



Flow Controller

KDS-R

- Flow controlling of liquids and gas
- Can be used in the chemical industry or in medical or laboratory engineering.
- Precision, reliability and efficiency are the remarkable features of this device.
- Robust mechanical system with a low rate of wear

Function

The diaphragm of the controller is in a state of equilibrium when the pressure conditions are the same on both sides. The pressure on the input side is determined by the pressure of the product; the pressure on the output side is determined by the pressure drop of the setting valve of the flowmeter. If either the inlet or outlet pressure changes, the change in pressure is compensated by the built-in diaphragm valve - thus maintaining a constant set flow rate.

The unit consists of a KDS variable-area flowmeter, equipped with a diaphragm differential pressure flow controller. The variable-area flowmeter consists of a stainless steel device with an integrated conical stainless steel measuringtube and a vertically movable float. The valve for setting the flow rate is built-in.

The differential pressure flow controller is made of stainless steel and consists of a diaphragm made of Perbunan or PTFE and a compensating valve made of stainless steel

Important: The controller only regulates inlet or outlet pressure fluctuations. Steady pressure conditions must prevail on the other side.

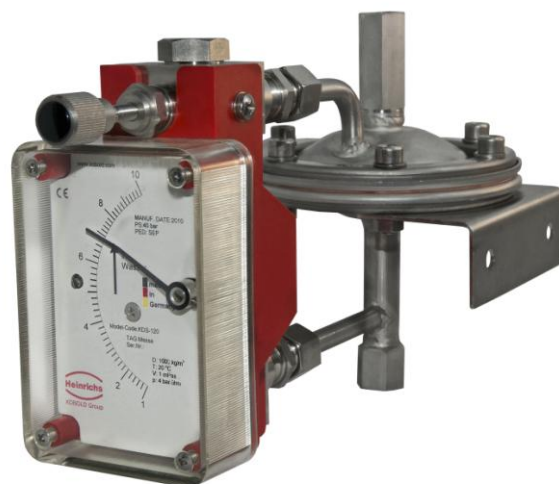
Application

The KDS-R flowmeter can be used for stabilizing set flow quantities of liquid and gaseous products in pipes. The set quantity is kept constant independent of pressure changes during product inflow for type KDS-R.....N or a pressure change during product outflow for type KDS-RV.

Applications: constant dosing, level monitoring in open or close vessels, N₂-superposition of flammable media.

The devices are available with additional electrical equipment for process monitoring and control.

- A variety of membrane and sealing materials





Technical data

Sensor

| | | |
|----------------------------------|--|------------------|
| Materials: | Stainless steel | |
| Measuring cone, Float, Armature: | 1.4404 (316 L) / 1.4571 (316 Ti) | |
| Armature: | other materials on request | |
| Sealing: | NBR, Viton, PTFE | |
| Membrane: | NBR, PTFE | |
| Process connection: | 1/4" NPT (F), adapter for other connections available | |
| | special connections on request | |
| Nominal pressure: | PN 16 | |
| | PN 25 (optional) | |
| | PN 40 (optional) | |
| | (the maximum unilateral pressure resistance of the diaphragm is 7 bar) | |
| Process temperature: | -10°C up to +100°C | (without switch) |
| | -10°C up to +70°C | (with switch) |
| Ambient temperature: | -25°C up to +65°C | |
| Weight: | 1,3 kg | |
| Ingress protection: | IP 65 (EN60529) | |

Certification

Explosion protection: BVS 03 ATEX H/B 113

Ranges

KDS-R

| Range | H ₂ O [l/h] | Luft [NI/h] |
|-------|------------------------|-------------|
| A | 0,1-1,0 | 3,0-30 |
| B | 0,25-2,5 | 7,5-75 |
| C | 0,6-6,0 | 18-180 |
| D | 1,0-10 | 30-300 |
| E | 1,6-16 | 48-480 |
| F | 2,5-25 | 75-750 |
| G | 4,0-40 | 120-1200 |
| H | 6,0-60 | 180-1800 |
| I | 10-100 | 300-3000 |

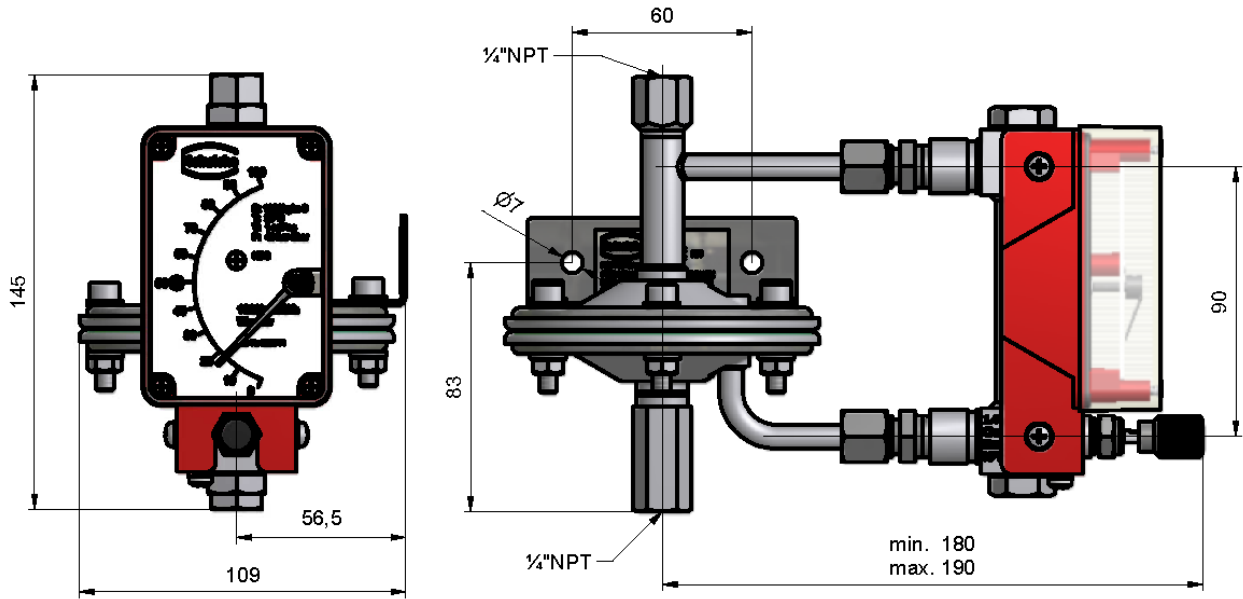
Reference condition: according to IEC 770:
Water at 20°C



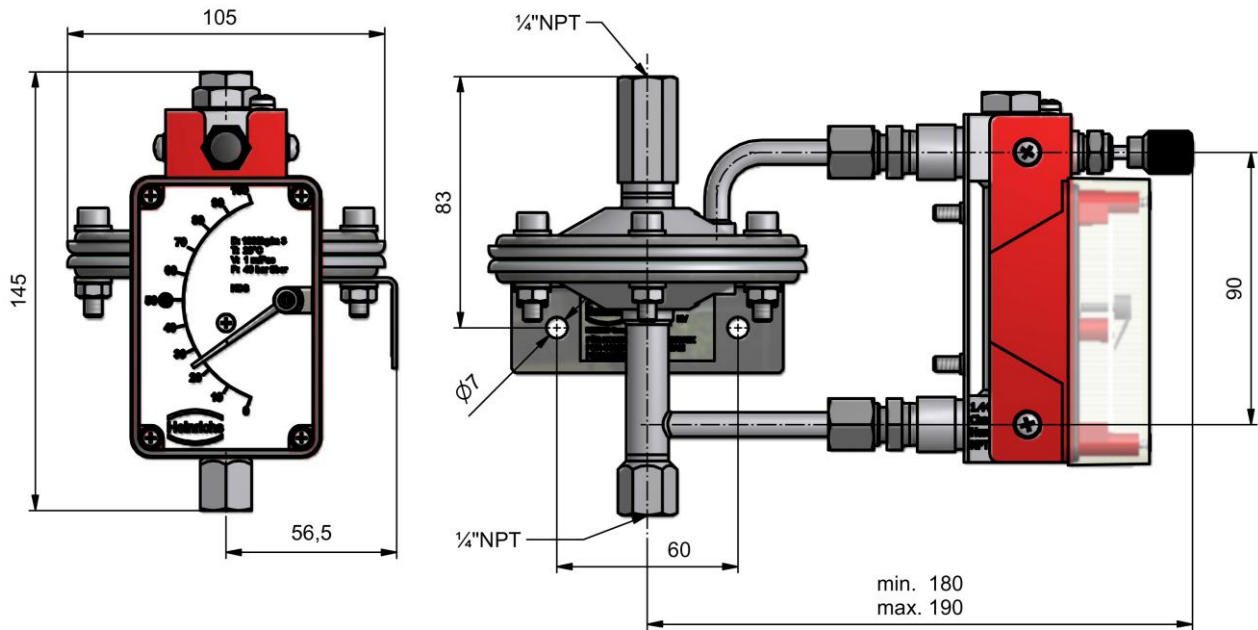
| | |
|--|--|
| Display | %-scale Measuring range scale |
| Outputs | inductive switches inductive switch (safe technology) |
| Ambient temperature: | -25°C up to +65°C |
| <u>Accuracy</u> Liquid/Gas: | ± 3% of upper range value |
| <u>Regulation accuracy</u> Liquid/Gas: | ± 5% of upper range value |
| <u>Certification</u> Explosion protection: Type of protection: | PTB 00 ATEX 2048 X (gas) II 2G Ex ia IIC T6-T4 |
| Explosion protection: Type of protection: | ZELM 03 ATEX 0128 X (dust) II 1D Ex iaD 20 T...°C |
| CE-Marking: | Explosion Protection Directive 94/9/EC |
| Electromagnetic compatibility for add-on electrical sensors: | EMC-Directive 2004/108/EC EN 61326-1:2006 |

Dimension

KDS-R...-N with 1/4" NPT (F) connection as outlet pressure controller version



KDS-R...-V with 1/4" NPT (F) connection as inlet pressure controller version



For further information see device description KDS-BGK_GB_XX_en.
Subjects to change without notice.

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