

GasBloc
Multifunctional gas control
Combined regulator and
safety shut-off valves
single-stage atmospheric
operating mode

DUNGS®
Combustion Controls

GB-(LEP) 055 D01

3.01



Technical description

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

- One stage mode or two stage mode for direct burner ignition (DBI) or intermittent pilot (IP)
- Fast-open or slow-open with adjustable start gas volume
- Constant volume flow using servo pressure regulator with servo regulator
- Input pressures up to max. 65 mbar
- Different variants according to application

Application

Suitable for gas heating boilers and gas air heaters with atmospheric or fan assisted burners.

Suitable for gases as per EN 437 and other neutral combustion gases.

Approvals

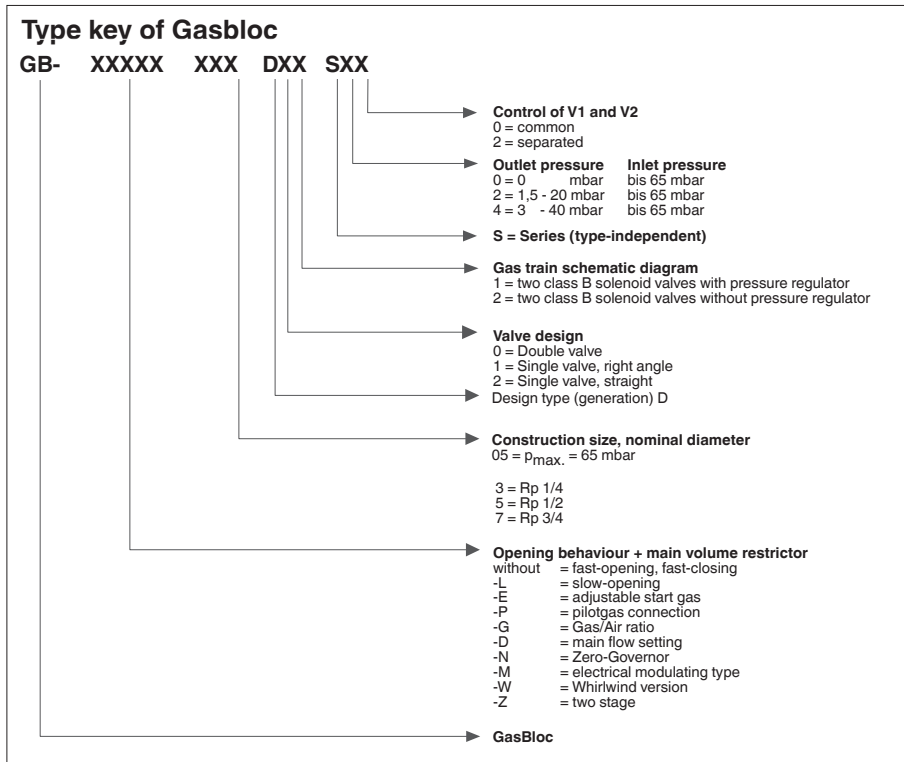
EU type test approval as per EU Gas Appliance Directive.

GB-(LEP) 055 D01 CE-0085 AQ 0847

Approvals in other important gas-consuming countries.

Specification / Main types	Servo-pressure controller	Operating valve Solenoid valve [class]	Safety valve Solenoid valve [class]	Pressure controller regulator slow-opening	Pressure controller regulator fast-opening	Filter	Ignition gas connection	Gas pressure switch	Start gas setting	Line socket	MPA 109x
GB-LE 055 D01	●	B	B	●	---	●	---	○	●	○	○
GB-055 D01	●	B	B	---	●	●	---	○	---	○	○
GB-LEP 055 D01	●	B	B	●	---	●	●	○	●	○	○
GB-P 055 D01	●	B	B	---	●	●	●	○	---	○	○

● standard ○ optional --- not available



Pressure instrument glands

On inlet and outlet sides

Solenoid valve modes

Mode 1

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

Mode 2

V1 and V2 are opened and activated separately.

Pilot gas outlet is released and V1 opens.

When the flame has been detected, release is performed and V2 opens.

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.

Slow opening function

For slow start of the burner, the start rate can be adjusted to 80 % of the main gas volume.

Shutting down the pressure regulator

To shut down the pressure regulator turn the setting device 25 times clockwise until a soft click can be heard.

Solenoid valves

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

Dirt trap device

Fine-meshed strainer to protect fitting.

Pilot gas

Pilot gas connection between V1 and V2.

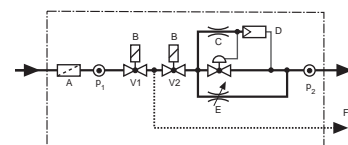
Gas pressure switch

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.

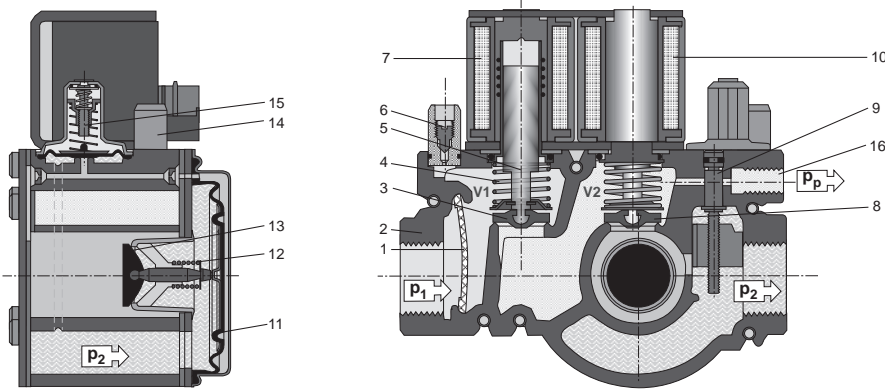
Block diagram

- A** Filter
- B** Automatic shut-off valves
- C** Pressure regulator
- D** Servo-pressure regulator
- E** Start gas setting
- F** Pilot gas outlet
- p₁** Test nipple, inlet
- p₂** Test nipple, outlet



Functional diagram GB-(LEP) 055 D01

Legend

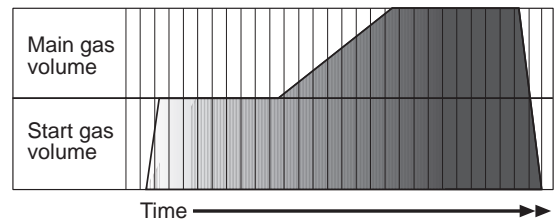


- 1 Fine-meshed strainer
- 2 Housing
- 3 Valve V1
- 4 Closing spring
- 5 Plunger V1
- 6 Test nipple
- 7 Solenoid V1
- 8 Valve V2
- 9 Start gas setting
- 10 Solenoid V2
- 11 Working diaphragm
- 12 Return spring
- 13 Operating valve
- 14 Electrical connection
- 15 Servo-pressure regulator
- 16 Ignition gas connection

Solenoid valve modes GB-(LEP) 055 D01

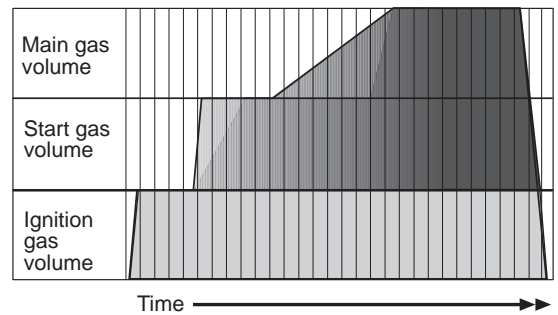
Mode 1

Opening characteristic for slow start without ignition gas



Mode 2

Opening characteristic for slow start with ignition gas



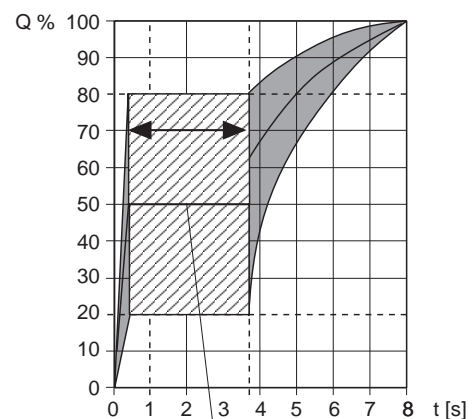
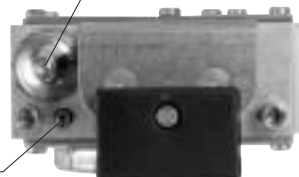
Setting the start rate

Start rate can be set
Time cannot be changed

Slow start requires a closed pressure regulator at start.
Before each restart, a waiting period of **at least 45 s** must be observed.

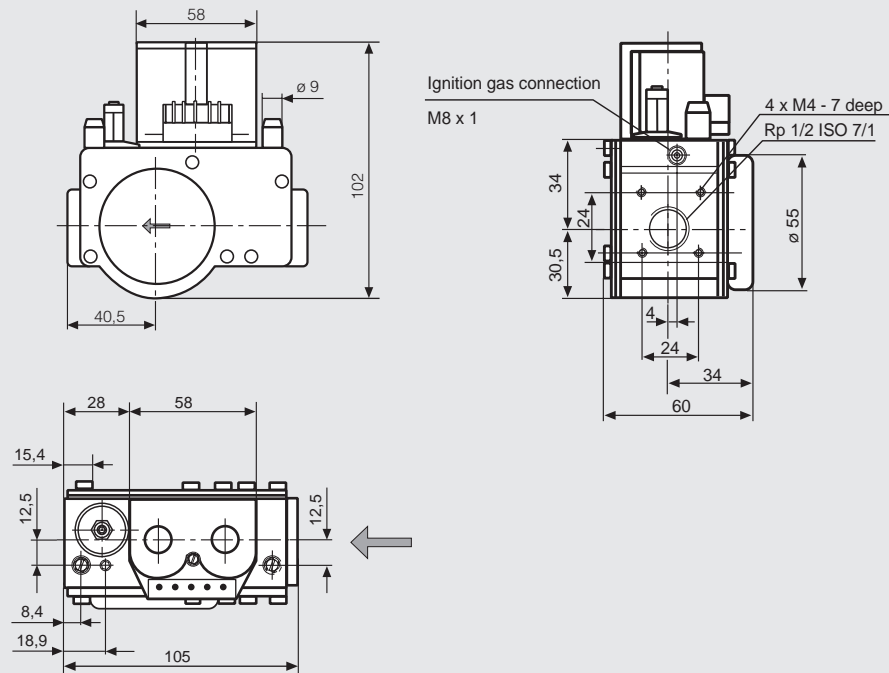
Setting device
pressure regulator

Reference value setting
Starting load

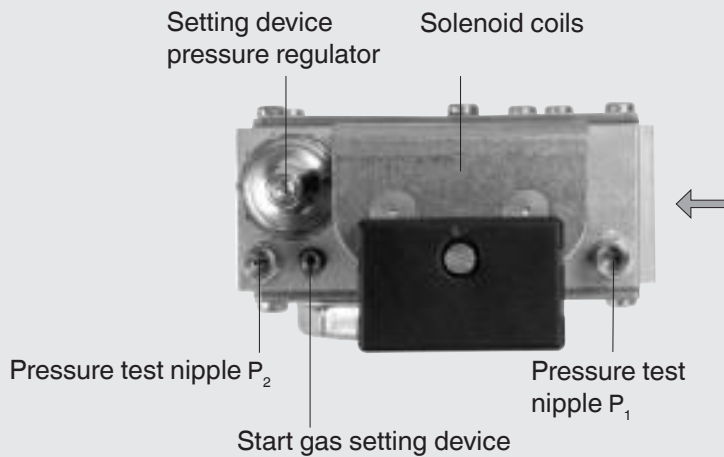


Example:
Start load = $0.5 \times Q_{\max}$
max. ≈ 4 s

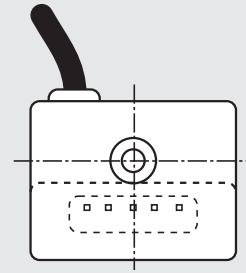
Dimensions [mm]



Adjusting devices



Electrical connection



Standard

Box with cable connection IP 40
Molex Crimp System 3001



Volume flow pressure difference characteristic GB-(LEP) 055 D01 - atmospheric as per DIN EN 126

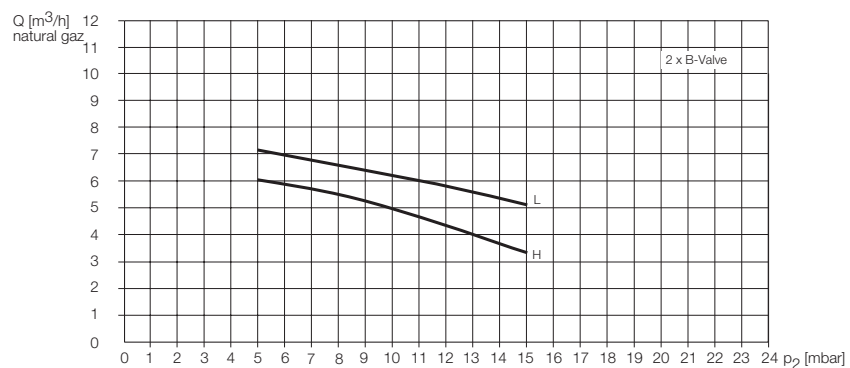
Inlet pressure range (mbar)

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-(LEP) 055 D01 - atmospheric as per DIN EN 126**

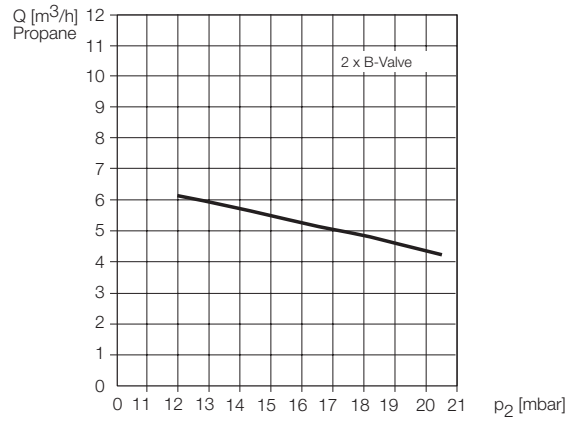
Inlet pressure range (mbar)

3rd gas family	P _{NOM.}	P _{MAX.}	P _{MIN.}
Propane	37	45	25

Permissible deviation

Pressure regulator class C - 3rd gas family

p₂ ±10 % as per EN 126



**Volume flow pressure difference characteristic
GB-(LEP) 055 D01 - atmospheric as per DIN EN 126**

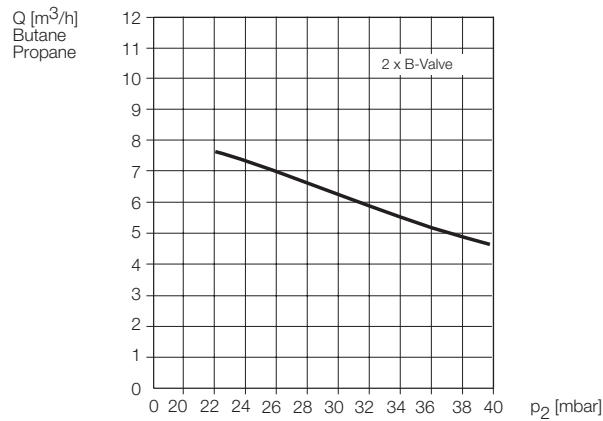
Inlet pressure range (mbar)

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

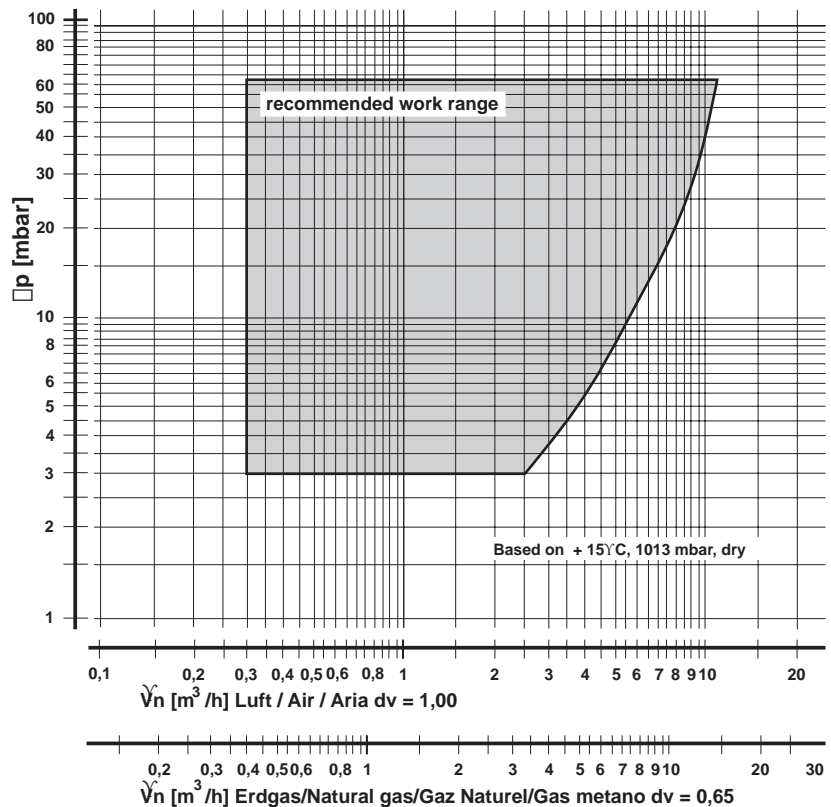
Permissible deviation

Pressure regulator class C - 3rd gas family

p₂ ±10 % as per EN 126



**Volume flow pressure difference characteristic
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Specifications

Nominal diameter	DN 15
Gas connection	Rp 1/2 ISO 7/1 G 3/4 DIN ISO 228 OD
Flange with tube thread	Rp 1/2 ISO 7/1 ID G 3/4 DIN ISO 228 OD
Pilot gas connection	M8 x 1 ø 4 mm
Max. inlet pressure	65 mbar
Pressure range	2.5 mbar to 38 mbar
Nominal flow	3,3 m³/h (Air) at Δp 5 mbar, governed
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
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 5,5 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 ver- tical and horizontal axis.

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

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