

## 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 × 10 <sup>-12</sup> Pa·m <sup>3</sup> /s (He)			
Pressure setting signal	0,1-10 VDC (1-100 %F.S.) Input impedance ≥ 1 MΩ	1-100 %F.S.		
Pressure output signal	0-10 VDC (0-100 %F.S.) Minimum resistance 2 kΩ	0-100 %F.S.		
Pressure input signal	–			0-10 VDC (0-100 %F.S.) Input impedance ≥ 500 kΩ <sup>*1</sup>
Power supply	+15 V±5 % 150 mA -15 V±5 % 150 mA	DC 24 V, 4.0 VA, Applicable for ODVA standard	DC 24 V, 6.6 VA	
Digital interface	RS-485 (Transmission speed 38,400 bps) F-Net Protocol	DeviceNet™ Protocol	EtherCAT® Protocol	
Gas <sup>*2</sup>	He, Ar, N <sub>2</sub>			
Pressure full scale	13.33 kPa (A) (100 Torr)			Full scale of external pressure sensor <sup>*2</sup>
Flow full scale	20, 50, 100 SCCM <sup>*2</sup>			2.5-10 SLM <sup>*3</sup>
Flow rate measurement range	0-100 %F.S.			
Flow accuracy <sup>*4</sup>	±1 %R.S. (Flow rate > 25 %F.S.) ±0,25 %F.S. (Flow rate ≤ 25 %F.S.)			±1 %F.S.
Flow rate output signal	0-5 VDC (0-100 %F.S.) Minimum resistance 2 kΩ	0-100 %		
Standard fittings	1/4 inch VCR equivalent, 1.125 inch IGS			
Wetted material	SUS316L			
Mounting orientation	Free			

<sup>\*1</sup> Accuracy is 10 V ± 7 mV for a calibrated voltage signal of 10 V. <sup>\*2</sup> Please contact us for specifications other than those in the product specifications list or for details of specifications. <sup>\*3</sup> Full scale flow rate is the N<sub>2</sub> equivalent flow rate. <sup>\*4</sup> Flow rate accuracy is guaranteed for calibration gas (N<sub>2</sub>) 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.

DeviceNet™ is trademark of Open DeviceNet Vendors Association. EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH in Germany.