

INSTALLATION AND OPERATING INSTRUCTIONS  
FOR  
MKS BARATRON<sup>®</sup> TYPE 127A/128A  
PRESSURE GAUGE

SECTION 1

GENERAL DESCRIPTION

The Types 127/128 MKS Baratron<sup>®</sup> Vacuum Gauge are capacitance manometers designed to provide accurate, reliable, and repeatable pressure measurements in the range from 1000 Torr (1000 mmHg) to less than .01 micron ( $10^{-5}$  mmHg). Based on 20 years of experience in capacitance manometers, these sensors utilize the latest balanced bridge signal conditioning technology to provide accuracy and stability previously unavailable in low cost capacitance manometers.



The 127 and 128 are designed specifically to meet the needs of vacuum process systems, where environmental and process conditions are particularly demanding. Both units expose only Inconel to the process, which permits use with corrosive or dirty gases, and eliminates contamination of the process with gauge materials. Measurements are independent of gas composition; the 127 and 128 measure true total pressure, regardless of gas species or mixtures. Temperature control of the sensor minimizes effects of ambient or process temperature variations typically encountered in process line environments. The 127 controls the sensor temperature at 45°C, while the 128 controls the sensor temperature at 100°C. RFI shielding is standard to prevent interference from RF or noisy electrical environments. The unit is protected against damage due to overpressure (35 psia max all ranges except 0.1 mmHg range which is 20 psia max), such as when venting to atmosphere between process cycles. (An isolation valve is still recommended, though, to achieve the best zero stability.)

Both the 127 and 128 are compatible with the Type PDR-C-1C/2C power supply/readout instruments, many commercial  $\pm 15$  VDC power supplies and standard DVM's and with closed-loop pressure/flow control systems, such as the MKS Type 250 Pressure/Flow Ratio Controller or Type 152/252 Exhaust Valve Controller.

The 127 and 128 utilize the same construction and operation procedures and are discussed interchangeably in this manual. The 127 is controlled at 45°C and has a black case. The 128 is controlled at 100°C and has a gray case.

SPECIFICATIONS

	<u>127</u>	<u>128</u>
PRESSURE RANGE (full scale)	0.1,1,2,10,100,1000,5K, 10K,15K,20K or 25K mmHg	0.1,1,2,10,100,or 1000 mmHg
RESOLUTION	0.01% of full scale	
ACCURACY	0.15% of reading ± temp. coeff. 0.1 torr F.S. is .25% R.	0.25% of reading ± temp. coeff
TEMP. COEFF		
Zero:	0.005% F.S./°C (over 15°-40°C) Except 0.015% F.S./°C for 0.1 range	.005% F.S./°C (over 20°-70°C) Except 0.015% F.S./°C for 0.1 range
Span:	0.02% reading/°C (over 15°-40°C)	0.02% reading/°C (over 20°-70°C)
RESPONSE TIME	<16 msec	
OVERPRESSURE	35 psia all ranges (except for 0.1mmHg range which is 20 psia or 120% F.S., whichever is greater	
VOLUME	7.0 cc	
OPERATING TEMP. RANGE	15°-40°C (sensor con- trolled at 45°C)	20°-70°C (Sensor con- trolled at 100°C)
MATERIALS EXPOSED TO PROCESS	Inconel (plus pressure fitting materials, if applicable)	
INPUT POWER REQ'D	@ startup, ±15V, ±2%, 250mA 150mA after 1 hr. at 30°C	@ startup, ±15V, ±2%, 500mA
OUTPUT SIGNAL	0 to +10VDC into 10KΩ load or greater	
PRESSURE FITTINGS		
Standard:	1/2 inch (12.7 mm)      For 5K and above 8VCR in standard. O.D. tubulation	
Optional:	Cajon 8VCR, Cajon 8VCO, KF-16, Mini CF	
WEIGHT	1 kg (2 1/4 lb.)	

Specifications subject to change without notice.

## ACCESSORIES

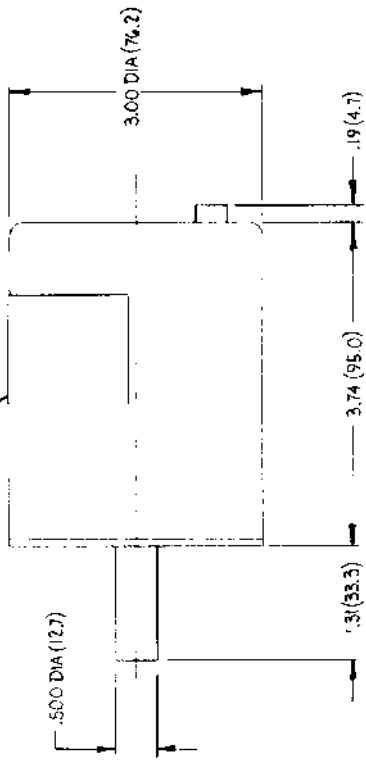
1. PDR-C-1C/2C Power Supply/Digital Readout: 4 1/2 digit meter, with two additional process setpoints. Optional RM-6 rack mount kit permits mounting one or two PDR-C-1C or -2C in 19" rack. (See Series 200 bulletin for information.)
2. Pressure/Flow Controllers: The 127 and 128 are compatible with all MKS pressure, flow, flow ratio, and throttling valve controllers. Note: The 128 will require a separate  $\pm 15V$  supply. (See MKS Pressure/Flow Control bulletins for complete information.)

## CABLES

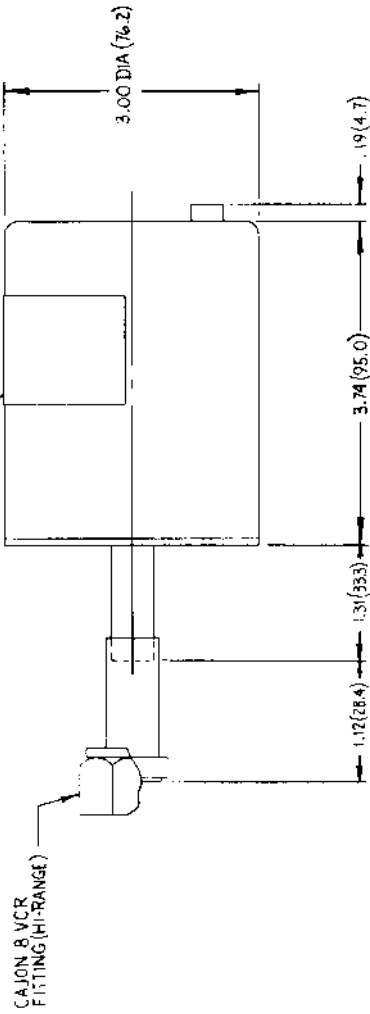
1. Standard: 10 ft. (3m) cable supplied with each transducer and PDR-C-1C/2C system ordered, providing both are ordered together as a pressure display system.
2. Optional: Longer cable lengths to 100 ft. (30m).
3. When the 127 or 128 are ordered without readout instrument, a mating electrical connector is supplied.

LO-RANGES  
1, 10, 100, 1K  
TORR

IDENTIFICATION DATA

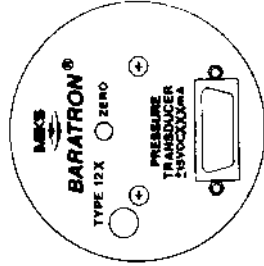
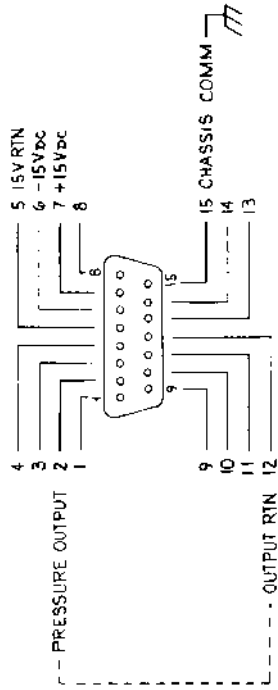


IDENTIFICATION DATA



HI-RANGES  
5K, 10K, 15K, 20K, 25K  
TORR

15 POSITION MALE TYPE D



DIMENSIONAL OUTLINE

1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE NOMINAL VALUES IN INCHES (MM REFERENCED).