



Dimmable



TEXMATE



BN-45-DCV BN-45I-DCV

Slim, Short Depth, **Dimmable**

4.5 Digit (± 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 (± 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.

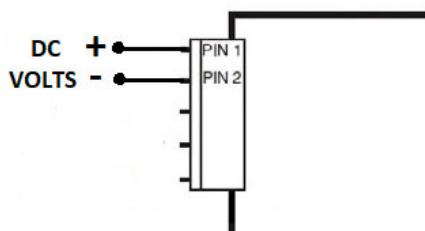
Scaling defaults to 00.00 - 1.9999; contact Texmate for your custom scaling needs.

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 Ω

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 μV in 2V range

Display:.....0.56" (14.2mm) Red LEDs; 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 $^{\circ}\text{C}$

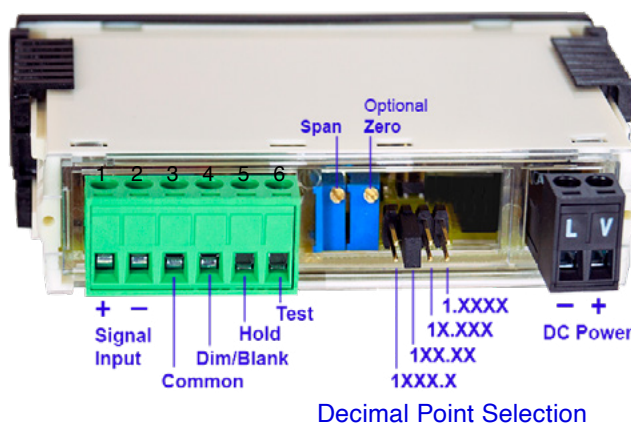
Storage Temperature:-40 to +85 $^{\circ}\text{C}$

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

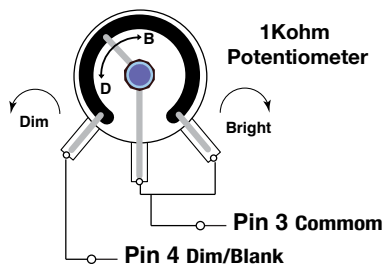
Weight:85 gms (3.0 oz)

Connector Pinouts

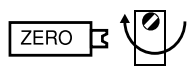


Display Test: All numeric display segments will light up when Test Pin 6 is connected to Common Pin 3.

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



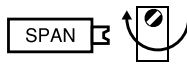
Hold Reading: When Pin 5 (Hold) is connected to the Common Pin 3, the meter will freeze the reading while A/D conversions continue. The display will not be updated until the Hold Pin and Common pins are disconnected.



Turn Clockwise to Increase Reading

ZERO Potentiometer (Pot) Optional

The Optional ZERO pot when installed enables the displayed reading to be offset ± 1000 counts.



Turn Clockwise to Increase Reading

SPAN Fine Potentiometer (Pot)

Typically, the 25 turn SPAN Fine Pot's adjustment range is 20% of the input signal.

Optional Face Plate Descriptors

AC	Ω	KV	KVAR	m/hr	Hz	RPM
V	mV	min	PF	F	C	Cosφ
DC	x10kN	μA	PSIG	mS	kg/cm ²	PSI
kW	W	kWH	pH	%	K	kPa
A	mbar	mA	MW	kA	RPS	MWH
nWs	μm	kW/s	I	I/sec	ml	cm
DRP	mm/s	l/min	mm	kg/sec	lbs	kg/hr
FT	bars	min ³	m/min	Mvars	μV	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.

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 ± 85 mV. Different ranges of $\pm$ 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 ($F_c = 3.4$ Hz). Measurement is done by a true differential, dual slope, analog-to-digital converter for superior noise suppression and accuracy.

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.

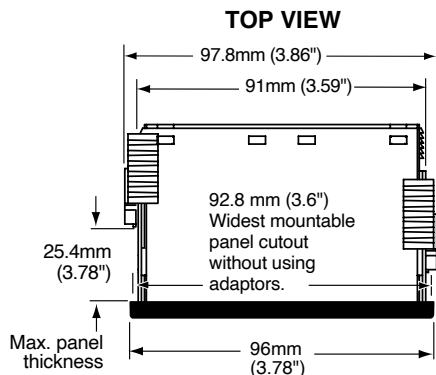


CAUTION - ELECTRICAL SHOCK HAZARD All internal parts of the meter may be at the same electrical potential as the input signal and power supply. Do not reposition the signal conditioning components when input voltages are applied. When measuring dangerously high input voltages, extreme care must be taken 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

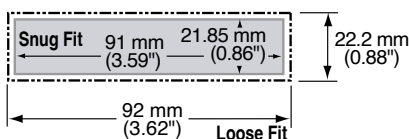
NOTE: Texmate provides documentation for modifying or altering the function of Texmate products solely for reference. Any customer alteration of Texmate products beyond the settings specified in their original purchase order, including recalibration or component modification/removal/substitution, will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

BN-45 Case Dimensions and Panel Cutouts



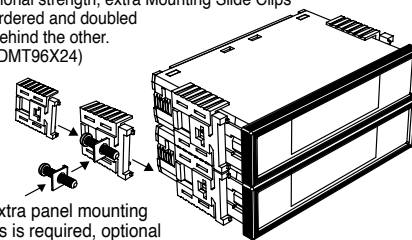
PANEL CUTOOUT

Case will mount in standard 1/16 DIN cutouts

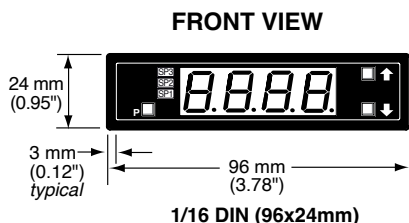


Panel adaptor plates are available to retrofit most existing panel cutouts.

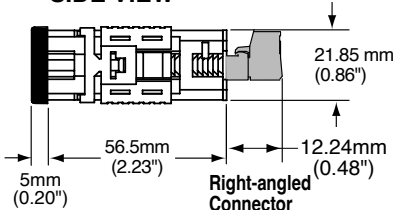
For additional strength, extra Mounting Slide Clips can be ordered and doubled up one behind the other.
P/N: (75-DMT96X24)



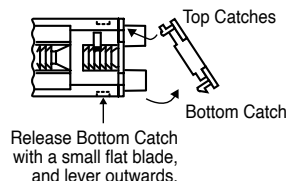
When extra panel mounting tightness is required, optional Screw Mounting Clips are included which fit on the Mounting Slide Clips.



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-DCVDimmable 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

We are pleased to offer suggestions on the use of our various products either by way of printed matter or through direct contact with our sales/application engineering staff. However, since we have no control over the use of our products once they are shipped, **NO WARRANTY WHETHER OF MERCHANTABILITY, FITNESS FOR PURPOSE, OR OTHERWISE** is made beyond the repair, replacement, or refund of purchase price at the sole discretion of Texmate. Users shall determine the suitability of the product for the intended application before using, and the users assume all risk and liability whatsoever in connection therewith, regardless of any of our suggestions or statements as to application or construction. In no event shall Texmate's liability, in law or otherwise, be in excess of the purchase price of the product.

Texmate cannot assume responsibility for any circuitry described. No circuit patent or software licenses are implied. Texmate reserves the right to change circuitry, operating software, specifications, and prices without notice at any time.



1934 Kellogg Ave., Carlsbad, CA 92008

Tel: 1-760-598-9899 • USA 1-800-839-6283 • 1-800-TEXMATE

• Email: orders@texmate.com • Web: www.texmate.com

BN-45-DCV/BN-45I-DCV Technical Manual Copyright © 2025 Texmate Inc. All rights reserved. Published by: Texmate Inc. USA. Information in this Technical Manual is subject to change without notice due to correction or enhancement. The information described in this manual is proprietary to Texmate, Inc. and may not be copied, reproduced or transmitted, in whole or in part, in connection with the design, manufacture, or sale of apparatus, device or private label product without the express written consent of Texmate, Inc.

Copyright © 2025 Texmate Inc. All Right Reserved.