

# GSV

## Gas Solenoid Valve

### Installation and Maintenance Instructions



## INTRODUCTION

The Gold Seal GSV solenoid valves are widely used in gas distribution to provide isolation and emergency shut-off.

The valves can be used on various hydrocarbon gases including natural gas, methane, and liquid petroleum gas.

## OPERATION

The GSV solenoid valves will normally be in the closed position, but when energised will open quickly and a blue indicator light will be lit on the terminal box attached to the coil.

There are G $\frac{1}{4}$  holes on both sides of the valve body and at the bottom ( $\frac{1}{2}$ " to 2" size only). These can be used for various applications but notably a CPI (closed position indicator) or gas proving system.

## TECHNICAL SPECIFICATION

Opening time:		< 1 second
Closing time:		< 1 second
Max. operating frequency:		20 time per minute
Maximum working pressure:	$\frac{1}{2}$ " to 1"	360 mbar
	$\frac{1}{4}$ " to 2"	200 mbar
	DN65 to DN100	200 mbar (DN150
Integral filter:		1000mbar) IP54
Protection level:		-15 to 60°C
Working temperature:		65°C
Coil temperature:		BS EN 10226
Body connections – threaded:	$\frac{1}{2}$ " to 2" Body	BS EN 1092
connections – flanged PN16:	DN65	BS EN 1092
flanged PN16:	DN80 to DN150	NBR polymer
Seal material:		Aluminium alloy
Body material:		AISI 302 stainless steel
Spring material:		

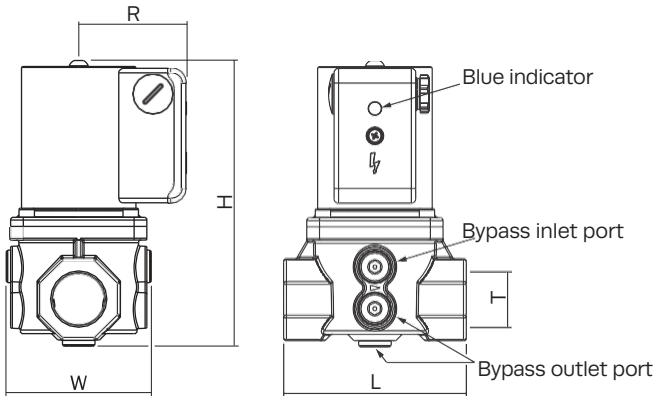
## ELECTRICAL SPECIFICATION

Voltage:	230 V ac
Rating:	50/60 Hz
Coil Level F:	360° rotation
Suitable for:	Permanent excitation

## STANDARDS

According to European	90/396/EEC
Standards:	73/23/EEC
	89/336/EEC
According to standard:	EN 161

## DIMENSIONS - 1/2" to 2" SIZES



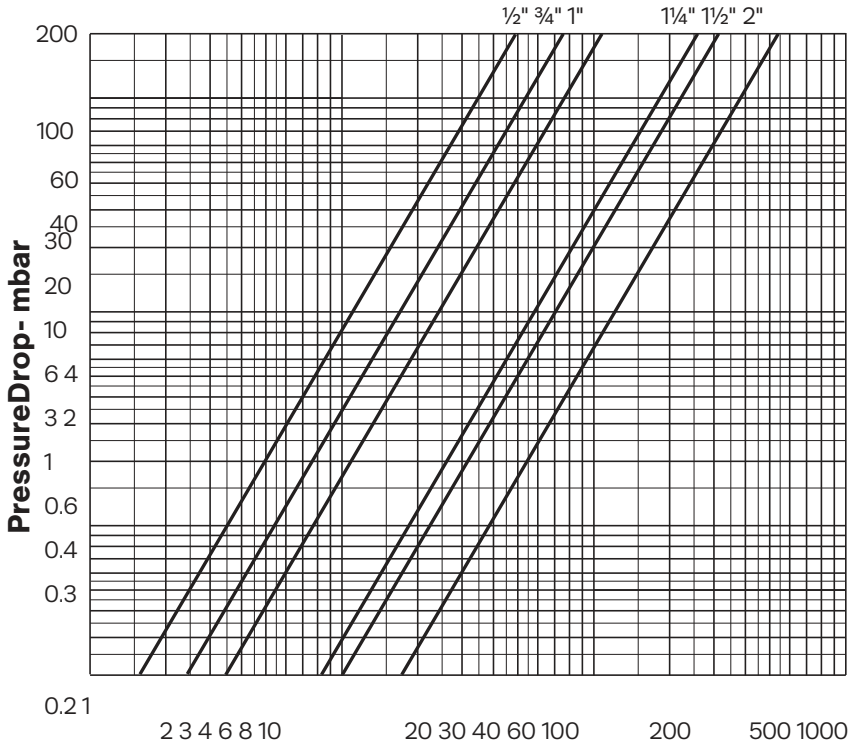
Code	T	L	W	H	R	230V AC Power - W
GSV15	Rp1/2	72	71	115	55	15
GSV20	Rp3/4	92	76	156	59	22
GSV25	Rp1	100	80	158	59	22
GSV32	Rp1 1/4	149	115	216	71	42
GSV40	Rp1 1/2	149	115	216	71	42
GSV50	Rp2	170	142	230	76	50

## CAPACITY

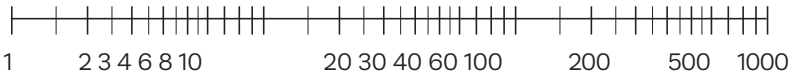
The capacity in m<sup>3</sup>/hr at ΔP = 2.5 mbar.

Code	Size	m <sup>3</sup> /hr	Max P
GSV15	1/2"	6.4	360mbar
GSV20	3/4"	14.8	360mbar
GSV25	1"	16.7	360mbar
GSV32	1 1/4"	38.5	200mbar
GSV40	1 1/2"	47.1	200mbar
GSV50	2"	66.7	200mbar

**PRESSURE DROP CHART - 1/2" to 2" SIZES**

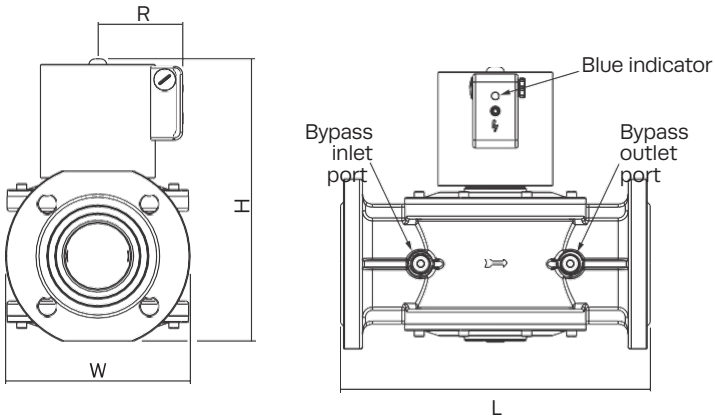


Based on +15°C, 1013 mbar, dry **Air Flow - Nm<sup>3</sup>/h**



Based on  $f = 1.24$  **Natural Gas Flow - Nm<sup>3</sup>**

For Air, Gas and Liquid Gas Density ratios please see page 5

**DIMENSIONS - DN65 to DN100 SIZES**


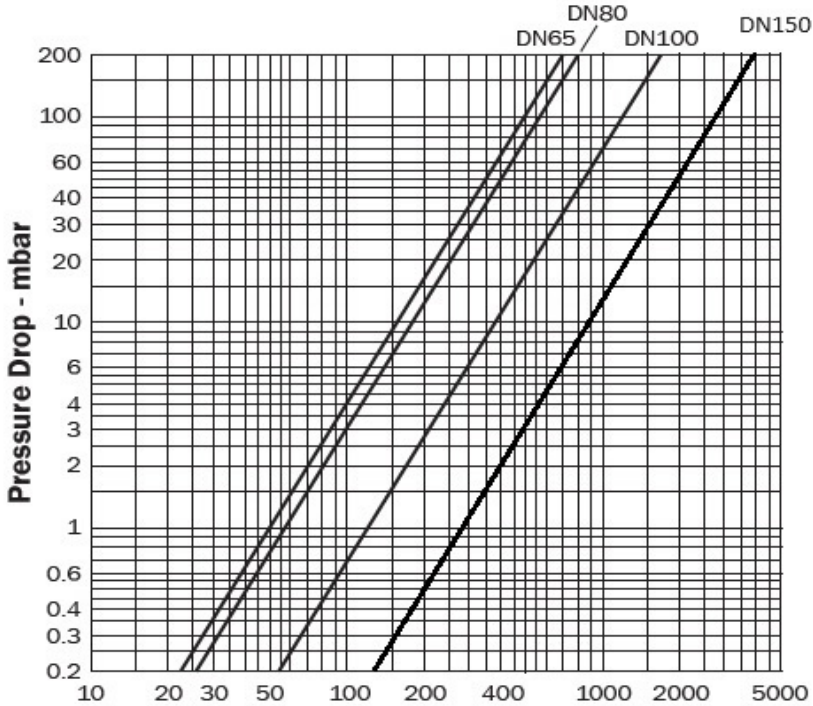
Code	L	W	H	R Coil	230V AC Power - W
GSVF65-SO	270	180	290	85	75
GSVF80-SO	284	195	341	85	75
GSVF100-SO	350	220	441	130	150
GSVF150	450	312	612	139	62

**CAPACITY**

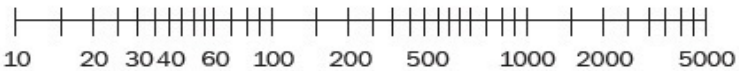
The capacity in m<sup>3</sup>/hr at  $\Delta P = 2.5$  mbar.

Code	Size mm	m <sup>3</sup> /hr	Max Pressure
GSVF65	65	79	200mbar
GSVF80	80	90	200mbar
GSVF100	100	190	200mbar
GSVF150	150	1340	1000mbar

**PRESSURE DROP CHART - DN65 -DN150**



Based on +15 °C, 1013 mbar, dry **Air Flow - Nm<sup>3</sup>/h**



Based on  $f = 1.24$  **Natural Gas Flow - Nm<sup>3</sup>/h**

$$dv = \frac{\text{Gas density}}{\text{Air density}}$$

$$f = \sqrt{\frac{\text{Relative density of air}}{\text{Relative density of gas}}}$$

Gas	Density kg/m <sup>3</sup>	dv density ratio	f correction factor
Air	1.29	1.00	1.00
Natural gas	0.84	0.65	1.24
Liquid gas	2.19	1.70	0.77

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## **ELECTRICAL INSTALLATION**

- Turn off power supply before making electrical connections or servicing any part of the system.
- Provide a fused isolation switch for the power supply to the actuator.
- Ensure that wiring is in accordance with local regulations.
- Use wire which can withstand 105°C ambient.
- Follow the instructions supplied by the appliance manufacturer.

## **INSTALLATION**

If installing the gas solenoid valve into an existing system.

- Turn off the gas supply before starting installation.
- Disconnect power supply to prevent electrical shock and/or equipment damage.
- Take care to ensure that dirt cannot enter the gas valve during handling and installation.

General installation recommendations.

- The GSV gas solenoid valve should be mounted directly in a vertical pipeline or in a horizontal pipeline with the coil uppermost.
- Check that the site conditions comply with the technical specification of the valve.
- The flow direction arrow on the valve body must match the direction of flow.
- Thoroughly purge the pipeline before installing the valve to prevent debris entering the valve and damaging the diaphragm and causing premature failure.
- A gas filter should be installed upstream of the valve to prevent the ingress of debris and prolong the interval between services and the life of the valve.
- **IMPORTANT:** the valve is not explosion proof.
- If installed outdoors or in a harsh environment the valve should be protected accordingly.
- If recommended install a bypass around the gas solenoid valve to aid isolation and future maintenance
- If the valve fails to open or close check that the power supply is connected correctly and turned on. Also check the pressure within the system is within the technical specification of the valve.
- If not installed on the valve, the coil should be stored indoors between 0 to 40°C with a relative humidity of 80% or less. It should not be stored in the open air.

## **COIL CARE**

The coil can only be powered when attached to the valve. The power must be disconnected if the coil is removed from the valve, failure to do this will result in the coil burning out.

Never energise the coil if not fitted to the valve otherwise this will shorten its life and eventually result in failure.

The coil should be securely fitted to valve, loose fitting will shorten the life of the coil. Surge/spikes should be prevented from reaching the coil as this will result in failure.

The power supply must be within the tolerance indicated otherwise failure of the capacitor will occur.

The continuous service (100%ED) causes inevitable coil heating.

Depending on working environment the coil surface will be very hot. This situation is absolutely normal.

## **DECLARATION OF CONFORMITY**

According to European Directive 90/396/EEC -73/23/EEC-89/336/EEC.

KIWA EU type examination certificate (GAR) certificate number 19GR0652/00 – meets the essential requirements as described in regulation (EU) 2016/426 relating to appliances burning gaseous fuels, reference standard EN161:2011+A3:2013.