UM-Series
FUNCTION
SPECIFIC METERS

UM-40AC

700.0V AC Meter
4 DIGIT with 0.56" LEDs
in a Traditional NEMA Style Case

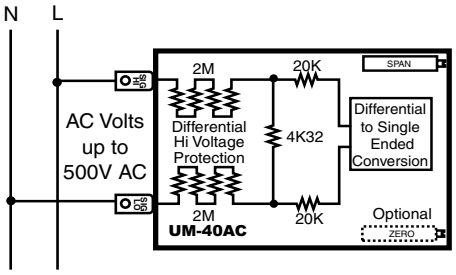
A utility meter for high resolution AC volts measurement with safe resistively isolated differential inputs.

General Features

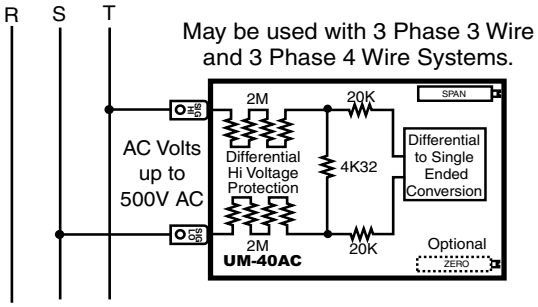
The UM-40AC is a low-cost, utility, AC voltage measuring meter with range of 0 to 700.0V AC. The unique resistively isolated differential input of this meter allows safe measurement of phase to phase voltages, making it a effective solution to most high resolution AC voltage measuring applications.
The 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.

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.
Provision for optional zero pot to offset the reading displayed. (See Ordering Information)

Full Scale Ranges: ..... 700V AC full scale

Input Impedance: ..... 4MΩ minimum.

A/D Converter: ..... 16 Bit Dual Slope

Accuracy: ..... ±(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/ISO ..... Isolated Switcher. 9 to 36V DC/12 to 24V AC

(Optn) V0-24V ..... Isolated Transformer 24V AC ±10%

Operating Temperature: ..–10 to 50 °C

Storage Temperature: ..... –20 to 70 °C.

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

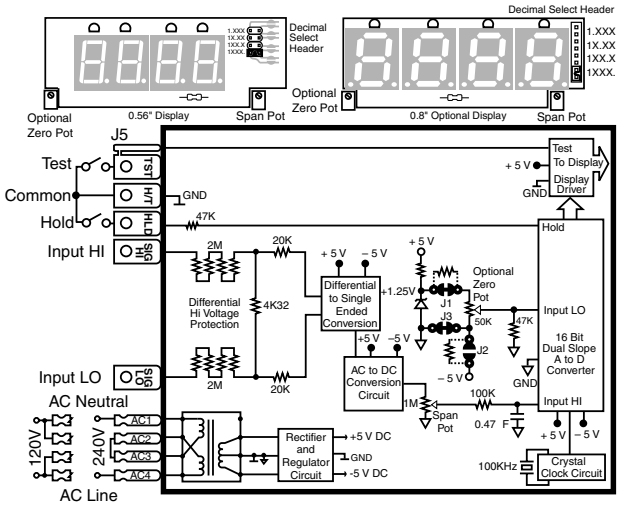
Case Dimensions: ..... Bezel 3.78"Wx1.89"H (96Wx48Hmm) Depth behind bezel 3.67" (93.1 mm) Plus 0.5 to .9" (12.7 to 22.8mm) depending on connector used.

Weight: ..... 10oz., 13oz. when packed.

UM-Series low cost utility meters for switchboard and process indication

UM-35ACI1/5..... AC amps, Scaled RMS, (**1 or 5 Amp** internal shunt), 3.5 digit
UM-35AC..... AC volts, Scaled RMS. **199.9V AC**/700V AC Header Selectable Ranges, 3.5 digit
UM-40AC..... AC volts, Scaled RMS. **700.0V AC** full scale, high resolution 4 digit
UM-35HZ..... **15Hz** to **199.9Hz** or optionally 40Hz to 500Hz up to 500V AC input, 3.5 digit
UM-35..... DC Volts **±2**/20V DC Header selectable or optionally ±2/200V DC, 3.5 digit
UM-35MV ..... DC mV **±50mV** and ±100mV select inputs to suit DC current shunts, 3.5 digit
UM-45..... DC Volts **±2V**/±20V/±200V DC Header selectable ranges 4.5 digit
UM-45MV..... DC mV **±50 mV**, ±100mV, or ±200mV selectable inputs to suit DC current shunts, 4.5 digit
UM-35CL..... Process 4 to 20mA **(100.0)**, easily user scalable, 3.5 digit
UM-35CLE..... Process 4 to 20mA **(100.0)** with 24V DC excitation, easily user scalable in engineering units anywhere from –1999 to +1999. 3.5 digit
UM-45CL..... Process 4 to 20mA **(100.00)**, easily user scalable, 4.5 digit
UM-35P..... Pressure, strain gage and load cell, 4 and 6 wire, 5V DC excitation, Header Selectable Sensitivity 2mV/V, 5mV/V, 10mV/V, **20mV/V**, 3.5 digit
UM-35J/K..... **J** or **K** thermocouple input, 1° resolution, order **°C** or **°F**, 3.5 digit
UM-35RTD..... 100Ω platinum RTD, 3 or 4 wire, order **°C** or **°F** and **0.1°** or **1°**, 3.5 digit

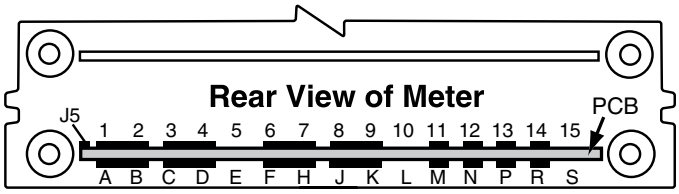
Functional Diagram

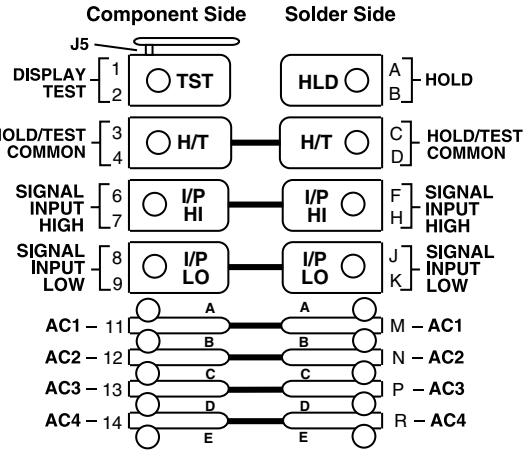


UM-40AC Functional Diagram

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)





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.

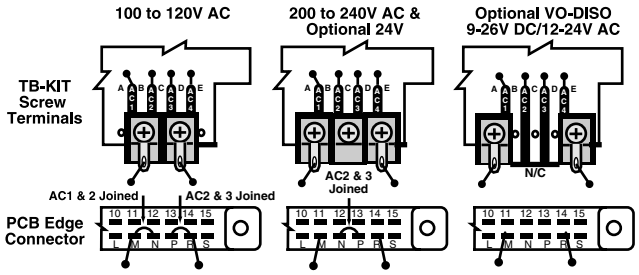
Pins A & B - Hold Reading: If this Pin is left unconnected, the meter will operate in a free-running mode. When this pin is connected to the H/T Common pin, the meter will latch up. A/D conversions will continue, but the display will not be updated until Pins A & B are disconnected from the H/T Common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

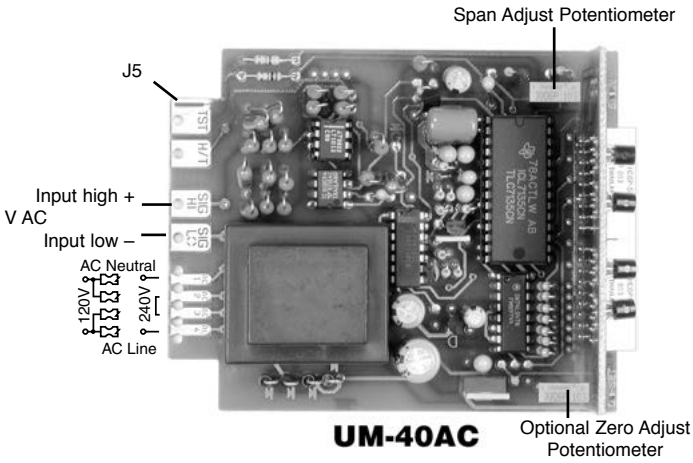
Pins 8, 9, J & K - Signal Low Input: Signal low input of the A/D Converter.

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

See below for connections



Component Layout



Signal Conditioning Components

SPAN

SPAN Potentiometer (Pot)

To the Right Front

Turn Clockwise to Increase Reading

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.

ZERO

ZERO Potentiometer (Pot)

To the Left Front

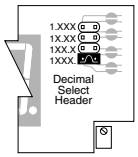
Turn Clockwise to Increase Reading

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.

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-40AC 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

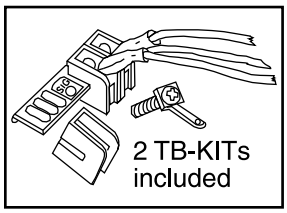


Remove faceplate by inserting a screwdriver blade in the slot at the side of the faceplate. Press blade in to release catch and gently pry face plate outward from the side.

Decimal selection is made on the front of the display board by moving the jumper clip to the desired position on the header.

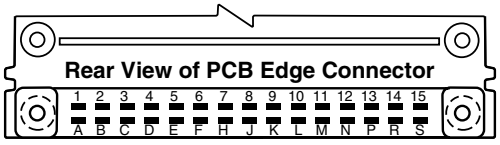
TB-Kit Screw Connectors

Six Screw Terminals included Free with each UM Series meter



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.

Optional PCB Edge Connector

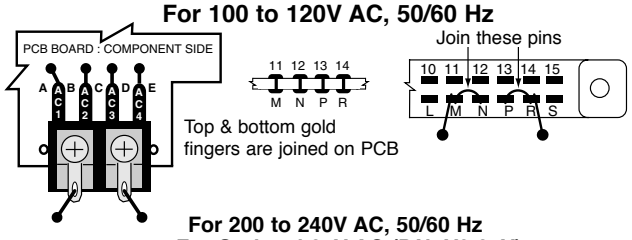


A standard 30 pin edge connector (two rows of 15 pins on 0.156" centers) may also be used to connect the UM-Series. Order part no. CN-L15. For different power supply voltage connection details, see pin connections below.

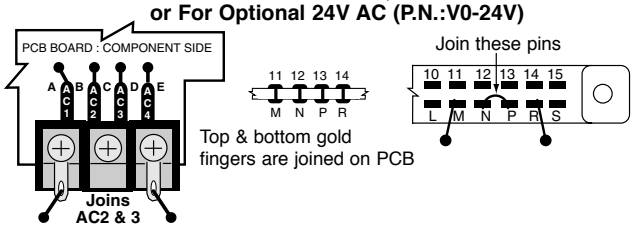
Selecting Power Supply Voltages

With TB-KIT Screw Terminals | **With Optional PCB Edge Connector**

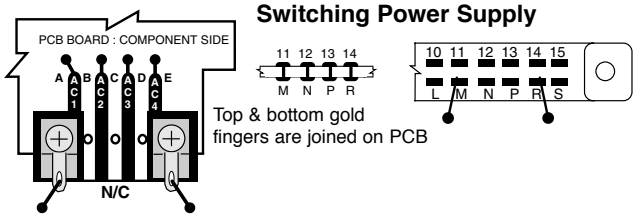
For 100 to 120V AC, 50/60 Hz



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



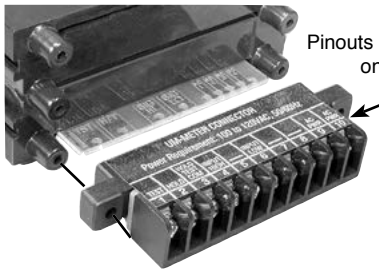
For Isolated 9-36V DC/12-24V AC, 50/60 Hz Switching Power Supply



Push-On Screw Terminals

They provide the greatest convenience and ease of use

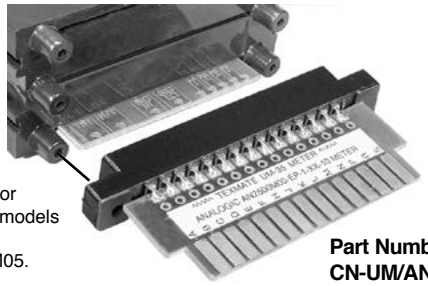
Texmate's exclusive optional Push-On Connectors combine an edge card connector and a 10 position screw terminal block. Push-On Connectors are ordered preconfigured for each specific power supply voltage and each optional power supply available for the UM-Series.



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

Pinout Change-Over Connectors

To replace DPMs in existing panels where matching pinouts are required, Texmate can provide custom pinout Change-over Connectors, either with PCB gold finger terminations, (shown below) or customized versions of Push-On Screw Terminals. (shown above)



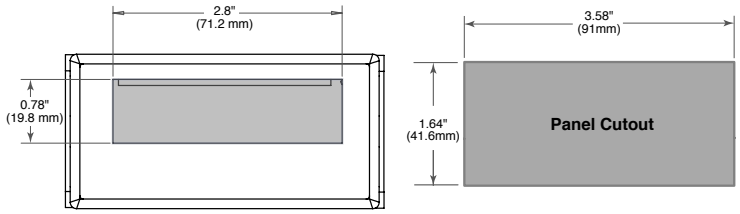
Change-over Connector shown is for Analogic models AN25M02,AN25M03, AN25M04 and AN25M05.

Part Number CN-UM/ANLGC

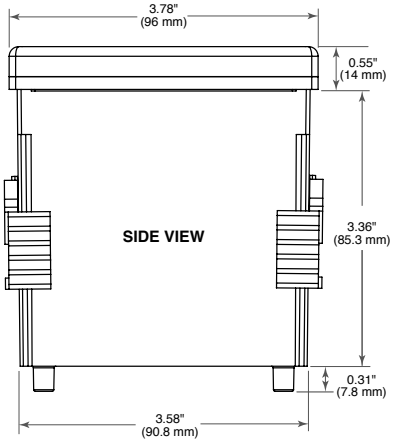
Face Plate Descriptors

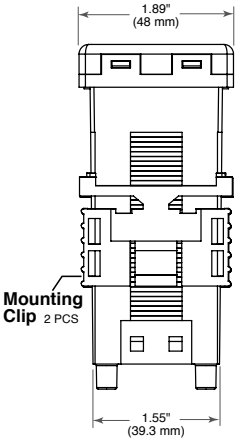
To customize the face plate, each UM-meter is supplied with a white printed clear adhesive label containing various popular descriptors. Choose the descriptor, peel off the adhesive backing and align the descriptor in the lower right corner of the standard face plate.

UM Case Dimensions and Panel Cutouts

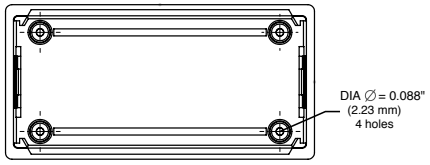


FRONT VIEW





SIDE VIEW



REAR VIEW

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-40AC ..... DPM, AC Volts, **700.0V AC** .....

▶**DISPLAY**

STANDARD .....0.56" 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/ISO .....Isolated auto-sensing AC/DC 9 to 36V DC/12 to 24V AC.

V0-24V.....Isolated transformer 12V AC or 24V AC userselectable

▶**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.....

Special Options and Accessories

Part Number	*Description*	*List*

▶**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) .

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 proDXcts 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 proDXcts 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 proDXct which has been either repaired or replaced by Texmate.

USER'S RESPONSIBILITY

We are pleased to offer suggestions on the use of our various proDXcts 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 proDXcts 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 proDXct 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 proDXct.

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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