

PPG550 ATM to Medium Vacuum Gauge

The new INFICON Pirani Piezo combination gauge (PPG550) is based on the most advanced MEMS (Microelectromechanical Systems) sensor technology available.

The Pirani/ Piezo combination technology miniaturized in the MEMS process enables the construction of a very small and thus space-saving sensor, which makes it possible to keep the overall height of the measuring device very small.

In addition to the advantage of the low height, a Pirani based on MEMS technology also offers the advantage of measuring deeper and more accurately in the HV range than a classic Pirani. In combination with a MEMS piezo sensor, mounted in the same flange, the Pirani gauge becomes a real vacuum wide range gauge, extending the measuring range far beyond the usual 1000 mbar, also towards the atmosphere. At the same time the MEMS piezo sensor provides gas type independent pressure measurement in the range of 2 ... 1333 mbar. Another advantage of the technologies mentioned is the increased resistance to acceleration forces and vibrations.

Last but not least the new INFICON PPG550 can be used to directly drop in replace the so called MKS910 "DualTrans™ MicroPirani™ - Absolute Piezo Vacuum Pressure Transducers" as well as MKS925 "Micro Pirani™ Vacuum Pressure Transducers". Inficon offers same connectors/ pin assignment, analog output and RS232/485 compatibility.



ADVANTAGES

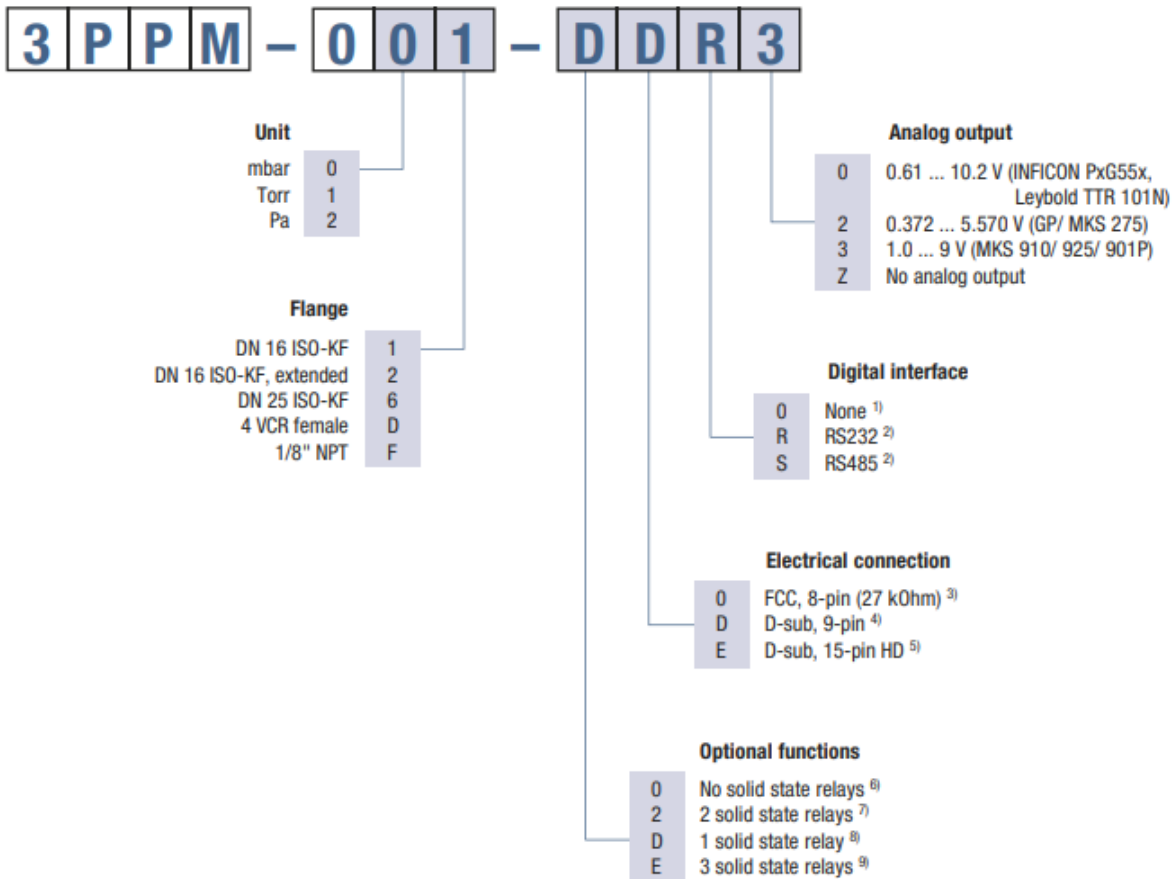
- Gas type independent above 2 mbar – allows safe venting with any gas mixture
- High accuracy and reproducibility at atmosphere – for reliable, fast atmospheric pressure detection

- Versatile of mounting orientation – provides engineering freedom in tool design
- Selectable analog output signal for easy system integration
- Digital interfaces RS232/ RS485
- Compliance & standards: CE, EN, UL, CSA, RoHS
- Able to direct drop in replace MKS910 “DualTrans™ MicroPirani™ - Absolute Piezo Vacuum Pressure Transducers” as well as MKS925 “Micro Pirani™ Vacuum Pressure Transducers”.

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- Compliance & standards: CE, EN, UL, CSA, RoHS

ORDER 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 relays 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⁾ All connectors are also available without solid state relays

⁷⁾ 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

⁸⁾ 1 solid state relay is only available on D-sub 9-pin connector; solid state relays can be set by customer via RS interface

⁹⁾ 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

SPECIFICATIONS

Type	PPG550 MEMS		
Measurement principle			
Pressure range	mbar	2 ... 1333	MEMS Piezo resistive diaphragm 1.5 ... 2 &nbs
Measuring range			
Range (N2)	mbar	1x10 ⁻⁶ ... 1333	
Accuracy			
1100 ... 1333 mbar	% of reading	0.5	
800 ... 1099 mbar	% of reading	0.25	
100 ... 800 mbar	% of reading	0.5	
2 ... 99.9 mbar	% of reading	1	
1 x 10 ⁻⁴ ... 1.99 mbar	% of reading	5	
1 x 10 ⁻⁵ ... 9.99 x 10 ⁻⁵ mbar	% of reading	25	
Hysteresis			
10 ... 1333 mbar	% of reading	0.1	
1 x 10 ⁻³ ... 10 mbar	% of reading	1	
Responsetime (ISO 19685:2017)	ms	<20	
Temperature compensation	°C	+10 ... +50	
Temperature measurement absolute accuracy	°C	+/-1.5 (0 ... +80)	
Gas type dependence	look operating manual page 13		
Solid state relay			
Set point range	mbar	5 x 10 ⁻⁶ ... 1333	
Solid state relay			
Contact rating	V	50	
Solid state relay			
Contact rating	mA	100	
Solid state relay			
Contact on resistance	Ω	<35	
Solid state relay			
Contact endurance	Unlimited (no mechanical wear)		

SPECIFICATIONS

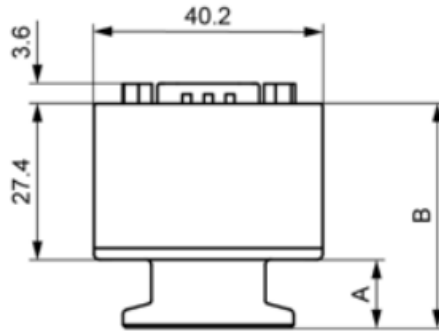
Type	PPG550 MEMS	
Analog output		
3PPM-xxx-xxx0	V	0.61 ... 10.2
3PPM-xxx-xxx2	V	0.375 ... 5.570
3PPM-xxx-xxx3	V	1.0 ... 9
Error signal	V	Check operating Manual page 13
Power Supply		
Supply voltage at the gauge	V (dc)	+12 ... 30
Power Supply		
Power consumption	W	≤3.5
Power Supply		
Internal fuse (thermal recoverable)	mA	100
Power Supply		
Reverse polarity and overvoltage protection		yes
Sensor cable connection		
3PPM-0xx-x0xx	IP40	FCC 68, 8-pin electrical connection
3PPM-0xx-xExx	IP40	D-Sub HD, 15-pin, male electrical connector
3PPM-0xx-xDxx	IP40	D-Sub, 9-pin, male electrical connection
Sensor cable connection		
Sensor cable		shielded, 0.14 mm ² / conductor
Sensor cable connection		
Cable length for analog operation	m	≤100
Cable length for RS232 operation	m	≤15
Cable length for RS482 operation	m	≤1200
RS232C/ RS485 interface		
Data Rate	baud	9600 (default)
RS232C/ RS485 interface		

SPECIFICATIONS

Type		PPG550 MEMS
Data format	bit	binary, 8 data bits onestop bit no parity bit no handshake
For further informaion on RS232/ RS485 interfaceplease look operating manua page 15		
Materials exposed to vacuum		
Flange		SS 1.4307, AISI 304L
Housing		SS 1.4307, AISI 304L, AL 6061
Further parts		AISI 304L, Kovar, glass, Silicon, nickel, AL, SiO ₂ , Si ₃ N ₄ , gold, FPM, low outgassng epoxy resin, solder, RO4305
Pressure max.	bar	10 (absolute)
Admissible temperatures (ambiance)		
Operation	°C	-20 ... +50
Storage	°C	-40 ... +120
Bakeout	°C	+120 (non operating)
Relative humidity ambiance (IEC 68-2-38); year`s mean/ during 60 days	%	98 (non-condensing)
Use	m	Indoors only altitude up to 2000
Mounting orientation		any
Protection class	IP40	degree of protection

DIMENSIONS

Dimensions [mm]



	A [mm]	B [mm]
DN 16 ISO-KF	12	39.4
DN 16 ISO-KF, long tube	29	56.4
DN 25 ISO-KF	12	39.4
4 VCR female	37.5	64.9
1/8" NPT	37.0	64.4

Weight

DN 16 ISO-KF	≈136 g
DN 16 ISO-KF, long tube	≈154 g
DN 25 ISO-KF	≈155 g
4 VCR female	≈158 g
1/8" NPT	≈139 g



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