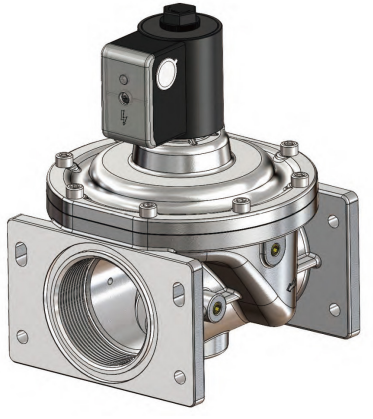
AGS-GSV212/3

Gas Solenoid Valve

Installation and Maintenance Instructions

Screwed or Flanged Type



c UL us LISTED CE ISO 9001 Class A AS-4629-2005

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INTRODUCTION

The AGS-GSV212/3 gas solenoid valves are widely used in gas distribution to provide isolation and emergency shut-off. Compatible with both internal screwed thread or flanged piping (with the addition of the optional extra AGSGSV212FA/3FA flange adapters).

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

OPERATION

The AGS-GSV212/3 solenoid valves will normally be in the closed position, but when energized will open quickly and a blue indicator light will be lit on the terminal box attached to the coil.

There are four 1/8 NPT internal screwed threaded holes on both sides of the valve body and at the bottom. 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 times per minute
Maximum working pressure:	2-1/2" to 3"	7Psi (195 in w.c.)
Protection level:		IP54 / NEMA 13
Ambient / fluid temperature:		5 to 140˚F
Coil temperature:		149˚F
Body connections - threaded or flanged:		NPT or flanged
Seal material:		NBR rubber
Body material:		Aluminum
Spring material:		AISI 302 stainless steel

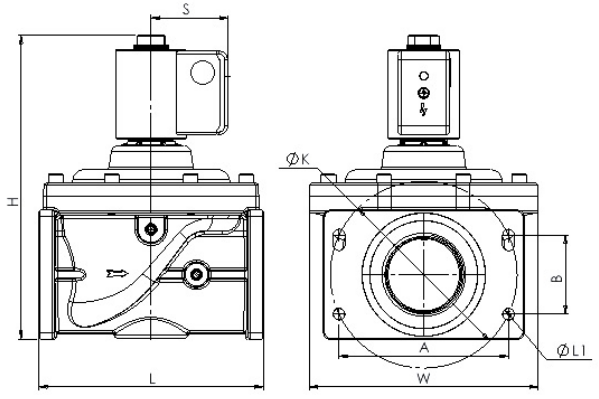
ELECTRICAL SPECIFICATION

Voltage:	110/120 V ac
Rating:	50/60 Hz
Coil Level F:	360˚ rotation
Suitable for:	Permanent excitation

STANDARDS

Listed to:	UL Listed
	AS-4629-2005
	CE
Complies with:	CSA/ANSI Z21.21 - CGA
	6.5 ISO 9001 Class A

DIMENSIONS



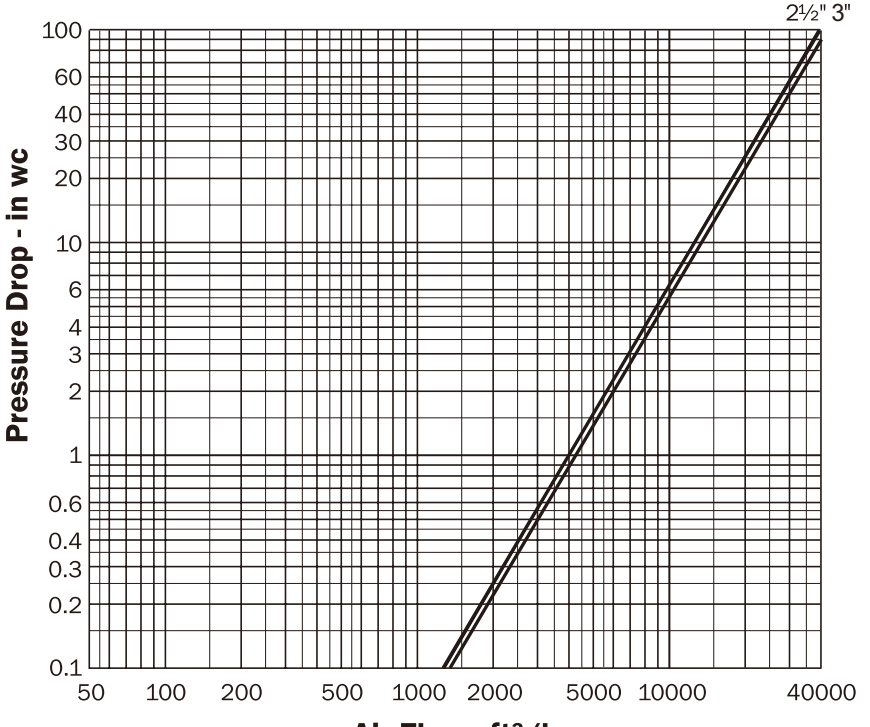
NPT Screwed Connections

Code	T	L	H	W	S
AGS-GSV212	2-1/2" NPT	7.8"	10.57"	7.95"	2.67"
AGS-GSV3	3 NPT	7.8"	10.57"	7.95"	2.67"

Flanged Connections (With Optional Flange Adapter AGSGSV212FA/3FA)

Code	T	K	L1	A	B
AGS-GSV212	2-1/2"	6.5"	0.41"	7.95"	2.67"
AGS-GSV3	3"	7.8"	0.41"	7.95"	2.67"

PRESSURE DROP FLOW CHART



Based on +59˚F, 14.7 psi, dry **Air Flow - ft³/h**

50 100 200 500 1000 2000 5000 10000 40000

Based on f = 1.24 **Natural Gas Flow - ft³/h**

$$dv = \frac{\text{Gas density}}{\text{Air density}} \qquad f = \sqrt{\frac{\text{Relative density of air}}{\text{Relative density of gas}}}$$

Gas	Density	dv density ratio	f correction factor
Air	0.080	1.00	1.00
Natural gas	0.052	0.65	1.24
Liquid gas	0.136	1.70	0.77

GENERAL INSTALLATION RECOMMENDATIONS

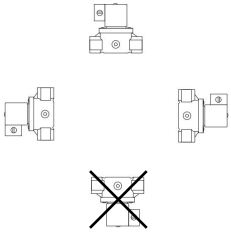
- The AGS-GSV212/3 gas solenoid valve should be mounted directly in a horizontal pipeline or in a vertical pipeline with the coil uppermost.
- Check that the site conditions comply with the technical specification of the valve.
- The flow direction arrow on the valve body must match the direction of 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.
- 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 32 to 104˚F with a relative humidity of 80% or less. It should not be stored in the open air.

EXISTING INSTALLATION

If installing the gas solenoid valve into an existing system;

- Turn off 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.

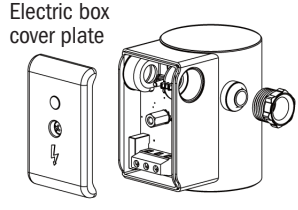
MOUNTING POSITION



Metal shoe construction of the diaphragm allows for vertical installation, with less damage from debris and over pressure.

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 220°F ambient.
- Follow the instructions supplied by the appliance manufacturer.
- Please confirm the power specification corresponding to the solenoid valve before installation. The power supply should strictly correspond to the rated power supply of the solenoid valve.
- Remove the white protective cap on one side of the junction box and replace it with the corresponding cable connector.
- The AC power supply should be correctly connected to live (L), neutral (N) and earth terminals.
- After the power connection is completed, the electric box cover plate should be replaced ensuring that the sealing gasket is correctly seated before tightening the fixing screw.



Incorrect installation or improper use may cause electrical damage or personal injury.

ADDITIONAL BODY PORTS

The solenoid valve body is provided with additional body ports for other possible applications.

- Users can add detection, input, output, and other auxiliary devices using the bypass connections
- The bottom connection can be used to install sensors (such as CPI sensor, which can be used to monitor whether the valve is open or closed).
- To ensure the sealing reliability, please do not disassemble any of the bypass connections if no additional equipment is needed.
- **ATTENTION:** if additional equipment is needed or the plug is disassembled, the sealing of the connection should be strictly checked.

Ensure safety before moving on to the next installation test.

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.

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