



TELEDYNE HASTINGS INSTRUMENTS

DVT (Digital VT)
DCVT (Digital CVT)

Vacuum Measurement

RANGES

- DV-4 (0.1 – 20 Torr)
- DV-5 (0.1 – 100 mTorr)
- DV-6 (1 – 999 mTorr)

FEATURES

- Linear Analog Output (DCVT):
 0 - 1 VDC / 0 - 5 VDC / 0 - 10 VDC
 0 - 20 mA / 4 - 20 mA
- Digital Output - RS232 (DCVT)
- Dual Setpoint Control Relays (DCVT)
- Bright, Easy-to-Read Digital Display
- Available in Torr, mbar, or Pascal
- Compatible with Calibration Reference Tubes

APPLICATIONS

- Refrigeration / HVAC
- Power/Transformer Fill & Maintenance
- Cryogenics/Vacuum Insulation
- Vacuum Coating
- Vacuum Furnaces
- Freeze Drying
- Accelerators

BENEFITS

- Proven Reliability / Less Downtime
- Easy Installation and Operation
- Low Cost

DVT & DCVT Vacuum Measurement



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Description & Specifications

DESCRIPTION

The Teledyne Hastings Instruments' DVT & DCVT are digital readout versions of the successful VT/CVT-Series "Hastings Gauges" which have generated loyal customers for over 50 years. A reputation has been built on exceptional stability, accuracy, and reliability under the most demanding conditions.

Both the DVT & DCVT feature a precision A/D converter along with a microprocessor to measure the thermocouple vacuum gauge tube's signal output. The microprocessor converts the measurement to a pressure reading by employing the gauge tube's well-defined output/pressure relationship. The result is displayed using a bright 3-digit green LED display. Both the DVT & DCVT are packaged in an 1/8 DIN case which can be panel mounted.

The Digital VT/CVT Vacuum Gauge Meters are available for three of THI's most popular gauge tube families: DV-4, DV-5 and DV-6. These tubes utilize THI's rugged but sensitive noble metal thermocouples 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.

DCVT - Digital Vacuum Controller

The DCVT includes several enhanced features which makes it an attractive solution for many vacuum control automation applications. The DCVT can provide linear analog output (voltage or current) for integration of vacuum measurement with a PLC or other data acquisition system. In addition, the DCVT provides RS232 communication for direct connection of the instrument to a computer. The DCVT also includes two independent user selectable set point relays for process control. The control relays are durable 10 Amp single pole double throw which can be wired in a normally open or normally closed configuration.

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Mini-Conflat™ is a trademark of Varian Associates, Inc.

COMMON SPECIFICATIONS (DVT & DCVT)

Range	DVT-4 / DCVT-4 0.1–20 Torr DCVT-5 0.1–100 mTorr DVT-6 / DCVT-6 1–999 mTorr
Digital Accuracy (Display and RS232)	DCVT-4 ± (20% of reading + 0.01 Torr) (max) DCVT-5 ± (20% of reading + 0.2 mTorr) (max) DCVT-6 ± (15% of reading + 1 mTorr) (max)
Cables	6-ft power cable and 8-ft sensor cable included. Sensor cable lengths up to 100 ft. are available.

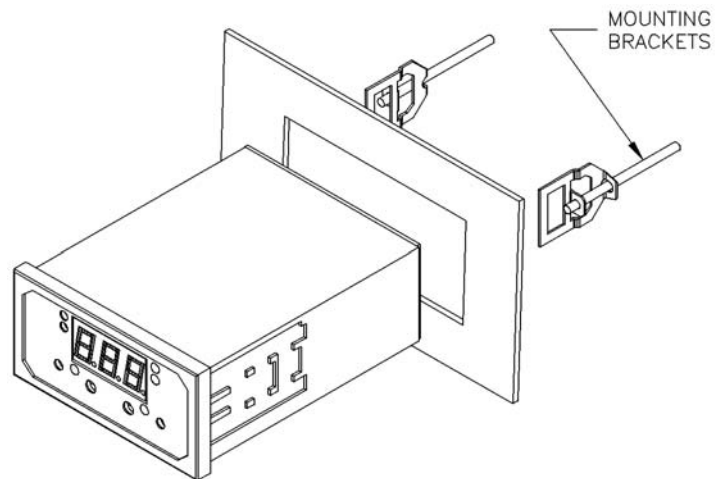
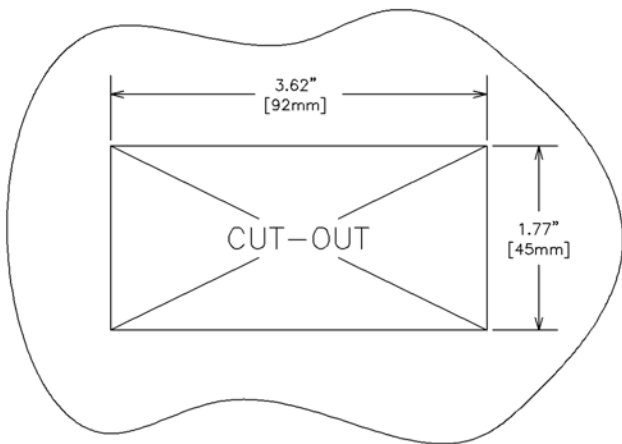
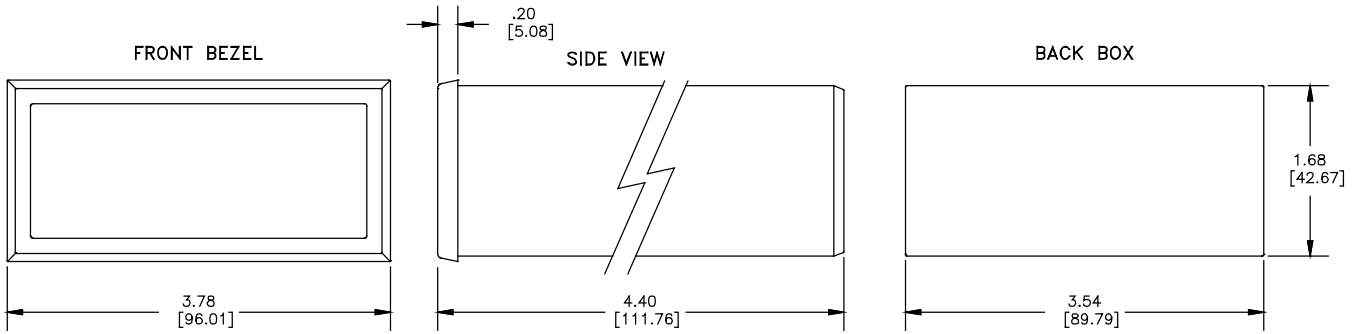
SPECIFICATIONS DVT (Digital VT)

Operating Temperature	5 — 50°C
Power Requirements With universal power converter (included)	90–240 VAC, 47–63 Hz, 2 W
DC Input Requirements (If not using universal converter)	4.5–5.3 VDC @ 155 mA
Connector	6 pin Terminal Block
Weight (approx.)	0.5 lbs. (0.2 kg)

SPECIFICATIONS DCVT (Digital CVT)

Operating Temperature	-20 — 70°C
Power Requirements	90 - 250 VAC, 47 - 63 Hz, 5 W
DC Input Requirements (If not using AC input)	22 - 25 VDC, 1.5 W
Connector (Gauge Tube, Analog Out, Relays)	12 pin Terminal Block
Connector (RS232 Serial Port)	6P6C Modular
Weight (approx.)	0.7 lbs. (0.3 kg)
Analog Output Accuracy	DCVT-4 ± (20% of reading + 0.02 Torr) (max) DCVT-5 ± (20% of reading + 0.4 mTorr) (max) DCVT-6 ± (15% of reading + 2 mTorr) (max)
Serial Communications	RS232, 9600 — 19200 baud
Relays	250 VAC @ 10 Amp 100 VDC @ 5 A (max) 5 VDC @ 0.1 Amp (min)

Outline Drawings



DVT Selection Chart

Model Number	Enclosure
DVT-4	
DVT-6	

Enclosure	
	Standard
B	Cabinet

DVT Shipment Includes

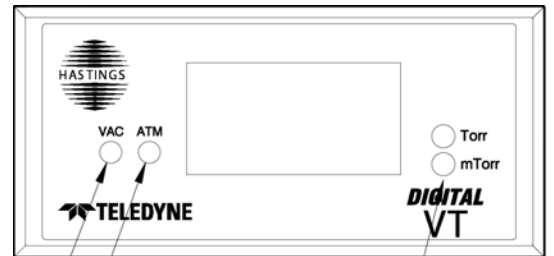
- DVT Electronics Module
- 8 Foot Gauge Tube Cable
- AC/DC Universal Power Supply
- AC Plug Adapter
- Panel Mount Hardware



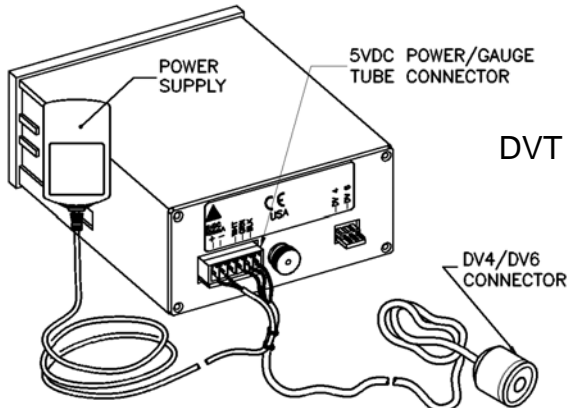
DVT in Cabinet Enclosure

Stock #	DVT Cables
CB-DVT-8	Cable, Digital VT, 8' (std)
CB-DVT-25	Cable, Digital VT, 25'
CB-DVT-50	Cable, Digital VT, 50'
CB-DVT-100	Cable, Digital VT, 100'
CB-DVT-XXX	Cable, Digital VT, SPCL'

Stock #	DVT Cables
12-01-165	UK Service
12-01-164	European Service



VAC ADJUSTMENT (LOW END)
 ATMOSPHERE PUSH BUTTON (HIGH END)
 Torr / mTorr INDICATORS



DVT Rear View

DCVT Selection Chart

Model Number	Enclosure	Pressure Units	Analog Output
DCVT-4			
DCVT-5			
DCVT-6			

Enclosure	
	Standard
B	Cabinet

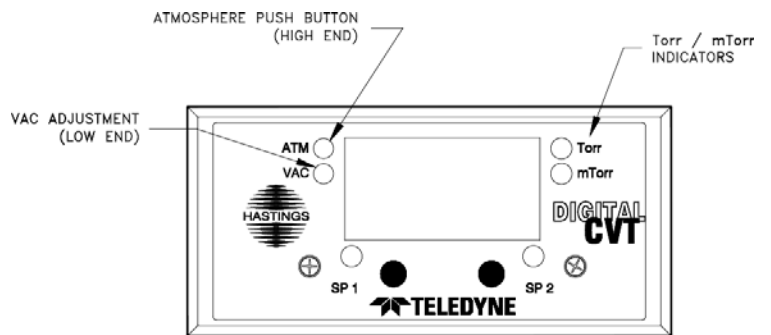
Pressure Units	
01	Torr
02	mbar
03	Pascal

Analog Output	
01	0 - 1 VDC Non-Linear
02	0 - 1 VDC Linear
03	0 - 5 VDC Linear
04	0 - 10 VDC Linear
05	4 - 20 mA Linear
06	0 - 20 mA Linear

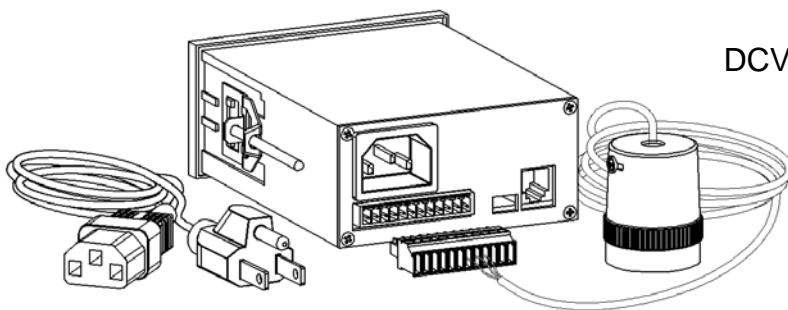
Stock #	DCVT Cables
CB-DCVT-8	Cable, Digital CVT, 8' (std)
CB-DCVT-25	Cable, Digital CVT, 25'
CB-DCVT-50	Cable, Digital CVT, 50'
CB-DCVT-100	Cable, Digital CVT, 100'
CB-DCVT-XXX	Cable, Digital CVT, SPCL'



- DCVT Shipment Includes**
- DCVT Electronics Module
 - 8 Foot Gauge Tube Cable
 - AC Cordset
 - Panel Mount Hardware



DCVT Rear View



Gauge Tube Selection Chart

Gauge tubes are sold separately.
For an entire list of available gauge tubes for use with the DVT & DCVT, see Product Bulletin PB-105.

Instrument Series	DVT DCVT	DCVT	DVT DCVT
Vacuum Range	0.1-20 Torr	0.1-100 mTorr	1-1000 mTorr
Color Band	Purple	Red	Yellow
1/8" NPT - Standard	DV-4D	DV-5M	DV-6M
1/8" NPT - Ruggedized	DV-4R	----	DV-6R
VCR	DV-4D-VCR	DV-5M-VCR	DV-6-VCR
KF-16	DV-4D-KF-16	----	DV-6-KF-16
KF-25	DV-4D-KF-25	----	DV-6-KF-25
Mini-CF	----	----	DV-6R-CF
Stainless (high temp/pressure)	DV-34	----	DV-36
Robust with Protective Cup	----	----	DV-6S
Glass 3/8" OD	----	----	DV-20
Reference Tubes	DB-16D	DB-18	DB-20

Note: Color band is not used on all tubes.

For proper accuracy and performance, Teledyne Hastings Vacuum Gauges should always be used with the proper range of Teledyne Hastings Vacuum Gauge Tubes.



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