Honeywell

krom schroder

Air/gas ratio controls GIK

TECHNICAL INFORMATION

- To maintain a constant gas/air mixture
- For continuous and staged burner control
- Design with inlet pressure compensation diaphragm ensures high control accuracy
- High turndown
- EU certified

CE EAC

EN
Edition 07.25
03251253

Contents

1 Application

GIK..R

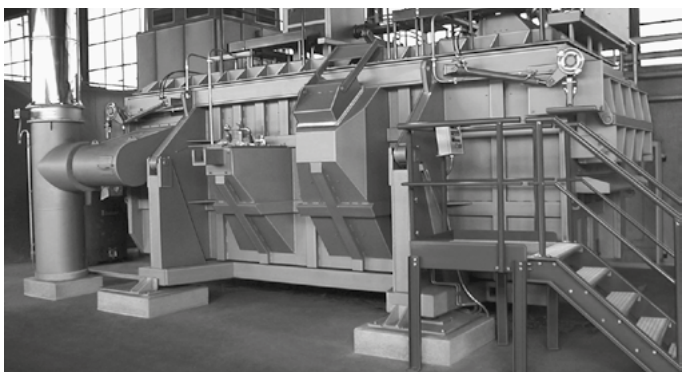
GIK..F

Air/gas ratio controls GIK with inlet pressure compensation diaphragm and zero shut-off serve to maintain a constant gas/air ratio and to control the gas pressure upstream of gas burners in systems without preheated combustion air.

For use in gas control lines in all sectors of the iron, steel, glass and ceramics industries, as well as in commercial heat generation, such as the packaging, paper and foodstuffs industries.

1.1 Application examples

Metallurgical industry: bogie hearth furnace



Aluminium industry: smelting furnace

Ceramics industry: intermittent shuttle kiln

2 Certification

Certificates – seewww.docuthek.com

EU certified

CE

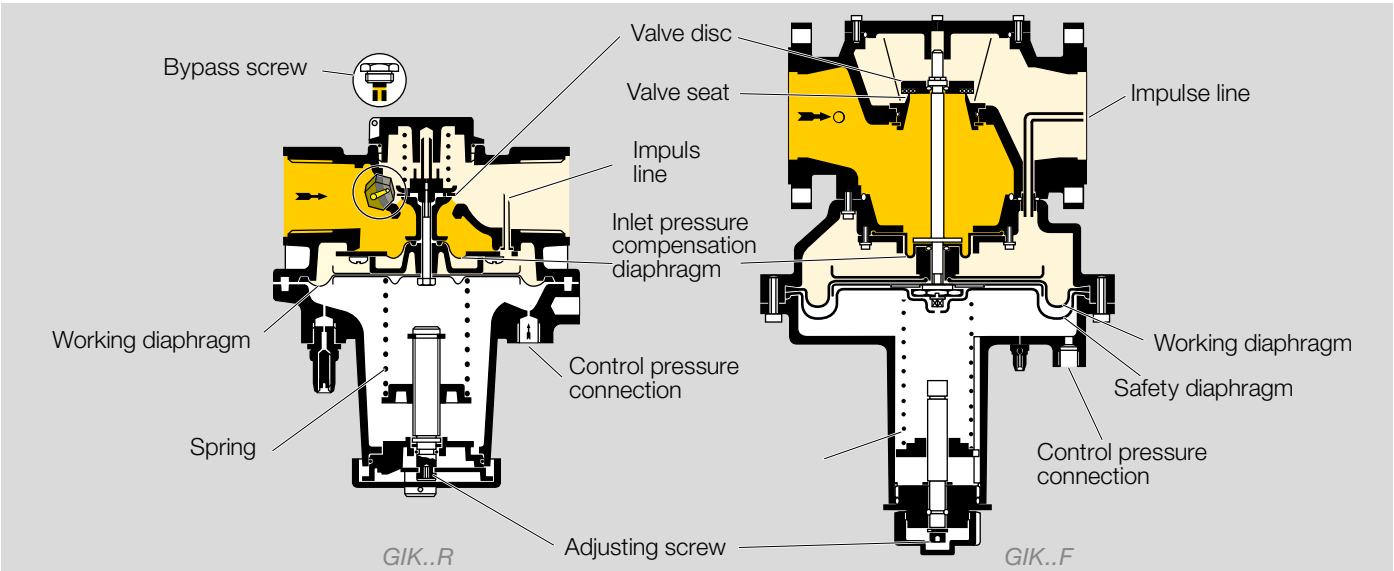
- (EU) 2016/426 (GAR) – Gas Appliances Regulation
- EN 88-1:2022 + A1:2023

2.1 Eurasian Customs Union

EAC

The products GIK meet the technical specifications of the Eurasian Customs Union.

3 Function



Air/gas ratio control GIK is actuated by the air line pressure. The valve plate is lifted from the valve seat and the gas flows into the regulator outlet area via the open valve seat. The outlet pressure is applied to the space above the working diaphragm via the impulse line. The outlet pressure is controlled in a ratio of 1:1 to the air control pressure. The inlet pressure compensation diaphragm ensures high control accuracy.

The burner capacity can be adjusted using the air control valve. Furnace pressure fluctuations have the same effect on the gas and air throughput so that the gas/air mixture will remain unchanged.

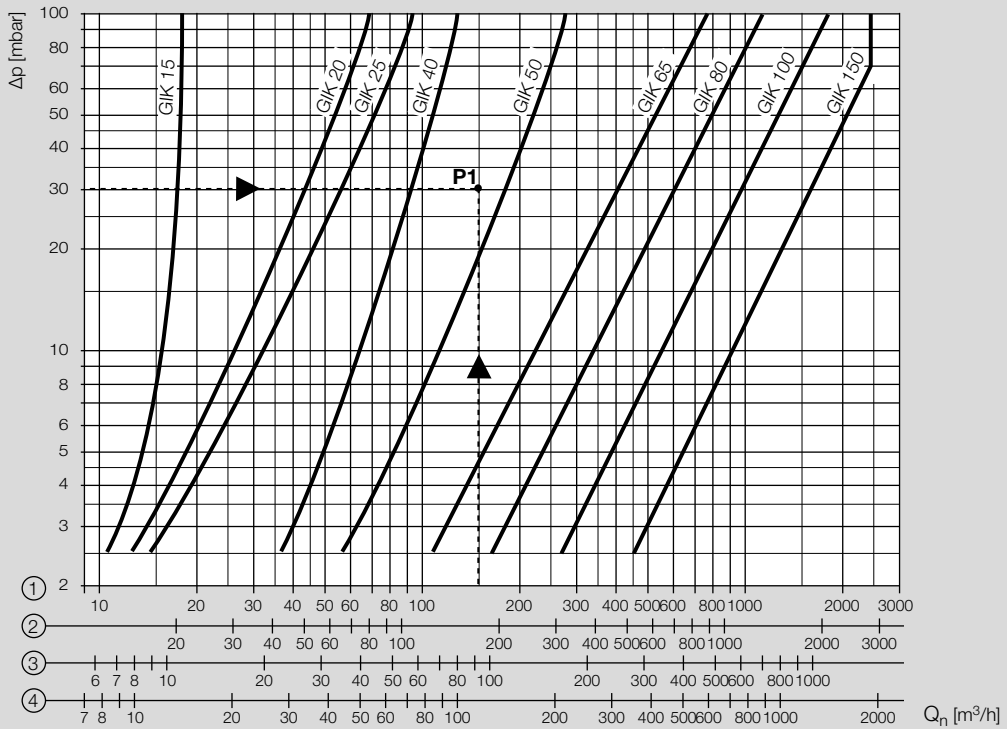
The spring can be used for compensating the weight of the measuring unit. In the low-fire rate range, the gas/air mixture can be set by adjusting the spring. For staged control, the spring is decompressed at the factory in such a way that the low-fire rate only flows through the bypass.

Adjustment at high-fire rate is carried out using restrictors or valves on the burner.

The zero shut-off prevents an increase in the outlet pressure when the consumer is switched off.

Test nipples have been installed to measure the static inlet, outlet and control pressures.

4 Flow rate



1 = natural gas (ρ = 0.80 kg/m³)
2 = town gas (ρ = 0.58 kg/m³)
3 = propane (ρ = 2.01 kg/m³)
4 = air (ρ = 1.29 kg/m³)

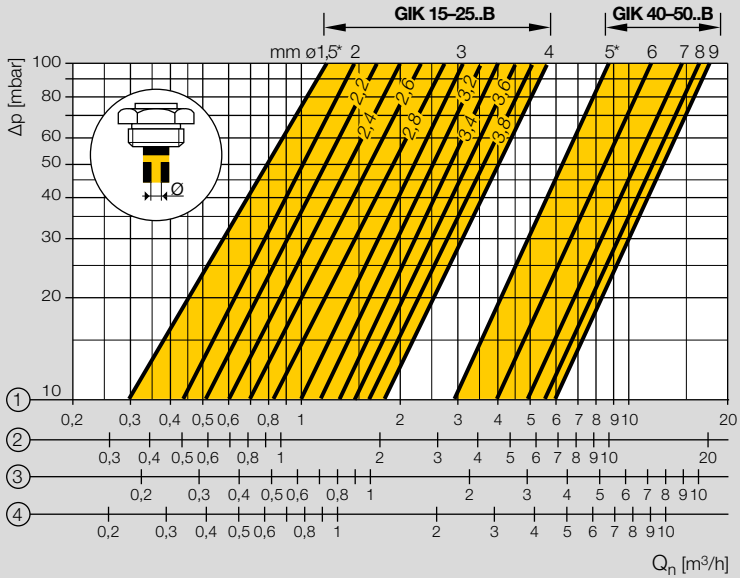
Gas type: natural gas,
flow rate Q = 150 m³/h,
inlet pressure p_u = 50 mbar,
outlet pressure p_d = 20 mbar,
pressure loss $\Delta p = p_u - p_d$ = 30 mbar.

The result is intersection P1.
The next largest nominal size is selected: GIK 50.

4.1 Calculating the nominal size

A web app for calculating the nominal size is available at www.adlatus.org.

4.2 Bypass screw flow rate



* Standard:
GIK 15 – 25..B: 1,5 mm
GIK 40 – 50..B: 5 mm

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5 Selection

Option	GIK 15–50	GIK 65–100
DN	15, 20, 25, 40, 50	65, 80, 100, 150
Pipe connection	R	F
Inlet pressure	02	02
Pressure measuring point	-5	-6
For air only*	L	L
Bypass screw*	B	–

** If "none", this letter is omitted*

Order example

GIK 40R02-5

5.1 ProFi

A web app selecting the correct product is available at www.adlatus.org.

5.2 Type code

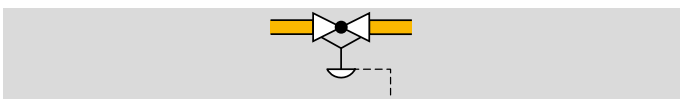
GIK	Air/gas ratio control
15-150	Nominal size
T	T-product
R	Rp internal thread
N	NPT internal thread
F	Flange to ISO 7005
A	ANSI flange
02	p_u max. 200 mbar
-5	Pressure test point at the outlet
-6	Pressure test point at the inlet and outlet
L	For air only (without approval)
B	With bypass screw (GIK 15–25: 1.5 mm; GIK 40–50: 5 mm)

6 Project planning information

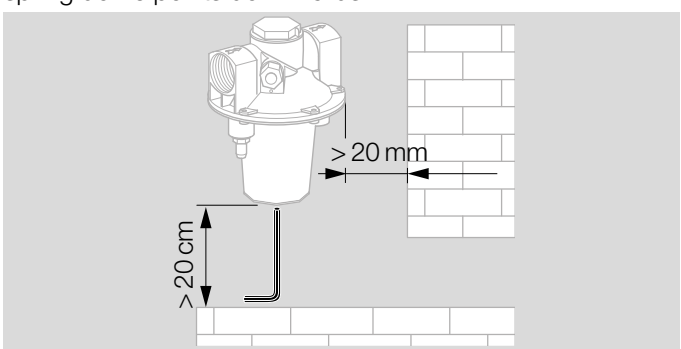
The gas inlet pressure p_u must always be greater than the air control pressure p_L + pressure loss Δp to ensure that the air/gas ratio control is not overloaded.

GIK..B: the air control pressure must be less than 2 mbar at low-fire rate.

6.1 Installation



Installation position: install in horizontal pipelines only. The spring dome points downwards.

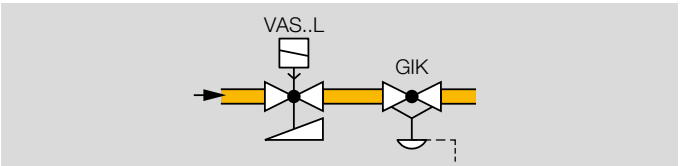


The air/gas ratio control GIK must not be in contact with masonry. Ensure that there is sufficient space for adjusting the low-fire rate.

Do not store or install the unit in the open air.

Sealing material and dirt, e.g. thread cuttings, must not be allowed to get into the regulator housing. Install a filter (GFK) upstream of every system.

The outlet opening on the installed reducing fitting must also be protected from dirt.



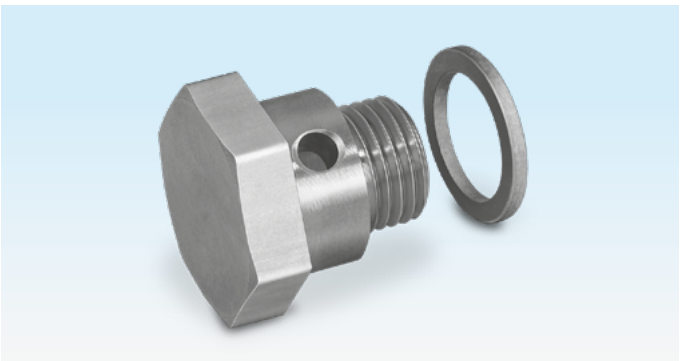
Safety valves must always be installed upstream of the air/gas ratio control GIK. For continuous control, we recommend using slow opening safety valves VAS..L.

We recommend that a slowing down section of 3 x DN be provided downstream of the GIK.

Every signal line whose failure may lead to the uncontrolled escape of gas and therefore to an unsafe status and gas fire must be made of metal.

7 Accessories

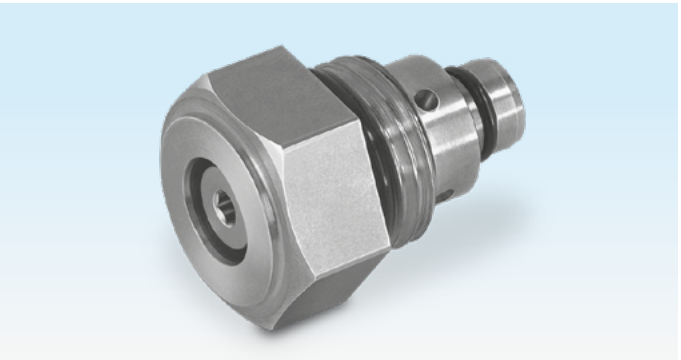
7.1 Conversion kit for zero pressure control



The conversion kit for zero pressure control is screwed in instead of the air impulse line.

Order No.:
GIK 15–50: 03351039,
GIK 65–150: 74910853.

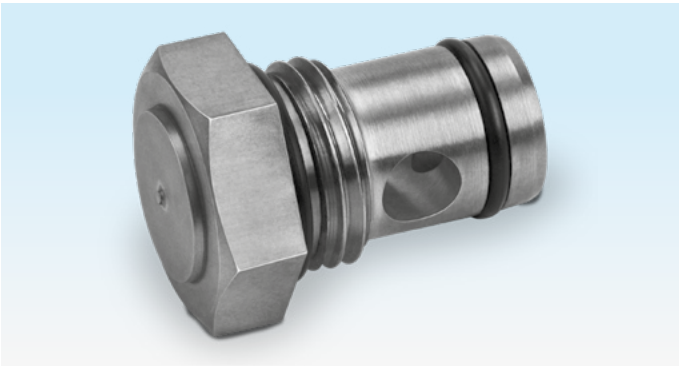
7.2 Bypass screw GIK 15–25, variable



The bore hole diameter for the flow rate can be adjusted as desired and corresponds to holes of 1.5–4 mm, see page 8 (4.2 Bypass screw flow rate).

Order No.: GIK 15–25: 74919806.

7.3 Bypass screw, diameter to order



The bore hole diameter of the bypass screw is made to order.

Order No.:
GIK 15–25: 74919820,
GIK 40–50: 74919821.

8 Technical data

8.1 Ambient conditions

Icing, condensation and dew in and on the unit are not permitted.

Avoid direct sunlight or radiation from red-hot surfaces on the unit. Note the maximum medium and ambient temperatures!

Avoid corrosive influences, e.g. salty ambient air or SO_2.

The unit may only be stored/installed in enclosed rooms/ buildings.

Long-term use in the upper ambient temperature range accelerates the ageing of the elastomer materials and reduces the service life (please contact manufacturer).

This unit is not suitable for cleaning with a high-pressure cleaner and/or cleaning products.

Ambient temperature:
GIK 15–50: -20 to +60°C,
GIK 65–150: -15 to +60°C,
GIKH 25: -20 to +60°C.

Storage temperature: GIK 15–50: -20 to +40°C,
GIK 65–150: -15 to +40°C,
GIKH 25: -20 to +40°C.

Transport temperature = storage temperature.

8.2 Mechanical data

Gas types: town gas, natural gas, LPG (gaseous) and biogas (max. 0.02 %-by-vol. H_2S). GIK..L for air only. The gas must be clean and dry in all temperature conditions and must not contain condensate.

Medium temperature = ambient temperature.

8.3 GIK

The inlet pressure p_u must be greater than the control pressure p_{sa} plus the pressure drop Δp.

Max. pressure drop Δp = 100 mbar.

Air control pressure: 0.5 to 120 mbar.

Outlet pressure: 0.2 to 119 mbar.

Gas/air pressure ratio: 1:1.

Turndown: 1:10.

Rp internal thread pursuant to ISO 7-1 and NPT internal thread.

ISO flange pursuant to ISO 7005 (PN 16) and ANSI flange.

Type	Weight [kg]
GIK 15R, GIK 15N	1
GIK 20R, GIK 20N	1.1
GIK 25R, GIK 25N	1.1
GIK 40R, GIK 40N	1.8
GIK 50R, GIK 50N	2.8
GIK 65F, GIK 65A	12
GIK 80F, GIK 80A	16.1
GIK 100F, GIK 100A	26
GIK 150F	45.5

Housing: AlSi.

Diaphragms: NBR.

Bypass screw: brass.
GIK 15–25 bypass orifice:
standard Ø 1.5 mm, up to Ø 4 mm possible.
GIK 40–50 bypass orifice:
standard Ø 5 mm, up to Ø 9 mm possible.

GIK 15–50

Adjusting range at low fire: -3 to +3 mbar.

Connection for control line: Rp 1/4.

Valve plate: plastic.

Valve plate seal: NBR.

GIK 65–150

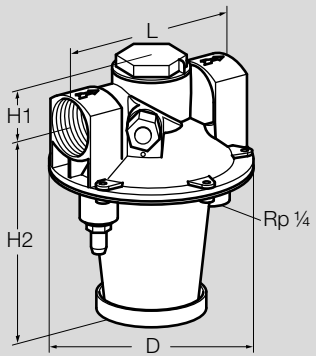
Adjusting range at low fire: -2 to +2 mbar.

Connection for control line: Rp 1/2.

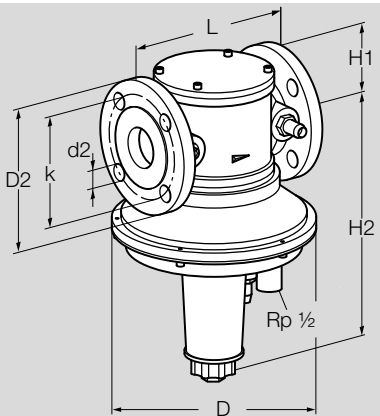
Valve plate: aluminium.

Valve plate seal: vulcanized NBR seal.

8.4 Dimensions



GIK 15–50



GIK 65–150

Type	Dimensions						p max.	Flange		Drilling		Weight
			L	H1	H2	D						
	DN	Connection	mm	mm	mm	mm	mbar	D2	k	d2	No.	kg
GIK 15	15	Rp ½	120	34	132	134	200	–	–	–	–	1.0
GIK 20	20	Rp ¾	125	34	132	134	200	–	–	–	–	1.1
GIK 25	25	Rp 1	125	34	132	134	200	–	–	–	–	1.1
GIK 40	40	Rp 1½	155	45	149	185	200	–	–	–	–	1.8
GIK 50	50	Rp 2	200	52	167	240	200	–	–	–	–	2.8
GIK 65	65	65	290	89	412	260	200	185	145	18	4	12.0
GIK 80	80	80	310	100	446	310	200	200	160	18	8	16.1
GIK 100	100	100	350	115	501	396	200	229	180	18	8	26.0
GIK 150	150	150	480	150	573	520	200	285	240	22	8	46.5

9 Converting units

See www.adlatus.org

10 Maintenance cycles

At least once a year, at least twice a year in the case of biologically produced methane.

For more information

The Honeywell Thermal Solutions family of products includes Honeywell Combustion Safety, Eclipse, Exothermics, Hauck, Kromschröder and Maxon. To learn more about our products, visit ThermalSolutions.honeywell.com or contact your Honeywell Sales Engineer.

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