



SM-35-DCV

Easily-Scaled 5V DC Powered 3.5 Digit **Panel Meter**

Selectable Multi-range: 50mVDC, 100mVDC Current Shunt, 2V, 20V and 200V with optional 1000VDC range, optional 4-20mA, optional 5V isolator and optional Differential Measurement

Great for High Voltage EV Battery and Solar Battery Range

CE ROHS Optional 4 Ratchetting Mounting Side Clips 0.56" Red LED Display Optional Blue or Green Display

General Features

The SM-Series meters have LCD or LED displays and offer many unique features designed to simplify installation, calibration and scaling. SM-35-DCV and SM-35X-DCV meters are pin-compatible, which enables LED and LCD meters to be interchanged within the same panel without necessitating wiring or panel cutout changes.

All SM-Series meters are powered with bipolar single-ended inputs with optional differential measurement. The meters feature Display Hold, Display Test and Auto-Polarity indication.

The SM-series of meters are designed to be user scalable to almost any engineering unit of readout. On-site scaling and recalibration is facilitated by multi-turn potentiometers that provide continuous adjustment within each of the six header-programmable full scale ranges.

The five ranges provided with the SM-35-DCV (LED display) and SM-35X-DCV (LCD display) are 50mV, 100mV current shunt, 2V, 20V and 200V DC full scale. 5V power isolator, 1000V DC range, 4-20mA and Differential Measurement are factory installed options only.

Both SM-35-DCV and SM-35X-DCV have Zero-offset and Span adjustment potentiometers as a standard feature.

4 to 20mA Process Loop Connections Fully User Scalable **ZERO SPAN** 24V 0000 External Loop Supply HOLD Common **TEST GND** Direction LO Of Current Ш Other devices can be added to the loop.

Specifications

Input Configuration:Single-ended, with optional differential measurement and provision to offset the

zero of the reading displayed

Input Impedance:1MΩ minimum

Full Scale Ranges:±2VDC (Meters shipped with 2V range

selected) ±20VDC, ±200VDC, 50mVDC and 100mVDC ranges are header programmable.

A/D Converter:12 Bit Dual Slope

Accuracy:±(0.05% of reading + 2 digits)

Temperature Coefficient: 100ppm/°C typical

Warmup Time:One minute to specified accuracy

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

Display:......................0.56" High efficiency LED's "Display Hold"

feature

Decimal Selection: User programmable to 3 positions

Over-range Indication: ... When input exceeds full scale on any range

being used, most significant "1" digit and polarity symbol are displayed with all other

digits blank

Power Supply:+4.5 to +5.5V DC at 150mA;

Optional 1.5kV 5V Isolation

Operating Temperature:.. 0°C to +60°C

Storage Temperature:-20° to +70°C

Relative Humidity:95% (non-condensing)

Case Dimensions:Bezel 2.76" x 1.17" (69.75 x 29.7mm)

Depth behind Bezel 3.32"(84mm) plus 0.68" (17.27mm) for connector.

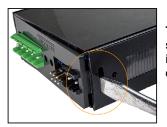
Weight:88 gms (3.1 oz)

143 gms (5 oz) when packed

SM-Series with LCD Display

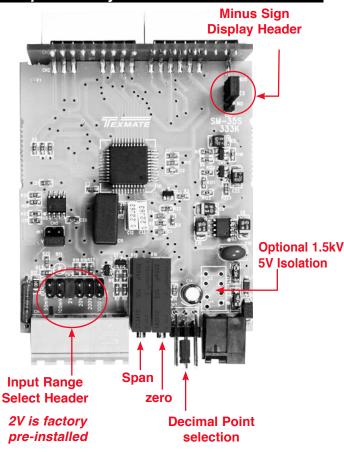
SM-35X-DCV3.5 digit LCD with back light, 5VDC Powered input ranges: 50mV/100mV/2/20/200/1000VDC

Open the Meter to Select Input



To open meter, insert a flat head screwdriver or similar instrument in both slots on the side of the cover and pry open.

Component Layout

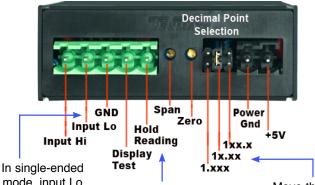


Calibration Procedure

- Select the DC Volt input range 20V, for example, by re-positioning the jumper clip on the range select headers indicated by and marked on the PCB Range select Header, shown on Component Layout section.
- 2) Input 0VDC , meter will automatically will display 000 or adjust Zero pot until meter display 000.
- Apply at least 95% of full voltage range, eg 19V for a 20 DCVolt range.
- 4) Adjust Span pot until meter displays 19.00 (20V Range). For other ranges, the voltage applied should be similarly proportional to the particular full-scale voltage.

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.

Connector Pinouts



In single-ended mode, input Lo and GND are internally connected. In differential mode, input Lo

and GND are

disconnected

 Hold will freeze the reading when connected to Gnd, reading will update when disconnected.

 Display test will light up all digits 1888 when connected to Gnd and will go back to normal display when disconnected

ZERO Potentiometer (Pot)

Move the jumper to the indicated position on the header for the required decimal

Signal Conditioning Components



Turn Clockwise to Increase Reading

The ZERO pot is to the right of the SPAN pots (as viewed from the back of the meter). Typically it enables the displayed reading to be offset ± 1000 counts. Not available on differential option



SPAN Potentiometer (Pot)

The SPAN pot is on the right side of the signal input. Typical adjustment is 100% of the input signal range.



RANGE SELECT Header

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

Minus Sign Header

NO YES

Activates Minus sign on display

NO VES

Disable Minus sign on display*

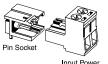
Minus Sign Header

This header allows the Minus Sign to work normally.

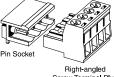
*Note: Removing the header disables Minus Sign

Connectors

This meter uses plug-in type screw terminal connectors for all input and output connections. The power supply connections have a unique plug and socket outline to prevent cross connection. The main board uses standard right-angled connectors.



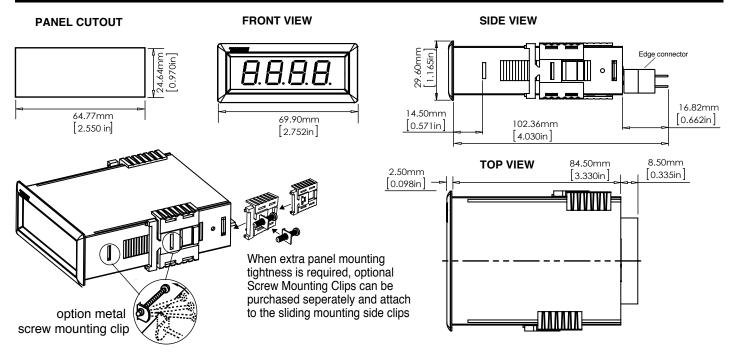
Input Power Screw Terminal Plug



WARNING: AC and DC input signals and power supply voltages can be hazardous. Do Not connect live wires to screw terminal plugs, and do not insert, remove or handle screw terminal plugs with live wires connected.



SM Case Dimensions and Panel Cutouts



Ordering Information

Part Number

Description

▶ BASIC MODEL NUMBER Includes screw terminal connectors, standard display and standard power supply unless optional versions are ordered.

SM-35-DCV3.5 digit Red LED, 50mV/100mV/2v/20V/200V,optional 1000V, 4-20mA, 5V Isolator and differential measurement. 5VDC Powered

▶ DISPLAY

STANDARD Red LED, 0.96 inch high

SM-GREEN . . . Green LEDs SM-BLUE Blue LEDs

► SPECIAL OPTIONS (Specify Inputs & Req. Reading)

V0-ISO5V..... 5V isolator-1.5kV isolaton between signal and power ZZ-SM35-DIFF. Differential Measurement ZR-SM35-50M. Range change 0 to 50mV DC. Display scaling 100.0 ZR-SM35-100M. Range change 0 to 100mV DC. Display scaling 100.0 ZR-SM35-420. Range change 4 to 20mV DC. Display scaling 100.0 ZR-SM35-20V. Range change 0 to 20V DC. Display scaling 1999 ZR-SM35-200V Range change 0 to 200V DC. Display scaling 1999 ZR-SM35-1KV. Range change 0 to 1000V DC. Display scaling 1000 ZS. Custom digital display scaling within standard ranges

ACCESSORIES

SL.CASERED. . Slim Bezel Case, Red Faceplate w/Mtg Hrdwre PS-505 5V DC Regulated Power Supply, 0.5A Output PS-510 5V DC Regulated Power Supply, 1A Output

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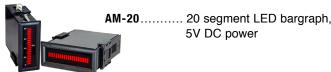
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Email: orders@texmate.com

Tech Support: techsupport@texmate.com

Meters in Dashboard Case Enclosure



CM-35XTL Less than 1V DC loop drop and 1 Joule energy storage

CM-35XT Economical 4-20mA loop-powered meter

PM-45X 4.5 digit 0.48" LCD DPM **PM-45L** 4.5 digit 0.4" LED DPM

SP-35X..... Signal Power DC voltage measurement from 5.0V DC to 199.9V DC



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PS-505.......5V DC Regulated Power Supply, 0.5A Output

PS-510 5V DC Regulated

Power Supply, 1A Output



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