SOGAV™ 2.2

Solenoid Operated Gas Admission Valve

Applications

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

The SOGAV 2.2 valve is designed for use as a pre-chamber fuel admission valve for four-cycle, turbocharged, natural-gas engine. It may also be applied as a main in-manifold (port) fuel admission valve.

A thorough sizing analysis must be performed for any new application, since fuel properties and engine use can affect valve choice.

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 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

ENVIRONMENT

Operating Temperature ..... –20 to +105 °C (–4 to +221 °F)
Vibration Qualification Test
- Test Method ..... US MIL-STD-810C Method 514.2 Procedure 1
- Curve ..... L (20 g – Figure 514.2-2)
- Resonance Search ..... 5–2000 Hz
- Dwell Endurance ..... 30 minutes at each major resonance in each axis
- Sweep Endurance ..... 3 hours minus the dwell time in each axis

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 ..... 0.005 s max
- Time to full closed after signal off ..... 0.005 s max

Maximum Leakage When Closed ..... Less than 0.3% of the rated steady state flow rate
Filtration Required for Long Life ..... 5 µm absolute max particle size
Coil Heat Dissipation ..... 10 W (maximum)
Expected Maximum Gas Supply Pressure (P1) ... 500 kPa (5 bar abs; 72 psi abs)
Expected Maximum Air Manifold Pressure (P2) .. 300 kPa (3.0 bar abs; 43 psi abs)
Maximum Gas Manifold to Air Manifold
- Maximum Pressure Difference ..... 300 kPa (3.0 bar; 43 psi)

Maximum Backfire Pressure Spike
- (without backflowing through valve) ..... 600 kPa (6.0 bar; 87 psi) above the current gas manifold pressure

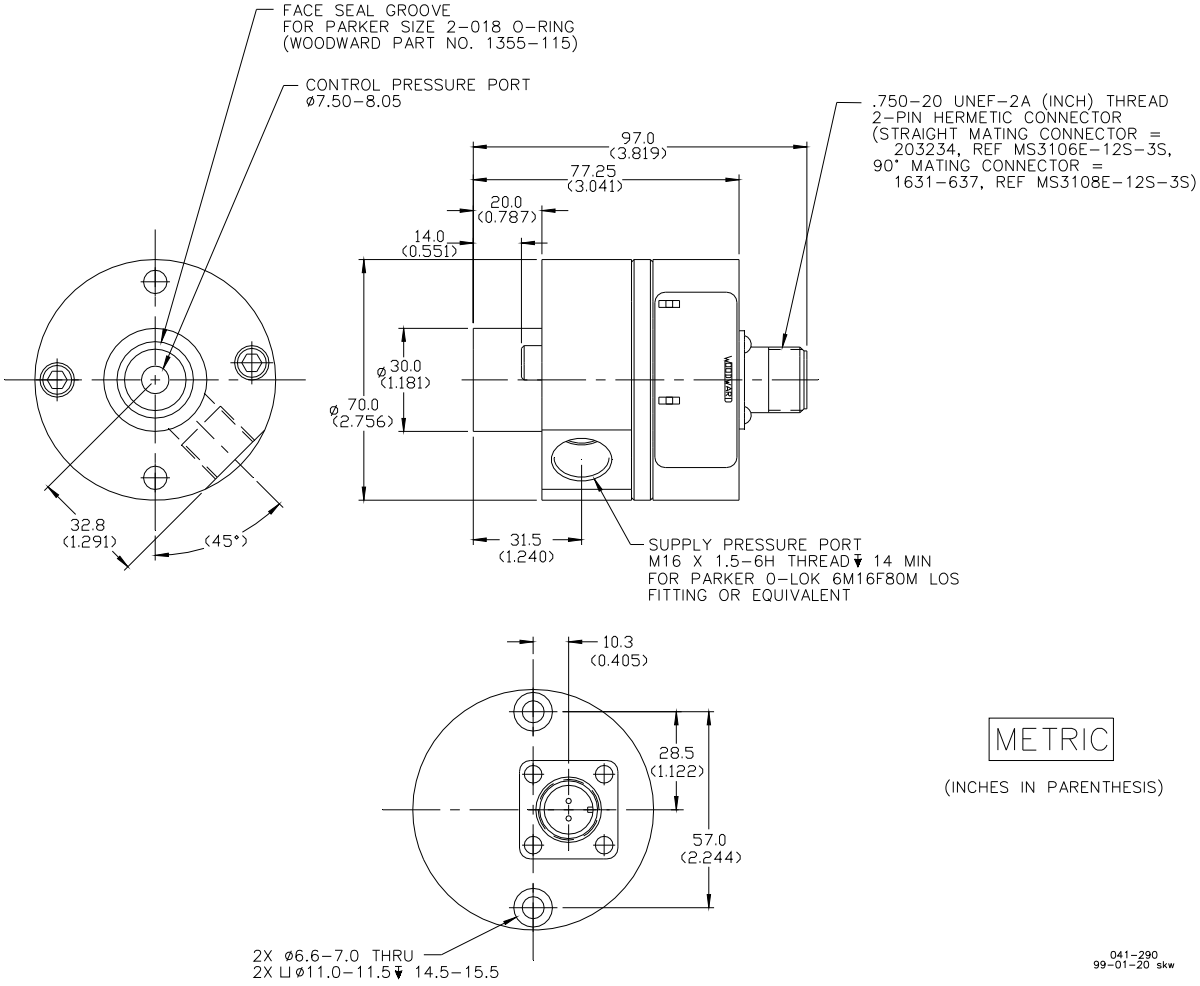
Expected Maximum Gas Supply Temperature .... 80 °C (176 °F)

REGULATORY COMPLIANCE

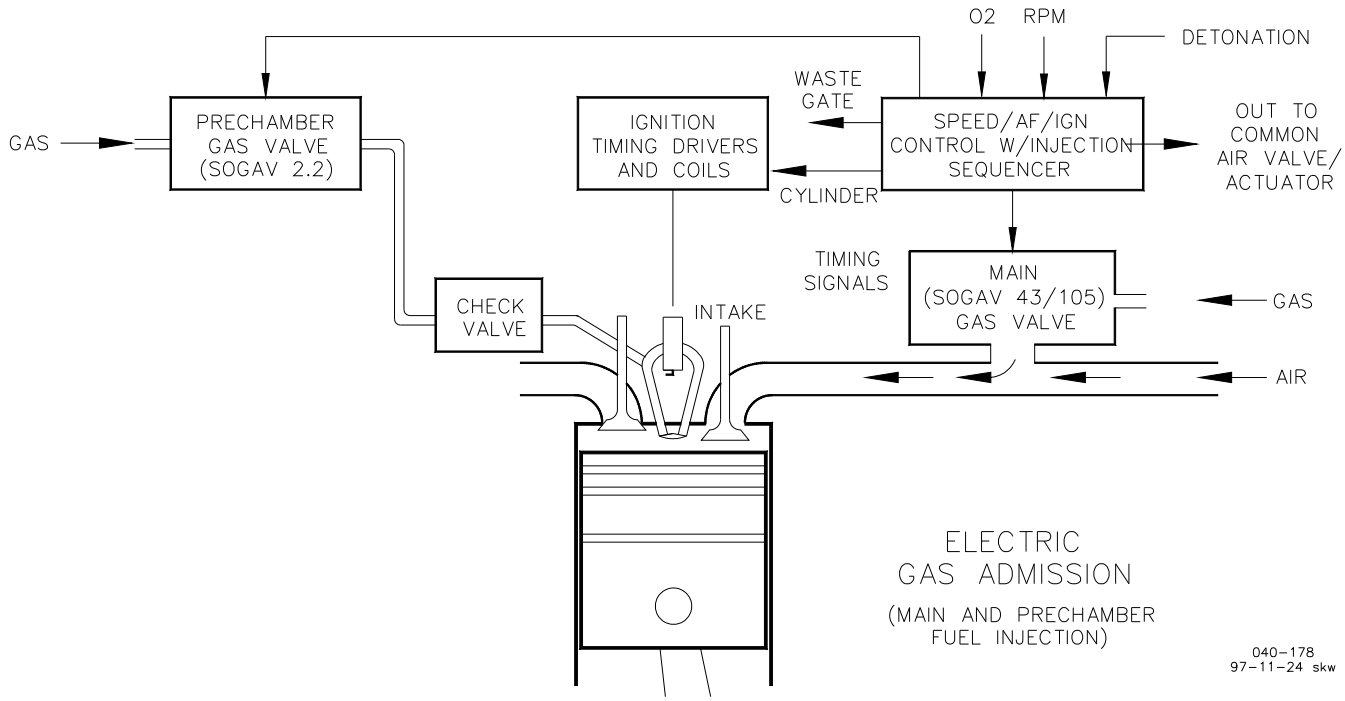
Hazardous Locations listings are limited to solenoid only
North America: CSA Class I, Division 2, Groups A, B, C, D
Europe: Zone 2, Category II 3 G, EEx m IIC T4
CE Compliant with ATEX, EMC, LVD, and MD Directives
Exempt from the Pressure Equipment Directive 97/23/EC per Article 1-3.10

REFERENCE PUBLICATIONS

04153 ..... SOGAV 2.2 Installation, Operation, & Maintenance
04161 ..... SOGAV 2.2 Installation Sheet



SOGAV 2.2 Outline Drawing
(Do not use for construction)



Electric Gas Admission (Main and Prechamber Fuel Injection)

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Distributors & Service
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