RP-Series

FUNCTION SPECIFIC METERS

RP-4500D2

Differential Input Panel Meter 4 1/2 Digit 0.56" LED in a NEMA Style Case

RP-4500D2BCD

Meter with Parallel BCD Output

A High Accuracy Differential Input AC Powered Meter, and a Tri-State Buffered Parallel BCD Output Option.

General Features

The Texmate Model RP-4500D2 is an ultra stable, super accurate 4 1/2 digit panel meter featuring a 100KHz crystal clock. As a result of this feature, the meter provides an exceptionally high normal mode and common mode rejection. The meter measures bipolar true differential and single-ended DC voltages over four factory calibrated ranges from ±1.9999V to ±1200.0V full scale. Resolution is 100µV over ±19999 counts, and errors due to zero drift are virtually eliminated by means of autozeroing. The meter has a multiplexed BCD output capability and as an option a parallel BCD output can be provided. Other user programmable modes of operation include an ohmmeter, current meter, ratiometric voltmeter, and special scaling with offset capability.

The differential input capability of the RP-4500D2 has a wide common mode voltage range of ±3VDC and a high common mode DC voltage rejection ratio of 80dB. Common mode signals are those which are present equally on both input terminals but do not develop a differential voltage between them. This capability is particularly useful for making accurate measurements of very small signals in the presence of much larger common mode signals. Because of its noise immunity, the RP-4500D2 is ideal for measuring various balanced transducers and bridge inputs.

The 120dB normal mode rejection of the RP-4500D2 at multiples of 50/60Hz means that almost any AC mains noise present on the input signal will be rejected.

In addition to standard run/hold and display blanking options, the RP-4500D2 features specially prepared internal mounting holes and solder pads to enable user designed input signal conditioning and control. These auxiliary pads provide access to all the key operating and control circuitry of the meter including regulated 5VDC and outputs.

Specifications and features of the RP-4500D2BCD meter begin on page 5.

Compatibility

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

Traditional NEMA STYLE USA CASE

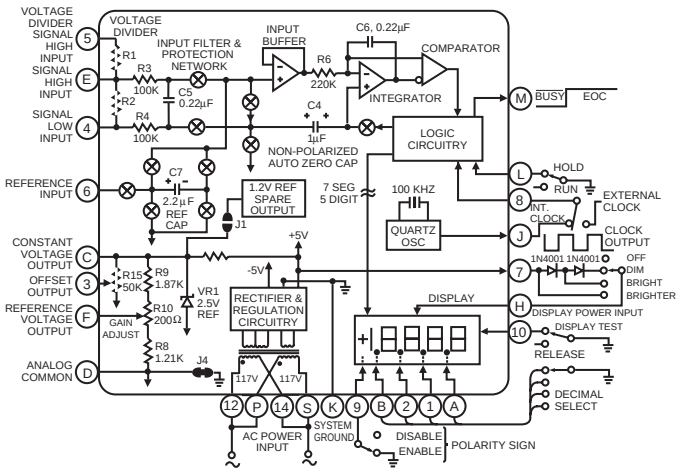
Specifications

Input Configuration:.....True differential and single-ended
Full Scale Ranges: .....±199.9mVDC
±1.999VDC (standard)
±19.99VDC
±199.9VDC
±1200VDC
Input Impedance: .....Exceeds 1000MΩ on 2V range; 10MΩ on all other ranges
Input Protection:.....±60VDC or 40VAC on 2V range; ±1200VDC or 850VAC on all other ranges
Accuracy: .....±(0.01% of reading + 3 digits)
Temperature Coefficient: ..5PPM/°C in ratiometric operation; 50 PPM/°C Typ. using internal reference with 2V range
Warm Up Time: .....3 minutes to specified accuracy
Conversion Rate: .....2.5 readings per second controlled by precision 100KHz Quartz Crystal Clock, or user controllable from 1 to 12 readings per second by external clock
Display: .....0.56" LED
Decimal Selection: .....User programmable to 4 positions
Overrange Indication: ..When input exceeds full scale on any range being used, display flashes "000"
Power Requirements:....110V or 220V, ±5% at 50Hz; 117V or 230V, ±5% at 60 and 400Hz
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: .....8 oz (227 gms)

RP-Series, a reliable replacement for your application

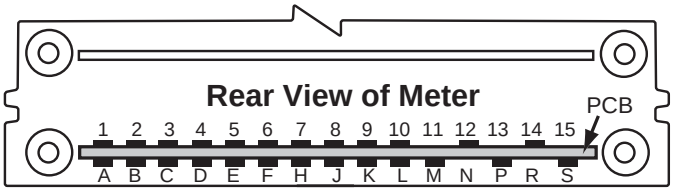
RP-3500D2 .....3.5 digit Red LED Ultra Stable, Differential, 2VDC std
RP-3500D2BCD .....RP-3500D2 with Tri-State Parallel BCD, 2VDC std
RP-35A .....3.5 digit Red LED with Differential Inputs, 2VDC std
RP-35AR .....3.5 digit Red LED, Autoranging, 200mV / 2VDC
RP-35U .....3.5 digit Red LED, Low Cost, 2VDC std
RP-4500D2 .....4.5 digit RED LED Ultra Stable, Differential, 2VDC std
RP-4500D2BCD .....RP-4500D2 with Tri-State Parallel BCD, 2VDC std

Functional Diagram



Connector Pinouts

The Texmate Model RP-4500D2 interconnects by means of a standard PC board edge connector having two rows of 15 pins each, spaced on 0.156" centers. Connectors are available from Texmate, or from almost any connector manufacturer.



Component Side		Solder Side	
DECIMAL SELECT (1XX.X)	1	A	DECIMAL SELECT (1XXX.)
DECIMAL SELECT (1X.XX)	2	B	DECIMAL SELECT (1.XXX)
OFFSET VOLTAGE OUTPUT	3	C	CONSTANT VOLTAGE OUTPUT
SIGNAL LOW INPUT	4	D	ANALOG COMMON
VOLTAGE DIVIDER SIG HI IN	5	E	SIGNAL HIGH INPUT
REFERENCE INPUT	6	F	REFERENCE VOLTAGE OUTPUT
+5VDC POWER OUTPUT	7	H	DISPLAY POWER INPUT
CLOCK INPUT	8	J	CLOCK OUTPUT
POLARITY ENABLE	9	K	SYSTEM GROUND
DISPLAY TEST	10	L	RUN/HOLD
NO CONNECTION	11	M	INTEGRATION BUSY OUT
AC POWER INPUT	12	N	NO CONNECTION
NO CONNECTION	13	P	117/230V SELECT
117/230V SELECT	14	R	NO CONNECTION
NO CONNECTION	15	S	AC POWER INPUT

PINS A, B, 1 and 2 - Decimal Select: Decimal points may be displayed as required by connecting appropriate pin to System Ground Pin K.

PIN C - Constant Voltage Output: Pin C may be used as a primary reference Voltage Source of +2.5V referred to Analog Common Pin D. A temperature coefficient of 50PPM/ °C is typical. The maximum usable load without component change is limited to 500µA.

PIN D - Analog Common: Signal return common for differential inputs, ratiometric inputs, external reference inputs. For single-ended inputs, Pin D and Pin 4 should be joined at the grounded side of the input signal source. *CAUTION*: Analog Common Pin D is not isolated and is internally connected to System Ground Pin K.

PIN E - Signal High Input: Signal high input of A to D converter. Maximum overvoltage protection is ±60VDC or 40VAC.

PIN F - Reference Voltage Output: Internal precision voltage reference. Standard output is 1.000V, adjustable by ±5% with R10 potentiometer. Usable voltages from 0.5V to 2.5V for special high impedance scaling can be obtained by changing the value of internal dividing resistors R8 and R9.

PIN H - Display Power Input: Power input for LED display drive. For normal operation, connect Pin H to +5VDC Power Output Pin 7. The display may be dimmed or blanked by reducing or removing the voltage between Pin H and Pin 7. The power supply to the A to D converter and logic circuits is independent to that of the display. Thus, even with the display blanked, the remainder of the meter continues to function normally.

PIN J - Clock Output: A quartz crystal controlled oscillator provides a stable clock signal output of 100KHz.

PIN K - System Ground: All digital signals, decimal points, display test, and run/hold circuits should be returned to this ground point. Pin K is internally connected to Analog Common Pin D.

PIN L - Run/Hold: If Pin L is left open (or connected to +5VDC Power Output Pin 7 for logic control purposes), the meter will operate in a free-running mode. Under control of the internal 100KHz quartz crystal clock, readings will be updated every 400mS (2.5 per sec). If Pin L is connected to System Ground Pin K (logic low), the meter will latch up an continuously display the reading. If Pin L is released from Pin K (Pin L then goes logic high) for more than 2000 clock pulses (>10mS at 100KHz) and returned to Pin K (logic low), the meter will complete one conversion, update, and then hold the new reading. For all practical purposes, a manually actuated pushbutton switch will provide sufficient timing for “press-to-update” operation.

PIN M - Integration Period BUSY Output: CMOS logic output (normally high) goes low and remains low during the period of the conversion cycle when the input signal is being integrated. Actual integration is performed for 20,000 clock pulses. De-integration then occurs for 0 to 40,000 clock pulses (each count display = 2 clock pulses), depending on signal magnitude. Pin M goes to logic high throughout Autozero Phase and during Hold Status.

PINS N, R, 11, 13, and 15 - No Connection: The PCB pads which would normally correspond to these pins do not exist on the PCB.

Pin P - 117/230V Select: Connect Pin P to AC Power Input Pin 12 for 117V operation. Connect Pin P to 117/230V Select Pin 14 for 230V operation.

PIN S - AC Power Input: Connect one side of 117 or 230VAC power input to Pin S.

PIN 3 - Offset Voltage Output: Pin 3 is the center tap of R15 potentiometer which when installed will provide an offset voltage output which is variable from 0 to +2.5V and may be used for signal offset or scaling purposes.

PIN 4 - Signal Low Input: Signal low input of A to D converter. Maximum overvoltage protection is ±60VDC or 40VAC.

PIN 5 - Voltage Divider Signal High Input: Signal high input for voltages that require attenuation or scaling. Dividing resistors R1 and R2 may be mounted internally for voltages up to 1200V max. Matched dividing resistors for 20V (1/10), 200V (1/100) and 1200V (1/1000) ranges are available from Texmate. Shunt resistors for current measurements up to 200mA may be internally mounted in the R1 position. The current loop is then applied to Signal High Input Pin E and returned through Pin 5.

PIN 6 - Reference Input: Reference voltage input for A to D converter. Normally supplied from Reference Voltage Output Pin F. An external reference source referred to Analog Common Pin D may be used instead. Pin 6 may be used as an input for ratiometric measurements. Minimum usable voltage is 0.5VDC and the maximum voltage is 2.5VDC. (Signal Input Voltage ÷ Reference Input Voltage) x 1000 = Reading Displayed. Maximum signal voltage is 2.5V. Higher voltages must be scaled down through voltage divider. Reference input voltage must remain stable during measurement period.

PIN 7 - +5VDC Power Output: Regulated +5VDC ±3% power output to enable the display and logic circuitry. In addition, up to 25mA may be used to power external circuitry.

PIN 8 - Clock Input: Normally Pin 8 is connected to Clock Output Pin J which provides a 100KHz clock input for optimum rejection from 50/60Hz noise. An external clock source may be used if desired (+5V referred to power ground at 50% duty cycle). The minimum recommended frequency is 10KHz ,and the maximum is 1MHz (12.5 readings per sec.). For inputs below 100KHz or above 300KHz, the integrator time constant and some component values have to be changed.

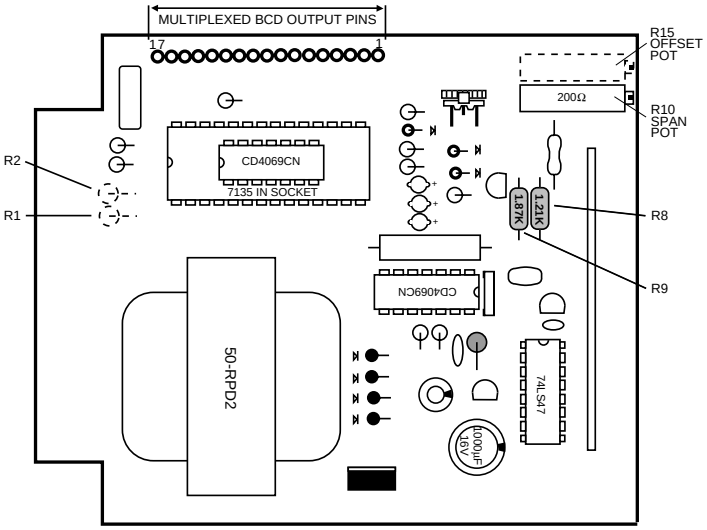
PIN 9- Polarity Enable: Connect Pin 9 to System Ground Pin K to enable normal indication of positive and negative polarities. To reverse the polarity indication (i.e. indicate negative for positive inputs and vice versa) open jumper J4 and close jumpers J5 and J8 on the solder side of main board.

PIN 10 - Display Test: All display segments will operate when Pin 10 is connected to System Ground Pin K.

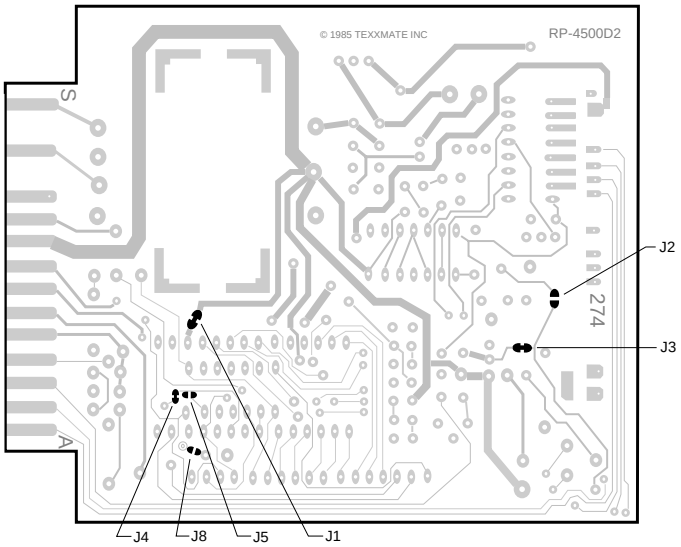
PIN 12 - AC Power Input: Connect one side of 17 or 230 V AC power input to Pin 12.

PIN 14 - 117/230V Select: Connect Pin 14 to AC Power Input Pin S for 117V operation. Connect Pin 14 to 117/230V Select Pin P for 230V operation.

Component Layout

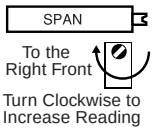


COMPONENT SIDE



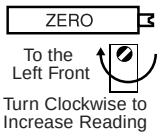
SOLDER SIDE

Signal Conditioning Components



SPAN Potentiometer (Pot)

The SPAN pot is on the right side of the display. Typical adjustment is 20% of the input signal range.



ZERO Potentiometer (Pot) optional

The ZERO pot is on the right side of the SPAN Pot. Typically it enables the displayed reading to be offset ±500 counts.

Timing Diagram

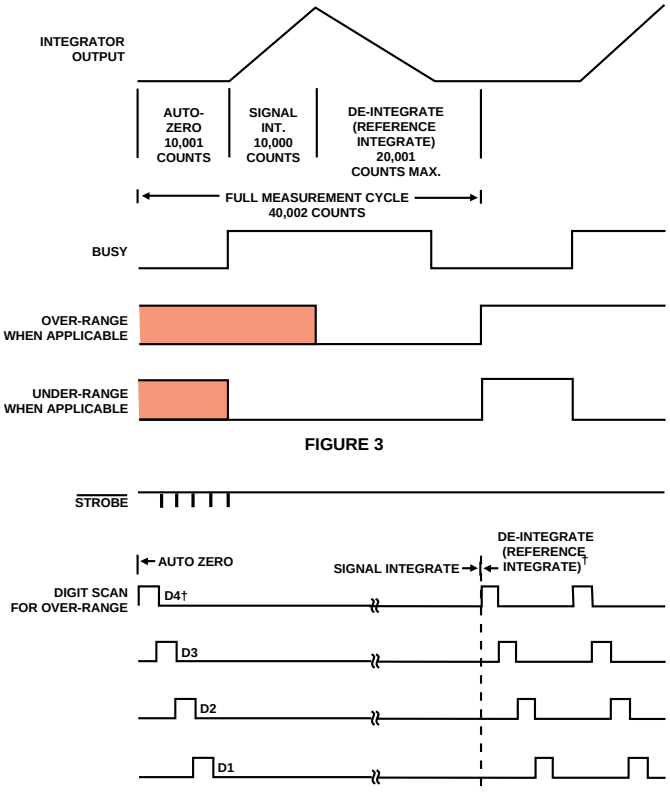


FIGURE 3

†First D4 of AUTO ZERO and DE-INTEGRATE is one count longer.

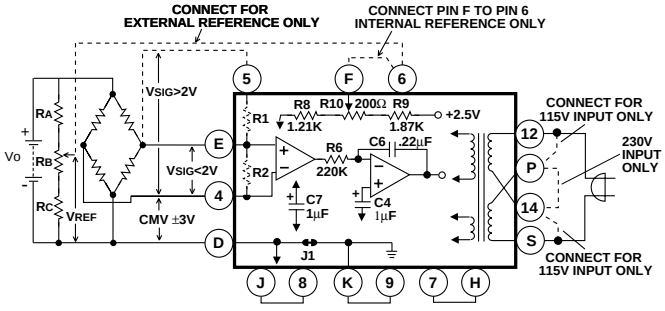
Calibration Procedure

Apply power to the meter. Then with a precision DC reference source, apply +1.9000VDC between the Signal High Input Pin E and the Signal Low Input Pin 4. Adjust R10 potentiometer (behind front panel filter on right side as viewed from front) until the display reads +1.9000V. Note: The voltage applied in this case is for a +1.9999V full scale meter. For other ranges, the voltage applied should be similarly proportionate to the particular full scale voltage.

Typical Application Connections

The RP-4500D2 may be used in a wide variety of configurations. The following circuits illustrate some of the possibilities and demonstrate the exceptional versatility of Texmate products. Components called for in the applications which are not part of the standard meter may be supplied by the user or in some cases purchased from Texmate. The circuit diagrams explain the basic pinout connections required for each application. Unless otherwise specified, the diagrams will show the component values and solder junctions that would normally be installed on a standard 2V range meter. For those applications which have alternative ranges and/or input configurations, the required component values and any modifications are described in the text.

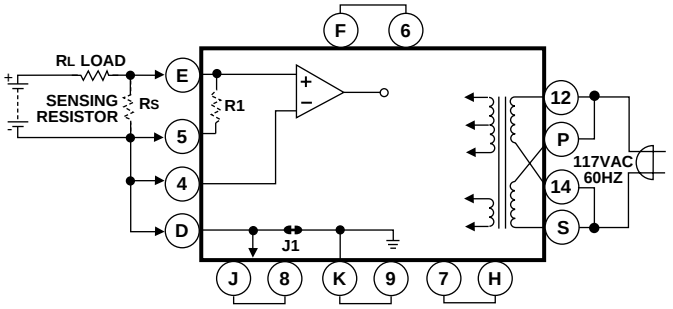
DIFFERENTIAL METER: 2V, >2V RANGE OR EXT. REF.
2V Range:
1) Connect up the circuit as shown.
2) Apply Signal High to Pin E and Signal Low to Pin 4.



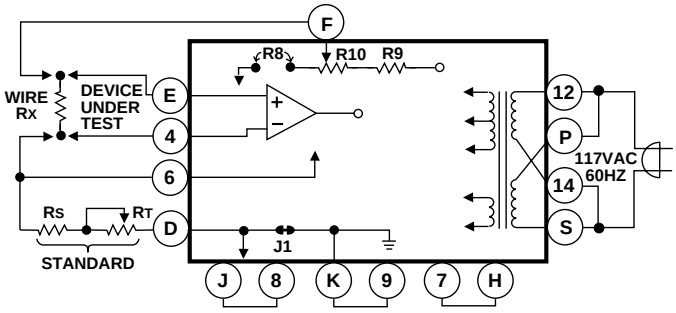
Continued on page 4.

Typical Application Connections continued

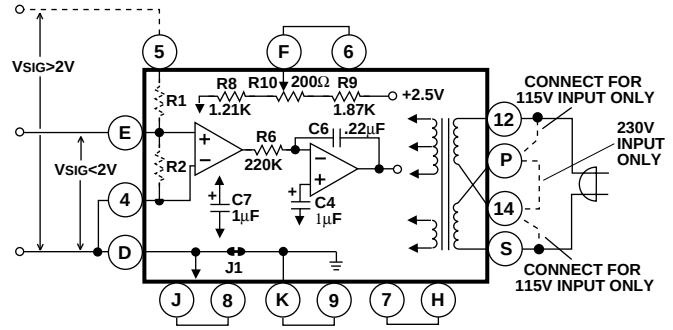
SINGLE ENDED CURRENT METER
1) Connect meter as shown. 2) Install RS.
Note: RS must be externally mounted when current is greater than 200mA. Standard values of RS are specified under section titled Useful Tables. For all other ranges, Rs may be internally mounted in the R1 position.



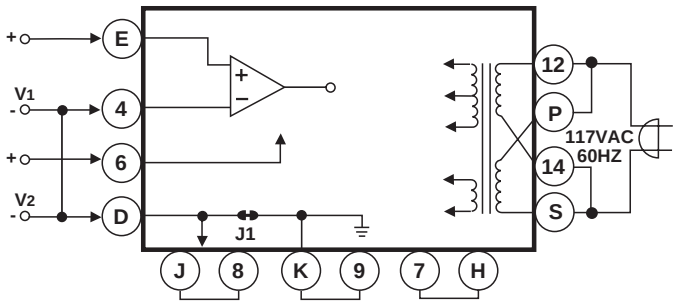
DIFFERENTIAL RATIOMETRIC OHM METER
1) Remove (open circuit) R8. 2) (Rs + RT) x 2 = Full Scale Value.
3) Reading = Rx ÷ (Rs + RT) x 10,000. 4) Change R6 from 220k to 22k for 200Ω. 5) Remove C5 for 20MΩ range.



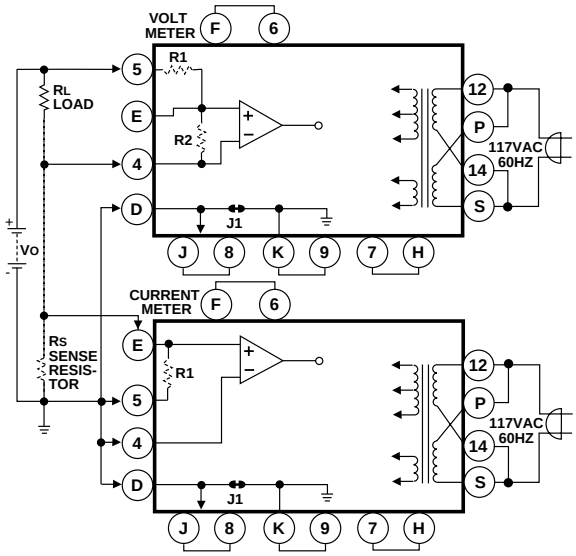
SINGLE ENDED METER: 2V, >2V RANGE
For 2V Range:
1) Connect up the circuit as shown.
2) Apply Signal High to Pin E and Signal Low to Pins 4, D.
For >2V Range:
1) Install R1 and R2 as specified under section titled Useful Tables.
2) Apply Signal High to Pin 5 and Signal Low to Pins 4, D.



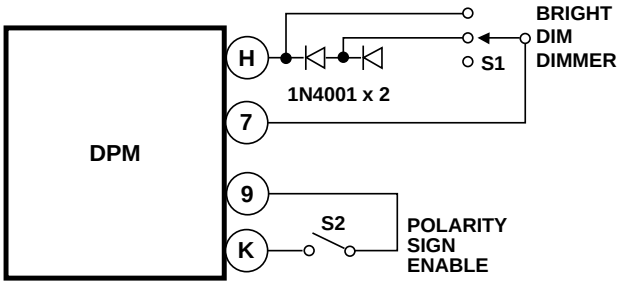
RATIOMETRIC VOLTMETER
1) Reading = (V1 + V2) x 10,000, where -2V <V1< +2.8V and +100mV <V2< +5V. If 50mV <V2< 500mV, change R6 from 220k to 22k.



SIMULTANEOUS VOLTAGE AND CURRENT MEASUREMENT
1) Install R1, R2 and Rs as specified under section titled Useful Tables.
Note: RS must be located in the low side of the current loop and Signal Low Input Pin 4 of Voltmeter must not be grounded.



DISPLAY BRIGHTNESS CONTROL
Externally mounted diodes may be used to vary display brightness.

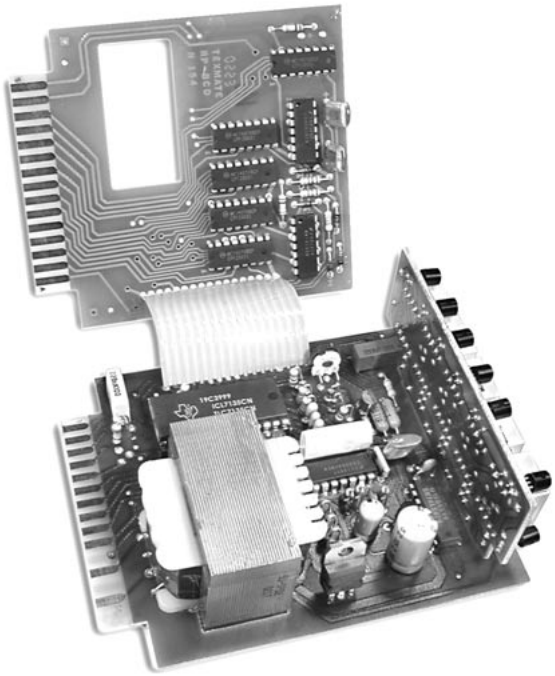


Useful Tables

VOLTAGE RANGE CHANGE				CURRENT RANGE CHANGE (*)			RESISTANCE RANGE CHANGE		
F.S. In	R1	R2	Resol.	F.S. In	Rs	Resol.	F.S. In	Rs + RT	Resol.
2V	Omit	Omit	100µV	20A	0.1Ω	1mA	200Ω	100Ω	10mΩ
20V	9MΩ	1MΩ	1mV	2A	1Ω	100µA	2KΩ	1KΩ	100mΩ
200V	10MΩ	100KΩ	10mV	200mA	10Ω	10µA	20KΩ	10KΩ	1Ω
1200V	10MΩ	10KΩ	100mV	20mA	100Ω	1µA	200KΩ	100KΩ	10Ω
				2mA	1KΩ	100nA	2MΩ	1MΩ	100Ω
				200µA	10KΩ	10nA	20MΩ	10MΩ	1KΩ
				20µA	100KΩ	1nA			

* For full scale current inputs greater than 200mA, Rs must be located external to the meter, and a 4-wire type connection should be used. For full scale currents of 200mA or less, Rs may be located on the meter's PCB in the R1 position.

Parallel BCD Output Option



General Features

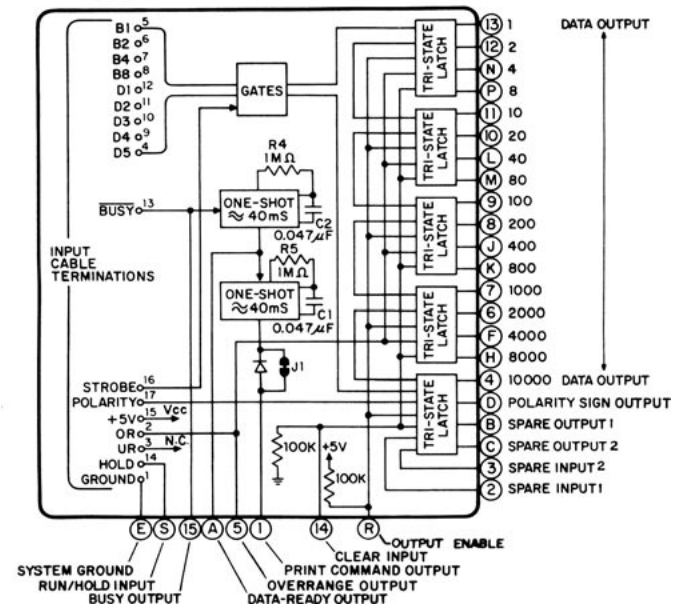
The RP-4500D2BCD meter, using a parallel BCD Output Module, is designed to further increase the versatility of the RP-4500D2 meter. it consists of an additional PC board mounted in the case with the meter and connected to it with a multiconductor ribbon cable.

The Parallel BCD module incorporates CMOS circuitry wish Tri-state output, capable of two low power TTL loads.

The unit may be used to drive remote displays, digital printers, digital comparators, or provide data for digital processor applications.

Specifications and features of the RP-4500D2 meter begin on page 1.

Functional Diagram



Compatibility

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

Traditional NEMA STYLE USA CASE

Specifications

System Voltage: .....5VDC ±2%
Data Output: .....Parallel binary coded decimal (BCD) ±19999 counts max.
BCD Logic Level: .....Buffered CMOS tri-state output
Logic 1: 4.6V at 1mA
Logic 0: 0.4V at 1mA
Logic X: High impedance 300nA max
Polarity Output: .....Logic 1 for positive
Logic 0 for negative
Spare Data Latch:.....2 bits spare latch available for decimal points, overrange, and underrange outputs.
Data Input:.....Multiplexed BCD CMOS input
Control Output:.....Data ready, print command, overrange, underrange, busy, run/hold, clear, blanking, and output select.
Power Consumption: ....2mA typical at no output load
Input Configuration:.....True differential and single-ended
Full Scale Ranges: .....±199.9mVDC
±1.999VDC (standard)
±19.99VDC
±199.9VDC
±1200VDC
Input Impedance: .....Exceeds 1000MΩ on 2V range; 10MΩ on all other ranges
Input Protection:.....±60VDC or 40VAC on 2V range; ±1200VDC or 850VAC on all other ranges
Accuracy: .....±(0.01% of reading + 3 digits)
Temperature Coefficient: ..5PPM/°C in ratiometric operation; 50 PPM/°C Typ. using internal reference with 2V range
Warm Up Time: .....3 minutes to specified accuracy
Conversion Rate: .....2.5 readings per second controlled by precision 100KHz Quartz Crystal Clock, or user controllable from 1 to 12 readings per second by external clock
Display: .....0.56" LED
Decimal Selection: .....User programmable to 4 positions
Overrange Indication: ..When input exceeds full scale on any range being used, display flashes "000"
Power Requirements:....110V or 220V, ±5% at 50Hz; 117V or 230V, ±5% at 60 and 400Hz
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: .....8 oz (227 gms)

Connector Pinouts

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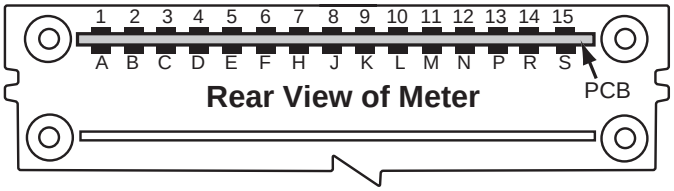


Component Side		Solder Side	
PRINT COMMAND OUTPUT	1	A	DATA READY OUTPUT
SPARE INPUT 1	2	B	SPARE OUTPUT 1
SPARE INPUT 2	3	C	SPARE OUTPUT 2
10000 DATA OUTPUT	4	D	POLARITY SIGN OUTPUT
OVERRANGE OUTPUT	5	E	SYSTEM GROUND
2000 DATA OUTPUT	6	F	4000 DATA OUTPUT
1000 DATA OUTPUT	7	H	8000 DATA OUTPUT
200 DATA OUTPUT	8	J	400 DATA OUTPUT
100 DATA OUTPUT	9	K	800 DATA OUTPUT
20 DATA OUTPUT	10	L	40 DATA OUTPUT
10 DATA OUTPUT	11	M	80 DATA OUTPUT
2 DATA OUTPUT	12	N	4 DATA OUTPUT
1 DATA OUTPUT	13	P	8 DATA OUTPUT
CLEAR INPUT	14	R	OUTPUT ENABLE
BUSY INPUT	15	S	RUN / HOLD INPUT

Pin A - Data Ready Output: Pin A remains at logic “0” during the period that valid data is available. Pin A goes high (logic “1”) for approximately 20mS after the integrator output crosses zero. During this period of change, the output data is considered invalid.

Pins B and C - Spare Outputs: Pins B and C are spare Tri-State latched outputs that can be addressed by the spare inputs provided on Pins 2 and 3.

Pin D - Polarity Sign Output: Pin D is a latched Tri-State output. Its output data is updated after every conversion cycle. Pin D goes to a Tri-State condition if Output Enable Pin R is either left open or applied to logic “1”.

Pin E - System Ground: Pin E is the common for all digital signals.

Pins F, H, J, K, L, M, N, P, 4, 6, 7, 8, 9, 10, 11, 12 and 13 - Data Outputs: These pins are latched Tri-State outputs. Data is updated after every conversion cycle. They go to a Tri-State condition if Output Enable Pin R is either left open or applied to logic “1”.

Pin R - Output Enable: For single meter applications, apply logic “0” (or connect to System Ground Pin E) to enable all data outputs. For multiple meter applications using a single data retriever such as a printer, apply logic “1” to Pin R in order to produce a floating output (Tri-State) at the Data Output Pins F, H, J, K, L, M, N, P, 4, 6, 7, 8, 9, 10, 11, 12 and 13.

Pin S - Run / Hold Input: Apply logic “0” to Pin S to hold the input. Apply logic “1” for free-running operation.

Pin 1 - Print Command Output: Pin 1 is normally at logic “1” and goes to logic “0” for approximately 20mS to activate a printer, and then returns to logic “1”.

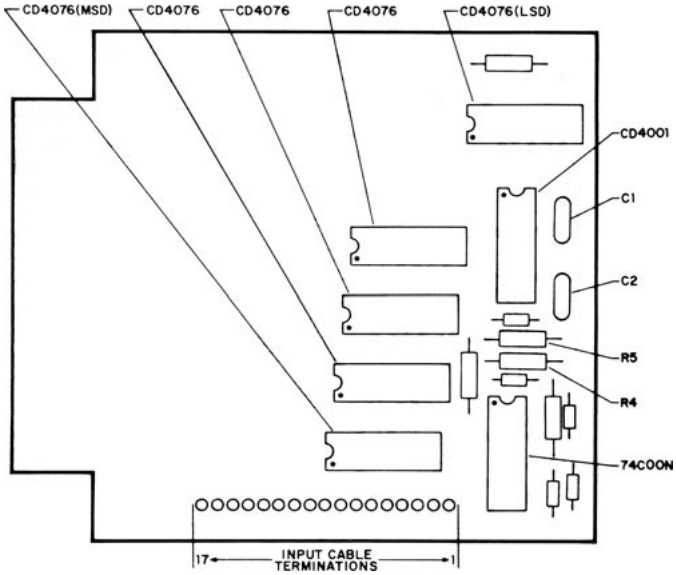
Pins 2 and 3 - Spare Inputs: Any required digital information (2 bits), such as decimal point positions, overrange / under-range can be transmitted to the data bus through Pin B and Pin C by using these two latches.

Pin 5 - Overrange Output: Pin 5 is normally logic “0” (zero volts). At the end of the deintegration period if the displayed reading is greater than 19999, Pin 5 will go “1” (+V). Pin 5 will change state from “1” to “0” at the beginning of the deintegration period.

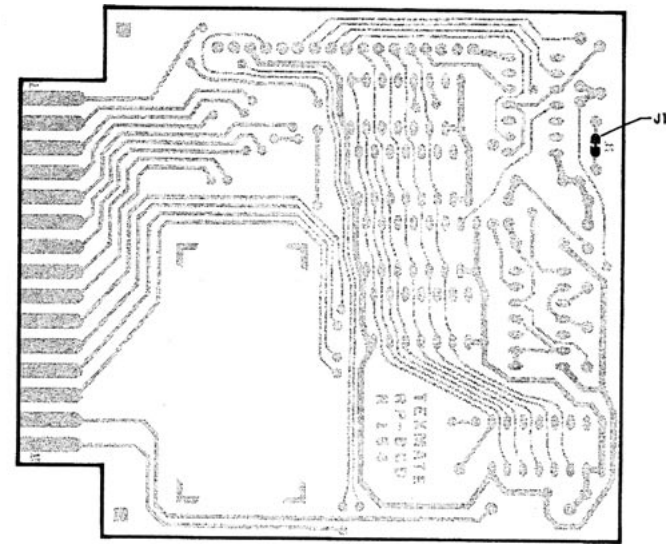
Pin 14 - Clear Input: By applying logic “1” to this pin, all data outputs will be cleared to zero. Application of logic “0” or an open circuit will enable normal operation.

Pin 15 - Busy Operation: Pin 15 is normally logic “1”. It goes to logic “0” during the integration period.

BCD Output Board Component Layout



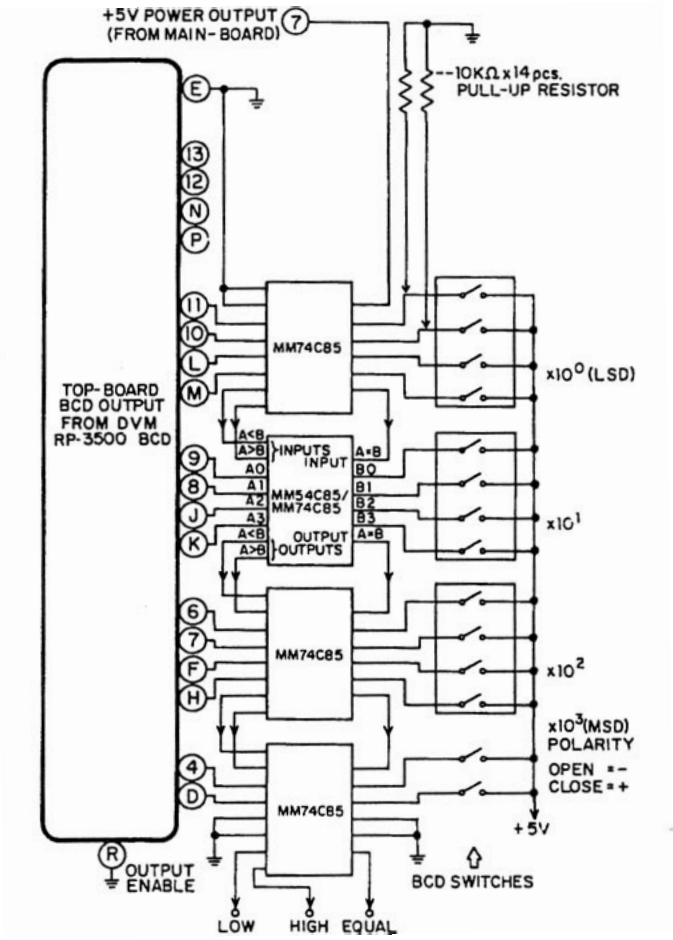
COMPONENT SIDE



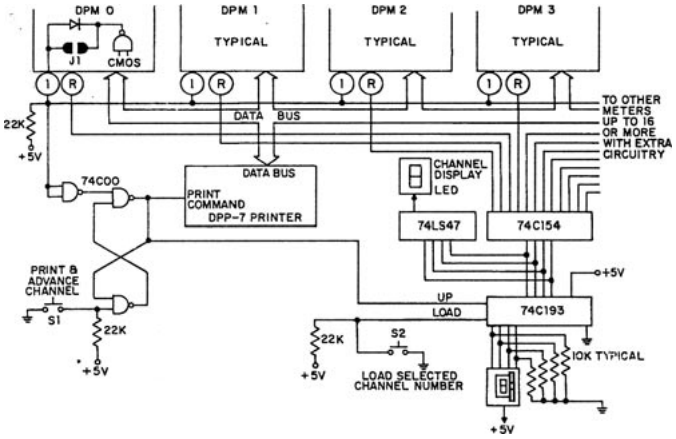
SOLDER SIDE

Parallel BCD Output Typical Application Circuits and Connection Instructions

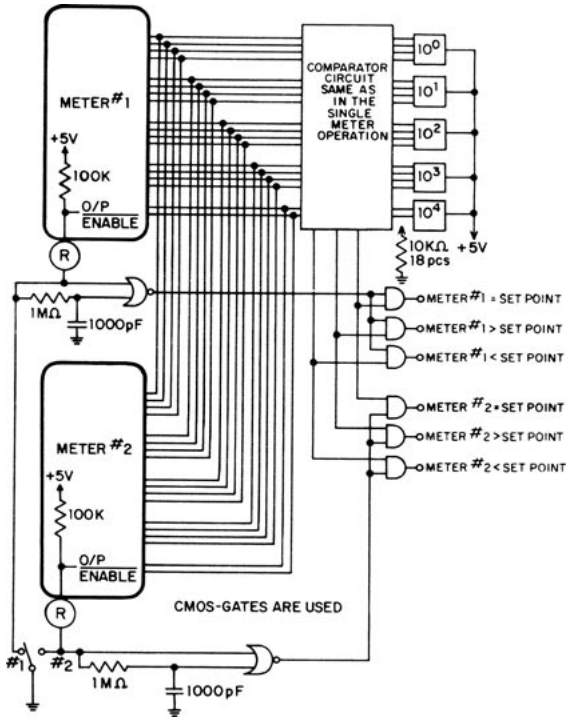
The RP-4500D2BCD may be used in a wide variety of configurations. The following circuits illustrate some of the possibilities and demonstrate the exceptional versatility of Texmate products. Components called for in the applications which are not part of the standard meter may be supplied by the user or in some cases purchased from Texmate. The circuit diagrams explain the basic pinout connections required for each application. Unless otherwise specified, the diagrams will show the component values and solder junctions that would normally be installed on a standard 2V range meter. For those applications which have alternative ranges and/or input configurations, the required component values and any modifications are described in the text.



THUMBWHEEL SWITCH DIGITAL COMPARATOR WITH HIGH, LOW AND EQUAL OUTPUT



BUS SYSTEM FOR MORE THAN ONE METER USING ONE PRINTER



MORE THAN ONE METER COMPARED TO ONE SETPOINT

Optional PCB Edge Connector

PCB Edge Connector

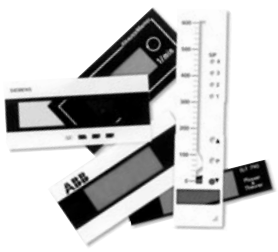
A standard 30-pin edge connector (two rows of 15 pins on 0.156" centers) may be used to connect the RP-Series of meters. Order part no. CN-L15.

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/cm²	Kilovolts AC		psi
kWH	kVAR	Power Factor	
kΩ	CosØ	M/min	m³/hr

To customize the face plate, each RP-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



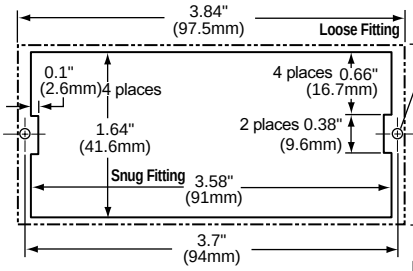
Texmate Produces Thousands of Custom OEM Face Plates

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.

RP Case Dimensions and Panel Cutouts

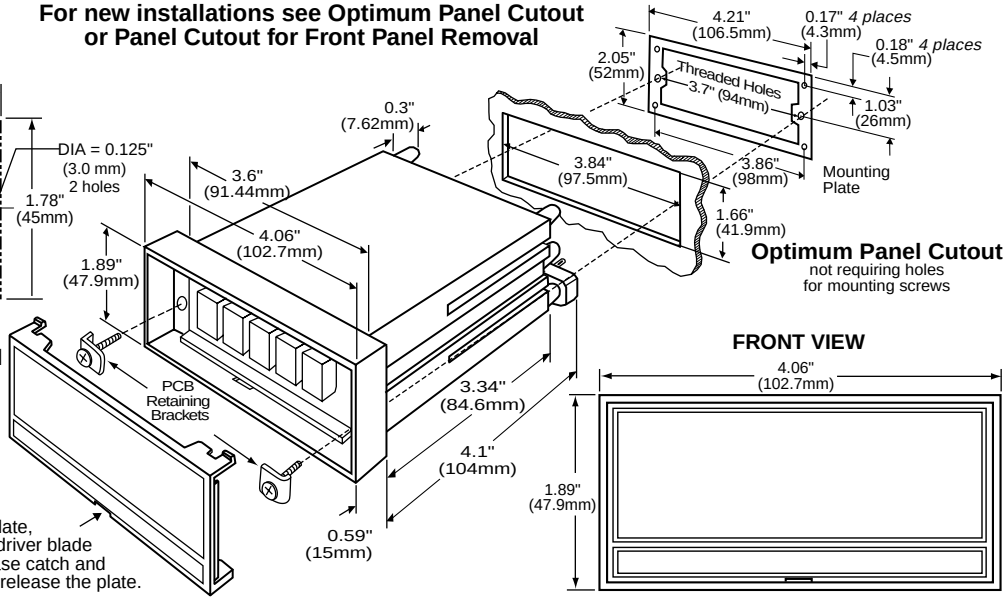
This NEMA Case will fit any existing cutout with dimensions that are between the Snug and Loose Fitting dimensions shown below.



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

BASIC MODEL NUMBER

RP-4500D2 . . .4.5 digit Red Ultra Stable, Differential, 2VDC std
RP-4500D2BCD . .4.5 digit Red Ultra Stable, Tri-State Parallel BCD, 2VDC std

Special Options and Accessories

Part Number .Description

SPECIAL OPTIONS (Specify Inputs & Req. Reading)

VDA-200MVFI . . .200mVDC Range Change
VFA-0020V . . . . .20VDC Range Change for 4.5 digit RP Series
VFA-0200V . . . . .200VDC Range Change for 4.5 digit RP Series
VFA-1200V . . . . .1200VDC Range Change for 4.5 digit RP Series
VS-4.5 . . . . . .Non-Std Range and Scale - 4.5 Digit RP Meters

ACCESSORIES

CN-L15 . . . . . .PCB Edge Connector, Solder Type, Dual row 15 Pins
OP-NSEAL/UM . .96x48mm clear lockable front cover - NEMA 4X, splash proof for RP & UM Series (Factory Installed)
RP.CASE . . . . . .Replacement Case w/Mount Hardware
DN.CAS96X24 .Din Case 96 X 24 Short Depth Plus Accessories

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

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Local Distributor Address

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