GasBloc
Multifunctional gas control
Combined regulator and safety shut-off valves
Integrated gas-air system
GB-GD 057 D01

DUNGS®
Combustion Controls

Zero pressure regulator
GB-ND 057 D01

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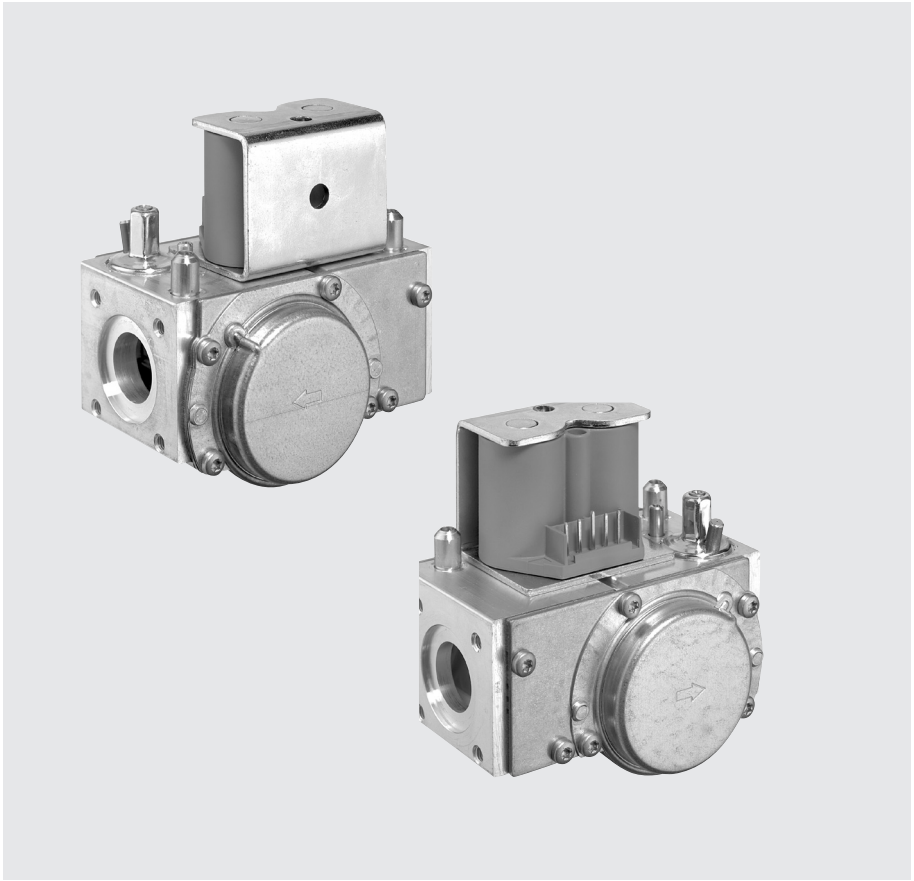

Technical description
Multifunctional gas control valve as per EN 126 for fully automatic operation:

- Pneumatic integrated system comprising air signal or zero pressure mode
- Offset correction of gas/air ratio at servo regulator
- Limit of maximum flow through restrictor
- Input pressures up to max. 65 mbar (6.5 kPa)
- Different variants according to application

Application
Suitable for gases to EN 437 and other gaseous inert media.

Approvals
EU type test approval as per EU Gas Appliance Directive.

GB-GD 057 D01	CE-0085 CM 0036
GB-ND 057 D01	CE-0085 CM 0036

Approvals in other important gas-consuming countries.

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Specification / Main types	Servo-pressure controller	Operating valve Solenoid valve [class]	Safety valve Solenoid valve [class]	Combined gas/air regulator 1:1	Zero pressure regulator	Maximum restrictor	Offset correction	Gas pressure switch	Start gas setting	Line socket	MPA 109x
GB-GD 057 D01	●	**B**	**B**	●	––	●	●	●	○	○	○
GB-ND 057 D01	●	**B**	**B**	––	●	●	●	●	○	○	○

● standard ○ optional –– not available

Type key of Gasbloc

GB- XXXXX XXX DXX SXX

Control of V1 and V2
0 = common
2 = separated

Outlet pressure / Inlet pressure
0 = 0 mbar / bis 65 mbar
2 = 1,5 - 20 mbar / bis 65 mbar
4 = 3 - 40 mbar / bis 65 mbar

S = Series (type-independent)

Gas train schematic diagram
1 = two class B solenoid valves with pressure regulator
2 = two class B solenoid valves without pressure regulator

Valve design
0 = Double valve
1 = Single valve, right angle
2 = Single valve, straight
Design type (generation) D

Construction size, nominal diameter
05 = $p_{max.}$ = 65 mbar

3 = Rp 1/4
5 = Rp 1/2
7 = Rp 3/4

Opening behaviour + main volume restrictor
without = fast-opening, fast-closing
-L = slow-opening
-E = adjustable start gas
-P = pilotgas connection
-G = Gas/Air ratio
-D = main flow setting
-N = Zero-Governor
-M = electrical modulating type
-W = Whirlwind version
-Z = two stage

GasBloc

Solenoid valve modes

V1 and V2 can be activated and opened either together or separately.

Description of main components

Pressure regulator

The pressure regulator includes a servo regulator to regulate pressure fluctuations in the mains supply. This ensures a precise volume flow and constant injector pressure.

In the combined gas/air valve GB-GD 055 the injector pressure follows the signal pressure applied to the servo diaphragm at a ratio of 1:1.
The zero pressure valve GB-ND regulates the injector pressure at the valve outlet dependent on the vacuum generated, towards zero.

Solenoid valves

Solenoid valves as per EN 161, Class B. DC coils are protected against voltage transients.

Filter

Fine-meshed strainer to protect fitting.

Pilot gas

Pilot gas connection between V1 and V2.

Gas pressure switch
Optional equipment

Monitors gas pressure on the inlet side for gas leakage protection. The pressure switch can be pre-adjusted and sealed to customer specifications.

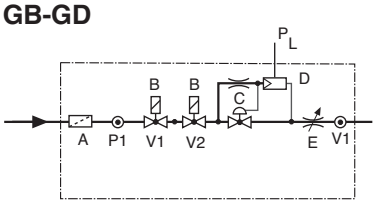
Pressure instrument glands

On inlet and outlet sides

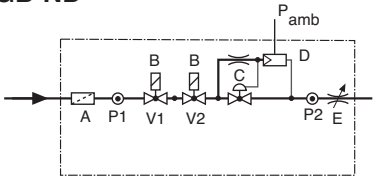
Block diagram

A Filter
B Automatic shut-off valves
C Pressure regulator
D Servo-pressure regulator
E Start gas setting
p_1 Test nipple, inlet
p_2 Test nipple, outlet

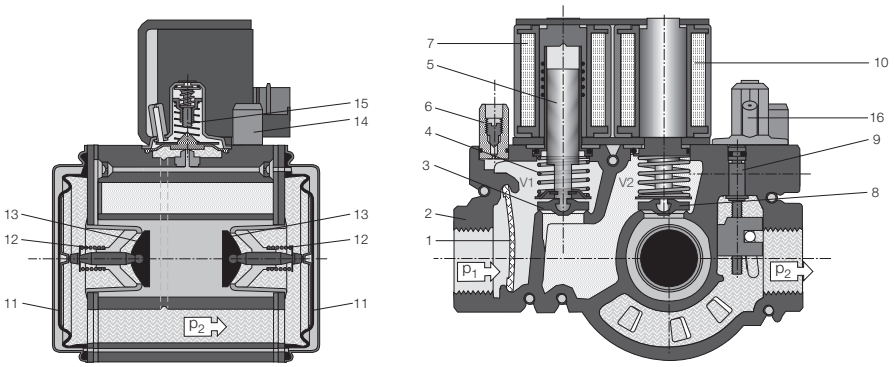
GB-GD



GB-ND



Functional diagram GB-GD 057 D01 / GB-ND 057 D01

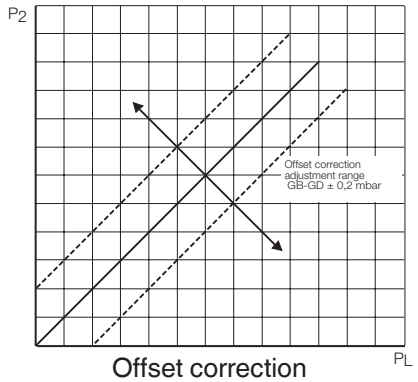


Legend

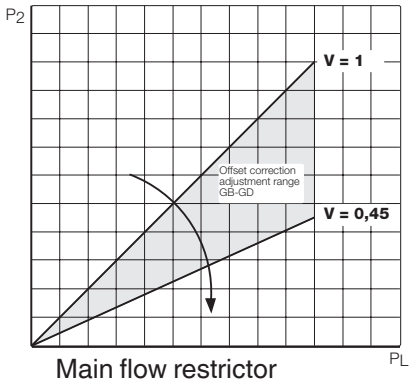
1 Fine-meshed strainer
2 Housing
3 Valve V1
4 Closing spring
5 Plunger V1
6 Test nipple
7 Solenoid V1
8 Valve V2
9 Main flow restrictor
10 Solenoid V2
11 Working diaphragm
12 Return spring
13 Operating valve
14 Electrical connection
15 Servo-pressure regulator
16 Connection for signal (only GB-GD...)

Adjustment range
Offset and gas/air ratio

GB-GD integrated gas/air system

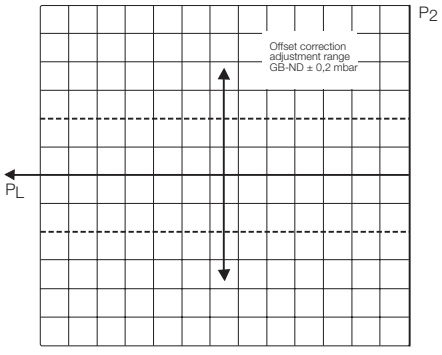


Offset correction



Main flow restrictor

GB-ND zero pressure



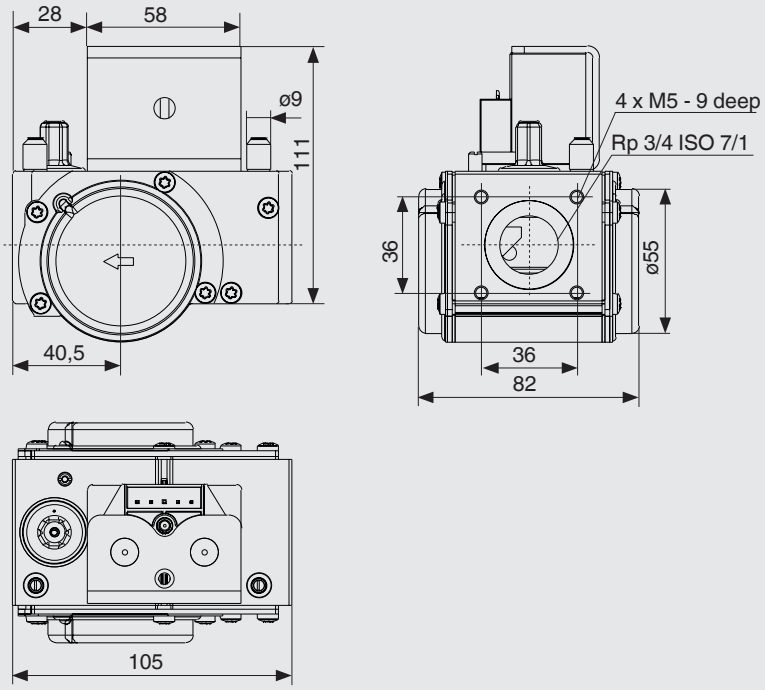
Offset correction

Adjustment instructions

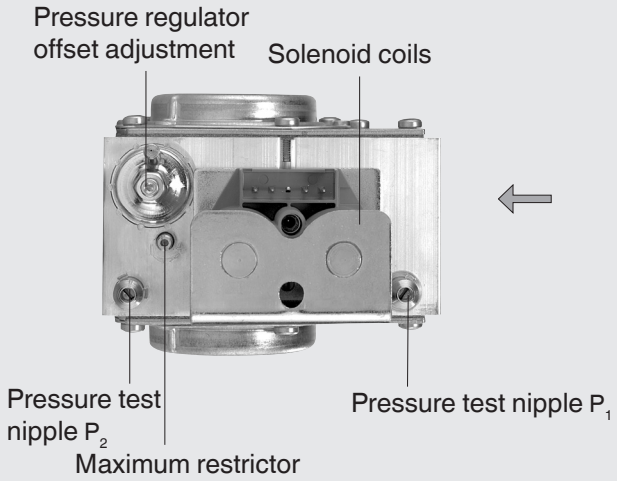
Rapid and simple adjustment by means of:

- Adjust offset correction using set ting screw on servo regulator.
- Adjust maximum flow using flow-restriction screw.

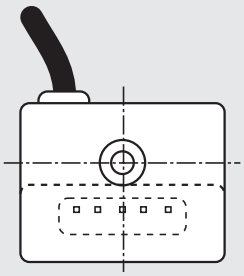
Dimensions [mm]



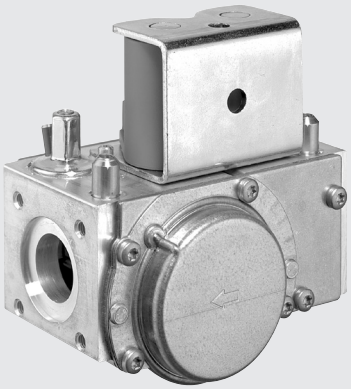
Adjusting devices



Electrical connection



Standard
Box with cable connection IP 40
Molex Crimp System 3001



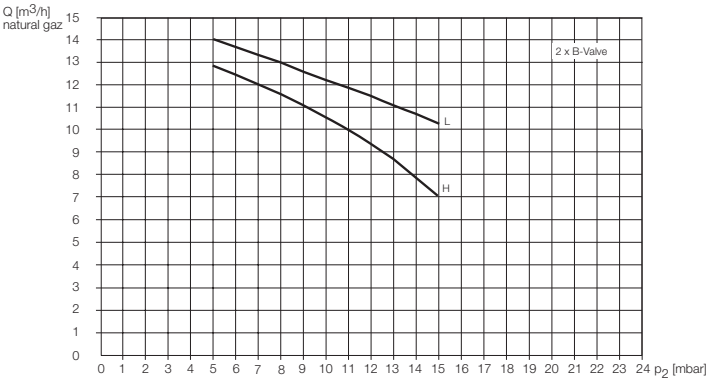
Volume flow pressure difference characteristic GB-(LEP) 057 D01 - pneumatic to DIN EN 126

Inlet pressure range (mbar)

2nd gas family	$P_{NOM.}$	$P_{MAX.}$	$P_{MIN.}$
Natural gas-H-E	20	25	17
Natural gas-L	25	30	20

Permissible deviation
Pressure regulator class C - 2nd gas family

p_2 + 10 % - 15 % as per EN 126



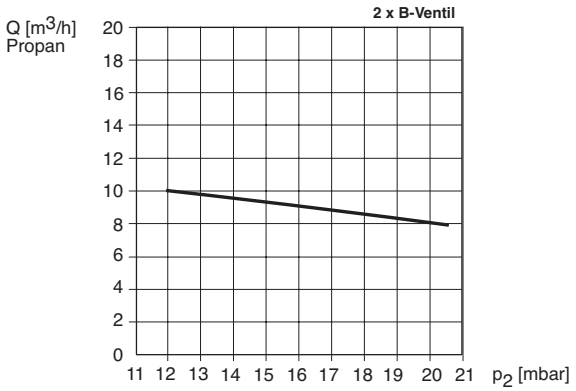
Volume flow pressure difference characteristic
GB-..... 057 D01 - pneumatic to DIN EN 126

Inlet pressure range (mbar)

3rd gas family	$P_{NOM.}$	$P_{MAX.}$	$P_{MIN.}$
Propane	37	45	25

Permissible deviation
Pressure regulator class C - 3rd gas family

p_2 ±10 % as per EN 126



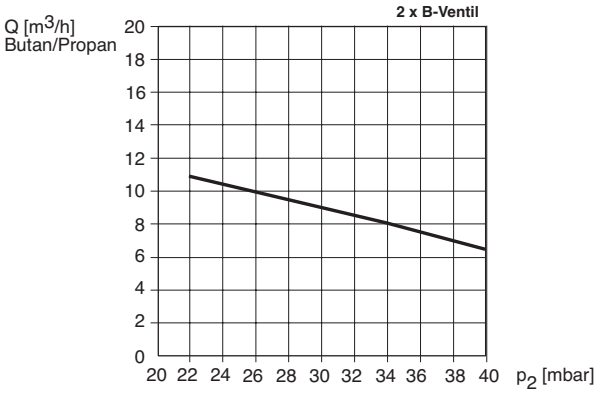
Volume flow pressure difference characteristic
GB-..... 057 D01 - pneumatic to DIN EN 126

Inlet pressure range (mbar)

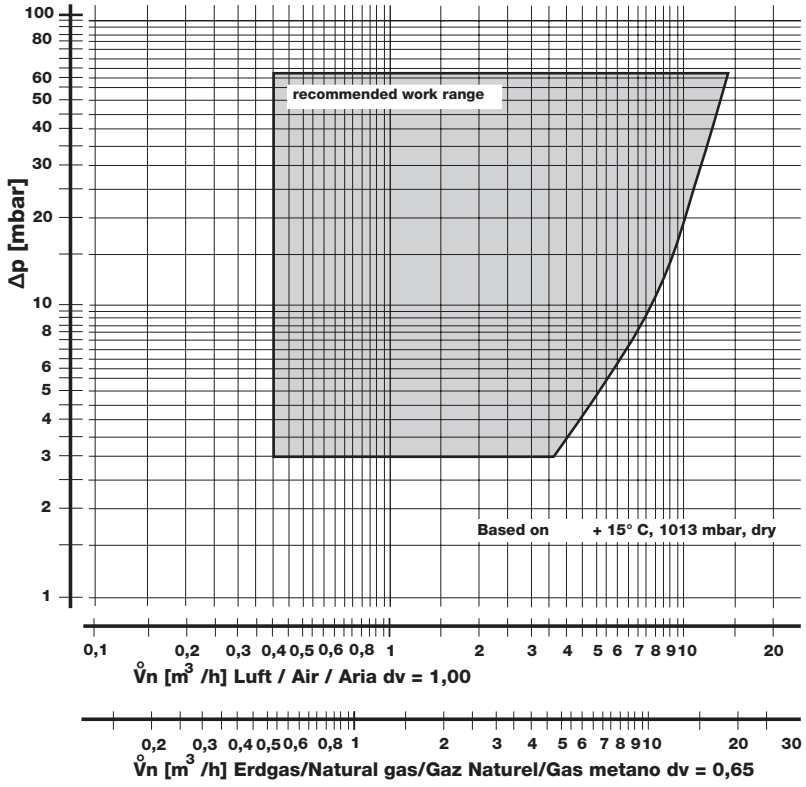
3rd gas family	$P_{NOM.}$	$P_{MAX.}$	$P_{MIN.}$
Butane/Propane	50	57,5	42,5

Permissible deviation
Pressure regulator class C - 3rd gas family

p_2 ±10 % as per EN 126



Volume flow pressure difference characteristic
GB-..... 057 D01 - pneumatic to DIN EN 126



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Specifications

Nominal diameter	DN 15
Gas connection	Rp 3/4 ISO 7/1
Flange with tube thread	Rp 3/4 ISO 7/1 ID
Max. inlet pressure	65 mbar (6.5 kPa)
Nominal flow GB-GD 055	5.3 m^3/h (air) at Δp 5 mbar (0.5 kPa), regulated
Nominal flow GB-ND 055	15.4 m^3/h (air) at Δp 30 mbar (3.0 kPa), regulated
Ambient temperature	-15 °C to +70 °C 0 °C to 70 °C at LPG
Automatic shut-off valves	Class B as per EN 126
Group	2
Pressure regulator	Class C
Proportional adjustment range V	$V = p_{gas} - p_{air} = 0{,}45\text{-}1$
Minimum signal pressure	0.3 mbar (0.03 kPa) at $\Delta p_{Offset} = 0$ Pa
Offset correction	± 0.2 mbar (0.02 kPa)
Degree of protection	IP 40
Opening time	Fast-opening < 1 s Slow-opening < 10 s
Closing time	< 1 s
Switch on duration	100 % ED
Voltage/frequency	~(AC) 50 - 60 Hz 24 V +10 % – 15 % ~(AC) 50 - 60 Hz 230 V +10 % – 15 %
Load of coil (24 V, 230 V)	2 x 12,5 VA
Electrical connection	Molex System connection coil or Option: Connection box with integrated cable
Optional equipment	Electrical connections in Rast 5 Automatic burner control MPA 109x Gas pressure switch GW A5
Installation position	Solenoid at any position between vertical and horizontal axis.

We reserve the right to make any changes in the interest of technical progress.

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