SOGAV™ 36
Solenoid Operated Gas Admission Valve

Applications

The SOGAV™ (Solenoid Operated Gas Admission Valve) 36 is an electrically actuated, high response gas admission valve for in-manifold (port) fuel admission. The SOGAV 36 valve is designed for use on four-cycle, turbocharged, natural gas or dual-fuel engines. One SOGAV 36 valve is required for each cylinder.

The SOGAV valve is the electro-mechanical portion of an overall Woodward fuel admission system consisting of:

- In-Pulse™ electronic fuel injection control
- Main speed/air-fuel ratio/engine sequencing control (must regulate air manifold and gas manifold pressures as well as fuel admission)
- Other necessary valves, actuators, regulators, sensors, cables, and safety devices

Governing is done by valve opening duration and/or gas pressure modulation.

The SOGAV 36 valve is typically suitable for (but not restricted to) engines in the 150–180 mm bore size range. A thorough sizing analysis must be performed for any new application, since fuel properties and engine use can affect valve choice.

The SOGAV36 valve’s E-core solenoid has a short travel and high output force which result in fast and consistent opening and closing response. The valve is a face-type poppet with multiple concentric grooves. The moving metering plate is spring-loaded and pressure-loaded in the close direction.

- Port fuel admission for improved cylinder-to-cylinder control
- All-electric actuation
- Fast response
- Simple installation
- Electronic fuel injection technology for four-stroke engines
- For new engines and retrofits
- Choice of sizes
- Works with Woodward In-Pulse™ electronics
- CSA Class I, Division 2, Groups A, B, C, D
- CE Compliant
Specifications

CONSTRUCTION

Materials: All parts exposed to the gas are resistant to corrosion and stress corrosion cracking.

Mounting: May be mounted in any configuration with the solenoid axis greater than horizontal, placing the solenoid higher than the metering plates. However, a vertical orientation (valve outlet facing downward) is preferred and will substantially increase valve life versus a horizontal orientation.

Gas Inlet Hole Diameter: 30 mm

ENVIRONMENT

Operating Temperature: –20 to +105 °C (–4 to +221 °F)

Vibration: Contact Woodward for vibration qualification data and analysis.

Humidity, Salt Spray, Pressure Wash: The unit withstands exposure to pressure washing, salt spray, etc., without adverse corrosion or infiltration.

PERFORMANCE

Response (assumes the use of a Woodward In-Pulse™ control):

- Time to full open after signal on: 0.0020 s max
- Time to full closed after signal off: 0.0020 s max
- Maximum Leakage When Closed: Less than 0.25% of the rated steady state flow rate
- Filtration Required for Long Life: 5 µm absolute max particle size
- Coil Heat Dissipation: 8 W (maximum)
- Expected Maximum Gas Supply Pressure (P1): 500 kPa (5 bar abs; 72.5 psi abs)
- Expected Maximum Air Manifold Pressure (P2): 300 kPa (3.0 bar abs; 43.5 psi abs)
- Maximum Gas Manifold to Air Manifold Pressure Difference: 200 kPa (2.0 bar; 29 psi)
- Minimum Pressure Difference: 100 kPa (1.0 bar, 14.5 psi)
- Maximum Backfire Pressure Spike (without backflowing through valve): 50 kPa (0.5 bar; 7 psi) above the current gas manifold pressure
- Expected Maximum Gas Supply Temperature: 80 °C (176 °F)

REGULATORY COMPLIANCE

Hazardous Locations listings are limited to solenoid only:
- North America: CSA Class I, Division 2, Groups A, B, C, D
- Europe: Zone 2, Category II 3 G, EEx m IIC T4
- CE Compliant with ATEX, LVD, and MD Directives
- Exempt from the Pressure Equipment Directive 97/23/EC per Article 1-3.10

TECHNICAL MANUAL

26209 SOGAV 36 Installation and Operation Manual
Typical SOGAV 36 Outline Drawing (8407-519-AL)
(Do not use for construction)
In-manifold Electric Gas Admission

Timing: In-manifold Gas Admission

Distributors & Service
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