

PPG570

Pirani Piezo Gauge

The new INFICON Pirani Piezo combination gauge (PPG570) is based on the most advanced MEMS (Microelectromechanical Systems) sensor technology available, which is also used 1:1 in our PPG550 "ATM to Medium Vacuum" Gauge.

What differentiates PPG570 from PPG550 is the additional installed ATM sensor that allows the use of PPG570 in classical Load-lock applications. For example in Semi-Conductor industries or any other vacuum applications where accurate pressure measurement relative to atmospheric ambient pressure is important.

The new INFICON PPG570 can be used to directly drop in replace the so called MKS Instruments MKS901P "MicroPirani™" and Piezo Loadlock Vacuum Pressure Transducer". PPG570 offers same connectors/ pin assignment, analog output and RS232/485 digital communication protocol compatibility.



ADVANTAGES

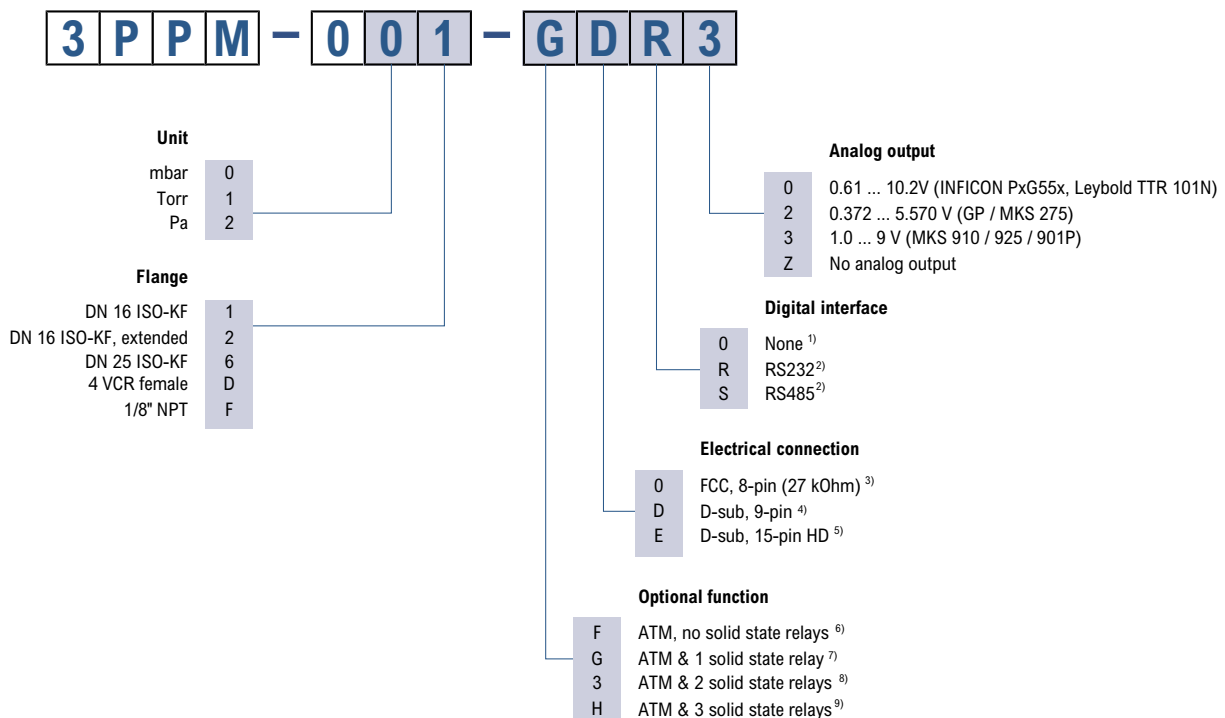
- Gas type independent above 2 mbar – allows safe venting with any gas mixture
- High accuracy and reproducibility at atmosphere – for reliable, fast atmospheric pressure detection
- Atmospheric ambient pressure measurement
- Up to 3 solid state relays
- Versatile of mounting orientation – provides engineering freedom in tool design
- Selectable analog output signal for easy system integration
- Digital interfaces RS232/ RS485
- Able to directly drop in replace MKS901P "MicroPirani™" - and Piezo Loadlock Vacuum Pressure Transducer"
- Compliance & standards: CE, EN, UL, CSA, RoHS

APPLICATIONS

- Semiconductor load-lock applications
- Use in Analytical equipment/ mass spectrometers
- Physical vapor deposition
- Furnace heat treatment

PPG570

ORDERING INFORMATION



- 1) No RS interface on FCC 8-pin connector
- 2) Only for D-sub 9-pin or D-sub 15-pin HD connectors
- 3) FCC 8-pin with 0 or 2 solid state relays, no RS interface on FCC 8-pin connector, solid state relay on FCC connector gauges have to be preset during production, they can't be set in the field due to missing RS interface
- 4) D-sub 9-pin with 0 or 1 solid state relay, customer choice of either RS232 or RS485 interface
- 5) D-sub 15-pin HD with 0 or 3 solid state relays, customer choice of either RS232 or RS485 interface
- 6) ATM function without solid state relays is available on FCC 8-pin, D-sub 9-pin and D-sub 15-pin HD connector
- 7) ATM function & 1 solid state relay is only available on D-sub 9-pin connector, solid state relays can be set by customer via RS interface
- 8) ATM function & 2 solid state relays are only available on FCC 8-pin connector, solid state relays on FCC connector gauges have to be preset during production, they can't be set in the field due to missing RS interface
- 9) ATM function & 3 solid state relays are only available on D-sub 15-pin HD connector, solid state relays can be set by customer in the field via the RS interface

PPG570

SPECIFICATIONS

Type	PPG570
Measurement principle	
2 ... 1333 mbar	MEMS Piezo resistive diaphragm
1.5 ... 2 mbar	crossover range
1×10^{-6} mbar	MEMS Pirani thermal conductivity
Measurement range N ₂	1×10^{-6} ... 1333 mbar
Accuracy	
1100 ... 1333 mbar	0.5% of reading
800 ... 1099 mbar	0.25 % of reading
100 ... 800 mbar	0.5 % of reading
2 ... 99.9 mbar	1% of reading
1×10^{-4} ... 1.99 mbar	5% of reading
1×10^{-5} ... 9.99×10^{-5} mbar	25% of reading
Hysteresis	
10 ... 1333 mbar	0.1% of reading
1×10^{-5} ... 10 mbar	1% of reading
Barometric measurement range	300 ... 1200 mbar
Barometric accuracy	± 0.5 mbar
Atmospheric referenced pressure output range	-1333 ... +1333 mbar
Vacuum temperature sensor range	-20 ... +85 °C
Vacuum temperature sensor accuracy	± 1.5 °C
Transducer temperature sensor range	-20 ... +85 °C
Transducer temperature sensor accuracy	± 1.5 °C
Analog output (measuring range)	
Resolution	16 bit (150 μ V)
Update rate	124 Hz
Response time (ISO 19685:2017)	<20 ms
Temperature	
Compensation	+10 ... +50 °C
Measurement range	+40 ... +80 °C
Measurement absolute accuracy	± 1.5 °C (0 ... +80 °C)
Solid state relay	
Set point range (absolute)	5×10^{-5} ... 1333 mbar
Set point range (atm. relative)	-1100 ... +500 mbar
Contact rating	50 V, 100 mA / mA (dc)
Contact on resistance	<35 Ω
Contact endurance	Unlimited (no mechanical wear)
Analog output	
3PPM-xxx-xxx0	0.61 ... 10.2 V
3PPM-xxx-xxx2	0.375 ... 5.570 V
3PPM-xxx-xxx3	1.0 ... 9 V
3PPM-xxx-xxxZ	no analog signal

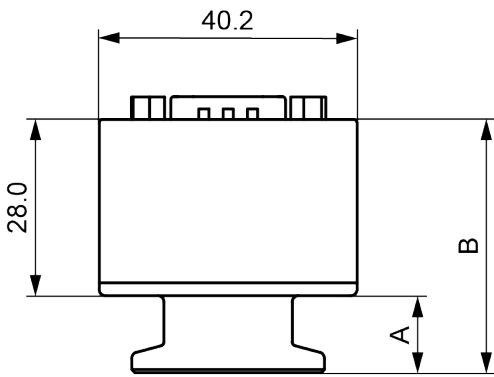
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Type	PPG570
Power supply	
Supply voltage at gauge	+12 ... +30 V (dc) ripple max. 1 V
Power consumption	≤350 mW
Internal fuse	100 mA (thermal recoverable)
Reverse polarity and overvoltage protection	yes
Sensor cable connections	
Electrical connection	
3PPM-0xx-x0xx	FCC 68, 8-pin
3PPM-0xx-xDxx	D-sub, 9-pin, male
3PPM-0xx-xExx	D-sub HD, 15-pin, male
Sensor cable	shielded, 0.14 mm ² /conductor
Cable length	≤100 m
RS232C operation	≤15 m
RS485 operation	≤1200 m
RS232C/RS485 interface	
Data rate	9600 Baud (default)
Data format	binary 8 data bits one stop bit no parity bit no handshake
Materials exposed to vacuum	
Housing	SS 1.4307, AISI 304L, Al 6061
Flange	SS 1.4307, AISI 304L
Further parts	AISI 304L, Kovar, glass, silicon, nickel, Al, SiO ₂ , Si ₃ N ₄ , gold, FPM, low outgassing epoxy resin, solder, RO4305
Pressure max	10 bar (absolute)
Admissible temperatures	
Storage	+40 ... +120 °C
Operation	+20 ... +50 °C
Bakeout	+120 °C (non operating)
Relative humidity (IEC 68-2-38) (year's mean / during 60 days)	98% non-condensing
Use	indoors only
Degree of protection	IP 40
Weight	
DN 16 ISO-KF	~136g
DN 16 ISO-KF, long tube	~154g
DN 25 ISO-KF	~155g
4 VCR female	~158g
1/8" NPT	~139g

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DIMENSIONS

[mm]



	A [mm]	B [mm]
DN 16 ISO-KF	12.0	40.0
DN 16 ISO-KF, long tube	29.0	56.4
DN 25 ISO-KF	12.0	40.0
4 VCR female	33.7	61.7
1/8" NPT	37.0	65.0

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