



Pressure &

Vacuum Measurement Solutions

WWW.MKSINST.COM

## 629F

### HEATED (45°C OR 100°C) ABSOLUTE BARATRON® CAPACITANCE MANOMETER

The 629F Baratron® capacitance manometer is an improved version of the industry standard 629B capacitance manometer. The 629F process capacitance manometer is heated to either 45°C or 100°C, is accurate to 0.12% of Reading, and includes improved temperature control electronics to provide superior long-term stability and repeatability. It has an optional external zero input, which accepts a voltage equal and opposite to the zero offset, to provide a zero output at zero pressure. The “At Temperature” LED/switch indicates that the sensor is at controlled temperature (either 45°C or 100°C). The 629F is available in Full Scale ranges down to 20 mTorr to accommodate today’s lower process pressures.

Based on well established Baratron capacitance manometer technology, the sensor’s wetted surfaces are constructed of Inconel® for excellent resistance to corrosive gases. The stainless steel package provides a cleanroom compatible product. The 629F product is directly interchangeable with earlier 629A, 629B, and 629D Baratron capacitance manometers, as well as many competitive products.

### Features & Benefits

#### Accurate

- Excellent long-term stability
- Percent of Reading accuracy calibration for more precise output signal in lower part of pressure ranges
- Full Scale ranges low as 20 mTorr for precise measurement of low pressure processes
- Measures total pressure directly, independent of gas composition

#### Robust

- All-Inconel corrosion-resistant wetted surfaces
- Integrated sump (US patent #5,822,685) provides particle protection
- Faster warm-up time

- Visual and electrical status of temperature and condition of the unit
- High overpressure rating for improved reliability

#### Compatible

- Cleanroom-compatible stainless steel package
- Compatible with earlier Baratron capacitance manometers, MKS power supply/readout modules, and pressure controllers



# Specifications and Ordering Information

## Full Scale Ranges Resolution Accuracy

45°C version

100°C version

## Temperature Coefficients

Zero

45°C version

100°C version

Span

## Ambient Operating Temperature

## Volume

## Warm-Up Time

## Overpressure Limit

## Materials Exposed to Gases

## Input Power Required

## Output Signal

## Optional Features at Temperature

## Status (LED and Switch) and External Zero

## Fittings

## Compliance

0.02 (45°C only), 0.05, 0.1, 0.25, 1, 2, 10, 20, 100, 1000, 2000, 5000, 10000, 15000, 20000, 25000 Torr  
0.001% of Full Scale (0.002% of Full Scale for 0.02 and 0.05 Torr)

0.12% of Reading (including non-linearity, hysteresis, and non-repeatability) for 1 - 25,000 Torr;  
0.15% of Reading for 0.25, 0.1, and 0.05 Torr; and 0.25% for 0.02 Torr  
0.25% of Reading (including non-linearity, hysteresis, and non-repeatability) for 1 - 25,000 Torr; 0.50% of Reading for < 1 Torr

0.002% of Full Scale/°C for 1-25000 Torr range; 0.005% Full Scale/°C for 0.25 and 0.1 Torr,  
0.015% Full Scale/°C for 0.05 Torr, 0.03% Full Scale/°C for 0.02 Torr

0.002% of Full Scale/°C for 1-25000 Torr, 0.01% Full Scale/°C for 0.25 and 0.1 Torr;  
and 0.02% of Full Scale/°C for 0.05 Torr

0.02% of Reading/°C  
15°C to 40°C for 45°C version  
15°C to 50°C for 100°C version

6.3 cc

2 hours for 1 - 25,000 Torr ranges, 4 hours for ranges < 1 Torr

45 psia (310 kPa) or 120% Full Scale, whichever is greater

Inconel®

±15 VDC ±5% @ 0.25 Amps for 45°C, 0.6 Amps for 100°C

Pressure: 0 to +10 VDC into >10K Ω load

At temperature status: semiconductor switch will turn "ON" and corresponding green LED will be "ON" when the instrument is at temperature. Option not available: 0.02 Torr/45°C and 0.05 Torr/100°C.

External Zero allows voltage input that is equal to and opposite to a zero offset.

Option not available: 0.02 Torr/45°C and 0.05 Torr/100°C

Standard: 1/2" (12.7 mm) tubulation; Optional: 8 VCR® and 8 VCO® female, NW16 KF and NW25 KF,

1.33" OD CF and 2.75" OD CF

CE

## Ordering Code Example: 629F01TACJ1B

## Code

## Configuration

629F

629F

629F

## Pressure Range Full Scale

0.02 (not available in 100°C)

0.05

0.1

0.25

1

2

10

20

100

1000

2000

5000

10000

15000

20000

25000

U2T

U5T

.1T

RET

01T

02T

11T

21T

12T

13T

23T

53T

14T

RBT

24T

RCT

01T

## Fittings

1/2" diameter tubulation

8 VCR® female

1.33" OD CF

NW16 KF (range < 5000 Torr)

8 VCO® female

2.75" OD CF

NW25 KF (range < 5000 Torr)

A

B

C

D

E

L

Q

A

## Accuracy

0.12% of Reading (standard on 45°C, 1 thru 25000 Torr)

0.15% of Reading (standard on 45°C, 0.05 Torr, & 0.1 Torr)

0.25% of Reading (standard on 100°C, 1 thru 1000 Torr, 45°C - 0.02 Torr)

0.5% of Reading, (standard on 100°C, <1 Torr)

C

D

E

F

C

## Temperature

45°C

100°C

J

L

J

## Options

Standard Configuration

Optional Heater Status

External Zero (not available on 0.02 Torr 45°C and 0.05 Torr 100°C)

Heater Status and External Zero (not available on 0.02 Torr 45°C and 0.05 Torr 100°C)

1

2

3

4

1

## Connector

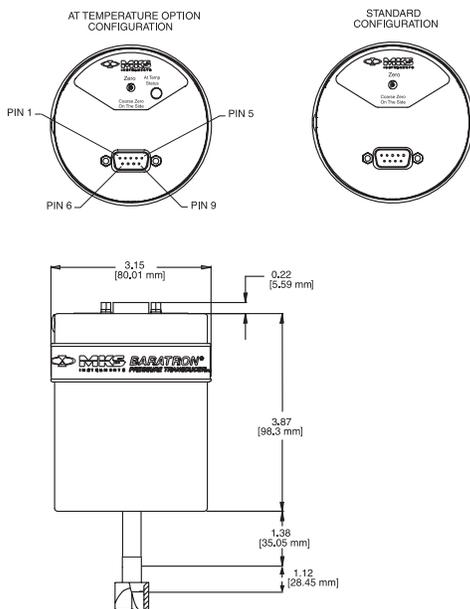
9 pin Type "D" with Thread Lock (standard)

9 pin Type "D" with Slide Lock (optional)

B

P

B



## Dimensional Drawing —

Note: Unless otherwise specified, dimensions are nominal values in inches (mm referenced).



## MKS Instruments, Inc. Global Headquarters

2 Tech Drive, Suite 201  
Andover, MA 01810

Tel: 978.645.5500

Tel: 800.227.8766 (in U.S.A.)

Web: www.mksinst.com

## MKS Instruments, Inc. Pressure & Vacuum Measurement Solutions

Six Shattuck Road  
Andover, MA 01810

Tel: 978.975.2350

629F - 3/19

© 2014-2019 MKS Instruments, Inc.  
All rights reserved.

Some Baratron® capacitance manometer products may not be exported to many end user countries without both US and local government export licenses under ECCN 2B230. Specifications are subject to change without notice. mksinst™ is a trademark and Baratron® is a registered trademark of MKS Instruments, Inc., Andover, MA. VCR® and VCO® are registered trademarks of Swagelok® Co., Solon OH. Inconel® is a registered trademark of Inco Alloys International, Inc., Huntington, WV.