MAG050, MAG060, MAG070

Cold Cathode Gauges - Passive

The gauge heads MAG050, MAG060 and MAG070 are long-established passive, inverted magnetron cold cathode gauges intended to operate with the Vacuum Gauge Controllers VGC094 and VGC083C. They are designed for vacuum measurement in the pressure range from 1×10^{-11} (MAG070) to 5×10^{-3} mbar. The compact metal design provides a robust solution suitable for general vacuum applications.

MAG050 is a simpler cold cathode gauge with an elastomer sealed feedthrough. Thanks to their all-metal design, MAG060 and MAG070 respond to needs of demanding applications requiring bake-out temperature up to 250 °C or high ionizing radiation resistance. Both allow pressure measurement in the UHV range. The triaxal connection of MAG070 allows lowest pressure reading (down to 1×10^{-11} mbar) and long distance operation between the gauge head and controller (up to 500 m). All gauge heads have an ignition aid mounted on the anode (reducing the cold cathode ignition time at low pressure) and can be easily disassembled and cleaned, allowing long term use with minimal downtime.

ADVANTAGES

- Reliable and proven gauge head design, based on the inverted magnetron principle
- Large vacuum pressure measurement range capability from 1×10^{-11} (MAG070) to 5×10^{-3} mbar
- Bakeable to 150 °C (MAG050) or 250 °C (MAG060, MAG070)
- Good ignition properties
- Corrosion resistant with ceramic feedthrough
- Radiation resistant design available (MAG060, MAG070)
- Easy to maintain, low cost of ownership

APPLICATIONS

- General vacuum measurement and control for demanding and/or high temperature applications from low to the high vacuum range

OPERATING UNITS

- Vacuum Gauge Controller VGC094 and VGC083C (MAG070 excluded)

MAG050, MAG060, MAG070

ORDERING INFORMATION

Type	MAG050	MAG060	MAG070
DN 25 ISO-KF	**399-840**	-	-
DN 40 ISO-KF	**399-841**	**399-845**	**399-847**
DN 40 CF-F	**399-842**	**399-846**	**399-848**

SPECIFICATIONS

Type	MAG050	MAG060	MAG070
Measurement system	cold cathode ionization (inverted magnetron principle)		
Measurement range (N_2)	2×10^{-9} … 5×10^{-3} mbar	1×10^{-10} … 5×10^{-3} mbar	1×10^{-11} … 5×10^{-3} mbar
Accuracy (N_2, typical)	30% of reading		
Repeatability (N_2, typical)	5% of reading		
Mounting orientation	any		
Admissible temperature			
Operation			
with standard cable	+5 … +80 °C	+5 … +80 °C	+5 … +80 °C
with high temperature cable	+5 … +150 °C	+5 … +250 °C	+5 … +250 °C[2]
Bakeout	150 °C[1]	250 °C[1]	250 °C[1]
Storage	-40 … +80 °C	-40 … +80 °C	-40 … +80 °C
Relative humidity	max. 80 % at temperature up to +30°C, decreasing to 50 % at +45°C		
Radiation resistance	□	1×10^7 Gy	1×10^7 Gy
Standard operating characteristics with VGC094/VGC083			
Voltage (within measuring chamber)	≤3.3 kV		
Current (within measuring chamber)	≤700 µA		
Electrical connection			
Type	coaxial		triaxial
Connector	Bayonet, SHV		Push-pull self-latching, triax
Use	indoors only, altitudes up to 2000 m		
Maximum cable length	≤100 m ≤40 m, if the lower limit of the measurement range is used	≤100 m ≤6 m, if the lower limit of the measurement range is used	≤500 m
Overpressure	≤9 bar (limited inert gases)		
Protection category	IP40		

[1] With high temperature cable or without cable

[2] On request

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Type	MAG050	MAG060	MAG070
Materials exposed to vacuum			
Vacuum chamber		Stainless steel (EN 1.4306, 1.4104, 1.4306)	
Feedthrough		Al_2O_3	
Internal seal	FPM	Ag	Ag
Anode		Mo	
Ignition aid		Stainless steel (EN 1.4310)	
Internal volume		~20 cm^3	
Weight		600 g (DN 25/40 ISO-KF) 850 g (DN 40 CF-F)	

[1] With high temperature cable or without cable

[2] On request

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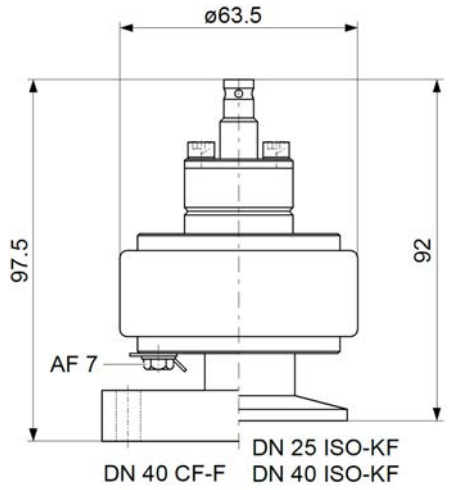
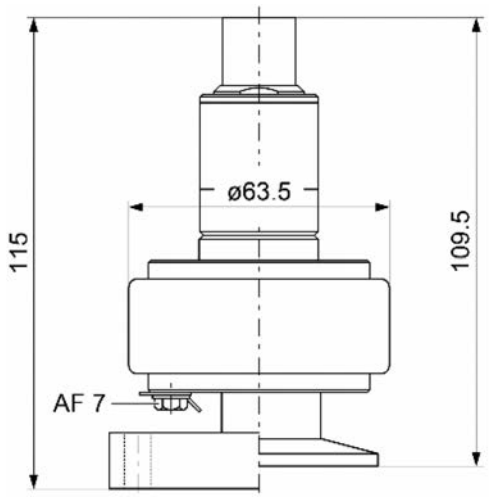
DIMENSIONS

[mm]

MAG050/060



MAG070



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