



G96 Series BASOTROL® CE Approved Gas Valve

The G96 Series gas valve is a combination main and pilot valve intended for use in conjunction with solid-state sequence control units on direct burner or intermittent pilot ignition systems.

The G96 valve can be used with natural gas, Liquefied Petroleum (LP) gas, and LP-air mixed gas. Typical applications include heaters, process burners, commercial dryers, commercial cooking equipment, rooftop units, and similar applications.



Figure 1: G96 CE Approved Gas Control Valve

Features and Benefits	
<input type="checkbox"/> Optional Pressure Regulator	Provides field-adjustable flow control for range-rated applications
<input type="checkbox"/> Convertible Pressure Regulator	Permits use with LP gas or natural gas
<input type="checkbox"/> Compact Size	Permits installation in space-restrictive applications
<input type="checkbox"/> Multiple Operating Voltages	Provide the flexibility to suit market requirements

Overview

Valve Operation

The G96 is a twin on/off valve with spring-loaded seat discs that are operated by Class B solenoids with protected rectifiers to ensure quiet operation.

When the valve is energized, the solenoid plunger is pulled into the coil, overcoming the force of the closeoff spring and the flow medium pressure. The valve seat discs are directly fixed to the plunger stem so the valve fully opens.

Valve Configurations

The G96 series offers twin solenoid models. Twin solenoid models allow independent opening of both valve seats.

Adjustment Methods

The G96 series offers models with either no adjustment or top adjust regulator control.

No Adjustment

The G96L model has a blank plate mounted onto the bottom of the body casting for applications where adjustment control is not needed or for applications where separate adjustment control is already provided.

Regulator Adjustment

The G96F, G96M, G96T and G96V models have a top adjust spring pressure regulator. These models have either a right- or left-handed top adjust pressure regulator. Right- or left-hand orientation is determined by the position of the adjustment when looking into the inlet connection of the valve. (Refer to the *Ordering Information* section for details.)

The regulator controls the gas pressure at the valve outlet by positioning the regulator poppet for a selected throughput flow and pressure. This is achieved by the valve outlet pressure acting on the regulator diaphragm, which balances against the preset regulator spring. Adjustment of the spring compression determines the valve outlet pressure and the throughput flow rate.

Range of Regulation

Top Adjust Pressure Regulator Models

G96 models with an adjustable top adjust pressure regulator have the following pressure range:

- Natural gas: 7.5 to 15 mbar
(0.75 to 1.5 kPa/3 to 6 in. W.C.)
- LP gas: 15 to 30 mbar
(1.5 to 3.0 kPa/6 to 12 in. W.C.)

Table 1: Range of Regulation (ANSI Z21.78) for Pressure Regulator Models

Valve Model	Q _{minimum}		Q _{maximum}	
	m ³ /h	cf/h	m ³ /h	cf/h
G96F, G96M, G96T and G96V	0.566	20	4.25	150

Note: 1 m³/h - 10.67 kW (1 cf/h = 1,000 Btu/h) natural gas at 0.64 specific gravity.

Accessories

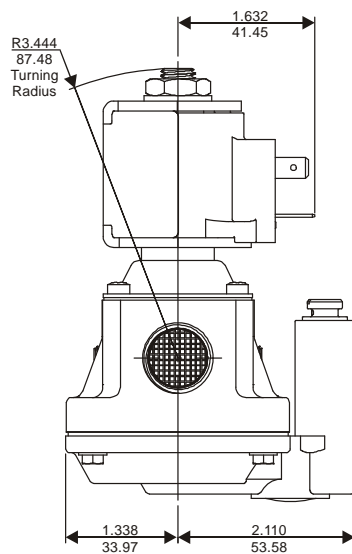
Table 2: Accessories

Description	Part Number
Conversion Kit for Regulation to Non-regulation	Y71AA-5
LP to Natural Gas Conversion Kit for 7.5 to 15 mbar (0.75 to 1.5 kPa/ 3 to 6 in. W.C.) Regulation	Y71QH-2
Natural Gas to LP Conversion Kit for 15 to 30 mbar (1.5 to 30 kPa/ 6 to 12 in. W.C.) Regulation	Y71GF-4

Repair and Replacement

Field repairs **must not** be made to the G96 valve. For a replacement valve, contact the original equipment manufacturer or the nearest BASO Gas Products distributor.

Dimensions



**Figure 2: Dimensions, mm (in.)
(Right-Hand Regulator Model Shown)**

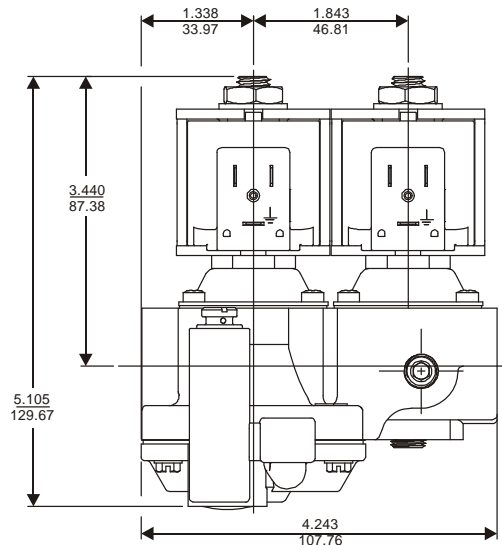
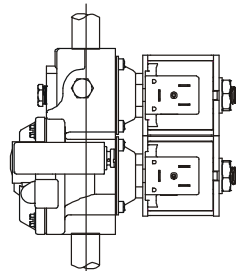
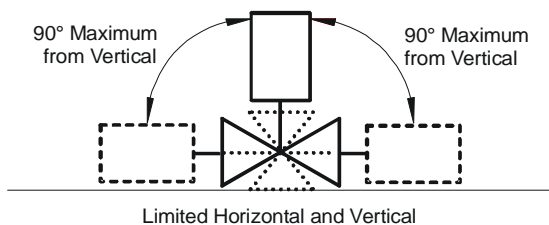


Figure 3: G96 Valve Mounting Position Wiring

Mounting

The G96 valve may be mounted on a horizontal manifold with the solenoid coils pointed up (vertical) or in any position not exceeding 90° from the vertical.

The valve may also be mounted on a vertical manifold in any position around its axis (see Figure 3). Do not install the solenoid coils upside down. Install vertically wherever possible.



Vertical mounting may be 360° around its axis with the gas flow either up or down, but always in the direction of the arrow.

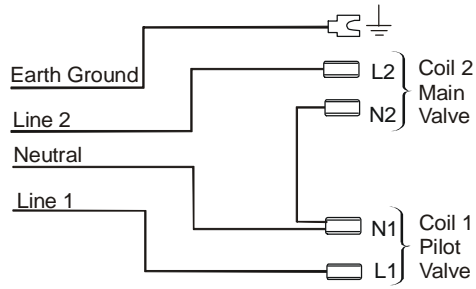
The G96 valve is supplied with 3-tab or 2-tab electrical connections. The tabs of the solenoid coil are male tag terminals, and electrical connections should be made using 6.35 x 0.8 mm (1/4 in.) female, fully insulated push-on terminals. The earth ground terminal is clearly labeled with the earth ground symbol.

The electrical wiring to a twin solenoid valve from an electronic intermittent proven pilot ignition system is comprised of two lines; a common and an independent earth ground. Wiring can be done using a single 4-wire cable. The wiring connections for a 4-wire cable are shown in Figure 4.

Route the electrical cable for the valve solenoid from the burner sequence control to the valve and make wiring connections in accordance with Figure 4.

Note: Electrical connections can also be made using pre-wired electrical plugs (DIN 43650 [ISO 4400]).

All wiring must be in accordance with national and local electrical codes and regulations.



Twin Solenoid Wiring Using 4-Wire Cable

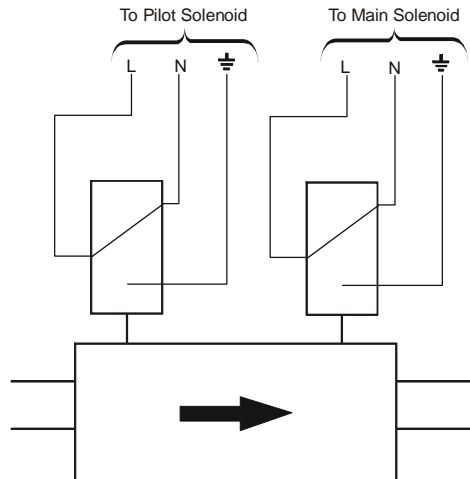
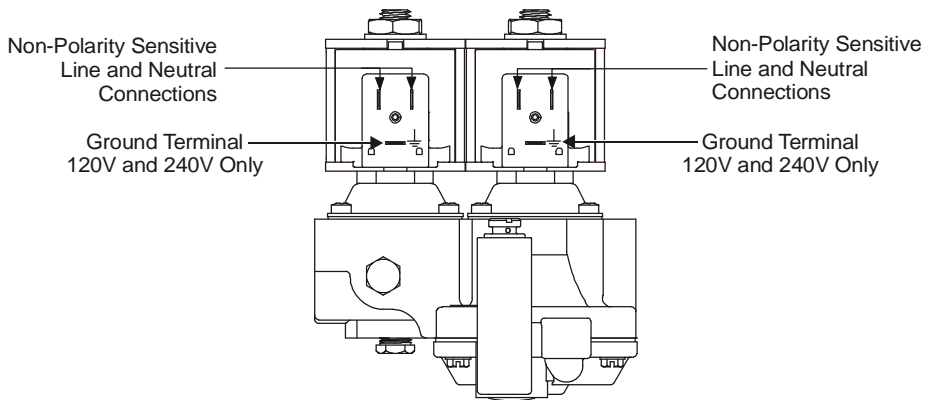


Figure 4: 3-Pin Electrical Connections

Ordering Information

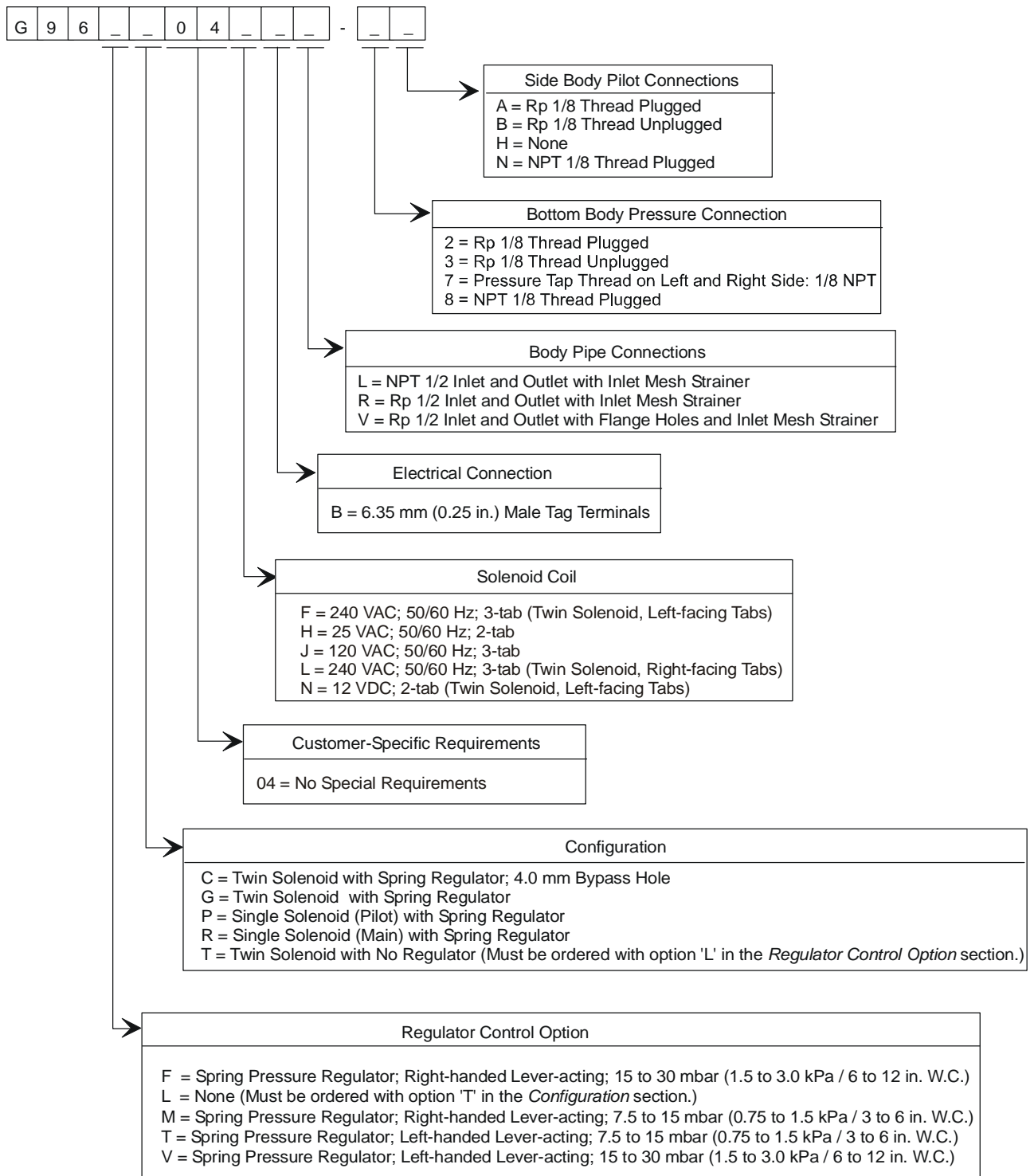


Figure 5: G96 Valve Ordering Matrix

Technical Data

Product	G96 Series CE Approved Gas Valve	
Maximum Operating Pressure	North America:	0.5 psi
	Europe:	100 mbar
Maximum Differential Pressure	8 in. W.C. (20 mbar [2 kPa])	
Reverse Pressure Ratings	20 in. W.C. (50 mbar [5 kPa]) Minimum; Class B (EN 161 and 126)	
Regulator Classification	Class C (EN 126)	
Top adjust Regulator Pressure Range	Natural Gas:	3 to 6 in. W.C. (7.5 to 15 mbar [0.75 to 1.5 kPa])
	LP Gas:	6 to 12 in. W.C. (15 to 30 mbar [1.5 to 3.0 kPa])
Regulator Setting	Factory Set to Customer's Specifications	
Permissible Ambient (Surface) Temperature	5 to 158°F (-15 to 70°C)	
Body Connections	1/2 in. NPT or 1/2 in. Rp	
Valve Torsion Group	Group 2 (EN 126 and EN 161)	
Pressure Connection	1/8 in. NPT or 1/8 in. Rp Outlet Tap	
Pilot Connection	1/8 in. NPT or 1/8 in. RpT Left-Hand and Right-Hand	
Electrical Ratings	12 VDC, 1.0A 25 VAC 50/60 Hz, 0.595A 120 VAC 50/60 Hz, 0.13A 240 VAC 50/60 Hz, 0.063A	
Materials	Body:	Die-cast Aluminum
	Diaphragms and Seals:	Nitrile Rubber
Dirt Strainer	0.02 in. (0.5 mm) Mesh	
Operating Time Rating	100% Continuous	
Valve Timings	Closing Time:	≤1 Second
	Opening Time:	≤1 Second
	Dead Time:	≤1 Second
Power Ratings	15 VA per Coil	
Electrical Connections	3-Pin Solenoid Coil: 2 x 1/4 in. (6.35 mm) Terminals + 1/4 in. (6.35 mm) Earth Ground Terminal 2-Pin Solenoid Coil: 2 x 1/4 in. (6.35 mm) Terminals	
Coil Insulation Class	Class F	
Type of Gas	2nd (Natural Gas), and 3rd (LP Gas) Family Gases	
Agency Listings	CSA (AGA/CGA) Certificate Number 229521-1656041 EC Type Examination Certificate Number EC-87/94/58	
Specification Standards	EN 126 and EN 161 Standards Complying with EMC Directive Standards Complying with Low Voltage Directive ANSI Standards Z21.21 and Z21.78 Canadian Standards CAN1-6.5 and 1-6.20	

Performance specifications are nominal and conform to acceptable industry standards. All agency certification of BASO products is performed under dry and controlled indoor environmental conditions. Use of BASO products beyond these conditions is not recommended and may void the warranty. Product must be protected if exposed to water (dripping, spraying, rain, etc.) or other harsh environments. The original equipment manufacturer or end user is responsible for the correct application of BASO products. Consult BASO Gas Products LLC for questionable applications. BASO Gas Products LLC shall not be liable for damages or product malfunctions resulting from misapplication or misuse of its products.

Refer to the *G96 Series CE Approved Gas Valve Installation Instructions (Part No. BASO-INS-G96GLOBAL)* for necessary information on the installation, use, and servicing of this product.

1007 South 12th Street
PO Box 170
Watertown, WI 53094
1-877-227-6427 (1-877-BASOGAS)

www.baso.gas
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