



Optional Green LED Display

UM-40-ACV

**700.0V AC Meter
4 DIGIT with 0.56" LEDs
in a NEMA type 1 Style Case**

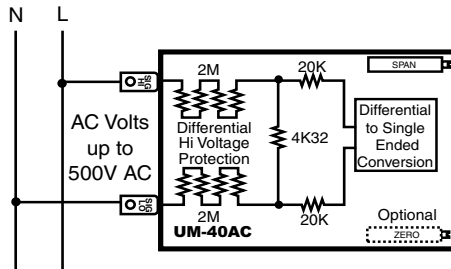
A utility meter for high resolution AC volts measurement with safe resistively isolated differential inputs.

General Features

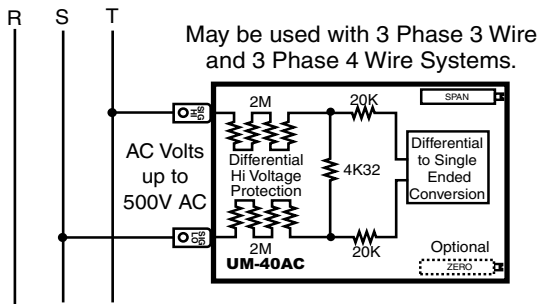
The UM-40-ACV is a cost-effective, utility, AC voltage measuring meter with range of 0 to 700.0V AC. The unique resistively isolated differential input of this meter allows safe measurement of phase to phase voltages, making it an effective solution to most high resolution AC voltage measuring applications. The standard meter is provided with TB-KIT screw terminal blocks and insulated quick-disconnects. For the greatest convenience and ease of use, order the optional pre-configured Push-On screw terminal connectors. (see Push-On Screw Terminals and Ordering Information)

Typical Application Connections

AC Voltage measurement in Single-phase Systems.
Maximum display of 500.0V AC.



AC Phase to Phase Voltage measurement in Multi-phase Systems.
Maximum display of 500.0V AC.



The unique differential input allows safe phase to phase AC line voltage measurements up to 500V AC.

UM-Series utility meters for switchboard and process indication

- UM-35-ACA**AC amps, Scaled or True RMS, (1 or 5 Amp internal shunt), 3.5 digit.
- UM-35-ACV**AC volts, Scaled or True RMS. 199.9V AC/600V AC header selectable 3.5 digit.
- UM-35-DCA**DC mV $\pm 20\text{mV}/\pm 50\text{mV}/\pm 100\text{mV}/\pm 200\text{mV}$ header selectable ranges, 3.5 digit
- UM-35-DCV**DC Volts $\pm 2\text{V}/\pm 20\text{V}/\pm 200\text{V}$ DC header selectable ranges, 3.5 digit.
- UM-40-ACA**AC amps, Scaled or True RMS, (1 or 5 Amp internal shunt), 4.0 digit.
- UM-40-ACV**AC volts, Scaled or True RMS. 199.9V AC/600V AC header selectable, 4.0 digit.
- UM-45-DCA**DC mV $\pm 20\text{mV}/\pm 50\text{mV}/\pm 100\text{mV}/\pm 200\text{mV}$ header selectable ranges, 4.5 digit
- UM-45-DCV**DC Volts $\pm 2\text{V}/\pm 20\text{V}/\pm 200\text{V}$ DC Header selectable ranges, 4.5 digit.

Compatibility

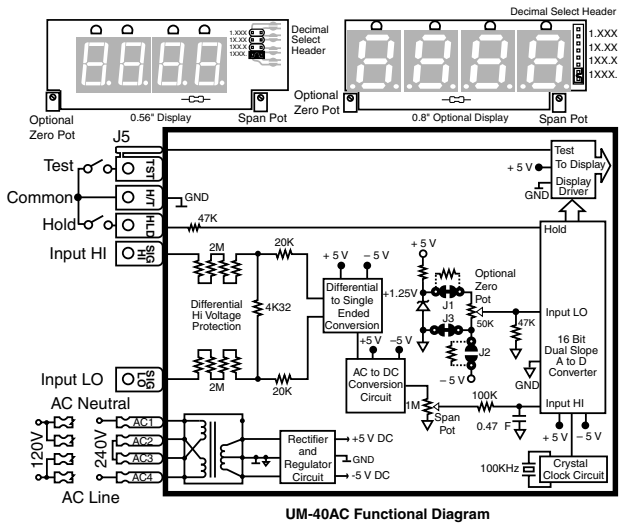
The UM-Series NEMA case style is complementary to Texmate's Classic RP-Series. For economy, each UM model is dedicated to a specific application. UMs are ideal for upgrading or replacing the traditional USA NEMA case panel meters presently in use.

**Traditional
NEMA
STYLE USA
CASE**

Specifications

- Input Configuration:**Differential input. Inputs resistively isolated to 1400V from internal ground of meter by 1.94MΩ, so that phase to phase measurements up to 700V AC can be safely made.
- Full Scale Ranges:**700V AC full scale
- Input Impedance:**4MΩ minimum.
- A/D Converter:**16 Bit Dual Slope
- Accuracy:** $\pm(0.05\%$ of reading + 3 counts)
- Temperature Coefficient:** 100 ppm/°C (Typical)
- Warm Up Time:**2 minutes to specified accuracy
- Conversion Rate:**3 conversions per second (Typical)
- Display:**4 digit 0.56" Red LED display (standard), Green or Super Bright Red (optional). Range 0 to 9999 counts.
- Decimal Selection:**Header under face plate, X•X•X•X•
- Overrange Indication:**Display flashes "0000"
- Power Supply (std):**120/240V AC, 50/60/400Hz. approx 1.5W.
(Optn) V0-DC/ISOIsolated Switcher. 9 to 36V DC/12 to 24V AC
(Optn) V0-24VIsolated Transformer 24V AC $\pm 10\%$
- Operating Temperature:**-10 to 50 °C
- Storage Temperature:**-20 to 70 °C.
- Relative Humidity:**95% (non-condensing)
- Case Dimensions:**Bezel 3.78"Wx1.89"H (96Wx48Hmm)
Depth behind bezel 3.36" (85.3 mm) Plus 0.5 to .9" (12.7 to 22.8mm) depending on connector used.
- Weight:**NW. 12oz (0.34kg)
15.6oz (0.44kg). when packed.

Functional Diagram

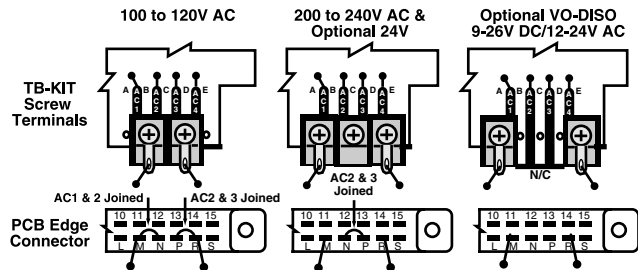


If this function is to be accessed through a Texmate TB-KIT Screw Terminal Clip, then jumper J5 will have to be opened to disconnect the Test function. If both hold and test functions need to be accessed, a PCB edge connector (part no. CN-L15) should be used.

Pins 6, 7, F & H - Signal High Input: Signal high input for the meter. The UM-40AC has a full scale range of 700.0V AC.

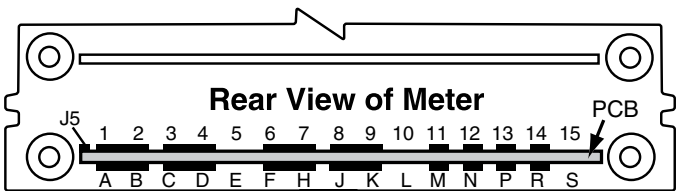
Pins 8, 9, J & K - Signal Low Input: Signal low input of the A/D Converter.

Pins 11 & M - AC1 - Live AC Power Input:
Pins 12 & N - AC2 - 110/220V AC Power Select: See below for connections
Pins 13 & P - AC3 - 110/220V AC Power Select:
Pins 14 & R - AC4 - Neutral AC Power Input:

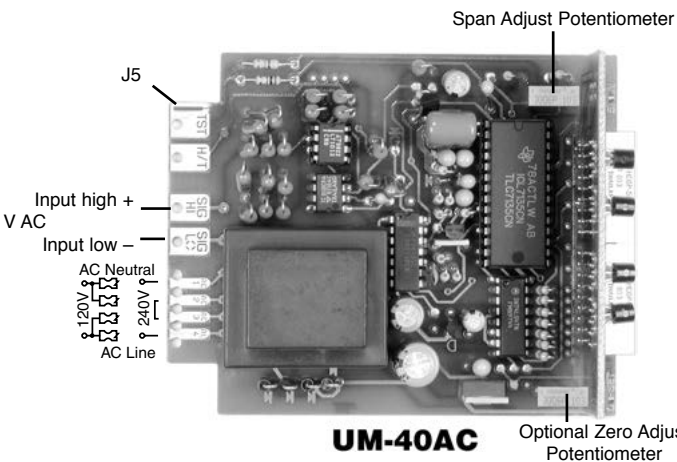


Connector Pinouts

UM-Series are connectable using the TB-KIT screw terminal blocks provided with the meter. For greatest convenience, order a Texmate Push-On screw terminal connector. Alternatively, a pcb edge connector can be used.(see connector options)



Component Layout



Signal Conditioning Components

SPAN **SPAN Potentiometer (Pot)**
 To the Right Front The 15 turn SPAN pot is always on the right side (as viewed from the front of the meter). Typical adjustment is 20% of the input signal range. Turn Clockwise to Increase Reading.

ZERO **ZERO Potentiometer (Pot)**
 To the Left Front The optional ZERO pot 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 ±500 counts. Turn Clockwise to Increase Reading.

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.

Pins 1 & 2 - Display Test: All numeric display segments will light up when this pin is connected to the H/T Common Pin. A Texmate TB-KIT Screw Terminal Clip can be used to access the Display Test function.

Pins 3, 4, C & D - H/T Common Pin: The Hold and Display Test pins have to be connected to this pin to activate their respective functions.

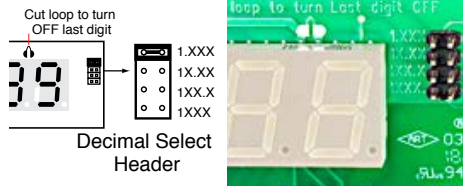
Pins A & B - Hold Reading: If this Pin is left unconnected, the meter will operate in a free-running mode. When this pin is connected to the H/T Common pin, the meter will latch up. A/D conversions will continue, but the display will not be updated until Pins A & B are disconnected from the H/T Common pin.

Calibration Procedure

1. Apply an input of 0 volts. If the Zero Offset Pot is installed, adjust it until the meter reads 000. If a Zero Offset Pot is not installed, the meter will auto-zero.
3. Apply a known high input signal that is within the full scale voltage range selected.
4. Adjust the Span Pot until the meter displays the required reading for the signal being applied.
4. The UM-40-ACV 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

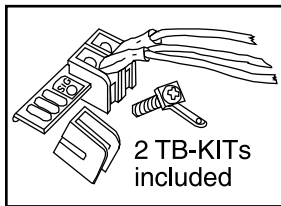
Decimal selection is made by moving the jumper to the indicated position on the header for the decimal required on the front of the display board.



To open meter, insert a flat head screwdriver or similar instrument in both slots on the side of the cover and pry open. The UM-Series meters slide out from the front of the case as a complete assembly.

TB-Kit Screw Connectors

Six Screw Terminals included Free with each UM Series meter



2 TB-KITs included

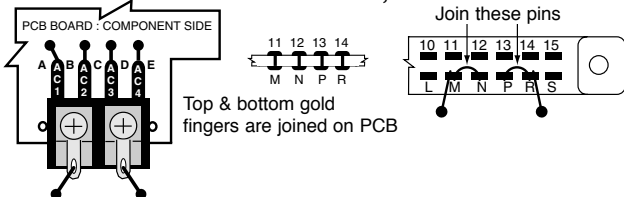
A TB-KIT consists of 3 insulated Quick Connects and 3 of Texmate's patented individual screw terminal blocks which attach directly to PCB inputs. These provide a Quick Connect tab and screw clamp termination. When using the TB-KIT screw terminal blocks, it is possible to select between 120V AC and 240V AC power, the optional low voltage switching power supply or the 24V AC power supply by connecting the screw terminals as shown in the diagrams below.

Selecting Power Supply Voltages

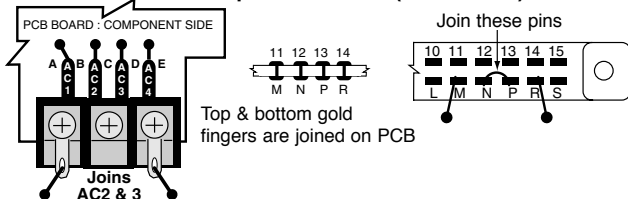
With TB-KIT Screw Terminals

With Optional PCB Edge Connector

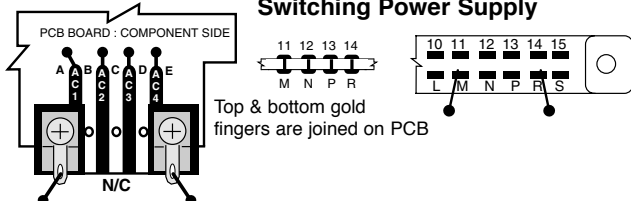
For 100 to 120V AC, 50/60 Hz



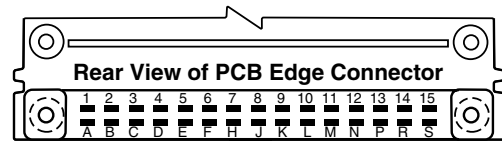
For 200 to 240V AC, 50/60 Hz or For Optional 24V AC (P.N.:V0-24V)



For Isolated 9-36V DC/12-24V AC, 50/60 Hz Switching Power Supply



Optional PCB Edge Connector

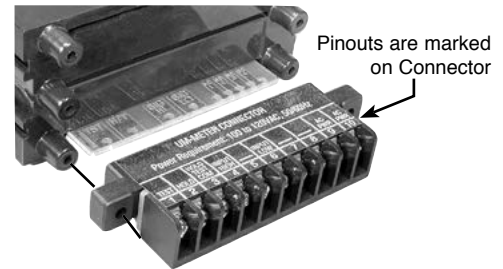


A standard 30 pin edge connector (two rows of 15 pins on 0.156" centers) may also be used to connect the UM-Series. Order part no. CN-L15. For different power supply voltage connection details, see pin connections below.

Push-On Screw Terminals

They provide the greatest convenience and ease of use

Texmate's exclusive optional Push-On Connectors combine an edge card connector and a 10 position screw terminal block. Push-On Connectors are ordered preconfigured for each specific power supply voltage and each optional power supply available for the UM-Series.



CN-PUSH/UM	.....	100/120V AC
CN-PUSH/UM01	.....	200/240V AC
CN-PUSH/UM02	.....	Switch Selectable 120/240V AC
CN-PUSH/UM03	.....	24V AC
CN-PUSH/UM04	.....	9-36V DC/12-24V AC
CN-PUSH/UM05	.....	5V DC

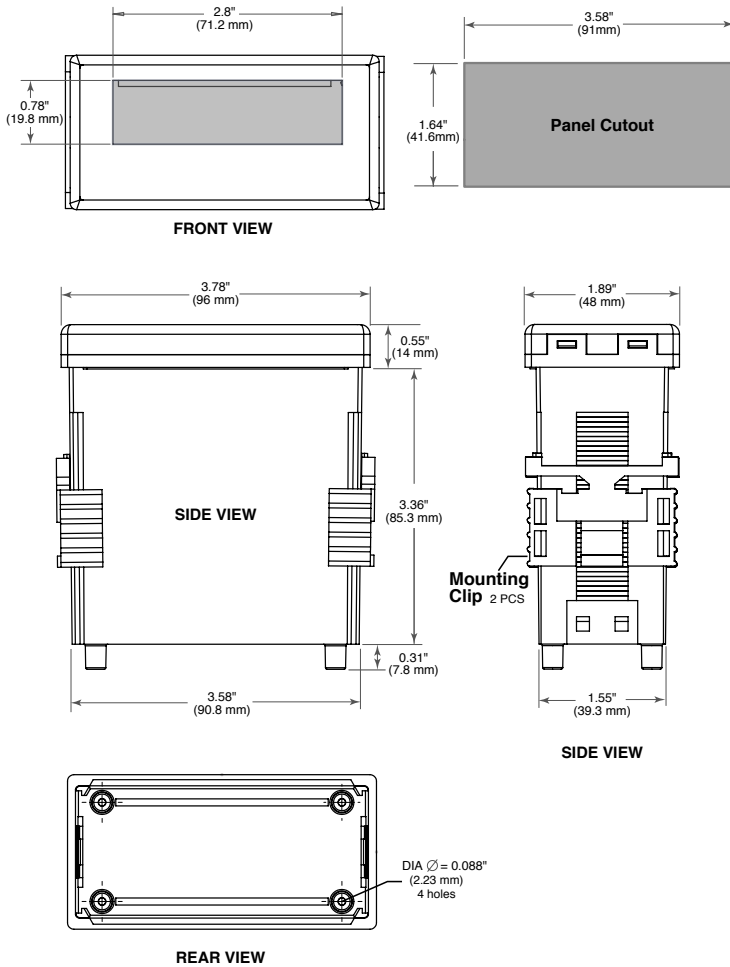
Optional Face Plate Descriptors

AC	V	KV	KVAR	mVA	Hz	RPM
V	mV	min	PF	F	C	Case
DC	kVA	µA	PSIG	mS	kVA	psi
KW	W	KWH	pH	%	K	RPa
µA	mbar	mA	MW	KA	RPS	KWH
nWs	µm	kW/s	I	V/sec	ml	cm
DRP	mm/s	l/min	mm	kg/sec	lbs	mm
BT	bars	min	mm	Mwatt	µV	dB

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.

P.N.: DU-CASEDES

UM Case Dimensions and Panel Cutouts



Ordering Information

Standard Options for this Model Number

Part Number	Description	List
► BASIC MODEL NUMBER Includes 2 TB-KITS, standard display and standard power supply unless optional versions are ordered.		
UM-40-ACV	DPM, AC Volts, 700.0V AC	

► DISPLAY

STANDARD0.56" Red LEDs.

UM-BRIGHT4..Display: .56 inch, Super bright Red LEDs

UM-GREEN4...Display: .56 inch, Green LEDs

► POWER SUPPLY

STANDARD 100/120 or 200/240VAC User selectable.....

V0-DC/ISOIsolated auto-sensing AC/DC 9 to 36V DC/12 to 24V AC.

V0-24VIsolated transformer 12V AC or 24V AC userselectable

Special Options and Accessories

Part Number	Description
► SPECIAL OPTIONS (Specify Inputs or Outputs & Req. Reading)	
HD-CHANGE ..	Range change from the standard input as shown in BOLD type
VRC-DPM	Range change to 500 Hz / 1 Hz Resolution

► ACCESSORIES

CN-L15 Connector: Dual Row, 30 Pin Edge Conn., 0.156" ctr

CN-PUSH/UM Connector: Push-on Terminal Block, 120V AC Pwr . .

CN-PUSH/UM01 Connector: Push-on Terminal Block, 200-240V AC Pwr.

CN-PUSH/UM02 Connector: Push-on Terminal Block, 120/240V AC select

CN-PUSH/UM03 Connector: Push-on Terminal Block, 24V AC pwr

CN-PUSH/UM04 Connector: Push-on Terminal Block, 9 to 36VDC/12 to 24 V AC .

CN-PUSH/UM05 Connector: Push-on Terminal Block, 5V DC.

OP-N4X/96X48 96x48 clear lockable front cover - NEMA 4X, Splash proof.

TB-KIT Connector: xtra Screw Terminal Blocks (3 sets=1 kit)

DU-CASEDES Clear adhesive descriptors label for face plate. . .

Many other options and accessories are available. See full price list for more details. 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.

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