

## Dimmable



**TEXMATE**



**0.56"**  
**LED**  
**Display**

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

## General Features

The BN-45CL420 is a 4.5-digit display, dimmable, streamlined 4 to 20mA current loop meter with a default selection of 9-36VDC or optional 36-75VDC power supply (both isolated and autosensing) for your 12V, 24V, and 48VDC applications.

It includes special input protection circuitry that can withstand up to 50VDC connection and overcurrents up to 40mA (clamps to 32mA).

The BN-45CL420 is 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.

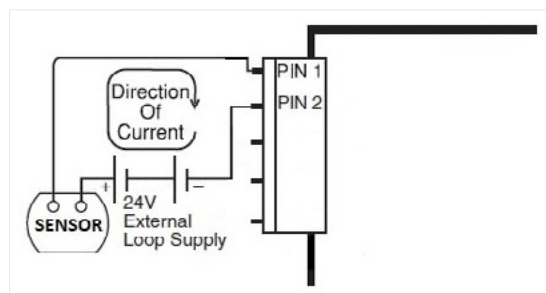
Scaling defaults to 00.00 - 100.00(%); contact Texmate for your custom scaling needs.

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



## 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:** .....Connects in series to 4-20mA process loop

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

**Input Impedance:** .....74Ω maximum. Maximum 1.48V drop

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

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

**Temperature Coefficient:** 10 ppm/°C (Typical)

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

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

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

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

**Decimal:**.....User selectable to 4 positions

**Over Range Indication:** ..Flashes four Zeros.

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

**Operating Temperature:**.. 0°C to +50°C

**Storage Temperature:** .....-40°C to +85°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)

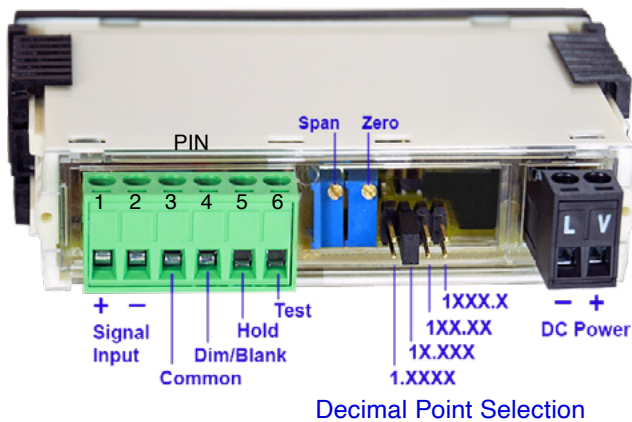
## Other BN-Series Panel Meters

**BN-40BCD... 4.0 digit, Parallel or Multiplex BCD, 5VDC Powered**

**BN-45** ..... 4.5 digit, 200mV/2/20/200VDC, 5VDC Powered

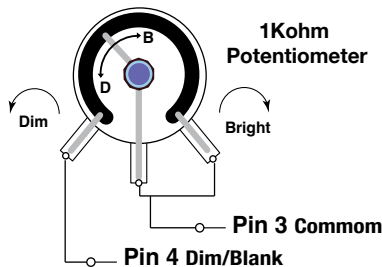
**BN-45I** ..... 4.5 digit, 200mV/2/20/200/1200VDC, Isolated Auto-sensing 9-36V DC or optional 36-75VDC Powered

## Connector Pinouts

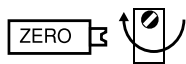


**Display Test:** All numeric display segments will light up when Test Pin 6 is connected to Common Pin 3.

**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.



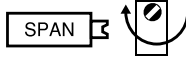
**Hold Reading:** When Pin 5 (Hold) is connected to the Common Pin 3, the meter will freeze the reading while A/D conversions continue. The display will not be updated until the Hold Pin and Common pins are disconnected.



Turn Clockwise to Increase Reading

### ZERO Potentiometer (Pot) Optional

The Optional ZERO pot when installed enables the displayed reading to be offset  $\pm 1000$  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	V	kV	kVAR	m <sup>3</sup> /hr	Hz	RPM
V	mV	min	PF	F	C	cos $\phi$
DC	$\times 10$ N	$\mu$ A	PSIG	mS	kg/cm <sup>2</sup>	psi
KW	W	KWH	pH	%	K	kPa
A	mbar	mA	MW	kA	RPS	MWH
mVs	$\mu$ m	kW/s	I	l/sec	ml	cm
DRP	mm/s	l/min	mm	kg/sec	lbs	kg/hr
FT	bars	l/min	m/min	Mvars	$\mu$ 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.

## Display Range

The display range is determined by a combination of Span and Zero header positions and Span and Zero potentiometer adjustments using a proprietary scheme developed by Texmate. This scheme allows ranges to be positive only (e.g., 0 to 100%) or to span both negative and positive values (e.g., -300 to 600F). Full negative ranges (e.g., -100 to -1500), although uncommon, can also be accommodated. Recalibration is required during any display range adjustment.

Factory default scaling is 00.00 - 100.00 (%); contact Texmate for your custom scaling needs.

## Signal Conditioning

The The 4-20mA input signal is first conditioned by a protection circuit that blocks over-voltage of up to 50V, e.g., due to incorrect external loop supply connection, and input over-currents up to 40mA are held to no more than 32mA, protecting the sense resistor circuit. The input signal is then low pass filtered ( $F_c = 4.3\text{Hz}$ ). Measurement is done by a true differential, dual slope, analog-to-digital converter for superior noise suppression and accuracy.

## Power Supply

The BN-45CL420 ships from the factory with a default selection of isolated and autosensing 9-36VDC power supply. 36-75VDC range are optional selection for your 12V, 24V, and 48VDC applications.

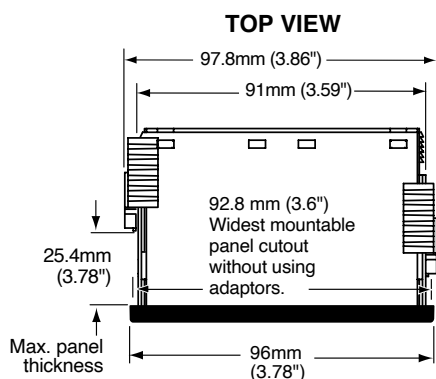


**CAUTION - ELECTRICAL SHOCK HAZARD** All internal parts of the meter may be at the same electrical potential as the input signal and power supply. Do not reposition the signal conditioning components when input voltages are applied. When measuring dangerously high input voltages, extreme care must be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

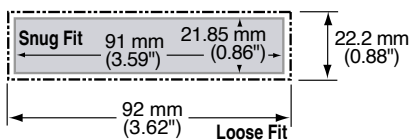
NOTE: Texmate provides documentation for modifying or altering the function of Texmate products solely for reference. Any customer alteration of Texmate products beyond the settings specified in their original purchase order, including recalibration or component modification/removal/substitution, will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

## BN-45 Case Dimensions and Panel Cutouts



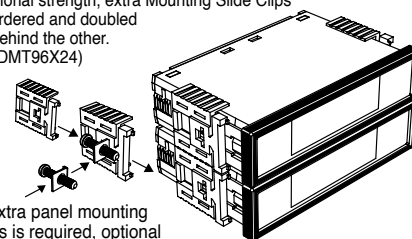
### PANEL CUTOUT

Case will mount in standard 1/16 DIN cutouts

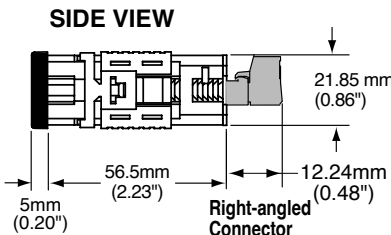
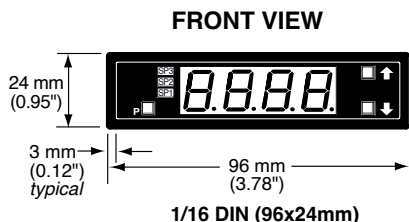


Panel adaptor plates are available to retrofit most existing panel cutouts.

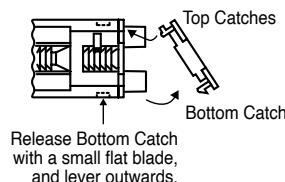
For additional strength, extra Mounting Slide Clips can be ordered and doubled up one behind the other.  
P/N: (75-DMT96X24)



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



### 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-45CL420.... Dimmable 4.5 digit Red LED, 4-20mA, isolated 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 bright sun light**

### Special Options and Accessories

**Part Number Description**

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

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