

TELEDYNE HASTINGS

ECONOMY ANALOG VACUUM METERS AND CONTROLLERS

INSTRUMENTS

VH Series

FEATURES

- Two Standard Ranges (0-5 Torr and 0-50 Torr)
- Optional Single or Double Control Points
- Ready for Panel Mounting
- Optional Sensor Fittings
- Fail Safe: Loss of Power = Loss of Vacuum
- Complete Installation and Calibration Accessories

APPLICATIONS

Processes Requiring Accurate Vacuum Measurement & Control:

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



Panel Mount Meter



Panel Mount Controller



Calibration Reference Tubes

DESIGN FEATURES

Teledyne Hastings Instruments (THI) Economy Vacuum Gauges, Models VH-3 and VH-4, are stable, dependable instruments for less demanding applications. These modular gauges feature solid-state construction with a taut-band meter and provide rapid response. The gauge tubes have excellent stability and ruggedness and provide pressure measurements over the 0-5 and 0-50 Torr ranges. Dual-scale meter faces also provide millibar readings. Environmental tests show that the gauge tube is stable over a wide temperature range. The instruments are relatively free of cable-length effects, permitting changes of cable length up to 25 feet without readjustment or recalibration.

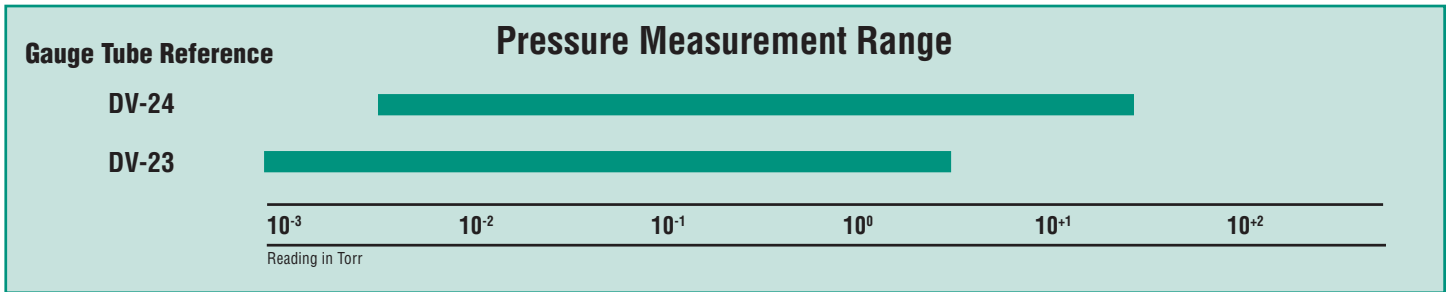
THI VH-3 and VH-4 Vacuum Gauges use a noble metal thermopile circuit. The hot junctions of the thermopile are heated directly by an AC current, while an equal number of cold junctions are kept at ambient temperature by heavy mounting studs. Thus a DC voltage is generated between hot and cold junctions. As the pressure decreases, the lowering of the thermal conductivity of the gas surrounding the hot junctions tends to increase the temperature of the hot junctions, thus increasing the output of the thermopile.

Vacuum Controllers

THI Economy Vacuum Controllers, CVH Models, are fully automatic, continuous-reading instruments for less demanding applications. These modular instruments provide dependable control with simplicity and economy. The gauge tubes have excellent stability and ruggedness and provide pressure measurements over the 0-5 and 0-50 Torr ranges. Dual-scale meter faces also provide millibar readings.

Providing control throughout the entire scale, the adjustable control arm is set with the pointer at the pressure desired.

VH SERIES



When the indicating needle passes the set point, the relay is activated. The needle continues to indicate pressure while it passes below the set point. When the indicating needle passes above the set point, the relay automatically drops out but the needle continues to indicate pressure throughout the entire range. Control is positive and without chatter.

Installation Accessories

THI offers a complete line of system attachments allowing for easy maintenance and contamination resistance operations. Gauge tubes are offered with various system fittings to match almost any system attachment requirement. Additionally, THI's complete line of quick disconnect attachments allowing customers to install these special fittings once and then easily replace sensors without vacuum sealant or tape. For particularly dirty systems, THI offers a particle drop-out trap containing a series of nine separate baffles which prevent solid contaminants from having a direct path to the sensor's thermopile.

Calibration Reference Tubes

The THI Reference Tube is an evacuated, sealed vacuum gauge tube accurately calibrated to precisely simulate a gauge tube at a given operating pressure. It permits quick and easy recalibration of THI Vacuum Gauge Indicators by merely plugging the instrument into the reference and adjusting the calibration "current set" potentiometer until the instrument reads the exact pressure noted on the reference.

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, sealed, and then aged to ensure stability over long periods of time. The sealed capsule is then housed in a protective metal shell to provide a rugged, trouble-free assembly.

SPECIFICATIONS

VH-SERIES VACUUM METERS & CONTROLLERS

Power	115 VAC 50/60 Hz
E Option	230 VAC 50/60 Hz
Cables (approx.)	6-ft power cable and 8-ft. sensor cable attached. Extensions available.
Weight (approx.)	
VH	1.2 lbs (0.55 kg)
CVH	2.5 lbs (1.13 kg)
Relays (CVH units)	115 V, 5 A SPDT @ 250 VAC noninductive. Normally open and normally closed.

DIMENSIONS (Reference only)

VH	3.50" (W) x 3.40" (H) x 2.55" (D) 89mm (W) x 86mm (H) x 65mm (D)
CVH	5.00" (W) x 4.25" (H) x 7.25" (D) 127mm (W) x 108mm (H) x 184mm (D)

STANDARD METAL GAUGE TUBE

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

OTHER GAUGE TUBES (see ordering guide)

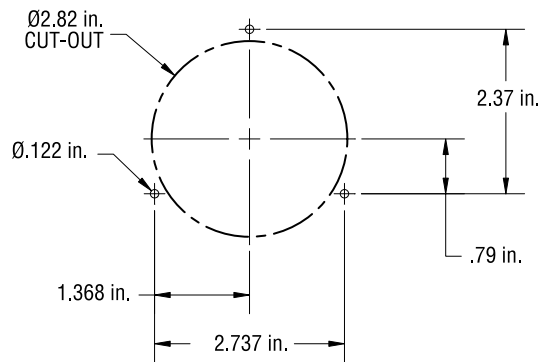
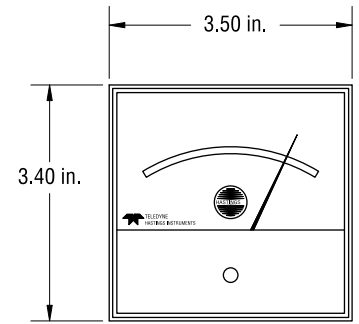
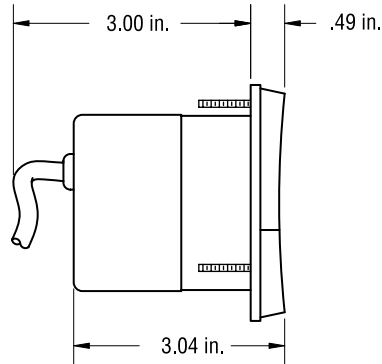
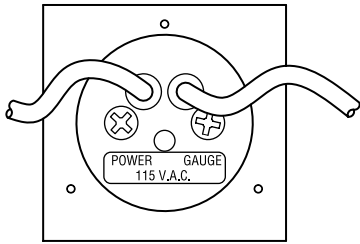
VCR Connection	VCR® female nut connection. 9/16-18 UNF, female threads w/0.75 hex, Cajon No. SS-4-VCR-3 and No. SS-4-VCR-1
KF Connections	KF-16 and KF-25 connection. Gauge tubes available in NW 25 ISO-KF flange sizes.

Teledyne Hastings Instruments reserves the right to change or modify the design of its equipment without any obligation to provide notification of change or intent to change.

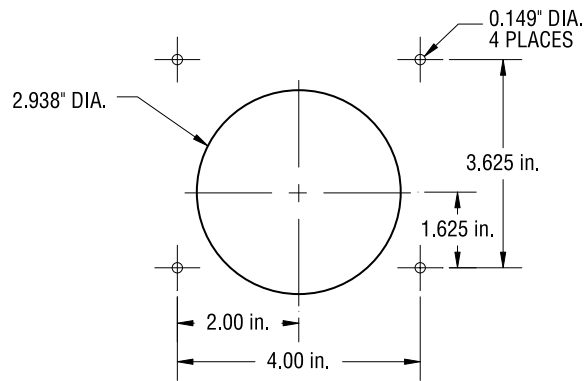
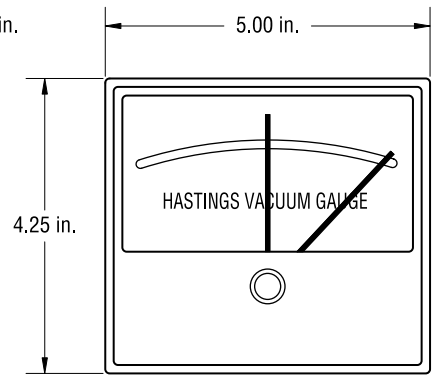
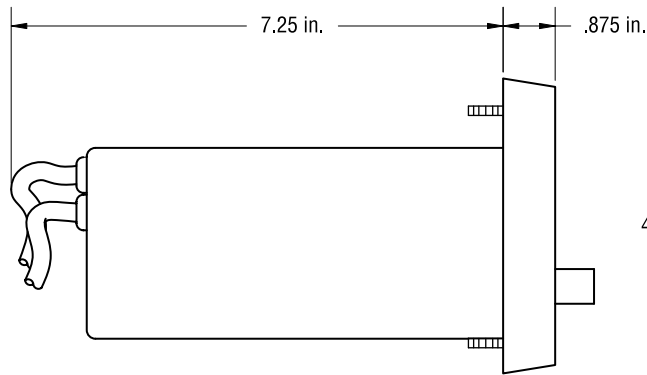
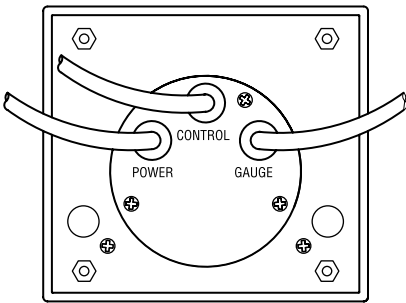
IMPORTANT NOTE:

These reference tubes are designed specifically for use with instruments employing Teledyne Hastings Instruments circuitry and are NOT interchangeable with instruments using other circuitry. Connection to another manufacturer's instrument may result in burnout.

VH Series



CVH Series



PANEL CUT-OUT DIMENSIONS

Selection Chart

Each vacuum meter or controller is shipped with approximately 6-ft. power and 8-ft. gauge tube cables. Sensors and extension cables are sold separately.

Gauges

Stock No.	Model No.	Description
55-74	VH-3 ⁽¹⁾	5 T Economy Gauge
55-88	VH-4 ⁽¹⁾	50 T Economy Gauge
55-270	VH-3/4	115v Circuit Card of VH-3/4
55-270E	EVH-3/4	230v Circuit Card of VH-3/4

Controllers

Stock No.	Model No.	Description
67-63	CVH-3 ⁽¹⁾	5 T Economy Vac Cont 1 Pt
67-66	CVH-23 ⁽¹⁾	5 T Economy Vac Cont 2 Pt
67-67	CVH-4 ⁽¹⁾	50 T Economy Vac Cont 1 Pt
67-69	CVH-24 ⁽¹⁾	50 T Economy Vac Cont 2 Pt

Sensor Tubes

Standard Tube 1/8" NPT	DV-23 (Orange)	DV-24 (White)
KF-16	DV-23-KF-16	DV-24-KF-16
KF-25	DV-23-KF-25	DV-24-KF-25
VCR	DV-23-VCR	—

Reference Tube

DB-33

DB-44

Cable Lengths

Various lengths ²	VP-*-VS	VP-*-VS
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¹Add prefix E for 230 Vac.

²Optional Cable Extensions (replace * with appropriate length, 12, 25, 50, 100 feet).

Your Customer Service Representative



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