TELEVAC®

3F Mini Bayard-Alpert Hot Cathode Ionization Gauge
Part Number: 3451-8305-25, 3451-8305-35, 3452-8306-05

Operating Specifications[1]	
Operating Range	1×10^{-10} to 1×10^{-2} Torr
Sensitivity in Nitrogen	10/Torr
X-Ray Limit	$<1 \times 10^{-10}$ Torr
Mounting Orientation	Any
Calibration Medium	Dry air or nitrogen
Overpressure	150 PSI
Filament Type	Dual Yttria Coated Iridium
Emission Current	.01, .1, or 1 mA
Filament Potential	30 V
Grid Potential	180 V
Filament Heating Voltage	1.5 V Typical (2.5 V Max)
Filament Heating Current	1.5 A Typical (3 A Max)
Operating Temperature	0 °C to +50 °C
Storage Temperature	-20 °C to +70 °C
Bakeout Temperature	200 °C
Degas Power	5 W Electron Beam (max)
Response Time	≤ 100 ms
Accuracy	
1×10^{-9} to 1×10^{-2} Torr	±0.1 decade

Physical Characteristics	
Electrical Connections	Custom 9 Pin Connector
Weight (3451-8305-35)	70 g (.15 lbs)
Dimensions	See dimensional drawings

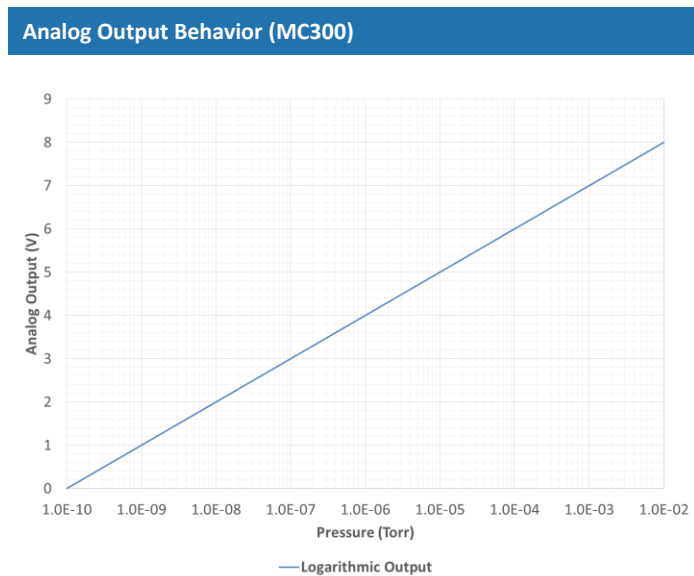| Materials Exposed to Vacuum	
Stainless Steel	Glass
Kovar	Tungsten
Molybdenum	Tantalum
Alumina Ceramic	Nickel
Platinum	Yttria Coated Iridium

Benefits

- Competitively priced
- Compact design
- Two filaments for longer lifetime
- High accuracy measurement solution
- Excellent customer support
- Designed and manufactured in the United States of America

Description

The 3F mini Bayard-Alpert hot cathode ionization gauge has a measurement range of 1×10^{-10} to 1×10^{-2} Torr. It indirectly measures absolute pressure by ionizing gas in the presence of an electric field. The design of this sensor allows for an extended range of measurement and bakeout temperatures up to 200° C.

The 3F can be operated by several Televac controllers, including the MM200 or MC300 rack mountable controllers. The MM200 and MC300 controllers automatically operate the mini Bayard-Alpert to provide a full range vacuum measurement solution when the 3F is used in conjunction with rough vacuum sensors.

Analog Output Behavior (MC300)

Ratings and Compliance

- RoHS compliant

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[1] See the Televac website at www.televac.com for a list of definitions for terms used in the operating specifications. All test data was acquired at 23° C.

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Ordering Information

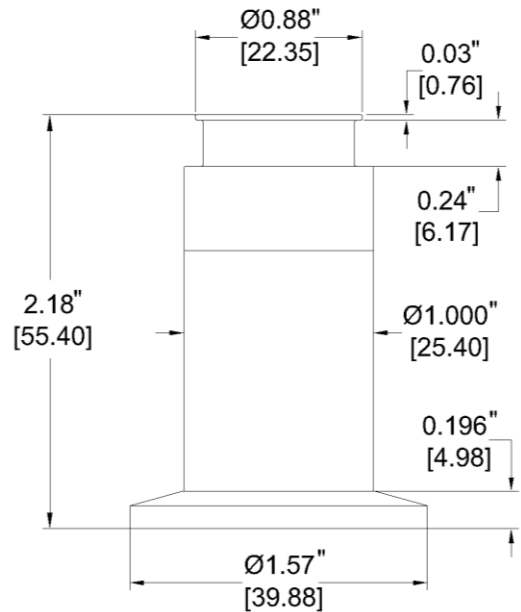|	
3F Mini BA Hot Cathode with DN-40 CF	3451-8305-25
3F Mini BA Hot Cathode with KF25 Flange	3451-8305-35
3F Mini BA Hot Cathode with 1" tube	3452-8306-05
Standard Cable	2-9854-0**XX**
Cable Length	XX
10 ft (3 m)	10
20 ft (6.1 m)	20
35 ft (10.6 m)	35
50 ft (15.2 m)	50
MC300 4A/3F Configuration	2-4502-306
MC300 2A/3F Configuration	2-4502-305
MM200 Base Unit	2-7900-20
MM200 3F Module	2-6200-291

Related Products

7E Double Inverted Magnetron Cold Cathode Sensor – This sensor has a measurement range from 1×10^{-8} up to 1×10^{-2} Torr. It indirectly measures absolute pressure by ionizing gas in the presence of a magnetic field. Unlike hot filament sensors, the 7E is resistant to inrushes of gas. The design of this sensor allows for easy disassembly enabling quick cleaning and extended use. The 7E can be operated by several Televac controllers, including the MM200, MC300, and MP7ER. The MM200 and MC300 controllers automatically operate the cold cathode to provide a full range vacuum measurement solution when the 7E is used in conjunction with rough vacuum sensors.

MP7FR Active Gauge – This gauge measures ultra high vacuum from 1×10^{-11} up to 1×10^{-2} Torr utilizing a double inverted magnetron sensor. It has a linear or logarithmic 0 to 10 V analog output with a relay set point and an LED display of pressure.

MM200 Vacuum Sensor Controller - The MM200 controls any Televac vacuum sensor including cold cathode, convection, diaphragm, hot ion, and thermocouple sensors. It also has optional features including up to 8 relay set points and RS-232/RS-485 communications. The large, bright LED display makes it easy to read from a distance. The MM200 is a modular unit, allowing customers to choose a vacuum sensing solution specific to their needs.

Visit the Televac website at www.televac.com for a full list of products and product applications.

Dimensional Drawings

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