BN-Series
FUNCTION SPECIFIC METERS

TEXMATE

BN-45/BN-45I

5V and 9-36V DC Powered
Easily-Scaled
Multirange 2V, 20V & 200V DC
4 1/2 Digit Voltmeter
In Short Depth 2.83" (72 mm)
Compact DIN 96x24mm Case

0.56" LED Display

General Features

The BN-45 is a 4 1/2 digit voltmeter in a compact 96x24 mm case with non-isolated 5VDC power.Another version of the BN-45, the BN-45I with internally isolated 9-36 VDC power, is also available.The case has a short depth of just 2.83 inches (72 mm) behind the panel.

The meter has three user-selectable ranges of 2V, 20V and 200V.The BN-45 may also be calibrated at the factory for these ranges or specially scaled for other ranges (see Ordering Infor-mation below).

The display is shipped standard with red LEDs, but green LEDs or super bright LEDs for high ambient light environments are also offered.Display Segments Test, Display Blank and Hold Reading are standard features.

Specifications

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

Input Impedance: .....Approx. 1MΩ

Input Protection: .....±250VAC/DC for all range

Full Scale Ranges: .....±1.9999VDC (standard) ±19.999VDC ±199.99VDC

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

Accuracy: .....±(0.05% of reading + 3 counts)

Temperature Coefficient: 10 ppm/°C in ratiometric mode; 50 ppm/°C in 2V ranges

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

Maximum Resolution: .....100μV in 2V range

Zero Stability: .....Autozeroed.0.1 counts per ºC

Display:.....0.56" High efficiency LED's; Display Hold Blank and Test provided

Over-range Indication: ...All digits flash to indicate overrange

BN-45 Power Supply:.....5VDC at 300mA

BN-45I Power Supply:.....9-36V DC at 300mA

Operating Temperature:.. 0˚C to +60˚C

Storage Temperature: .....-40 to +85˚C

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

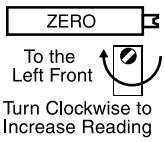
Case Dimensions:.....Bezel 3.62" x 0.95" (96 x 24mm)
Depth behind Bezel 2.23" (56.5mm)
plus 0.49" (12.47mm) for connector.

Weight: .....85 gms (3.0 oz)
125 gms (4.4 oz) when packed

BN-Series Panel Meters, for Those Applications Where Space is a Premium

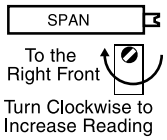
BN-35 ..... 3.5 digit, 0.2/2/20/200VDC, 5VDC Powered
BN-35CL..... 3.5 digit, 4 to 20mA, Isolated 24V DC
BN-35I ..... 3.5 digit, 0.2/2/20/200VDC, Isolated 24V DC
BN-40BCD... 4.0 digit, Parallel or Multiplex BCD, 5VDC Powered
BN-45 ..... 4.5 digit, 2/20/200VDC, 5VDC Powered
BN-45I ..... 4.5 digit, 2/20/200VDC, Isolated 9-36V DC

Signal Conditioning Components



ZERO Potentiometer (Pot) Optional

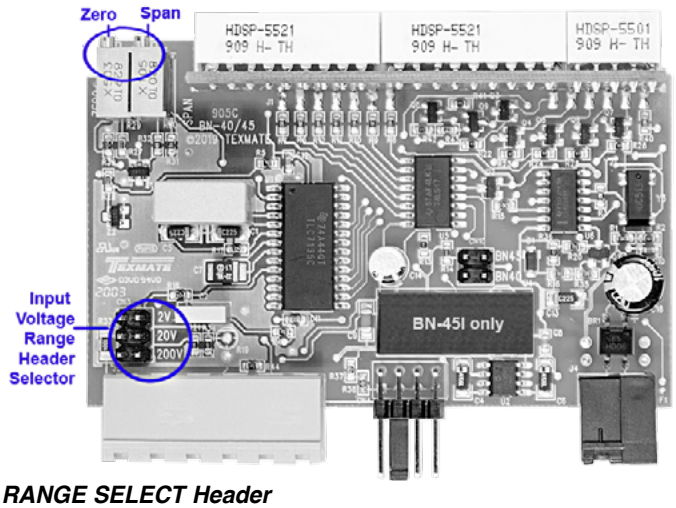
The Optional ZERO pot when installed is to the left of the SPAN pots (as viewed from the back of the meter). Typically it enables the displayed reading to be offset ±1000 counts.



SPAN Fine Potentiometer (Pot)

The 15 turn SPAN Fine pot is the middle pot (as viewed from the back of the meter). Typical adjustment is 20% of the input signal range.

Component Layout

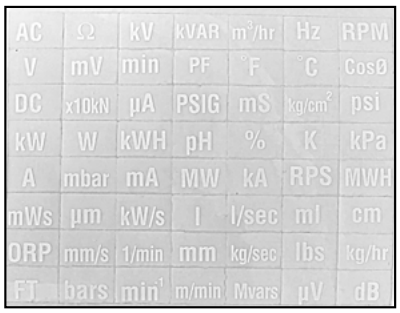


RANGE SELECT Header

Range values are marked on the PCB. Three positions are provided. After selecting a new range with the single jumper clip, recalibration is required.

Changing the range to 20V or 200V full scale.The BN-45 comes standard as a 2VDC meter.The factory can recalibrate the meter to a different range either when the meter is ordered or as an after sale service.

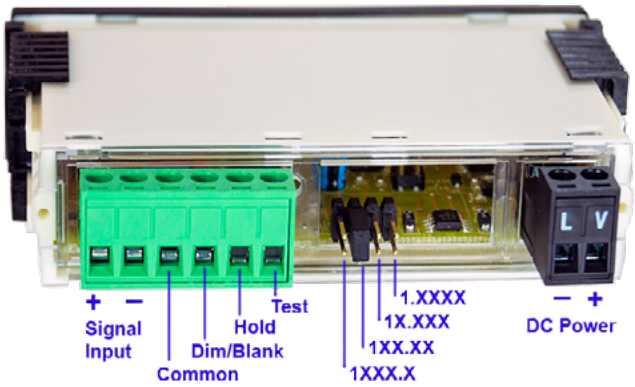
Optional Face Plate Descriptors



P.N.: DU-CASEDES

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 Display Test Pin 6 is connected to Common Pin 3.

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

Hold Reading: If Pin 5 is left unconnected, the meter will operate in a free-running mode. When Pin 5 is connected to the Hold/Test/Blank Common Pin 3, the meter will latch up. A/D conversions will continue, but the display will not be updated until the Hold Pin and Common pins are disconnected.

Calibration Procedure

The BN-45 and BN-45I are calibrated at the factory with a precision DC voltage source. Whenever the range is changed, the meter needs to be recalibrated.The Span Potentiometer is accessible with the front cover of the meter removed for user calibration.

1.Make sure there is proper DC power and input.

2.Connect the power supply.

3.Apply a positive signal input equal to 95% of the full scale input.

4.Adjust Span Potentiometer in the front of the meter so that the displayed reading agrees with the signal input.

5.The BN-45/BN-45I is now calibrated and ready for use.

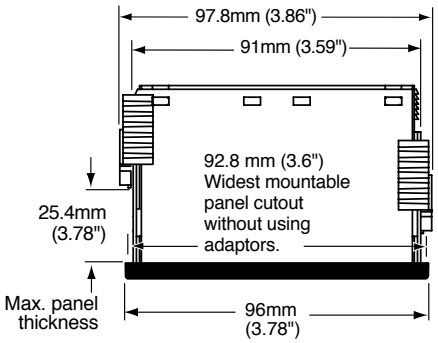
Power Supply

The BN-45 ships from the factory with a non-isolated 5VDC power supply.For applications where isolation is required between the power and signal grounds, use the Texmate model BN-45I. This model is available with 9-36 VDC power options and generates an internally isolated supply.

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.

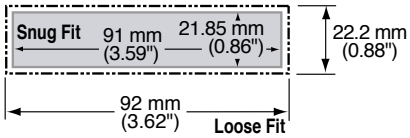
BN-45 Case Dimensions and Panel Cutouts

TOP VIEW



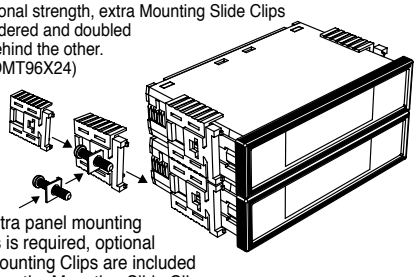
PANEL CUTOUT

Case will mount in standard 1/16 DIN cutouts



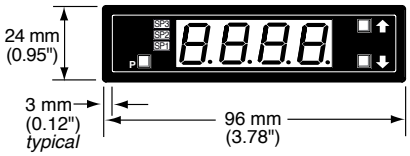
Panel adaptor plates are available to retrofit most existing panel cutouts.

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



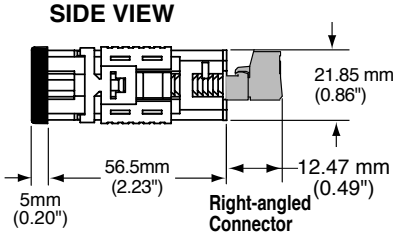
When extra panel mounting tightness is required, optional Screw Mounting Clips are included which fit on the Mounting Slide Clips.

FRONT VIEW

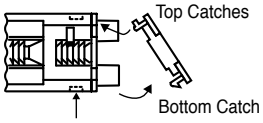


1/16 DIN (96x24mm)

SIDE VIEW



TO REMOVE REAR COVER



Release Bottom Catch with a small flat blade, and lever outwards.

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 ..... 4.5 digit Red LED, **2**/20/200VDC, 5VDC Powered

BN-45I ..... 4.5 digit Red LED, **2**/20/200VDC, 5VDC Powered

▸**DISPLAY**

STANDARD ..... Red LED, 0.96 inch high. . . . . . .

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

BN-BRIGHT . . . super bright Red LEDs, 0.56 inch high. . . . . .

Special Options and Accessories

Part Number ***Description***

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

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

ZR . . . . . Range Change from Standard Range shown in BOLD Type. Please specify range when ordering.

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

▸**ACCESSORIES**

75-DMTC96X24 . . . .Side Slide Brackets, extra set (96x24mm only)75-DBBZ96X24 . . . .Black Bezel for 96x24mm Case, BN and AM seriesDN.CAS96X24 . . . . .Din Case 96 X 24 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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