## Product Specifications

| Model | GR-312F | GR-314F | GR-317F | GR-317F-EPV |
|---|---|---|---|---|
| Valve Type | C: Normally close | | | |
| Pressure control range | 1-100 %F.S. | | | |
| Pressure accuracy | ±0.5 %F.S. | | | – |
| Operating temperature | 5-50 °C (Accuracy guaranteed temp : 15-40 °C) | | | 5-50 °C |
| Response | ≤ 1 sec (In a calibration condition) | | | ≤ 3 sec (In a calibration condition) |
| Maximum operating pressure | 250 kPa (A) | | | ≤ 450 kPa (G) |
| Pressure resistance | 300 kPa (A) | | | < 1000 kPa (G) |
| Leak integrity | ≤ $5 \times 10^{-12}$ Pa·m³/s (He) | | | |
| Pressure setting signal | 0.1-10 VDC (1-100 %F.S.)<br>Input impedance ≥ 1 MΩ | 1-100 %F.S. | | |
| Pressure output signal | 0-10 VDC (0-100 %F.S.)<br>Minimum resistance 2 kΩ | 0-100 %F.S. | | |
| Pressure input signal | – | | | 0-10 VDC (0-100 %F.S.)<br>Input impedance ≥ 500 kΩ *1 |
| Power supply | +15 V±5 % 150 mA<br>-15 V±5 % 150 mA | DC 24 V, 4.0 VA,<br>Applicable for ODVA standard | DC 24 V, 6.6 VA | |
| Digital interface | RS-485 (Transmission speed 38,400 bps)<br>F-Net Protocol | DeviceNet™ Protocol | EtherCAT® Protocol | |
| Gas *2 | He, Ar, $N_2$ | | | |
| Pressure full scale | 13.33 kPa (A) (100 Torr) | | | Full scale of external pressure sensor *2 |
| Flow full scale | 20, 50, 100 SCCM *2 | | | 2.5-10 SLM *3 |
| Flow rate measurement range | 0-100 %F.S. | | | |
| Flow accuracy *4 | ±1 %R.S. (Flow rate>25 %F.S.)<br>±0.25 %F.S. (Flow rate≤25 %F.S.) | | | ±1 %F.S. |
| Flow rate output signal | 0-5 VDC (0-100 %F.S.)<br>Minimum resistance 2 kΩ | 0-100 % | | |
| Standard fittings | 1/4 inch VCR equivalent, 1.125 inch IGS | | | |
| Wetted material | SUS316L | | | |
| Mounting orientation | Free | | | |

*1 Accuracy is 10 V ± 7 mV for a calibrated voltage signal of 10 V. *2 Please contact us for specifications other than those in the product specifications list or for details of specifications. *3 Full scale flow rate is the $N_2$ equivalent flow rate. *4 Flow rate accuracy is guaranteed for calibration gas ($N_2$) and calibration full scale (10 SLM). It is also guaranteed at an ambient temperature of 23±2 °C (compliance with SEMI standard E56 0309). SCCM and SLM are symbols for gas flow rate (mL/min, L/min, at 0°C 101.3 kPa). F.S. is a percentage of the full scale and %R.S. is a percentage of the reading scale. In notation of pressure unit, (A) shows absolute pressure, (G) shows gauge pressure.

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