

## Gemini™ ATM to Ultra-High Vacuum Gauge

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The INFICON Gemini™ Inverted Magnetron Vacuum Gauge is the workhorse for all vacuum measurement applications (pending). Gemini combines two sensor systems into one small device to measure from atmosphere to  $1 \times 10^{-9}$  mbar. The patented ultra-low magnetic stray field design opens up a whole new range of applications. A unique interchangeable dual chamber sensor unit avoids cleaning cycles and reduces maintenance, making Gemini the most robust and economical vacuum gauge of its kind.

Gemini Cold Cathode and combination comes with fully integrated digital electronics, providing ultimate flexibility for system integration. Cold cathode and Pirani combination option provides seamless transition, reliability, practicality and flexibility across wide ranging applications.

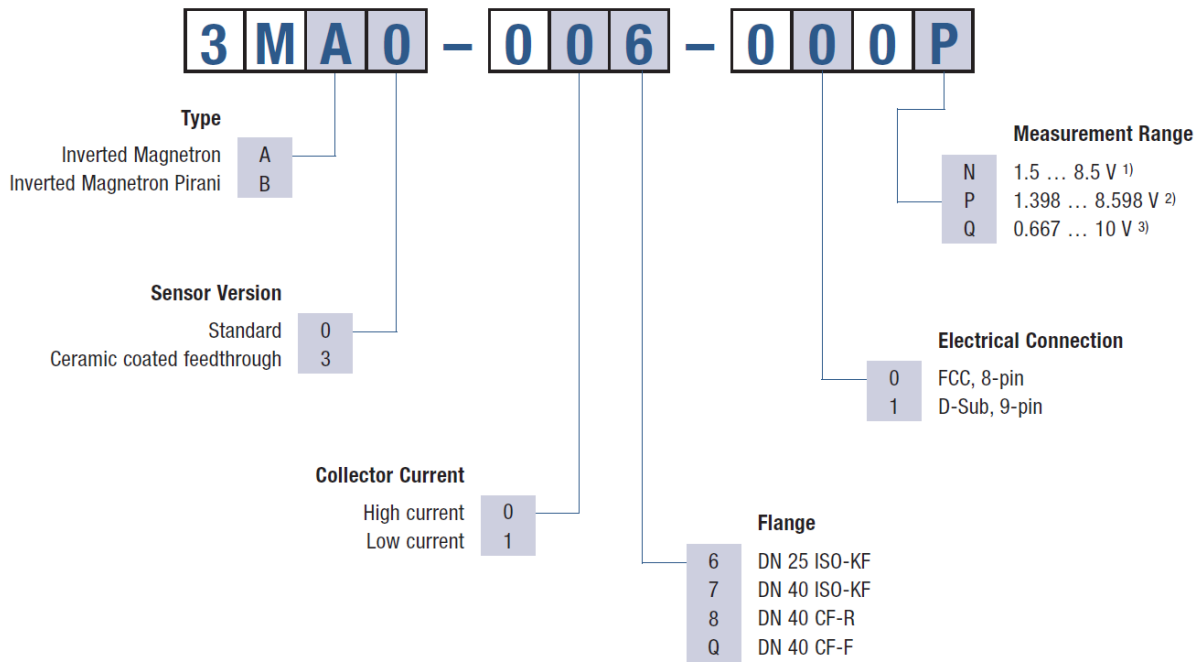


### BENEFITS

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- Long lifetime in harsh environments
- Low magnetic stray field
- Zero maintenance - replaceable insert
- Super compact size
- Reliable fast ignition
- Corrosion proof feed through
- Selectable measuring current

## ORDER INFORMATION



<sup>1)</sup> N = Inverted Magnetron (MAG50x). Not suited for operation with a vacuum gauge controller VGC40x.

<sup>2)</sup> P = Inverted Magnetron Pirani (MPG50x)

<sup>3)</sup> Q = Penning (MAG50x)

## SPECIFICATIONS

Type		MAG50x	MPG50x
Measurement system		Cold cathode ionization measurement system (according to the inverted magnetron principle)	Pirani and cold cathode ionization measurement system (according to the inverted magnetron principle)
Measurement range (air, N2)	mbar	$1 \times 10^{-9} \dots 1 \times 10^{-2}$	$1 \times 10^{-9} \dots 1000$
Measurement range (air, N2)	Torr	$(7.6 \times 10^{-10} \dots 7.6 \times 10^{-3})$	$(7.6 \times 10^{-10} \dots 760)$
Accuracy (N2)			
	$1 \times 10^{-8} \dots 1 \times 10^{-2}$ mbar	% of reading	30
	$1 \times 10^{-2} \dots 100$ mbar	% of reading	-
	$100 \dots 1000$ mbar	% of reading	50
Repeatability (N2)			
	$1 \times 10^{-8} \dots 1 \times 10^{-2}$ mbar	% of reading	5
	$1 \times 10^{-8} \dots 100$ mbar	% of reading	-
Mounting orientation		any	any
Admissible pressure	bar (absolute)	10 (limited to inert gases <50°C)	10 (limited to inert gases <50°C)
Admissible temperature			
	Operation (ambient)	°C	+5 ... +55
	Bakeout at flange (1)	°C	≤150
	Storage	°C	-40 ... +70
	Filament temperature	°C	-
Relative humidity for 30 days a year			
	$1 \times 10^{-7} \dots 1 \times 10^{-2}$ mbar	%	≤95 (non-condensing)
	$1 \times 10^{-8} \dots 1 \times 10^{-2}$ mbar	%	≤70 (non-condensing)
Supply voltage			
	At gauge (2)	V (dc)	+14.5 ... +30
Supply voltage			
	Ripple	V (p-p)	≤1
Supply voltage			
	Power consumption	W	≤2
Supply voltage			
	Fuse to be connected	AT	≤1
Voltage range			

## SPECIFICATIONS

Type		MAG50x	MPG50x
analog output	V	0 ... +10.5	0 ... +10.5
Measurement range			
3MAx-00x-0x0N	V	+1.5 ... +8.5	-
3MBx-00x-0x0P	V	-	+1.398 ... +8.598
3MAx-00x-0x0Q	V	+0.667 ... +10	-
Voltage vs. pressure			
3MAx-00x-0x0N	volts per decade	1 (logarithmic)	-
3MBx-00x-0x0P	volts per decade	-	0.6 (logarithmic)
3MAx-00x-0x0Q	volts per decade	1.33 (logarithmic)	-
Error signal			
Error signal	V	<+0.5	09.5 ... +10.5
Error signal			
Output impedance	$\Omega$	2x10	2x10
Error signal			
Load impedance	k $\Omega$	$\geq 10$ (short circuit-proof)	$\geq 10$ (short circuit-proof)
Step response time			
p = 10 <sup>-8</sup> mbar	ms	~1	~1
p > 10 <sup>-6</sup> mbar	ms	<10	<10
Gauge identification	k $\Omega$	100	85
Status (pin 6)			
Cold cathode ignited	V	+15 ... +30	-
Pirani-only mode	V	-	0 (low)
Combined Pirani/ cold cathode mode 3)	V	-	+15 ... +30 (high)
Electrical connection			
3Mxx-00x-000x		FCC68, 8-pin, female	FCC68, 8-pin, female
3Mxx-00x-010x		D-sub, 9-pin, male	D-sub, 9-pin, male
Sensor cable			
3Mxx-00x-000x		8-pin, shielded	8-pin, shielded
Cable length			

## SPECIFICATIONS

Type		MAG50x	MPG50x
50 m cable	m	≤ 50 (8x0.14 mm <sup>2</sup> )	≤ 50 (8x0.14 mm <sup>2</sup> )
75 m cable	m	≤ 75 (8x0.25 mm <sup>2</sup> )	≤ 75 (8x0.25 mm <sup>2</sup> )
100 m cable	m	≤ 100 (8x0.34 mm <sup>2</sup> )	≤ 100 (8x0.34 mm <sup>2</sup> )
300 m cable	m	≤ 300 (8x1.00 mm <sup>2</sup> )	≤ 300 (8x1.00 mm <sup>2</sup> )
Operating voltage	kV	≤3.3	≤3.3
High operating current	μA	≤500	≤500
Low operating current	μA	≤100	≤100
Materials exposed to vacuum			
3Mx0-00x-0x0x		Ni alloy, Al <sub>2</sub> O <sub>3</sub> , glass, stainless steels	W, Ni alloy, Al <sub>2</sub> O <sub>3</sub> , glass, stainless steels
3Mx3-00x-0x0x		Ni alloy, Al <sub>2</sub> O <sub>3</sub> , stainless steels	Ni alloy, Al <sub>2</sub> O <sub>3</sub> , stainless steels
Internal volume	cm <sup>3</sup>	22.8	22.8
Weight			
DN 25 ISO-KF	g	<280	<280
DN 40 ISO-KF	g	<320	<320
DN 40 CF-F & CF-R	g	<570	<570
Degree of protection		IP 40	IP 40
Standards			
CE conformity		EMC (EN 61000-6-2, EN 61000-6-3), EN 61010-1 & RoHS	EMC (EN 61000-6-2, EN 61000-6-3), EN 61010-1 & RoHS
Maintenance		none	none

1) Without electronics.

2) The minimum voltage of the supply unit must be increased proportionally to the length of the sensor cable.

3) Cold cathode ignited.

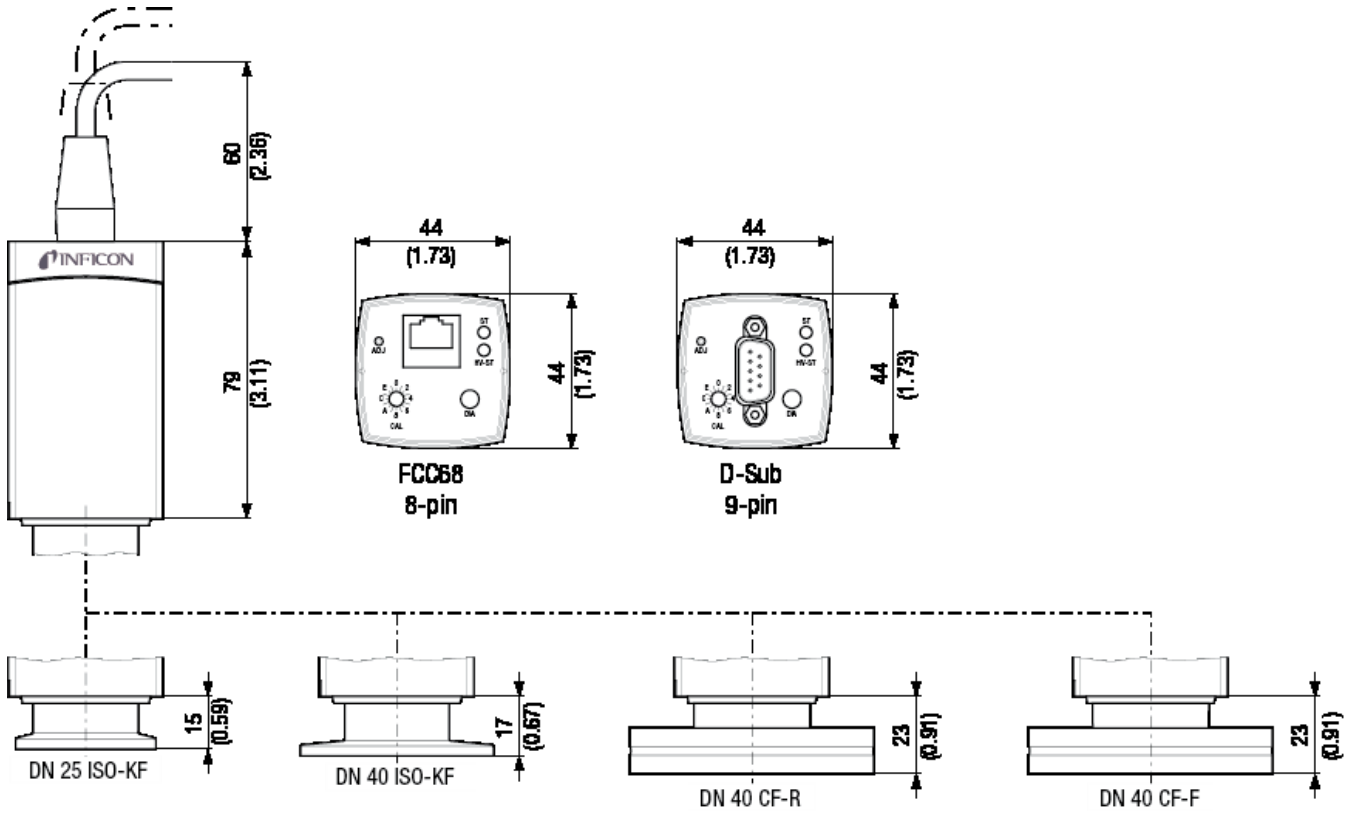
## SPAREPARTS

	MAG50x	MPG50x
MAG500 spare sensor, 25KF, SS	351-500	-
MAG500 spare sensor, 40CF-F, SS	351-524	-
MAG500 spare sensor, 40CF-R, SS	351-536	-
MAG500 spare sensor, 40KF, SS	351-512	-
MAG504 spare sensor, 25KF, SS	351-501	-
MAG504 spare sensor, 40CF-F, SS	351-525	-
MAG504 spare sensor, 40CF-R, SS	351-537	-
MAG504 spare sensor, 40KF, SS	351-513	-
MPG500 spare sensor, 25KF, SS	-	351-506
MPG500 spare sensor, 40CF-F, SS	-	351-530
MPG500 spare sensor, 40CF-R, SS	-	351-542
MPG500 spare sensor, 40KF, SS	-	351-518
MPG504 spare sensor, 25KF, SS	-	351-507
MPG504 spare sensor, 40CF-F, SS	-	351-531
MPG504 spare sensor, 40CF-R, SS	-	351-543
MPG504 spare sensor, 40KF, SS	-	351-519
MxG40x/50x Spare parts ignition aid (10)	351-995	351-995
Spare ion chamber ss	351-555	351-555

## ACCESSORIES

	MAG50x	MPG50x
Centering ring with fine filter DN 25 KF	211-098	211-098
MxG50x Ignition tool set	351-550	351-550

## DIMENSIONS



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⇒ Accuracy  
MPG at 1x10<sup>-2</sup> ... 10mbar  
from 15 to  
30%