



# TEXMATE



## BN-45-DCV BN-45I-DCV

**Slim, Short Depth, Dimmable  
4.5 Digit ( $\pm 19999$ )  
Multirange 200mV, 2V, 20V, 200V  
and 1200VDC Voltmeter**

**with 5VDC or Isolated 5VDC, 9-36VDC or  
36-75VDC power supply options for your  
5V, 12V, 24V, and 48VDC applications**

**Short Depth 2.83" (72 mm)  
1/16 DIN 96x24mm Case**

0.56"  
LED  
Display

### General Features

The BN-45-DCV and BN-45I-DCV are a slim, short-depth and dimmable 4.5-digit displays ( $\pm 19999$  reading), with multiple input ranges of 200mV, 2V (standard), 20V, 200V and 1200VDC voltmeter.

The BN-45-DCV is 5VDC powered and BN-45I-DCV ships with a default isolated 5VDC power supply. Optional choices of 9-36VDC or 36-75VDC power supply (both isolated and autosensing) are available for your 12V, 24V, and 48VDC applications.

The BN-45-DCV and BN-45I-DCV are specifically designed to be factory calibrated to almost any conceivable engineering unit, such as temperature, pressure, viscosity, or flow rates etc. Ideal for OEM applications.

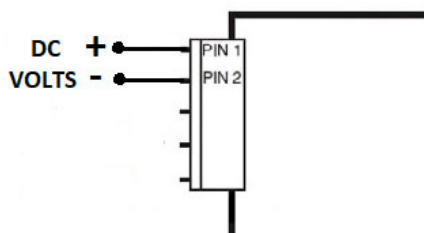
Scaling defaults to 00.00 - 1.9999; contact Texmate for your custom scaling needs.

It is in a compact 96x24mm case that has a short depth of just 2.83 inches (72mm) behind the panel.

The display is shipped standard with red LEDs. Blue LEDs that are visible under bright sunlight, and green LEDs are also offered.

Display Test, Dim/Blank, and Hold Reading are standard features.

### Typical Application Connection



### Other BN-Series Panel Meters

**BN-40BCD...** 4.0 digit, Parallel or Multiplex BCD, 5VDC Powered  
**BN-45CL420** 4.5 digit, Dimmable Red LED, 4-20mA, isolated,  
auto-sensing 9-36VDC or 36-75VDC Powered

### Compatibility

The BN-Series have a matching DIN case style that is complementary to the Lynx, Leopard and Tiger family of meters. BN-Meters are the OEM's choice for economical switchboard and process indication.



### Specifications

**Input Configuration:** .....Single-ended, with optional provision to offset the zero of the reading displayed

**Input Impedance:** .....Approx. 1M $\Omega$

**Full Scale Ranges:** .....Any scaling between -19999 to +19999

**Conversion Rate:** .....3 readings per second

**A/D Converter:** .....15 bit dual slope integrating

**Accuracy:** ..... $\pm 0.01\%$  of reading + 1 count

**Temperature Coefficient:** 10 ppm/ $^{\circ}\text{C}$  (Typical)

**Warmup Time:** .....One minute to specified accuracy

**Maximum Resolution:** .....100 $\mu\text{V}$  in 2V range

**Display:**.....0.56" (14.2mm) Red LED's; Optional Green, and Blue LEDs (visible under bright sunlight). Test, Dim/Blank, and Hold Reading are standard features.

**Polarity:** .....Assumed positive, display negative sign

**Over-range Indication:** ...Flashes four Zeros.

**BN-45 Power Supply:**.....5VDC at 200mA

**BN-45I Power Supply:**.....Isolated 5VDC or optional auto sensing isolated 9-36VDC or 36-75VDC. e.g. 9VDC @ 99mA; 12VDC @ 76mA; 24VDC @ 51mA (standard) and 36VDC @ 47mA measured under TEST (-188.88)

**Operating Temperature:**.. 0 $^{\circ}\text{C}$  to +50 $^{\circ}\text{C}$

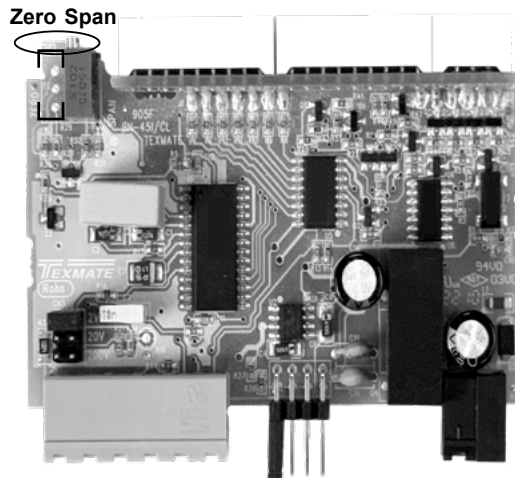
**Storage Temperature:** .....-40 to +85 $^{\circ}\text{C}$

**Relative Humidity:** .....95% (non-condensing)

**Case Dimensions:** .....Bezel: 96X24 mm (3.62" X 0.95")  
Depth behind bezel: 56.5 mm (2.23")  
plus 12.2 mm (0.48") for screw terminal connector

**Weight:** .....85 gms (3.0 oz)

## Component Layout



## Display Range

The display range is set by the factory for each of the available input ranges; default (maximum) display range is +/-19999 counts.

The Span potentiometer is used to calibrate the input signal to achieve the default display range. For example, for the 2V input range, a 1.9999V input signal is calibrated to display 19999 counts; a 2.0000V input signal will then show an over-range condition.

A optional Zero Offset potentiometer is provided to zero out any small offsets in the input signal; the default offset range is +/-85mV. Different ranges of +/- Zero Offset may be specified as an option, please contact Texmate for any specific zero offset range you might need.

With the Span and Zero Offset ranges, it is possible to scale the display range to specific requirements; contact Texmate for your custom display scaling needs.

## Signal Conditioning

The input voltage signal is first conditioned by a voltage divider, depending on the required input range, to scale the input signal to the input range of the analog-to-digital converter. The signal is then low pass filtered ( $F_c = 3.4\text{Hz}$ ). Measurement is done by a true differential, dual slope, analog-to-digital converter for superior noise suppression and accuracy.

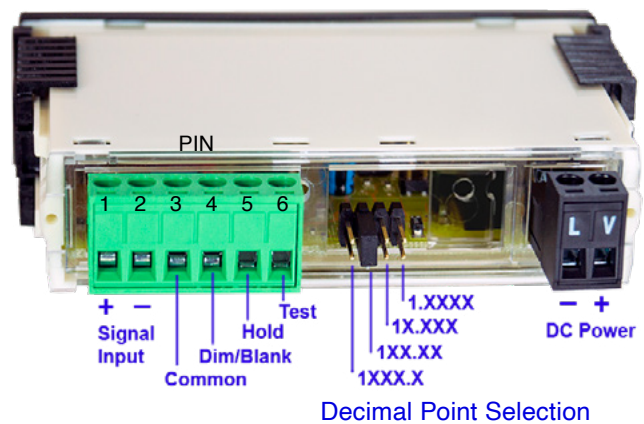
## Optional Face Plate Descriptors

AC	C2	kV	kVAR	m/hr	Hz	RPM
V	mV	min	PF	F	C	Cos $\phi$
DC	x10kN	$\mu$ A	PSIG	mS	kg/cm <sup>2</sup>	psi
kW	W	kWH	pH	%	K	kPa
A	mbar	mA	MW	KA	RPS	MWH
nWs	$\mu$ m	kW/s	I	l/sec	ml	cm
DRP	mm/s	t/min	mm	kg/sec	lbs	kg/hr
BT	bars	min <sup>3</sup>	m/min	Mwatts	$\mu$ V	dB

P.N.: 75-DESCRIPTR

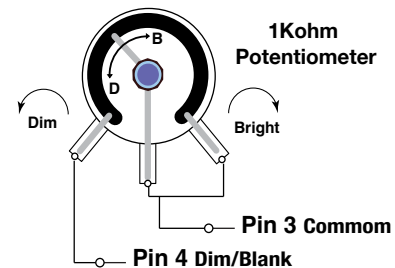
To customize the face plate, clear adhesive label containing various popular descriptors may be ordered. Choose the descriptor desired, peel off the adhesive backing and align the descriptor in the center right of the faceplate.

## Connector Pinouts



**Display Test:** All numeric display segments will light up when Test Pin 6 is connected to Common Pin 3.

**Display Blank/Dim:** When Pin 4 is connected to Common Pin 3, the display will be blanked out. If an external 1K $\Omega$  pot is connected between Pin 4 and Common Pin 3, the brightness of the display can be adjusted with the potentiometer.



**Hold Reading:** When Pin 5 (Hold) is connected to the Common Pin 3, the meter will freeze the reading while A/D conversions continue. The display will not be updated until the Hold Pin and Common pins are disconnected.

## Power Supply

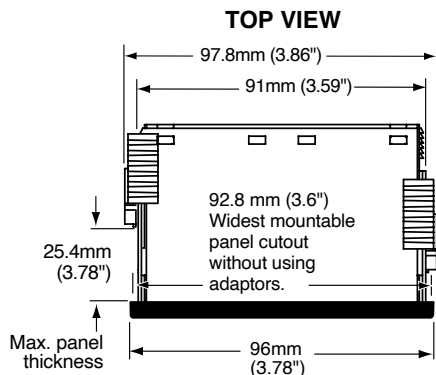
The BN-45-DCV ships from the factory with a 5VDC power supply. The BN-45I-DCV ships from the factory with a default selection of isolated 5VDC power supply. Optional isolated and autosensing 9-36VDC or 36-75VDC power supplies are also available for your 5V, 12V, 24V, and 48VDC applications.

**CAUTION - ELECTRICAL SHOCK HAZARD** All internal parts of the meter may be at the same electrical potential as the input signal and power supply. Do not reposition the signal conditioning components when input voltages are applied. When measuring dangerously high input voltages, extreme care must be taken to insulate the connector pins as well as all metal parts of the meter. A suitable high voltage warning notice should be affixed to those meters where there is any possibility that the meter could be removed from its case, or the internal components accessed, concurrent with the existence of a high voltage input signal.

## Warranty Disclaimer

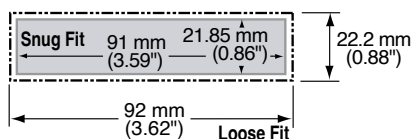
**NOTE:** Texmate provides documentation for modifying or altering the function of Texmate products solely for reference. Any customer alteration of Texmate products beyond the settings specified in their original purchase order, including recalibration or component modification/removal/substitution, will void their factory warranty.

## BN-45 Case Dimensions and Panel Cutouts



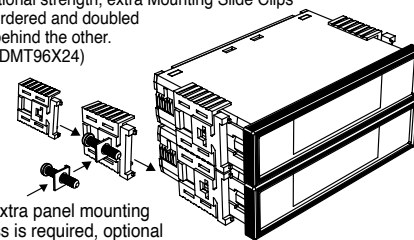
### PANEL CUTOOUT

Case will mount in standard 1/16 DIN cutouts

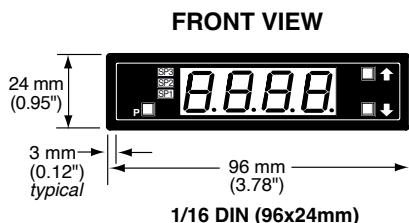


Panel adaptor plates are available to retrofit most existing panel cutouts.

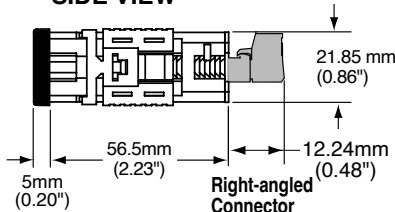
For additional strength, extra Mounting Slide Clips can be ordered and doubled up one behind the other.  
P/N: (75-DMT96X24)



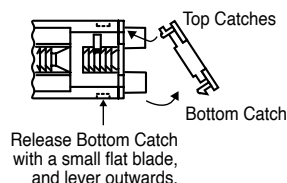
When extra panel mounting tightness is required, optional Screw Mounting Clips are included which fit on the Mounting Slide Clips.



### SIDE VIEW



### TO REMOVE REAR COVER



## Ordering Information

### Standard Options for this Model Number

**Part Number** **Description**

► **BASIC MODEL NUMBER** Includes plug in type screw terminals, standard display and standard power supply unless optional versions are ordered.

**BN-45-DCV.....Dimmable** 4.5 digit Red LED, 5VDC Powered

**BN-45I-DCV ....Dimmable** 4.5 digit Red LED, isolated 5VDC, optional 9-36VDC or 36-75VDC Powered

### ► DISPLAY

**BN-RED.....Red LED, 0.56 inch high (standard) . . . . .**

**BN-GREEN4 .. Green LEDs, 0.56 inch high . . . . .**

**BN-BLUE . . . . .** Blue LEDs, 0.56 inch high, Visible under sun light

### Special Options and Accessories

**Part Number** **Description**

► **SPECIAL OPTIONS** (Specify Inputs & Req. Reading)

**Z50K . . . . .** Zero offset 50 K Pot.

**ZR-BN-200mV . . . . .** Factory default input 0 to 200mV DC.  
Default display scaling 199.99

**ZR-BN-2V . . . . .** Factory default input 0 to 2V DC.  
Default display scaling 1.9999

**ZR-BN-20V . . . . .** Factory default input 0 to 20V DC.  
Default display scaling 19.999

**ZR-BN-200V . . . . .** Factory default input 0 to 200V DC.  
Default display scaling 199.99

**ZR-BN-1200V . . . . .** Range change from 0 to 1200DCV.  
Default display scaling 1200.0

Range Change from Standard Range shown in **BOLD** Type. Please specify range when ordering. choose ZS for a different scaling.

**ZS . . . . .** Custom display scaling within standard range

### ► ACCESSORIES

**75-DMTC96X24 . . . . .** Side Slide Brackets, extra set (96x24mm)

**75-DBBZ96X24 . . . . .** Black Bezel for 96x24mm Case

**75-DESCRIPTR . . . . .** Clear adhesive descriptors label for face plate

**DN.CAS96X24 . . . . .** Din Case 96mm X 24mm Short Depth with Bezel

### WARRANTY

Texmate warrants that its products are free from defects in material and workmanship under normal use and service for a period of one year from date of shipment. Texmate's obligations under this warranty are limited to replacement or repair, at its option, at its factory, of any of the products which shall, within the applicable period after shipment, be returned to Texmate's facility, transportation charges pre-paid, and which are, after examination, disclosed to the satisfaction of Texmate to be thus defective. The warranty shall not apply to any equipment which shall have been repaired or altered, except by Texmate, or which shall have been subjected to misuse, negligence, or accident. In no case shall Texmate's liability exceed the original purchase price. The aforementioned provisions do not extend the original warranty period of any product which has been either repaired or replaced by Texmate.

### USER'S RESPONSIBILITY

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