0.56" LEDs

UM-Series

UM-35P

Pressure or Load Cell Meter 3 1/2 DIGIT with 0.56" or 0.8" LEDs in a Traditional NEMA Style Case

0.8" LEDs

CE

Economical meter with adjustable over pressure or overload indication, to measure 4 wire and 6 wire pressure transducers, strain gauges and load cells.

General Features

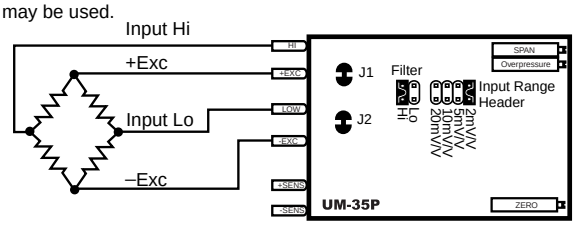
The UM-35P has four header selectable transducer output ranges of 2mV/V, 5mV/V, 10mV/V and 20mV/V. All of these ranges can provide a full scale display of 2000 counts from the precision ratiometrically compensated 5V DC excitation provided by the meter. The meter accepts 4 Wire or 6 Wire transducers, and like all UM-Series meters, is easily scaled to display in engineering units such as psi, bar, kbar, kpa, feet, lbs, and tons. An over pressure pot (usually set for 120% of transducer's range) is adjustable to indicate over pressure or overload by flashing the display.

A header selectable, two position filter is provided that enables the selection of high filtering to smooth noisy signals or low filtering for faster response.

Typical Application Connections

4 Wire Pressure Measurement

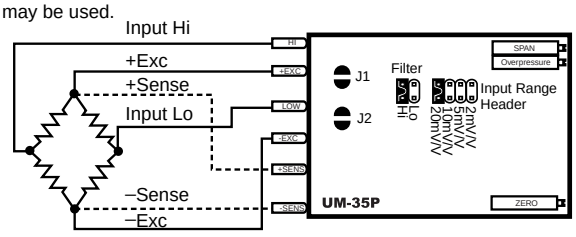
Pressure or loadcell transducers with outputs from 2mV/V to 20mV/V may be used.



PRESSURE TRANSDUCER

6 Wire Pressure Measurement

Pressure or loadcell transducers with outputs from 2mV/V to 20mV/V may be used.



PRESSURE TRANSDUCER

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

Full Scale Ranges: .....Accepts inputs from 2mV/V, 5mV/V, 10mV/V and 20mV/V transducers

Excitation: .....5.0V DC. Ratiometrically compensated to operate with all transducer output ranges.

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

Accuracy: .....±(0.05% of reading plus 2 counts)

Temperature Coefficient: 100 ppm/°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•

Overpressure Indication: Display flashes at any over pressure point selected by user.

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 ±10%

(Optn) VO-5V DC.....Non-isolated 5V DC ±10%

Operating Temperature: ..–10 to 50 °C

Storage Temperature:.....–20 to 70 °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 **±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

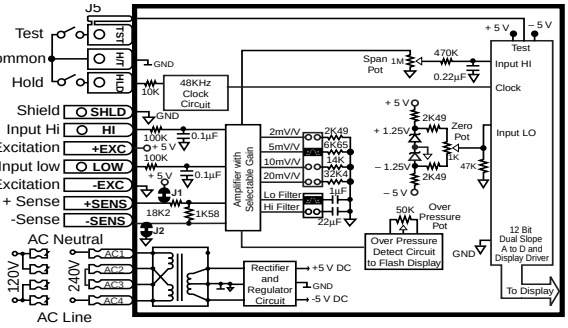
UM-45CL .....Process 4 to 20mA **(100.00)**, easily user scalable, 4.5 digit

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

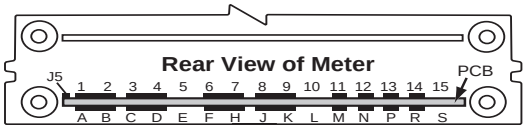
UM-35RTD.....100Ω platinum RTD, 3 or 4 wire, order **°C** or **°F** and **0.1°** or **1°**, 3.5 digit

Functional Diagram

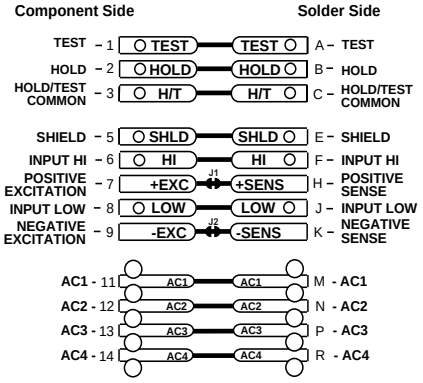


Connector Pinouts

UM-35P is connectable using a pcb edge connector 30 pin edge connector (two rows of 15 pins on 0.156" centers) or for use with 4 wire inputs only a convenient Push-On screw terminal connector can be ordered. (See Push-on Screw Terminals)



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 & A - 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 2 & B - Hold Reading: When this pin is connected to the H/T Common pin, A/D conversions will continue, but the display will not be updated until Pins A & B are disconnected from the H/T Common pin. When using a Texmate TB-KIT Screw Terminal, J5 has to be opened to disconnect the Test function and enable the Hold function. If both hold and test functions need to be accessed, a Push-On Screw Terminal can be used.

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

Pins 6 & F - Signal High Input:

Pin 7 - Positive Excitation: +5VDC excitation for pressure transducer

Pins 8 & J - Signal Low Input:

Pin 9 - Negative Excitation: Negative end of 5VDC excitation for pressure transducer.

Pin H - Positive Sense: Jumper J1 connects this pin internally to the positive excitation voltage for a 4-wire configuration. When used in a 6-wire configuration, Jumper J1 has to be opened.

Pin K - Negative Sense: Jumper J2 connects this pin internally to the negative excitation voltage for a 4-wire configuration. When used in a 6-wire configuration, Jumper J2 has to be opened.

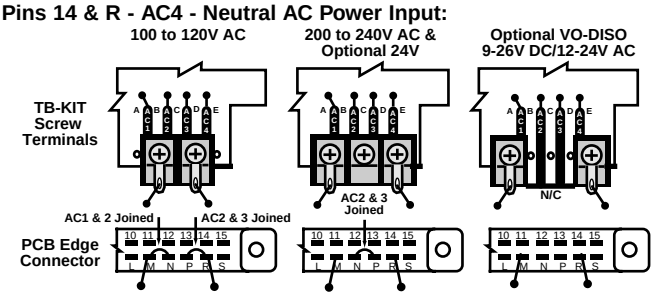
Pins 11 & M - AC1 - Live AC Power Input:

Pins 12 & N - AC2 - 110/220V AC Power Select:

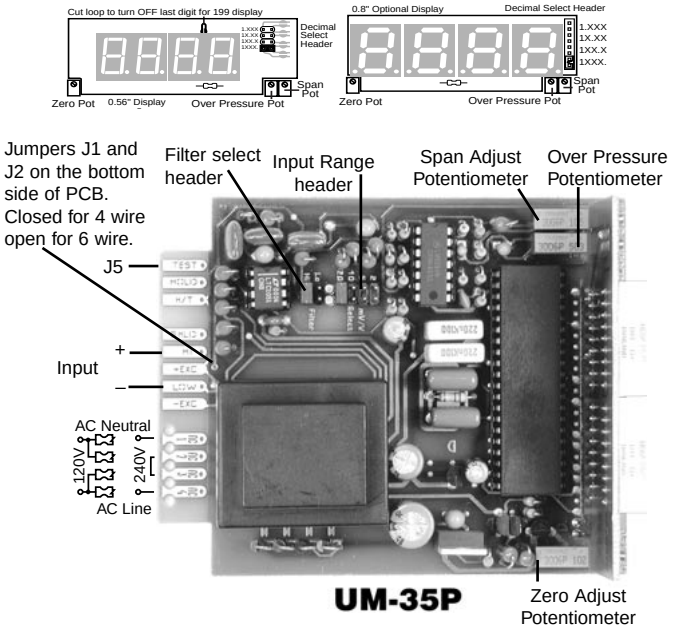
Pins 13 & P - AC3 - 110/220V AC Power Select:

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

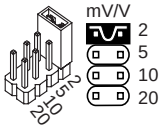
See below for connections



Component Layout

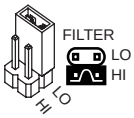


Signal Conditioning Components



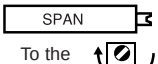
INPUT RANGE Header

This five position header selects the appropriate millivolt output per volt of excitation input (mV/V) for the pressure transducer or load cell being used.



INPUT FILTER Header

This two position header enables selection of a low filter for faster response or a high filter that smooths noisy signals but has a slower response.

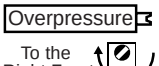


To the Right Front

Turn Clockwise to Increase Reading

SPAN Potentiometer (Pot)

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.

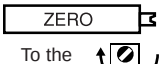


To the Right Front

Use to set the over pressure indication.

OVERPRESSURE Potentiometer

The 15 turn OVERPRESSURE pot to left of the SPAN pot (as viewed from the front of the meter) sets the over pressure or overload level at which the display starts flashing. It is adjustable to any point across the full scale range.



To the Left Front

Turn Clockwise to Increase Reading

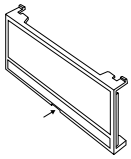
ZERO Potentiometer (Pot)

The ZERO pot is 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.

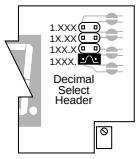
Calibration Procedure

1. Select the appropriate position on the INPUT RANGE SELECT Header, to correspond with the mV/V output of the transducer being used. If a 6 wire transducer is being used then jumpers J1 and J2 have to be open as is the case with a UM-35P6.
2. Select the Hi filter for noisy signals or the Lo filter for faster response.
3. Connect the transducer to the UM-35P as shown in the connection diagram.
4. With no pressure or load being applied to the transducer, adjust the ZERO pot so that the display reads 000.
5. Apply a known input, and adjust the SPAN pot until the meter displays the required reading for the pressure or load being applied.
6. Apply an input at which the display is required to flash over-range. Adjust the OVERPRESSURE pot until the display begins flashing.
7. The UM-35P meter is now calibrated and ready for use.

Decimal Point Selection

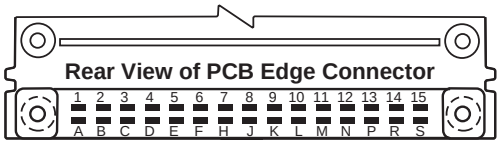


Remove faceplate by inserting a screwdriver blade in the slot at the bottom center of the faceplate. Press blade in to release catch and gently pry face plate outward from the bottom. (see also Case Dimension drawing)



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

PCB Edge Connector

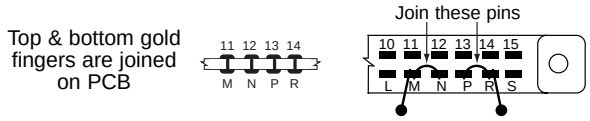


A standard 30 pin edge connector (two rows of 15 pins on 0.156" centers) may also be used to connect the UM-Series. Order part no. CN-L15. For different power supply voltage connection details, see pin connections below.

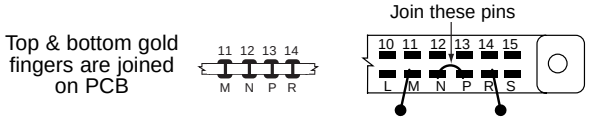
Selecting Power Supply Voltages

With PCB Edge Connector

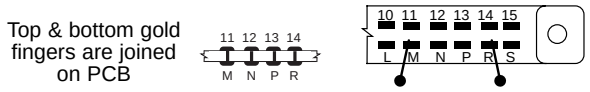
For 100 to 120V AC, 50/60 Hz



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

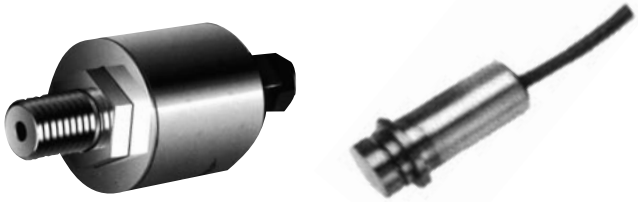


For Isolated 9-36V DC/12-24V AC, 50/60 Hz
Switching Power Supply



Typical Transducers

Pressure Transducers



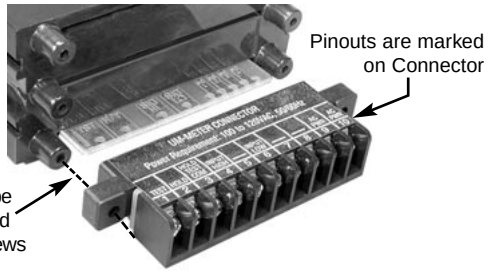
Load Cell

Torsion and Strain

Push-On Screw Terminals

They provide the greatest convenience and ease of use

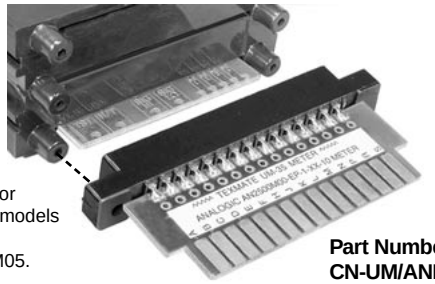
Texmate's exclusive optional Push-On Connectors combine an edge card connector and a 10 position screw terminal block. Push-On Connectors are ordered preconfigured for each specific power supply voltage and each optional power supply available for the UM-Series.



CN-PUSH/P . . . . . .100/120V AC
CN-PUSH/P01 . . . . . 200/240V AC
CN-PUSH/P03 . . . . . .24V AC
CN-PUSH/P04 . . . . . .9-36V DC/12-24V AC

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.

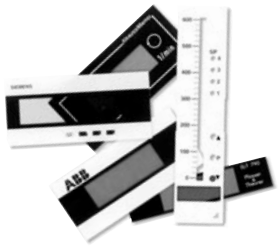
Part Number CN-UM/ANLGC

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	Ω
kg/cm ²	Kilovolts AC		psi
kWH	kVAR	Power Factor	
kΩ	CosØ	M/min	m³/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.

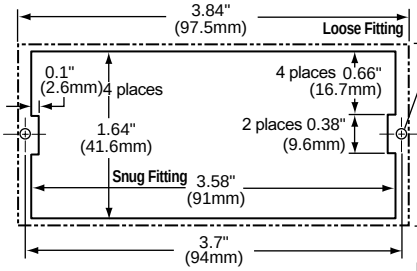
• Small Run or One-Off custom face plates incur an installation charge, and are generally printed on a special plastic film, which is then laminated to custom faceplate blanks as required.

• 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

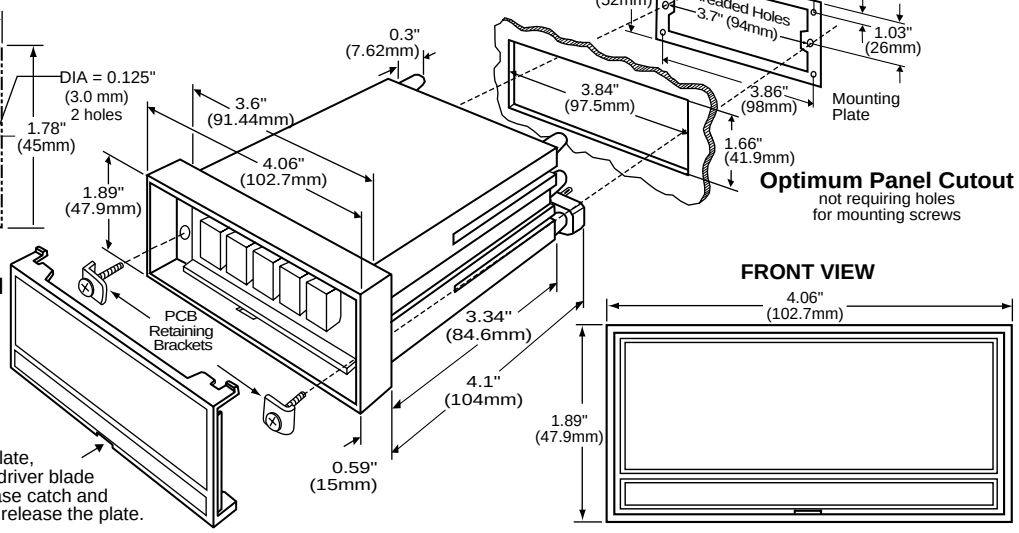
This NEMA Case will fit any existing cutout with dimensions that are between the Snug and Loose Fitting dimensions shown below.



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.

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



Optimum Panel Cutout
not requiring holes
for 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.

FRONT 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-35P	DPM, Pressure, 2mV/V/5mV/V/10mV/V/**20mV/V 4 Wire**	**$139**
UM-35P6	DPM, Pressure, 2mV/V/5mV/V/10mV/V/**20mV/V 6 Wire**	**$139**
▶ **DISPLAY**		
STANDARD	**....0.56" Red LEDs . . . . . N/C**	
UM-BRIGHT	Super bright Red LEDs, 0.56 inch high	$20
UM-GREEN	Green LEDs, 0.56 inch high	$10
UM-GREEN4.5	Green LEDs, 0.56 inch high Dummy Zero Option for UM-35s . .	$25
UM-LARGE/GRN	Green LEDs, 0.8 inch high for UM-35 Series	$35
UM-LARGE/RED	Red LEDs, 0.8 inch high for UM-35 Series	$25
UM-RED4.5	Red LEDs, 0.56 inch high Dummy Zero Option for UM-35s . . .	$25
▶ **POWER SUPPLY**		
STANDARD	**....100/120 or 200/240VAC User selectable . . . . . N/C**	
V0-DC/ISO	Isolated auto-sensing AC/DC 9 to 36V DC/12 to 24V AC	$35
V0-24V	Isolated transformer 12V AC or 24V AC user selectable	$15
VO-5V DC	Non-isolated 5V DC only	$10
▶ **SPECIAL OPTIONS (Specify Inputs or Outputs & Req. Reading)**		
HD-CHANGE	Range change from the standard input as shown in **BOLD** type..	$7
CB-FS35	Non-Std Range and Scale changes for UM-35 meters	$10

Special Options and Accessories

Part Number	Description	List
▶ **ACCESSORIES (Specify Serial # for Custom Artwork Installation)**		
75-RPCLEAR	Replacement Clear Lens for meter	$2
75-RPFILTER	Replacement Red Lens for meter	$2
CN-L15	Connector: Dual Row, 30 Pin Edge Conn., 0.156" ctr	$4
CN-PUSH/UM	Connector: Push-on Terminal Block, 120V AC Pwr	$18
CN-PUSH/UM01	Connector: Push-on Terminal Block, 200-240V AC Pwr	$18
CN-PUSH/UM03	Connector: Push-on Terminal Block, 24V AC pwr	$18
CN-PUSH/UM04	Connector: Push-on Terminal Block, 9 to 36V DC/12 to 24V AC	$18
CN-UM/ANLGC	Connector: Pinout Changer to match Analogic AN20M02 etc . .	$30
OP-N4SEAL/UM	NEMA 4 lens cover for UM Series meters	$50
RP • CASE	Case: Replacement with Mounting Hardware.	$10
TB-KIT	Connector: xtra Screw Terminal Blocks (3 sets=1 kit)	$1
ART-FS-S/D	NRC for Artwork & set-up Custom Faceplate and or Descriptor .	$35
ART-FS-S/D/C	NRC for Artwork & set-up Custom Faceplate and Custom Logo.	$75
ART-FS-001	Produce & Install Custom Faceplate per meter - 1 color no-min	$10
ART-FS-002	Produce & Install Custom Faceplate per meter - 2 color no-min	$20
ART-FS-003	Produce & Install Custom Faceplate per meter - 3 color no-min	$30
ART-FUM-001	Custom Faceplate, 100 piece Min. ($3.00 each) - 1 color	$300
ART-FUM-002	Custom Faceplate, 100 piece Min. ($4.20 each) - 2 color	$420
ART-FUM-003	Custom Faceplate, 100 piece Min. ($5.40 each) - 3 color	$540

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.

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