

# TEXMATE

## UM-35ACI1 & UM-35ACI5



0.56" LEDs



0.8" LEDs



**Utility AC current measuring meters designed for direct connection to industry standard 1 Amp and 5 Amp CTs.**

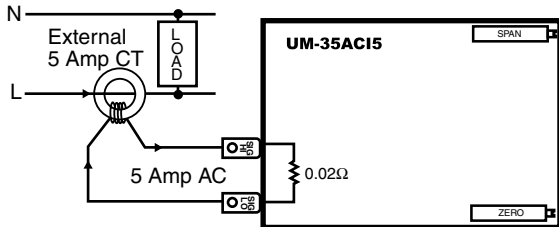
### General Features

The UM-35ACI1 and UM-35ACI5 are low cost, utility AC current measuring meters. Their low resistance internal shunt, has a very low burden of 0.1VA and 0.5VA when directly connected to 1A or 5A CT's (current transformers) respectively. No matter what the CT ratio, the 15 turn, infinitely adjustable Span potentiometer enables the user to easily scale the meters to display almost any current value required.

The UM-35ACI1 and UM-35ACI5 meters can withstand momentary over loads of up to 200 Amps (40 times input signal) for one second without developing an open circuit. Texmate's unique differential AC measurement circuit provides a safe high impedance ohmic isolation on both sides of the shunt.

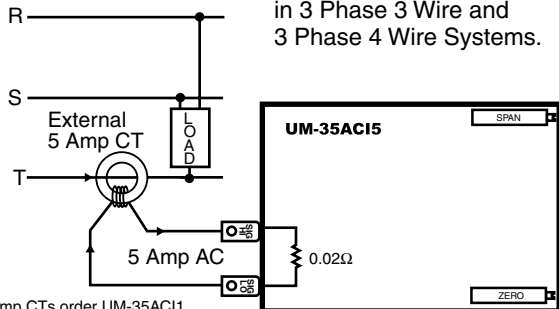
### Typical Application Connections

**AC Current measurement in Single-phase Systems.**  
Easily User Scaled to Display Currents up to 1999 Amps.



For 1 Amp CTs order UM-35ACI1

**AC Current measurement in Multi-phase Systems.**  
Easily User Scaled to Display Currents up to 1999 Amps in 3 Phase 3 Wire and 3 Phase 4 Wire Systems.



For 1 Amp CTs order UM-35ACI1

### 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:** .....Shunt input with differential auto zeroing AC to DC converter scaled in RMS.  
A Zero pot is provided to offset the displayed reading  $\pm 500$  counts.

**Full Scale Ranges:** .....1 Amp and 5 Amp Inputs can be scaled to any desired display value from 0 to 1999.

**Input Impedance:** .....0.02 $\Omega$  for 5A CT. Burden is only 0.5VA  
0.1 $\Omega$  for 1A CT. Burden is only 0.1VA

**A/D Converter:** .....12 Bit Dual Slope

**Accuracy:** ..... $\pm(0.05\%$  of reading plus 2 counts)

**Temperature Coefficient:** 100 ppm/ $^{\circ}$ C (Typical)

**Warm Up Time:**.....2 minutes to specified accuracy

**Conversion Rate:**.....3 conversions per second (Typical)

**Display:**.....3 1/2 digit 0.56" Red LED display (std),  
(optn) Green or Super Bright Red, 0.8" Red or Green. Range 0 to 1999 counts.

**Decimal Selection:**.....Header under face plate, X•X•X•X•

**Overrange Indication:** .....1 (MSD) displayed all other digits blank

**Power Supply (std):** .....120/240V AC, 50/60/400 Hz. approx 1.5W.

(Optn) VO-DC/ISO .....Isolated Switcher 9 to 36V DC/12 to 24V AC

(Optn) VO-24V .....Isolated Transformer 24V AC  $\pm 10\%$

(Optn) VO-5V DC .....Non-isolated 5V DC  $\pm 10\%$

**Operating Temperature:** ..-10 to 50  $^{\circ}$ C

**Storage Temperature:**.....-20 to 70  $^{\circ}$ C.

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

**Case Dimensions:** .....Bezel 4.06"Wx1.89"H (102.7Wx47.9Hmm)  
Depth behind bezel 3.64" (92.22 mm) Plus  
0.5 to .9" (12.7 to 22.8mm) depending on  
connector used.

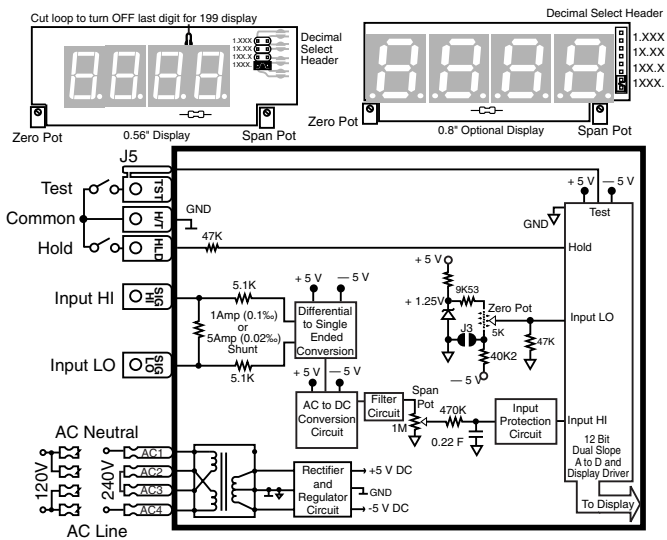
**Weight:**.....10oz., 13oz. when packed.

### 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/500V AC Header Selectable Ranges, 3.5 digit
- UM-40AC .....AC volts, Scaled RMS. 500.0V 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  $\pm 2/20$ V DC Header selectable or optionally  $\pm 2/200$ V DC, 3.5 digit
- UM-35MV .....DC mV  $\pm 50$ mV and  $\pm 100$ mV select inputs to suit DC current shunts, 3.5 digit
- UM-45 .....DC Volts  $\pm 2V/\pm 20V/\pm 200$ V DC Header selectable ranges 4.5 digit
- UM-45MV .....DC mV  $\pm 50$  mV,  $\pm 100$ mV, or  $\pm 200$ mV selectable inputs to suit DC current shunts, 4.5 digit

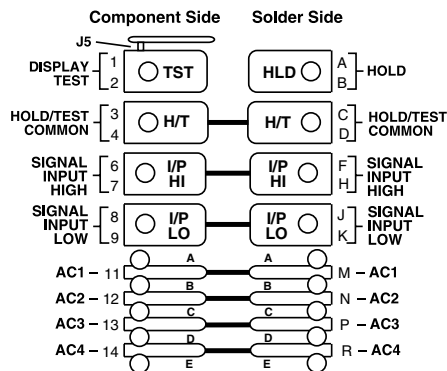
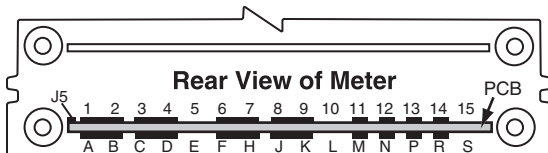
- UM-35CL .....Process 4 to 20mA (100.0), easily user scalable, 3.5 digit
- UM-35CLE .....Process 4 to 20mA (100.0) with 24V DC excitation, easily user scalable in engineering units anywhere from -1999 to +1999. 3.5 digit
- UM-45CL .....Process 4 to 20mA (100.00), easily user scalable, 4.5 digit
- UM-35P .....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 $^{\circ}$  resolution, order  $^{\circ}$ C or  $^{\circ}$ F, 3.5 digit
- UM-35RTD .....100 $\Omega$  platinum RTD, 3 or 4 wire, order  $^{\circ}$ C or  $^{\circ}$ F and 0.1 $^{\circ}$  or 1 $^{\circ}$ , 3.5 digit

## 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. Two factory installed ranges for direct connection to a 1A or 5A CT (Current Transformer).

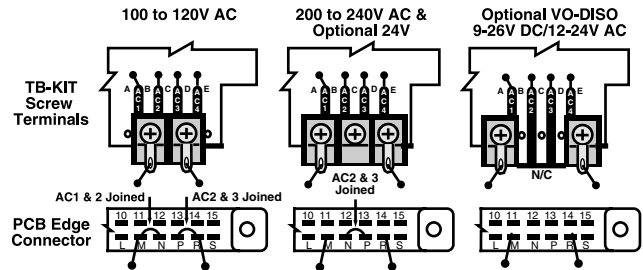
**Pins 8, 9, J & K - Signal Low Input:** Signal low input of the A/D Converter.

**Pins 11 & M - AC1 - Live AC Power Input:**

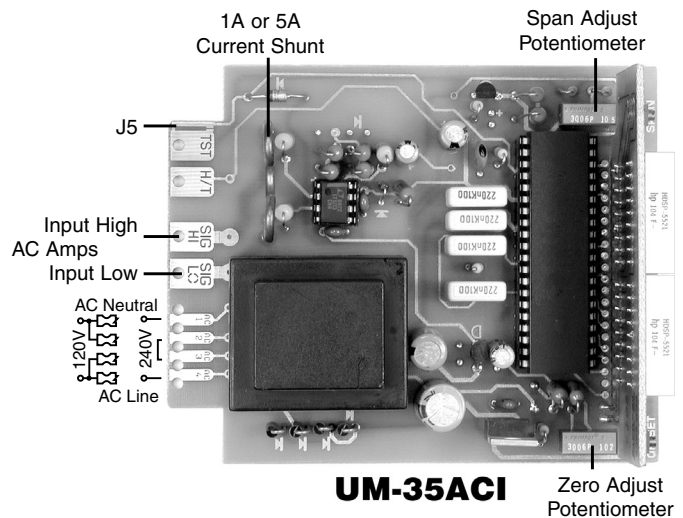
**Pins 12 & N - AC2 - 110/220V AC Power Select:** See below for connections

**Pins 13 & P - AC3 - 110/220V AC Power Select:**

**Pins 14 & R - AC4 - Neutral AC Power Input:**



## 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 100% of the input signal range.

**ZERO** **ZERO Potentiometer (Pot)**

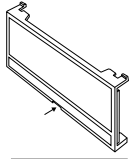
To the Left Front Turn Clockwise to Increase Reading. The ZERO pot is to the left of the SPAN pot (as viewed from the front of the meter). Typically it enables the displayed readings to be offset  $\pm 500$  counts.

## Calibration Procedure

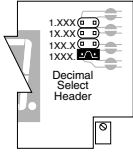
1. Apply an input of 0 amps AC to the meter by shorting the inputs. Adjust the Zero pot until the meter reads 000.
2. Connect the secondary of the current transformer (CT) to the meter inputs, and apply a known current. For high current CTs, a known AC current, proportionate to the CT output, should be used for calibration.
3. Adjust the Span Pot until the meter displays the required reading for the current being applied.
4. The UM-35ACI 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



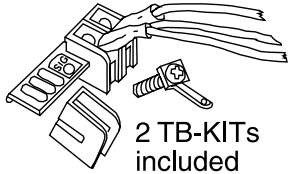
Remove faceplate by inserting a screwdriver blade in the slot at the bottom center of the faceplate. Press blade in to release catch and gently pry face plate outward from the bottom. (see also Case Dimension drawing)



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

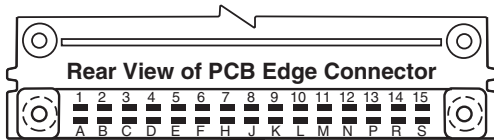


2 TB-KITs included

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.

## Optional PCB Edge Connector



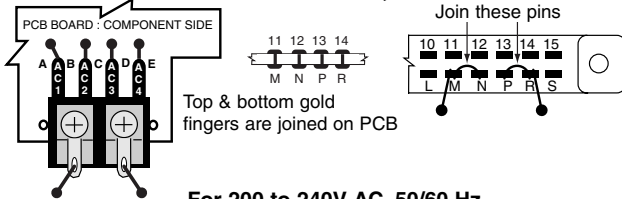
A standard 30 pin edge connector (two rows of 15 pins on 0.156" centers) may also be used to connect the UM-Series. Order part no. CN-L15. For different power supply voltage connection details, see pin connections below.

## Selecting Power Supply Voltages

With TB-KIT  
Screw Terminals

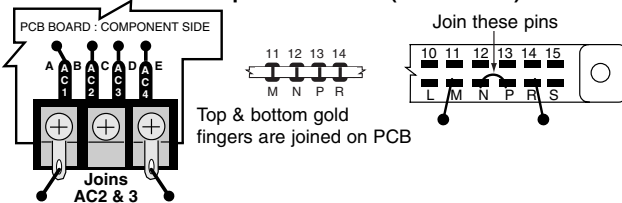
With Optional  
PCB Edge Connector

For 100 to 120V AC, 50/60 Hz



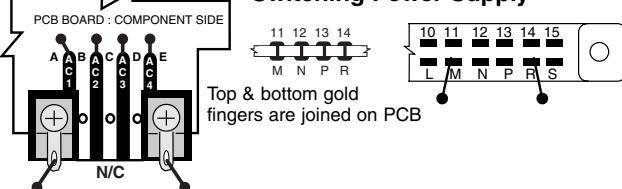
Top & bottom gold fingers are joined on PCB

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



Top & bottom gold fingers are joined on PCB

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

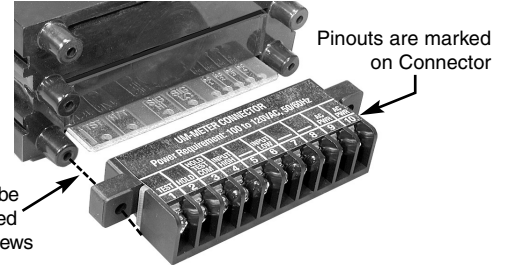


Top & bottom gold fingers are joined on PCB

## 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.



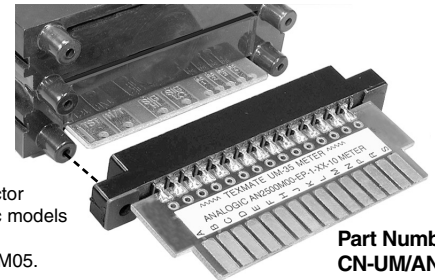
Connector can be securely attached to case with screws

Pinouts are marked on Connector

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.

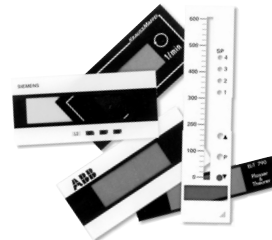
Part Number  
CN-UM/ANLGC

## Face Plate Descriptors

Volts AC	Volts DC	Hz	RPM
Amps AC	Amps DC	DCµA	
Milliamps AC	Milliamps DC	°C	
Millivolts AC	Millivolts DC	°F	
Kilowatts	Watts	%	pH
kg/cm <sup>2</sup>	Kilovolts AC	psi	
kWH	kVAR	Power Factor	
kΩ	Cosφ	M/min	m <sup>3</sup> /hr

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.

## Custom Face Plates



Texmate Produces Thousands of Custom OEM Face Plates

Have Texmate Design and produce a Custom Face Plate for your next project!

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

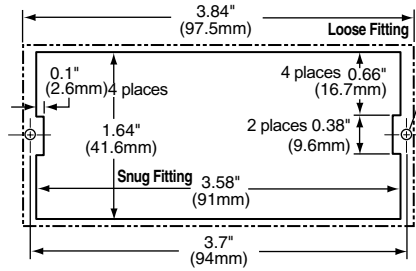
- Small Run or One-Off custom face plates incur an installation charge, and are generally printed on a special plastic film, which is then laminated to custom faceplate blanks as required.

- 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.

# UM Case Dimensions and Panel Cutouts

This NEMA Case will fit any existing cutout with dimensions that are between the Snug and Loose Fitting dimensions shown below.

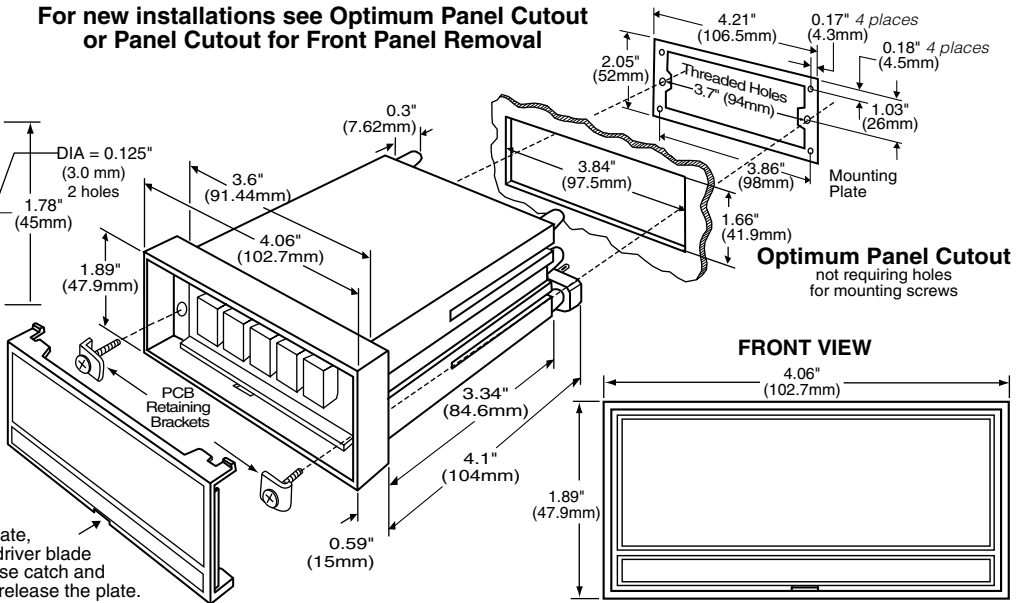


## Panel Cutout for Front Panel Removal

To enable removal of the panel meter from a mounting panel without requiring rear access, make the panel cutout as shown above, using the mounting plate supplied with the meter as a template. The mounting holes should then be tapped to match the mounting screws.

To remove the face plate, carefully insert screwdriver blade at bottom slot to release catch and gently pry outward to release the plate.

For new installations see Optimum Panel Cutout or Panel Cutout for Front Panel Removal



## Ordering Information

### Standard Options for this Model Number

Part Number	Description	List
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► **BASIC MODEL NUMBER** Includes 2 TB-KITs, standard display and standard power supply unless optional versions are ordered.

UM-35AC11	.....DPM AC Amps 1Amp CT Input	.....
UM-35AC15	.....DPM AC Amps 5Amp CT Input	.....

### ► DISPLAY

<b>STANDARD</b> ....0.56" Red LEDs	.....	.....
UM-BRIGHT	.....Super bright Red LEDs, 0.56 inch high	.....
UM-GREEN	.....Green LEDs, 0.56 inch high	.....
UM-GREEN4.5	.....Green LEDs, 0.56 inch high Dummy Zero Option for UM-35s	.....
UM-LARGE/GRN	.....Green LEDs, 0.8 inch high for UM-35 Series	.....
UM-LARGE/RED	.....Red LEDs, 0.8 inch high for UM-35 Series	.....
UM-RED4.5	.....Red LEDs, 0.56 inch high Dummy Zero Option for UM-35s	.....

### ► POWER SUPPLY

<b>STANDARD</b> ....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 user selectable	.....

### ► SPECIAL OPTIONS (Specify Inputs or Outputs & Req. Reading)

HD-CHANGE	.....Range change from the standard input as shown in <b>BOLD</b> type..	.....
CB-FS35	.....Non-Std Range and Scale changes for UM-35 meters	.....

### Special Options and Accessories

Part Number	Description	List
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### ► ACCESSORIES (Specify Serial # for Custom Artwork Installation)

75-RPCLEAR	.... Replacement Clear Lens for meter	.....
75-RPFILTER	.... Replacement Red Lens for meter	.....
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 36V DC/12 to 24V AC	.....
CN-PUSH/UM05	.... Connector: Push-on Terminal Block, 5V DC	.....
CN-UM/ANLGC	.... Connector: Pinout Changer to match Analog AN20M02 etc	.....
OP-N4SEAL/UM	.... NEMA 4 lens cover for UM Series meters	.....
RP•CASE	.... Case: Replacement with Mounting Hardware	.....
TB-KIT	.... Connector: xtra Screw Terminal Blocks ( 3 sets=1 kit)	.....
ART-FS-S/D	.... NRC for Artwork & set-up Custom Faceplate and or Descriptor	.....
ART-FS-S/D/C	.... NRC for Artwork & set-up Custom Faceplate and Custom Logo	.....
ART-FS-001	.... Produce & Install Custom Faceplate per meter - 1 color no-min	.....
ART-FS-002	.... Produce & Install Custom Faceplate per meter - 2 color no-min	.....
ART-FS-003	.... Produce & Install Custom Faceplate per meter - 3 color no-min	.....
ART-FUM-001	.... Custom Faceplate, 100 piece Min. (\$3.00 each) - 1 color	.....
ART-FUM-002	.... Custom Faceplate, 100 piece Min. (\$4.20 each) - 2 color	.....
ART-FUM-003	.... Custom Faceplate, 100 piece Min. (\$5.40 each) - 3 color	.....

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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# TEXMATE INC

995 Park Center Drive • Vista, CA 92081-8397

Tel: 1-760-598-9899 • USA 1-800-839-6283 • That's 1-800-TEXMATE

Fax: 1-760-598-9828 • Email: sales@texmate.com • Web: www.texmate.com

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](http://www.texmate.com)

Local Distributor Address