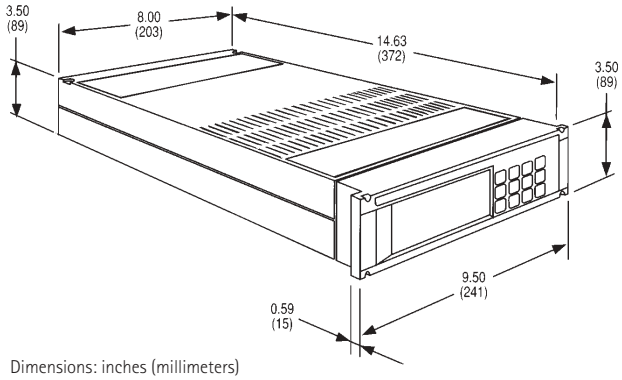
Outline Drawing



Dimensions: inches (millimeters)

Varian's senTorr is a complete half-rack vacuum gauge controller designed to increase system productivity with reliable, fast response pressure measurements, from rough to high vacuum. The analog output and programming capabilities make the senTorr ideally suited for a wide range of industrial and analytical vacuum applications where pressure measurement is a requirement. The controller is shipped ready-to-operate in one of three basic configurations.

- One high-vacuum or ultra-high vacuum transducer
  - senTorr model BA (Bayard-Alpert)
  - senTorr model UHV (Ultra-High Vacuum Nude Tube)
  - senTorr model CC (525 CCG)
- One high-vacuum or ultra-high vacuum transducer and two thermocouples
  - senTorr model BA2
  - senTorr model CC2
- One high-vacuum or ultra-high vacuum transducer and two ConvecTorrs
  - senTorr model BA2c
  - senTorr model UHV2c
  - senTorr model CC2c

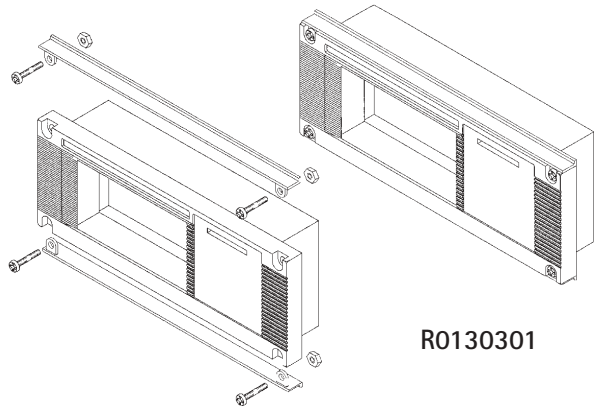
The senTorr's programming capability is easily managed from the front panel keypad. The command structure provides the user with the capability to operate other manufacturer's glass gauge tubes, measure desired gas load partial pressures, and automatically turn ion gauges on and off. Additionally, users can select torr or mbar pressure units, baud rate, sensitivity, and emission current. The senTorr has a standby mode which eliminates power to all components except the main processor. This feature conserves energy while allowing faster warm-up times than cold starts. Other system settings, such as calibration, display update rate, and fault protection are adjusted via front panel access codes.

To improve pressure measurement accuracy, the sensitivity can be adjusted to match gauge tube specifications. Emission current adjustments allow the user to extend the measurement range and/or prolong tube life. The keypad can be locked out to prevent inadvertent setting changes. The senTorr's ion gauge can be remotely operated with an applied DC voltage. Analog pressure signals for all transducers are located on the back panel.

Options include RS-232 or RS-485 interfaces, degas, and set points. RS-232 allows the senTorr to be operates remotely using a standard serial interface, while RS-485 permits the controller to be operated in a network with up to 32 senTorrs. Resistive degas is used with Bayard-Alpert gauges and electron bombardment is used with ultra-high vacuum nude gauges. The set point option provides one set point per transducer and one additional set point which can be assigned to any transducer. Set point hysteresis can be adjusted to prevent relay deactivation until pressure increases above the hysteresis setting.

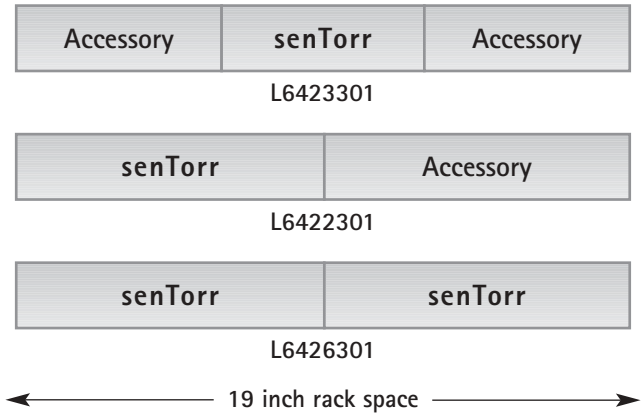
Features	Benefits
• Overpressure protection	• Automatically shuts off the ion gauge, protecting it from damage due to a sudden rise in pressure
• Auto-On	• Automatically turns the ion gauge on and off
• Low component operating temperature	• Dramatically decreases the probability of component failure
• Optional process control set points	• Control of heaters, pumps, timers, and more
• Log/linear analog outputs	• Ideal for remote monitoring of gauge pressure
• Troubleshooting error codes	• Used as a vacuum system diagnostic tool
• CE and UL, cUL listed	• Assures safety and reliable operation

senTorr Panel Mounting Cut-Out Accessory



R0130301

senTorr Full Rack (19 in.) Mounting Accessories



senTorr Technical Specifications

Power Requirements
50/60 Hz, 90 to 250 VAC, switchable
120 watts (typical)

Serial Communication
Optional: RS485, RS232
Format: Bi-directional ASCII
Data Rates: 1200, 2400, 4800, 9600, 19200
Parity: Selectable (even, odd, none)

Analog Outputs (standard on all tubes)
1 V/decade

Process Set Points
(1) SPDT/transducer; 1 additional SPDT assignable
3 amps/120 VAC

Remote Input (to turn ion gauge on/off)
Input: 5 to 24 VDC

Degas
Resistance heating

Operating Temperature Range
0 °C to 50 °C

Operating Ranges
- Thermocouple minimum pressure capability: 1 x 10^{-3} torr
- Thermocouple maximum pressure capability: 2 torr
- Sensitivity (selectable in 1/torr increments): 1/torr to 25/torr
- Emission Current (selectable in 0.1 mA increments): 1 mA to 10 mA
- Auto-on (standard): Refer to TC1
- Analog output per gauge standard: 1V/decade
- ConvecTorr™ minimum pressure capability: 1 x 10^{-3} torr
- ConvecTorr maximum pressure capability: Atmosphere

Ordering Information

To determine the ordering number, select the desired configuration as follows

Basic Configurations

One Ion Gauge	
BA - Bayard-Alpert (563, 564, 571, 572, 580, MBA-100, MBA-200)	L91203 01 X X 0 X
UHV – Ultra-High-Vacuum Nude Gauge (UHV-24)	L91103 01 X X 0 X
CC – cold cathode (525)	L91213 01 X X 0 X
One Ion Gauge, Two Thermocouple Gauges	
BA2	L91203 02 X X 0 X
CC2	L91213 02 X X 0 X
One Ion Gauge, Two ConvecTorr Gauges	
BA2c	L91203 03 X X 0 X
UHV2c	L91103 03 X X 0 X
CC2C	L91213 03 X X 0 X

Set Point Options

No set points.	0
Set points	1

Degas Options (not available with CC versions)

No degas	0
Degas	1

Communications Options

No communications	0
RS-232	1
RS-485	4

Ordering Information

Description	Part Number	Shipping Weight lbs. (kg)
Accessories Kits		
Center rack mount kit	L6423301	1.0 (0.5)
Off-center rack mount kit	L6422301	1.0 (0.5)
Dual senTorr™ rack mount kit	L6426301	1.0 (0.5)
Panel cutout bezel (trim kit)	R0130301	1.0 (0.5)
Cables* (Gauge tubes sold separately)		
10 ft. Ion Gauge (non-bakeable) cable for use with the **563**, **564**, **571**, or **572** gauge tubes	L64553010	1.0 (0.5)
10 ft. UHV (non-bakeable) cable, for use with the **UHV24** gauge tubes	L64413010	1.0 (0.5)
10 ft. TC cable, for use with one **531** or **536** gauge tubes	L91313010	1.0 (0.5)
10 ft. ConvecTorr cable	L91223010	1.0 (0.5)
10 ft. Cold cathode cable (525 only)	L55723010	1.0 (0.5)
10 ft. cable, MBA-100, MBA-200	R11723010	1.0 (0.5)

**Other lengths and configurations for cables on page 304*