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

The SOGAV0.8 and SOGAV2.2 are designed for use as a pre-chamber fuel admission valve for four-cycle, turbocharged, natural-gas engine. They 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 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’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 (SOGAV2.2 only)
- 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 ......................0.003 sec. max (SOGAV0.8)
   Time to full closed after signal off....................0.003 sec max (SOGAV0.8)
Maximum Leakage When Closed ......................Less than 0.1% of the rated steady state flow rate (SOGAV0.8)
                                     ..................................................Less than 0.3% of the rated steady state flow rate (SOGAV2.2)
Filtration Required for Long Life...............5 µm absolute max particle size
Coil Heat Dissipation............................................7 W (maximum) (SOGAV0.8)
                                     ..................................................10 W (maximum) (SOGAV2.2)
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 ....60 °C (140 °F)

CLASSIFICATION
Solenoid Certification (cable/gland nut version only)
CSA Class I, Division 2, Groups A, B, C, D (SOGAV2.2 solenoids bearing agency logo only)
European Hazardous Locations EEx m IIC T3, LCIE 98.E6132 X
Declaration of Incorporation (DOI) per the Machinery Directive 98/37/EC
Exempt from the Pressure Equipment Directive 97/23/EC per Article 1-3.10

REFERENCE MANUALS
26109.................................................................SOGAV 0.8 Installation Sheet
04153.................................................................SOGAV 0.8/2.2 Installation, Operation, & Maintenance
04161.................................................................SOGAV 2.2 Installation Sheet
SOGAV0.8 Outline Drawing

FACE SEAL GROOVE FOR PORKER SIZE 2-018 O-RING (WOODWARD PART NO. 1351-115)

CONTROL PRESSURE PORT 07.50-8.05

.750-20 UNEF-2A (INCH) THREAD
2-PIN HERMETIC CONNECTOR (STRAIGHT MATING CONNECTOR = 203334, RPT MS37680-125-35, 90° MATING CONNECTOR = 1631-637, RPT MS37680-125-35)

SUPPLY PRESSURE PORT M16 X 1.5-6H THREAD M6 MN FOR PORKER 0-10K SMITHERS LOS FITTING OR EQUIVALENT

METRIC
(INCHES IN PARENTHESES)

2X #8-63-70 THRU 2X Unifi 10-11.5 14.5-15.5

SOGAV2.2 Outline Drawing
(Do not use for construction)
Electric Gas Admission (Main and Prechamber Fuel Injection)

For more information contact:

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