4: ERG-H1 Series Regulation Spring Table

| Regulation Spring | | LP-MP (mbar) | | HP (mbar) | |
|---|---|---|---|---|---|
| Spring Code | Spring Color | Min. | Max. | Min. | Max. |
| PDM00003705 | Zink | 270 | 330 | - | - |
| PDM00003708 | Yellow | 200 | 400 | - | - |
| PDM00003714 | Blue | 400 | 800 | 800 | 1800 |
| PDM00003719 | Red | - | - | 1800 | 3000 |
| PDM00003720 | Orange | - | - | 3000 | 4500 |

# OPSO Spring Table

Table 5: ERG-H1 OPSO Spring Table

| OPSO Springs | | LP-MP (mbar) | | HP (mbar) | |
|---|---|---|---|---|---|
| Spring Code | Spring Color | Min. | Max. | Min. | Max. |
| PDM00002172 | Grey | 300 | 500 | - | - |
| PDM00003764 | Red | 500 | 1200 | - | - |
| PDM00003765 | Orange | - | - | 1200 | 4000 |
| PDM00003766 | Blue | - | - | 4000 | 7000 |

# Relief Spring Table

Table 6: ERG-H1 Series Relief Spring Table

| Relief Springs | | LP (mbar) | | HP (mbar) | |
|---|---|---|---|---|---|
| Spring Code | Spring Color | Min | Max | Min | Max |
| PDM00003723 | Black | 30 | 99 | 150 | 249 |
| PDM00003724 | Orange | 100 | 249 | 250 | 499 |
| PDM00003726 | Green | 250 | 449 | 500 | 849 |
| PDM00006526 | Red | 450 | 1200 | 850 | 2000 |
| PDM00004249 | White | - | - | 2000 | 3000 |

# UPSO Spring Table

Table 7: ERG-H1 Series UPSO Spring Table

| UPSO Springs | | LP (mbar) | | HP (mbar) | |
|---|---|---|---|---|---|
| Spring Code | Spring Color | Min | Max | Min | Max |
| PDM00003723 | Black | 100 | 200 | - | - |
| PDM00003729 | Blue | 200 | 350 | - | - |
| PDM00003724 | Orange | 350 | 600 | - | - |
| PDM00003726 | Green | - | - | 550 | 900 |
| PDM00003810 | Blue | - | - | 900 | 1700 |
| PDM00003731 | Red | - | - | 2000 | 3000 |

# Packaging

Table 8: ERG H1 Series Packing Information

| Product | Number or Items | Unit Weight | Package Size (LxWxH cm) | Number of Boxed Products in 1 Package | Total Package Weight | Pallet Total Items | Pallet Total Weight |
|---|---|---|---|---|---|---|---|
| ERG-H1 | 1 | Approximately 2,8 kg | 29x50x50 | 4 | 11,2 kg | 240 | Approximately 680 kg |
| ERG-H1Z | 1 | Approximately 2,2 kg | 29x50x50 | 4 | 8,8 kg | 240 | Approximately 550 kg |

# ESKA

ERG-H1
USER MANUAL

This manual is subject to change according to technical developments.

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