

TELEDYNE HASTINGS

INSTRUMENTS

ANALOG VACUUM METERS AND CONTROLLERS

VT SERIES

FEATURES

- Ranges – 0-100 mTorr, 0-1000 mTorr, 0-20 Torr
- Fail Safe: Loss of Power = Loss of Vacuum
- Optional Single or Double Control Points
- Optional Instrument Configurations and Sensor Fittings
- Complete Installation and Calibration Accessories

APPLICATIONS

Processes Requiring Accurate Vacuum Measurement & Control:

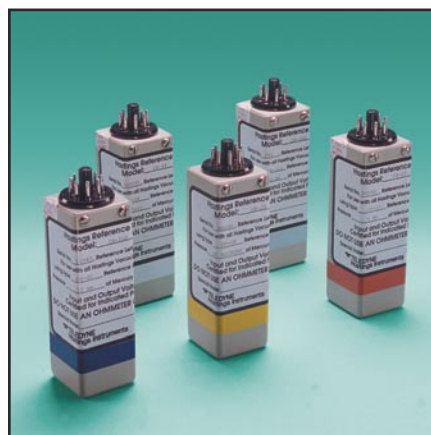
- Glove Boxes
- Cryogenics
- Vacuum Furnaces
- Pharmaceutical Production
- Freeze Drying
- Agricultural Processes
- Air Conditioning
- Thermal Food Containers
- Plasma Coating
- Refrigeration (HVAC)
- Accelerators
- Appliance Manufacturing



Panel Mount Meter



Panel Mount Controller



Calibration Reference Tubes

DESIGN FEATURES

Teledyne Hastings Instruments (THI) VT-Series Vacuum Gauges are the original models that have generated repeat customers for over 60 years. Their reputation is built upon exceptional stability, accuracy, and reliability under the most demanding conditions.

VT-Series Vacuum Gauges are available in three standard ranges: 0-100 mTorr, 0-1000 mTorr, and 0-20 Torr. A self-contained gauge circuit is attached to the rear of the direct reading meter. All VT-Series Vacuum Gauges feature long life and minimal maintenance.

These instruments utilize THI's rugged but sensitive noble metal TC gauge tubes that are designed specifically for each range. Tubes are matched and interchangeable without calibration adjustments. They are compensated for temperature and rate of temperature change and are corrosion-resistant.

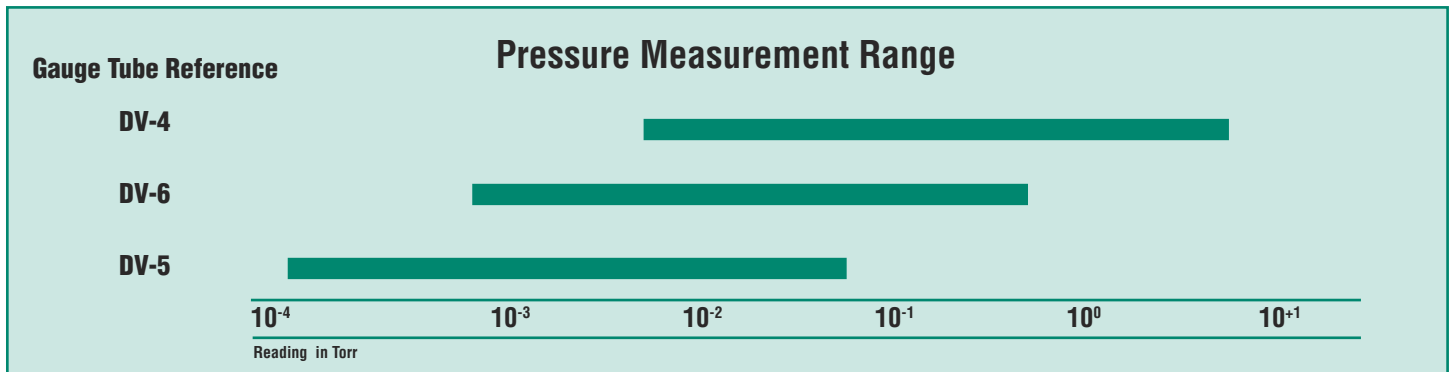
Vacuum Controllers

THI Vacuum Controllers, CVT series are fully automatic, continuous-reading instruments for unlimited vacuum applications. These controllers operate in the same standard ranges as the VT meters with the addition of single or double user selectable control limits. The control points are durable 5 amp single pole double throw relays which can be configured normally open or normally closed.

Installation Accessories

THI offers a complete line of system attachments that permits easy maintenance for contaminated operations. Gauge tubes are offered with various system fittings to match almost any system requirement.

VT SERIES



DESIGN FEATURES (cont)

Additionally, THI's complete line of quick disconnect attachments allows customers to install these special fittings and easily replace sensors without vacuum sealant or Teflon® tape. For particularly dirty systems, THI offers a particle drop-out trap to prevent solid contaminants from having a direct path to the sensor's thermopile.

Calibration Reference Tubes

THI Reference Tubes employ the same THI noble metal thermopile used in all THI Vacuum Gauge Tubes. The thermopile is sealed in a glass capsule that has been evacuated, baked, outgassed, and then aged to ensure long-term stability. The sealed capsule is then housed in a protective metal shell to provide a rugged, trouble-free assembly.

Once assembled, the gauge tube is accurately calibrated to precisely simulate a gauge tube at a given operating pressure. It permits quick and easy instrument recalibration by merely plugging the instrument and adjusting the calibration "current set" potentiometer until the indicator reads the exact pressure noted on the reference tube.

Please refer to Product Bulletin 100B for complete details on these accessories.

IMPORTANT NOTE:

These reference tubes are designed specifically for use with instruments employing THI circuitry and are NOT interchangeable with instruments using other circuitry.

SPECIFICATIONS

VT-SERIES VACUUM METERS & CONTROLLERS

Power	115 VAC, 50/60 Hz 230 VAC, 50/60 Hz
Cables (approx.)	6-ft power cable and 8-ft. sensor cable included.
Weight (approx.)	2 to 5 lbs max (0.9 to 2.3 kg). Varies with model.
Relays (CVT units)	5 A SPDT @ 250 VAC noninductive. Normally open and normally closed.

DIMENSIONS (Reference only)

	Wide inches	High inches	Deep inches	Wide mm	High mm	Deep mm
VT	5.00	4.19	3.75	127	106	95
VT-A	5.00	4.19	3.75	127	106	95
CVT	5.00	4.19	5.75	127	106	146
VT-B	7.62	5.62	4.50	194	143	114

STANDARD METAL GAUGE TUBE

Overpressure	50 psig max.
Material of Construction	Nickel-plated steel, stainless steel, glass, noble metal thermocouples.
Std. Connection	1/8-in. NPT male thread
Max Temperature	100°C
Tube Leak Test	10 ⁻⁸ SCCS

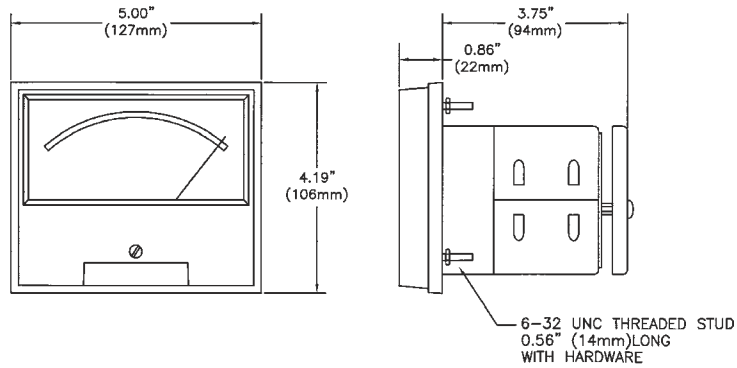
OTHER GAUGE TUBES (see ordering guide)

Glass	Available for high temperature bakeable systems 3/8 in. O.D. (10 mm) smooth tubulation.
Ruggedized	Stainless Steel, nickel-plated steel, glass, noble metal thermocouples.
Stainless Steel	For weather-proof, corrosive, and bakeable applications. Plain or threaded connection.
VCR & KF Connections	VCR® female connection. 9/16-18 UNF, female threads w/0.75 hex, Cajon No. SS-4-VCR-3 and No. SS-4-VCR 1.

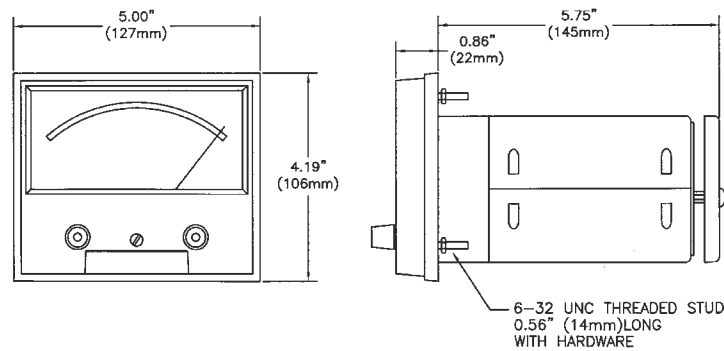
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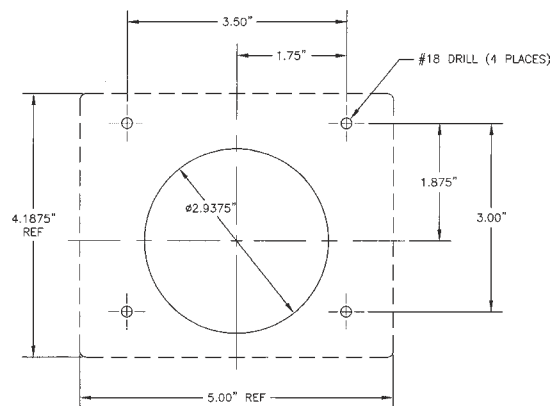
VT series outline dimensions



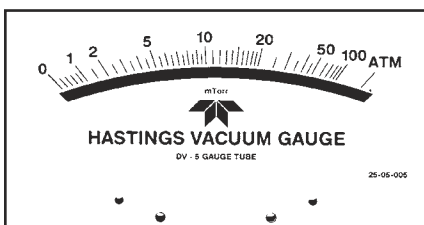
CVT series outline dimensions



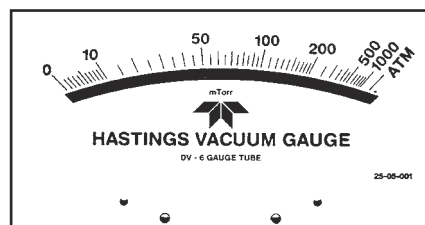
CVT/VT series mounting dimensions



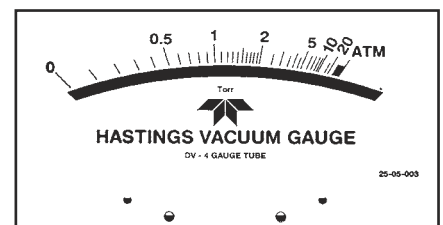
Meter dial faces



VT-5



VT-6



VT-4

Selection Chart

Each vacuum meter or controller is shipped with one 6-ft. power and one 8-ft. gauge tube cable (see Note 1). Sensors and extension cables are sold separately. Meter faces are available for equivalent Pascal on some models (see Note 2).

X: 0=Torr, 1=mbar, 2=pascal (Extra charge of \$15 applies to option 2.)

Y: 0=110 vac, 1=220 vac.

eg. VT-4-0-0 = Torr Dial Face & 110 vac; VT-4-1-1 = mbar Dial Face & 220 vac.

Meters

Stock No.	Model No.	Description
VT-4-X-Y	VT-4-X-Y	20 T Vac Gauge
VT-4B-X-Y	VT-4B-X-Y	20 T Vac Gauge, Cabinet
VT-4S2-X-Y	VT-4S2-X-Y	20 T Vac Gauge, Cabinet, 2 Pos
VT-4S5-X-Y	VT-4S5-X-Y	20 T Vac Gauge, Cabinet, 5 Pos ¹
VT-4A-X-Y	VT-4A-X-Y	20 T Vac Gauge, 1 VDC Output
VT-4D-X-Y	VT-4D-X-Y	20 T Circuit, Can & Cable
VT-5A-X-Y	VT-5A-X-Y	100 mT Vac Gauge: 1 VDC
VT-5AB-X-Y	VT-5AB-X-Y	100 mT Vac Gauge: 1 VDC, Cabinet
VT-6-X-Y	VT-6-X-Y	1000 mT Vac Gauge
VT-6B-X-Y	VT-6B-X-Y	1000 mT Vac Cabinet
VT-6S2-X-Y	VT-S2-X-Y	1000 mT Vac Gauge, Cabinet, 2 Pos
VT-6S5-X-Y	VT-6S5-X-Y	1000 mT Vac Gauge, Cabinet, 5 Pos ¹
VT-6A-X-Y	VT-6A-X-Y	1000 mT Vac Gauge, 1 VDC Output
VT-6D-X	VT-6D-X	1000 mT Circuit, Can & Cable

Controllers⁵

Stock No.	Model No.	Description
CVT-14-X-Y	CVT-14A-X-Y	20 T Vac Controller, 1 Pt
CVT-24-X-Y	CVT-24A-X-Y	20 T Vac Controller, 2 Pt
CVT-15A-X-Y	CVT-15A-X-Y	100 mT Vac Controller, 1 Pt
CVT-25A-X-Y	CVT-25A-X-Y	100 mT Vac Controller, 2 Pt
CVT-16-X-Y	CVT-16A-X-Y	1000 mT Vac Controller, 1 Pt
CVT-26-X-Y	CVT-26A-X-Y	1000 mT Vac Controller, 2 Pt

Sensor Tubes

	1000 mT Model No.	100mT Model No.	20T Model No.
Standard Tube 1/8" NPT	DV-6M (Yellow)	DV-5M (Red)	DV-4D(Purple)
Ruggedized Tube 1/8" NPT	DV-6R	—	DV-4R
KF-16	DV-6M-KF-16	—	DV-4D-KF-16
KF-25	DV-6M-KF-25	—	DV-4D-KF-25
VCR	DV-6M-VCR	—	DV-4D-VCR
Glass 3/8" O.D.	DV-20	—	—
Mini Conflat™	DV-6R-CF	—	—
Stainless Steel ³ 1/8" NPT	DV-36	—	DV-34
Stainless Steel ³ smooth ends	DV-36 smooth	—	DV-34 smooth

Reference Tube

	DB-20	DB-18	DB-16D
Cable Lengths			
Various lengths ⁴	OM-*-OFV	OM-*-OFV	OM-*-OFV
Five Channel Unit ⁴	CF-*-OFV	CF-*-OFV	CF-*-OFV



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NOTES

¹ Five channel units require the purchase of one cable and one sensor for each channel.

² Extra charge applies to Pascal meter face.

³ DV-36 and DV-34 sensors require a 1-foot cable adapter, type OM-1-MSF.

⁴ Optional cable extensions (replace * with appropriate lengths: 8, 12, 25, 50, 100 feet.)

⁵ CVT units may be supplied in boxes as "Specials". Contact factory for information.