



MU-35MV

Millivolt Panel Meter
3 1/2 Digit 0.315" LED
in a 1/8 DIN Case



A Multi-range, Easily-scaled, DC Milli-volt Measuring, AC/DC Powered LED Meter.

General Features

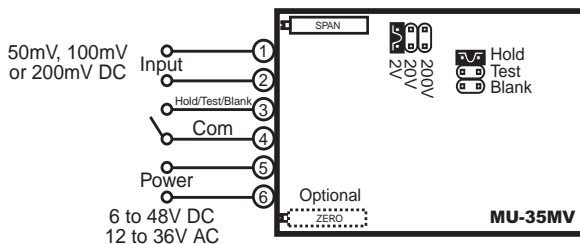
The MU-35MV is a miniature, streamlined DC millivolt measuring meter. The MU-35MV has three built-in header selectable ranges of 50mV, 100mV and 200mV. It is specifically designed to be easily user-scaled and calibrated to almost any conceivable engineering unit, such as temperature, pressure, viscosity or flow rates, etc., without requiring component changes.

On site scaling and recalibration is facilitated by multi-turn potentiometers that provide continuous adjustment within each of three header-programmable full scale ranges for span and zero offset. Display Hold and Display Test functions are also provided. The standard meters have a high efficiency red LED display. Green displays may also be specified. (See ordering information for available choices).

The MU-35MV interconnects by means of a push-on screw terminal that is provided with the meter. A high quality, internally isolated, wide range, switching supply is built into every MU-35MV meter. This allows the meter to operate from a wide range of AC or DC voltages. (See specifications.) The isolation ensures that ground loop currents do not affect the meter stability.

Typical Application Connections

DC Volts Single-ended measurement with a Resolution of 100 milliVolt.



Compatibility

The MU-Series have a matching DIN case style that is complementary to the Lynx, Leopard and Tiger family of meters. MU-Meters are the OEM's choice for economical switchboard and process indication. For economy, each model is dedicated to a specific application and designed for quick and easy installation.



Specifications

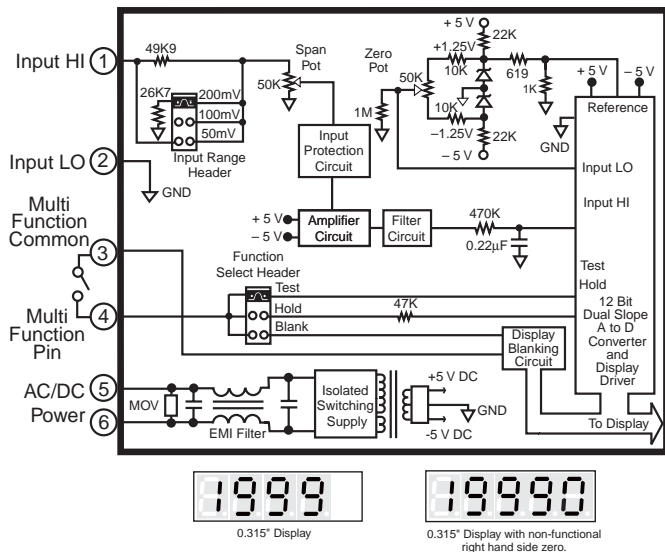
- Input Configuration:**Single-ended with optional provision to offset the zero of the reading being displayed
- Input Impedance:**50kΩ in 50mV range; 100kΩ in 100/200mV ranges
- Full Scale Ranges:**Three built-in header selectable ranges of ±50mV DC, ±100mV DC and ±200mV DC full scale
- A/D Converter:**12 Bit Dual Slope
- Accuracy:**± (0.05% of reading + 2 digits)
- Temperature Coefficient:**...100ppm/°C (Typical)
- Warm up Time:**One minute to specified accuracy
- Conversion Rate:**3 readings per second
- Display:**0.315" High Efficiency LED; optional non-functional, right hand side dummy zero available
- Decimal Selection:**User programmable to 4 positions
- Over-range Indication:**If input exceeds full scale on any range being used, most significant "1" digit & polarity symbol display; all other digits blank.
- Power Supply:**5VDC to 30VDC or 12VAC to 24VAC. Approximately 1.5 watts.
- Operating Temperature:** ..0°C to +50°C
- Storage Temperature:**-20 to 70 °C
- Relative Humidity:**95% (non-condensing)
- Case Dimensions:**1/8 DIN, Bezel: 96x48mm (3.78"x1.89")
Depth behind bezel 117 mm (4.61") plus 11.8mm (0.47") for Right-angled Connector or 20mm (0.79") for Straight-through Connectors.
- Weight:**312 gms (11oz)
397 gms (14 oz) when packed

MU-Series, the OEMs choice for DC voltage measuring

MU-353.5 digit, Iso., 2/20/200 VDC, 5-36VDC/12-24VAC Pwr
MU-35MV . . .3.5 digit, 50/100/200m VDC, Iso., VDC or VAC Pwr

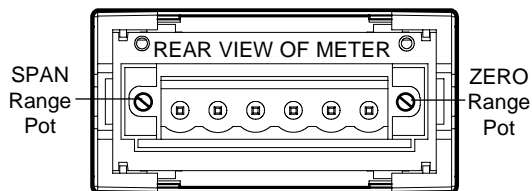
MU-35CL . . .3.5 digit, Iso., 4-20mA input, 5-36VDC/12-24VAC Pwr

Functional Diagram



Connector Pinouts

The MU-35MV interconnects by means of screw terminals. The screw terminal connector is provided with the meter.



Pin 1 - Signal Input High: Signal input high for the meter. Full scale ranges of 50mV, 100mV or 200mV can be selected on the Range Select Header.

Pin 2 - Signal Input Low: Signal input low for the meter. Full scale ranges of 50mV, 100mV or 200mV can be selected on the Range Select Header.

Pin 3 - Hold/Test/ Blank: Depending on the position of the internal jumper clip, connecting Pin 3 to Pin 4 will activate one of three special functions. The displayed reading may be held, the display blanked or the display segments may be tested. (See Component Layout). If display hold is selected on the internal header and Pin 3 is connected to the H/T/B Common Pin 4, the meter display will be latched. A/D conversions will continue but the display will not be updated until Pin 3 is disconnected from the H/T/B Common Pin 4.

HOLD If Display Test is selected on the internal header and Pin 3 is connected to the H/T/B Common Pin 4, all numeric segments of the display will light up and -1888 will be displayed. This function is used to check for defective segments. Once Pin 3 is disconnected from Pin 4, the meter will again display the true value of the signal input.

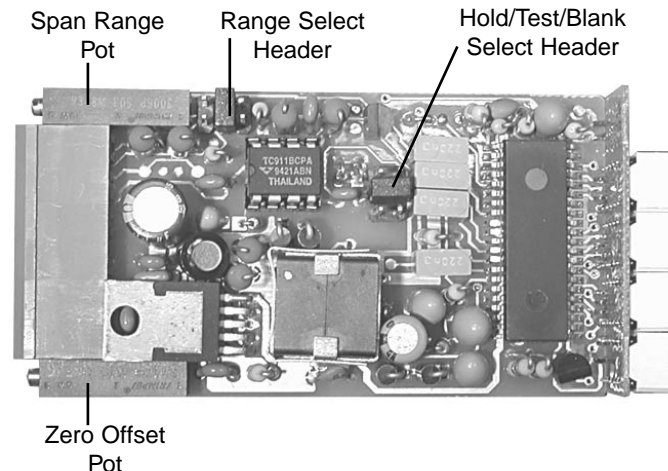
TEST If Display Blank is selected on the internal header and Pin 3 is connected to the H/T/B Common Pin 4, the display will blank out. A/D conversions will continue, so that the display will show the true value of the input as soon as Pin 3 is disconnected from Pin 4.

Pin 4 - Hold/Test/ Blank Common: Connect this pin to Pin 3 to activate Hold, Test or Blank as explained above under Pin 3.

Pin 5 - Power Input 1: The MU-35MV operates from any voltage from 5VDC to 30VDC or 12VAC to 24VAC. This input is not polarity sensitive. The MU-35MV consumes about 1.5 Watts of power.

Pin 6 - Power Input 2: The MU-35MV operates from any voltage from 5VDC to 30VDC or 12VAC to 24VAC. This input is not polarity sensitive. The MU-35MV consumes about 1.5 Watts of power.

Component Layout



Signal Conditioning Components

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.

SPAN Potentiometer (Pot)
 The 15 turn SPAN pot is always on the left side (as viewed from the back of the meter). Typical adjustment is 100% of the input signal range.

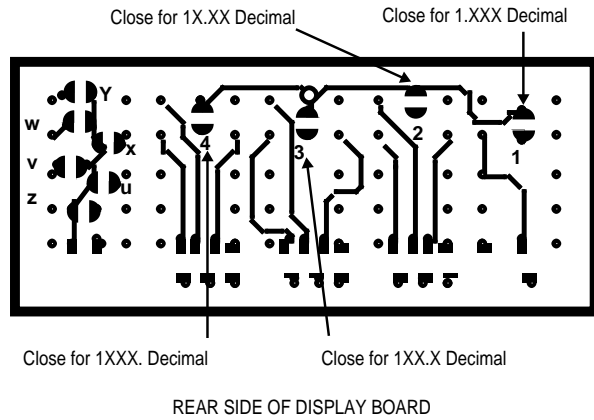
HOLD/TEST/BLANK Header
 Range values are marked on the PCB. Three positions are provided. After selecting a new range with the single jumper clip, recalibration is required.

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

Calibration Procedure

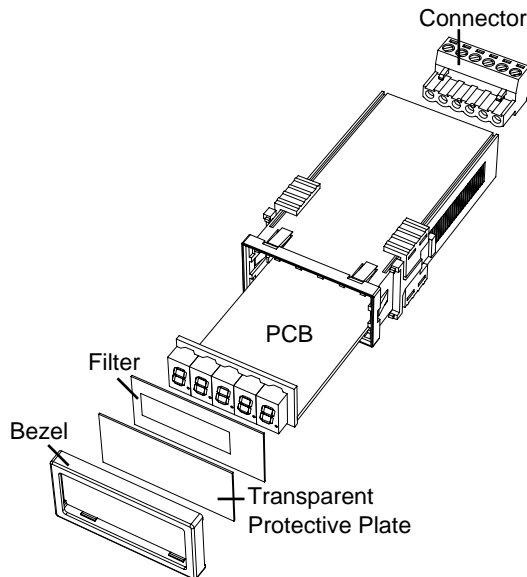
1. Select the required full scale voltage range, by repositioning the jumper clip on the range select header. Ranges of 50mV, 100mV and 200mV full scale may be selected.
2. Apply an input of 0 volts. Adjust the Zero Offset pot until the meter reads 000.
3. Apply an input equal to 95% of the full scale voltage.
4. Adjust the Span Pot until the meter displays the required reading.
5. The MU-35MV is now calibrated and ready for use. (Whenever a new range is selected, re-calibration is required to meet the specified accuracy.)

Decimal Point Selection



Decimal point selection is done by closing solder jumpers on the rear of the display board.

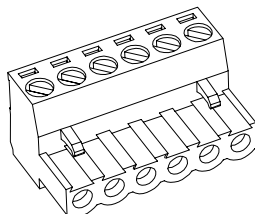
Removing Meter From Case



Due to its small size and wide range supply, the MU-35MV can fit into a variety of applications such as automotive, marine, utility, process industry, mosaic panels, clean room and in portable instrumentation.

NOTE: Use of these application and calibration instructions is entirely at the risk and responsibility of the user. Any user modification of the meter may, at the discretion of Texmate, void the warranty (see page four for user's responsibility, warranty and details and limits of Texmate's liability).

Connector



Input Power
Screw Terminal Plug

Part Numbers:
93-PLUG6P-ST.....6 pins

Front Bezel Descriptors

AC	Ω	kV	kVAR	m ³ /hr	Hz	RPM
V	mV	min	PF	°F	°C	Cosθ
DC	x10kV	μA	PSIG	mS	kg/cm ²	psi
kW	W	kWH	pH	%	K	kPa
A	mbar	mA	MW	kA	RPS	MWH
mWs	μm	kW/s	I	l/sec	ml	cm
ORP	mm/s	1/min	mm	kg/sec	lbs	kg/hr
FT	bars	min ¹	m/min	Mvars	μV	dB

To customize the front bezel, each DU-meter is supplied with a white printed clear adhesive label containing various popular descriptors. Choose the descriptors desired, peel off the adhesive backing and align the descriptors in the center right of the faceplate.

Custom Face Plates



Texmate Produces Thousands of Custom OEM Face Plates

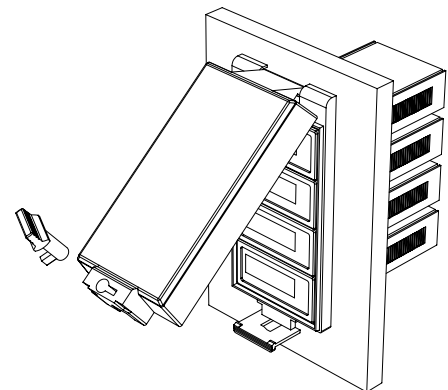
Have Texmate Design and Build a Custom Face Plate to Suit your Next project!

- Custom face plates have a non-recurring artwork charge. A serial number is then assigned to each artwork, to facilitate reordering.

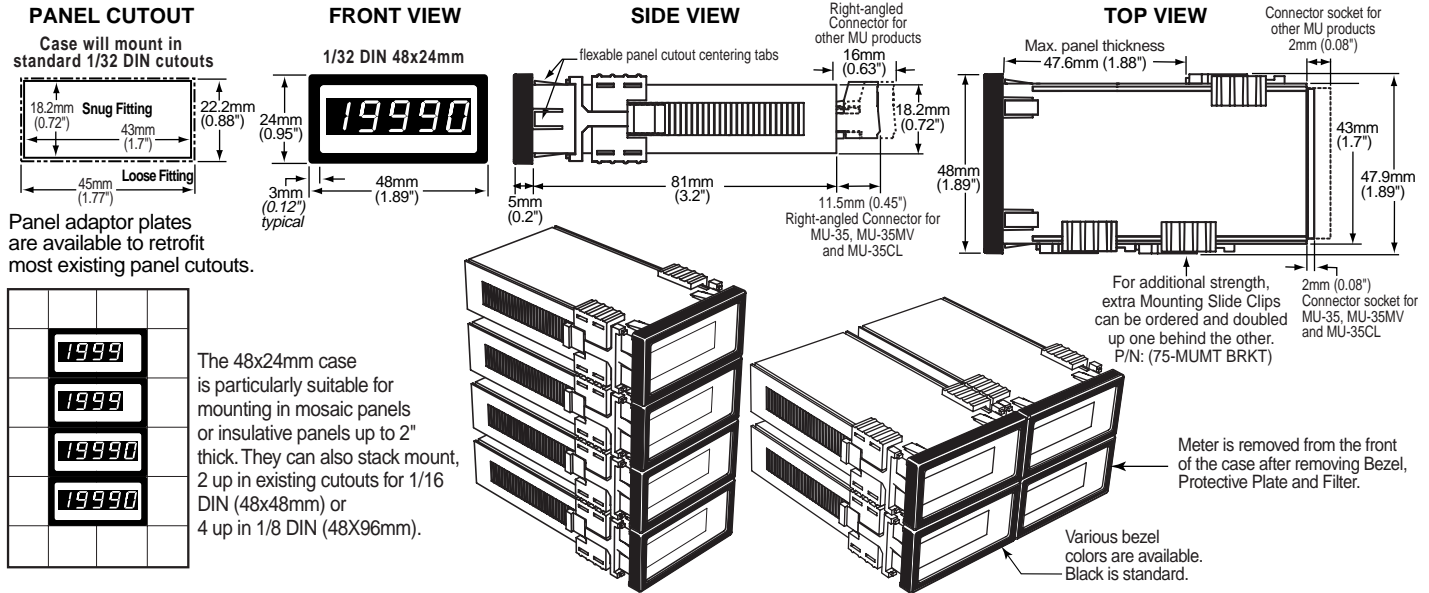
- Small Run or One-Off custom face plates incur an installation charge, and are generally printed on a special plastic film, which is then laminated to custom faceplate blanks as required.
- Large Run (250 pieces min): custom face plates are production silk screened, issued a part number, and held in stock for free installation as required by customer orders.
- OEMs may also order Custom Meter Labels, Box Labels Custom Data Sheets and Instruction Manuals.

Clear Lockable Water-proof Cover

The clear lockable cover is designed to be dust and water proof to NEMA-4X, IP65 standards. The assembly consists of a base and cover with a cam hinge and key-lock fastening mechanism. An O-ring, or neoprene gasket forms a seal between the base and the panel. The cam hinge prevents the cover from closing when opened until pushed closed. The cover has a tapered recess that, when closed, forms a seal with a tapered spigot on the base. A key-lock employs a cam locking device to force the spigot into the recess, ensuring seal integrity. A safety catch keeps the cover closed even when the key is removed, and the keyhole can be used to attach a safety seal clip, preventing unauthorized opening.



MU Case Dimensions and Panel Cutouts



Ordering Information

Standard Options for this Model Number

Part Number	Description	List
► BASIC MODEL NUMBER Includes plug in type screw terminals, standard display and standard power supply unless optional versions are ordered.		
MU-35MV	.....3.5 digit, 50/100/200m VDC, Iso., VDC or VAC Pwr	..... \$109
► DISPLAY		
STANDARD	.....Red LED, 0.3 inch high	..... N/C
MU-GREEN	.....Green LED	..... \$10
MU-RED 4.5	.....Dummy Zero Display Option w/ RED Display	..... \$25
MU-GREEN4.5	.....Dummy Zero Display Option w/ Green Display	..... \$25

Special Options and Accessories

Part Number	Description	List
► SPECIAL OPTIONS (Specify Inputs & Req. Reading)		
HD-CHANGE	.....Range change from the standard input as shown in BOLD type	..... \$7
VO-50K	.....Zero offset potentiometer 50k	..... \$5
CB-FS35	.....Non-Std Range and Scale Changes	..... \$10
► ACCESSORIES		
MU-CASE48X24	.....48x24mm Complete Case with Bezel	..... \$12
75-MUBEZEL	.....Black Bezel for 48x24mm Case	..... \$2
75-MUMTBRKT	.....Mounting Slide Clips, extra set (48x24mm case size)	..... \$2

Prices subject to change without notice.

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.



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Texmate has facilities in Japan, New Zealand, Taiwan, and Thailand. We also have authorized distributors throughout the USA and in 28 other countries.

For product details visit www.texmate.com

Local Distributor Address