



TELEDYNE HASTINGS INSTRUMENTS

DAVC (Digital AVC)

Vacuum Measurement

RANGES

- DV-4 (0.1 – 20 Torr)
- DV-5 (0.1 – 100 mTorr)
- DV-6 (1 – 1000 mTorr)

FEATURES

- Linear Analog Output:
 - 0 - 1 VDC / 0 - 5 VDC / 0 - 10 VDC
 - 0 - 20 mA / 4 - 20 mA
- Nonlinear Amplified Tube Output:
 - 0 - 1 VDC
- Digital Output - RS232
- Operates Hastings Most Popular Gauge Tubes
- Compatible with Calibration Reference Tubes
- 11 - 32 VDC
- TTL Setpoint for Process Control (w/LED)
- CE Compliant: EN61326

APPLICATIONS

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

BENEFITS

- Proven Reliability / Less Downtime
- Easy Installation and Operation
- Low Cost
- Rugged
- Small & Lightweight

DAVC Vacuum Measurement



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Description & Specifications

DESCRIPTION

The Teledyne Hastings Instruments' DAVC (Digital AVC) is a microprocessor-based vacuum gauge. In addition to the linear analog outputs (0-1 VDC, 0-5 VDC, 0-10 VDC, 4-20 mA, or 0-20 mA), pressure measurements can be accessed via the RS232 digital output. Digital readings can be provided in either Torr, mbar, or Pascal units.

A precision A/D converter, along with the microprocessor, measures the thermocouple vacuum gauge tube's output and converts the measurement to a pressure reading employing the gauge tube's well-defined output/pressure function.

The DAVC is a continuous-reading instrument for vacuum measurement and process control applications. The instrument is packaged in a small aluminum case with controls and electrical "D" connector located on the top.

DAVC - Digital Vacuum Controller

The DAVC includes several enhanced features which makes it an attractive solution for many vacuum control automation applications. The DAVC can provide linear analog output (voltage or current) for integration of vacuum measurement with a PLC or other data acquisition system. In addition, the DAVC provides RS232 communication for direct connection of the instrument to a computer.

Easy to Use

The DAVC includes three simple controls. The first is a push button which is used at atmospheric pressure to set the tube curve. The second is a potentiometer which can be used to adjust the "heating voltage" of the gauge for generating accurate low pressure readings. The third control is a set point for triggering over-pressure (or under-pressure) notification.

Note: The DAVC is ready for use "out of the box." Adjustments to the zero and span are necessary only for higher accuracy performance.

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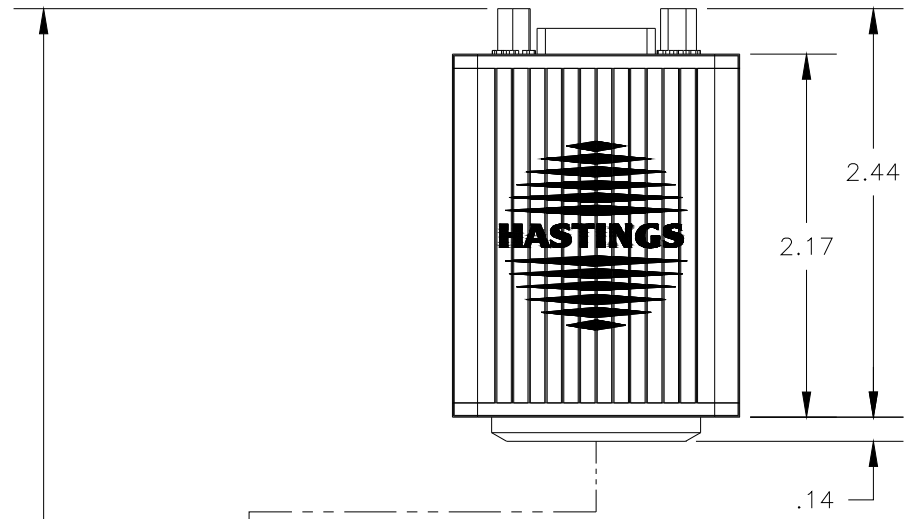
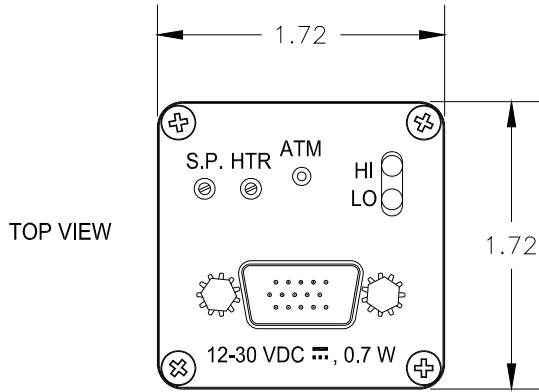
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SPECIFICATIONS DAVC (Digital AVC)

Range	DAVC-4 0.1 - 20 Torr DAVC-5 0.1 - 100 mTorr DAVC-6 1 - 1000 mTorr
Accuracy	DAVC-4 \pm (20% of reading + 0.01 Torr) (max) DAVC-5 \pm (20% of reading + 0.2 mTorr) (max) DAVC-6 \pm (15% of reading + 1 mTorr) (max)
Input Power	11 - 32 VDC, 0.7 W
I/O Connector	15-pin High-density "D", Male
Gauge Tube Connector	8-pin Octal
Cable (CB-DAVC-1.5m)	1.5 m I/O Cable (Power, Analog Output, Digital I/O, Set point)
Serial Communications	RS232, 9600 — 19200 baud
Weight (approx.)	4.2 oz (125 gm) without gauge tube & cable
Operating Temperature	-20 — 70°C
Temperature Coefficient (Includes Tube Effects)	DAVC-4 (0.1% of reading + 2.6 mTorr) / °C DAVC-5 (0.16% of reading + 0.08 mTorr) / °C DAVC-6 (-0.25% of reading + 0.2 mTorr) / °C
Set Point Output	Open-collector Transistor (80 mA @ 30 VDC)



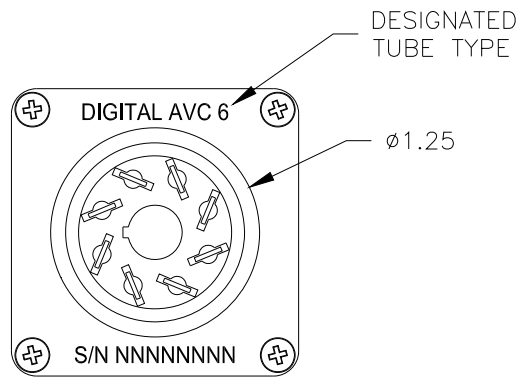
Outline Drawings



Tube	Dim. "A"
DV-4D-VCR	4.64"
DV-5M-VCR	4.64"
DV-4D	4.98"
DV-5M	4.98"
DV-6M	4.98"
DV-4R	4.58"
DV-6R	4.58"
DV-4D-KF-16	4.76"
DV-4D-KF-25	4.76"
DV-6-VCR	4.63"
DV-6-KF-16	4.51"
DV-6-KF-25	4.52"

"A"

TUBES ARE SOLD SEPARATELY



BOTTOM VIEW

DAVC Selection Chart

Model Number	Pressure Units	Analog Output
DAVC-4		
DAVC-5		
DAVC-6		

Pressure Units	
01	Torr
02	mbar
03	Pascal

Analog Output	
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 #	DAVC Cables
CB-DAVC-1.5m	Replacement Cable, 15 Pin "sub-D" to stripped wires Note: CB-DAVC-1.5m cable supplied with DAVC purchase
CB-DAVC-8-AM	8 ft Cable, 15 Pin "sub D" Female to 15 Pin "D" Male Connects DAVC to THPS-100, 400, THCD-100



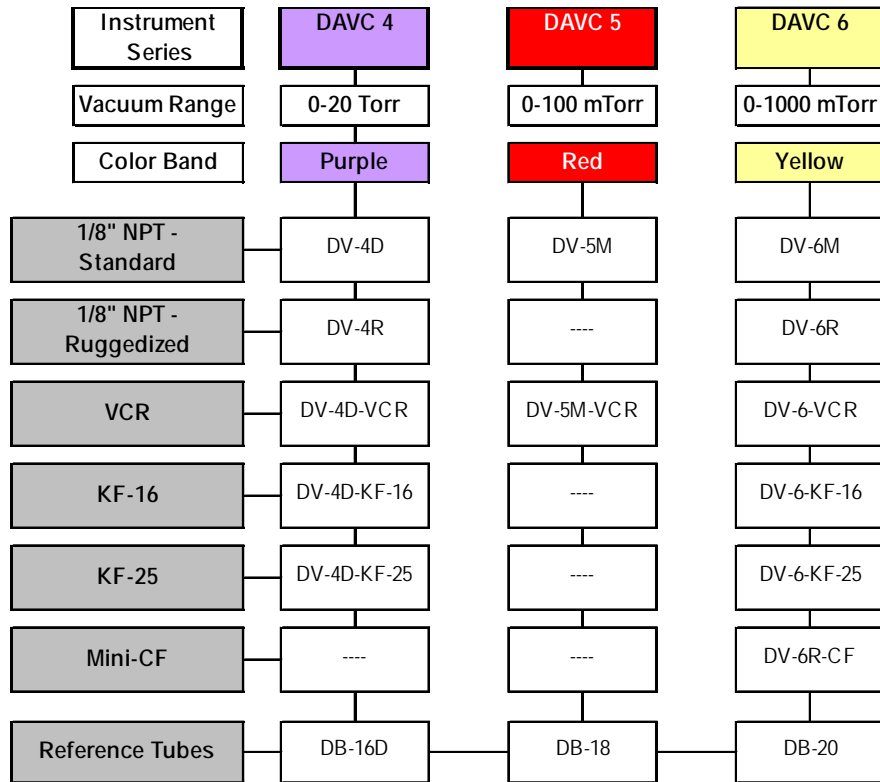
DAVC Shipment Includes

- DAVC Electronics Module
- 1.5m I/O Cable (CB-DAVC-1.5m)

Note: Nonlinear amplified tube output (0-1 VDC) is always available on Pins 7 & 6

Gauge Tube Selection Chart

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



Note: Color band is not used on all tubes.

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



Telephone: (757) 723-6531
 Toll Free: (800) 950-2468
 Fax: (757) 723-3925
 World Wide Web: <http://www.teledyne-hi.com>
 E-mail: hastings_instruments@teledyne.com
 P.O. Box 1436
 Hampton, VA 23661

