

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	
Maximum 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

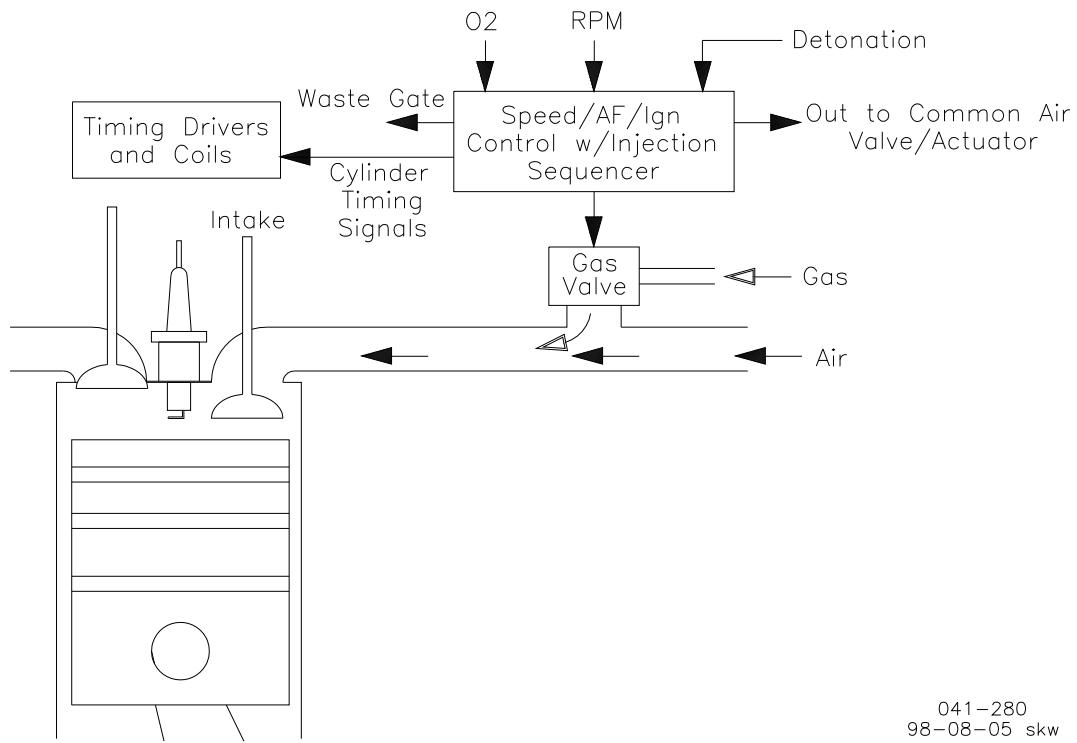
Europe: Zone 2, Category II 3 G, EEx m IIC T4

CE Compliant with ATEX, LVD, and MD Directives

Exempt from the Pressure Equipment Directive 97/23/EC per Article 1-3.10

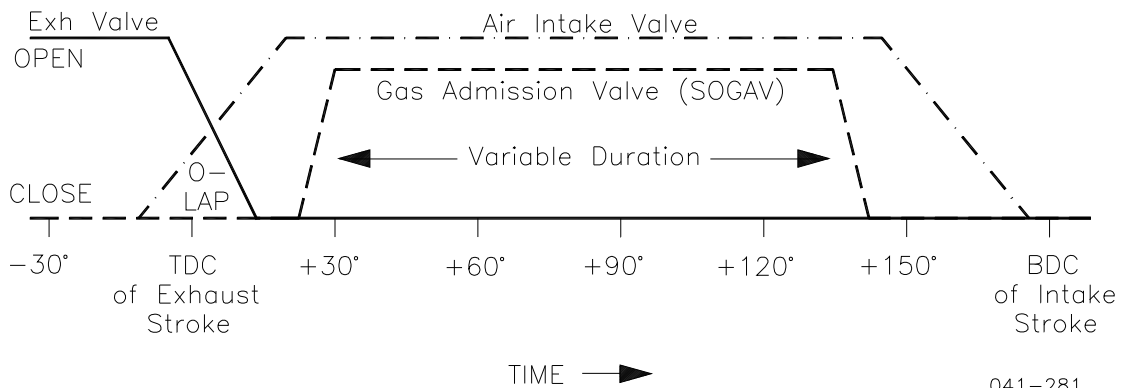
TECHNICAL MANUAL

26209 *SOGAV 36 Installation and Operation Manual*



041-280
98-08-05 skw

In-manifold Electric Gas Admission



041-281
99-01-19 skw

Timing: In-manifold Gas Admission



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