TEXMATE

LT-30/40/50 3, 4 & 5 DIGIT LED TACHOMETERS/ FREQUENCY METERS

DESCRIPTION

The Texmate Models LT-30, LT-40 and LT-50 are three new advanced rate counters featuring the versatility and flexibility to accomodate virtually any rate measuring need. The LT series can be used as either tachometers or as frequency meters All provide the capability of measuring very slow input rates.

The count input is compatible with NPN or PNP proximity sensors, photo-electric couplers, or encoders. The units provide +12VDC at 30mA to power the sensors. Four pulse/rotation settings, i.e. 1, 10, 60 and 120 are available through DIP switches mounted at the rear of the unit. These settings or selections are made via rear mounted switches.

The unit is powered by either 110VAC or 220VAC. All power and input signal connections are made via the terminal strip located at the rear of the unit.

SPECIFICATIONS

Display:	
3 Digit:	0.8" (20mm) , 7 segment High Efficiency LED
4 &5 Digit:	0.56" (14.2mm), 7 segment, High Efficiency LED
Display Ranges:	
3 Digit:	Tachometer: 0.13-999 RPM Frequency Meter: 0.26Hz - 1.66KHz
4 Digit:	Tachometer: 0.13-9999 RPM Frequency Meter: 0.26Hz - 1.666KHz
5 Digit:	Tachometer: 0.13-99999 RPM Frequency Meter: 0.26Hz - 1.666KHz
Accuracy:	0.01%
Count Input:	NPN or PNP Proximity Sensor Photo-Electric Sensor Encoder-Conduct Switch
Sensor Power:	+12VDC at 30mA supplied by meter
Input Frequency:	
3 Digit:	1.66KHz Max.
4 &5 Digit:	1.666KHz Max.
Scanning Time:	1 Sec + 1/fin for fin > 5HZ 2 Sec + 1/fin for fin < 5Hz (Max 4 sec.) (Note: fin-Input Frequency)
Input Impedance:	NPN Type: 7.8K PNP Type: 3.9K
Operating Temperature :	0°C to 50°C
Humidity:	45 to 85% RH
Power Requirements:	110V/220VAC ±10% 50/60HZ/AC

ORDERING INFORMATION

Order Part No.

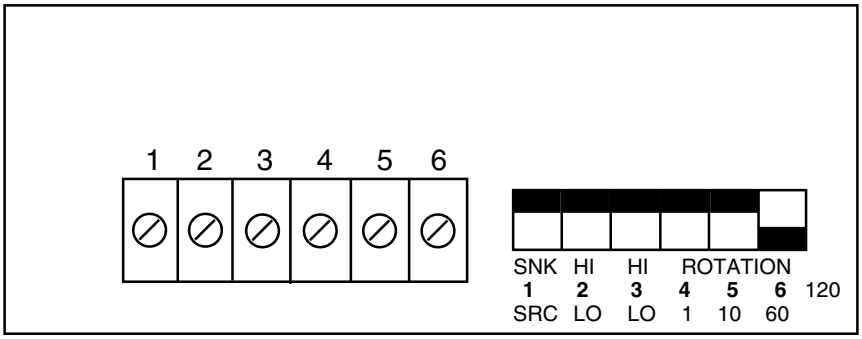
STANDARD METERS:

3 Digit Tachometer/Frequency Meter, AC 110/220 ..... LT-30
4 Digit Tachometer/Frequency Meter, AC 110/220 ..... LT-40
5 Digit Tachometer/Frequency Meter, AC 110/220 ..... LT-50

ACCESSORIES:

Plug-In 6-pin screw terminal connector provided with meter ..... No P/N

REAR VIEW OF METER



CONNECTOR PINOUTS

1 - AC Power Neutral Input
2 - 110VAC Active Input
3 - 220VAC Active Input
4 - Sensor Input Ground
5 - Sensor Input
6 - +12VDC System Power Output

PIN DESCRIPTIONS

PIN 1 - AC Power Neutral Input: Connect the neutral side of the AC power input, either 110VAC or 220VAC, to Pin 1.
PIN 2 - 110VAC Active Input: Connect the active side of the 110VAC power input to Pin 2.
PIN 3 - 220VAC Active Input: Connect the active side of the 220VAC power input to Pin 3.
PIN 4 - Sensor Input Ground: All input signals should be returned to system ground Pin 4.
PIN 5 - Signal Input: The output wire of the sensor should be connected to the signal input Pin 5.
PIN 6 - +12VDC System Power Output: Regulated +12VDC at 30mA is provided at Pin 6 to power the sensor.

SELECTION SWITCHES

Pulse/Rotation: Three DIP switches select the number of pulses per rotation . These switches may also be used to change the scaling factor.
SNK Switch: Provides a 7.8K pull-up resistor for sensor with sinking output normally used on NPN and NPN open collector sensor.
SRC Switch: Provides a 3.9K pull-up resistor for sensors with sourcing output, normally used on PNP sensor.
HI FRQ Switch: Removes damping capacitor and allows operation up to high speed of 1K cps max count specification. Normally used on proximity sensor and encoder (non-contact).
LO FRQ Switch: Connects damping capacitor for switch contact de-bounce. Limits count speed to 30 cps. Minimum count on/off times = 17 msec. Normally used on micro switch and relay switch (contact switches).
BIAS HI Switch: Sets input trigger levels at mid-range to accept logic pulses (CMOS) with full 0 to 12V swings.
(Lo = 4V, Hi = 7.5V)
BIAS LO Switch: Sets input trigger levels at low-range to accept logic pulse (TTL) with 0 to 5V swings.
(Lo = 1V, Hi = 3.5V)

DISPLAY MALFUNCTION INDICATIONS

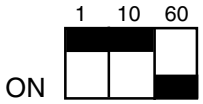
ALL DIGITS ARE ZERO AND FLASHING : Indicates that: a. No input signal or
b. Input signal frequency is below 0.26Hz or
c. The Pulses/Rotation settings are all off.

ALL DIGITS ARE 9 AND FLASHING : Indicates that the input signal frequency is greater than 1.66KHz on the 3 digit and 1.666KHz on the 4 and 5 digit meters.

SETTING INSTRUCTIONS

1. TO USE AS A FREQUENCY METER

a). Set the PULSES/ROTATIION DIP switches to the scale of 60 as follows:



Therefore the display value is the actual input RPM divided by 60. If there is only one pulse per revolution. i.e. PPR = 1, then we have:

$$\text{Display Value} = \frac{\text{Actual RPM}}{60} = \frac{f_{in}}{PPR} = f_{in}\ \text{Hz}$$

b). Frequency range of 3 digit meter: 0.26Hz to 1.66KHz. Frequency range of 4 and 5 digit meters: 0.26Hz to 1.666KHz.

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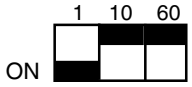
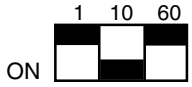
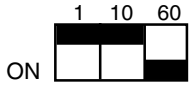
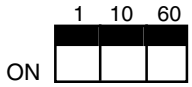
2. TO USE AS A TACHOMETER

a). Set the RPM/LS DIP switch to RPM position. The "RPM" indicator on the front panel is ON.
b). The four pulse/rotation DIP switches are the scaling factor setting for the display.

	LT-30	LT-40	LT-50
	• Scale: 1 Pulse/Revolution • Display Range: 16 - 999 RPM	• Scale: 1 Pulse/Revolution • Display Range: 16 - 9999 RPM	• Scale: 1 Pulse/Revolution • Display Range: 16 - 99999 RPM
	• Scale: 10 Pulses/Revolution • Display Range: 1.6 - 999 RPM	• Scale: 10 Pulses/Revolution • Display Range: 1.6 - 9999 RPM	• Scale: 10 Pulses/Revolution • Display Range: 1.6 - 9999.9 RPM
	• Scale: 60 Pulses/Revolution • Display Range: 0.26 - 166 RPM	• Scale: 60 Pulses/Revolution • Display Range: 0.26 - 1666 RPM	• Scale: 60 Pulses/Revolution • Display Range: 0.26 - 1666.6 RPM
	• Scale: 120 Pulses/Revolution • Display Range: 0.13 - 833 RPM	• Scale: 120 Pulses/Revolution • Display Range: 0.13 - 833.3 RPM	• Scale: 120 Pulses/Revolution • Display Range: 0.13 - 833.3 RPM

c). The setting of Diameter and $^{Y/min}/_{M/min}$ switches are irrelevant.
d). The formula below is used to calculate the rate of revolution:

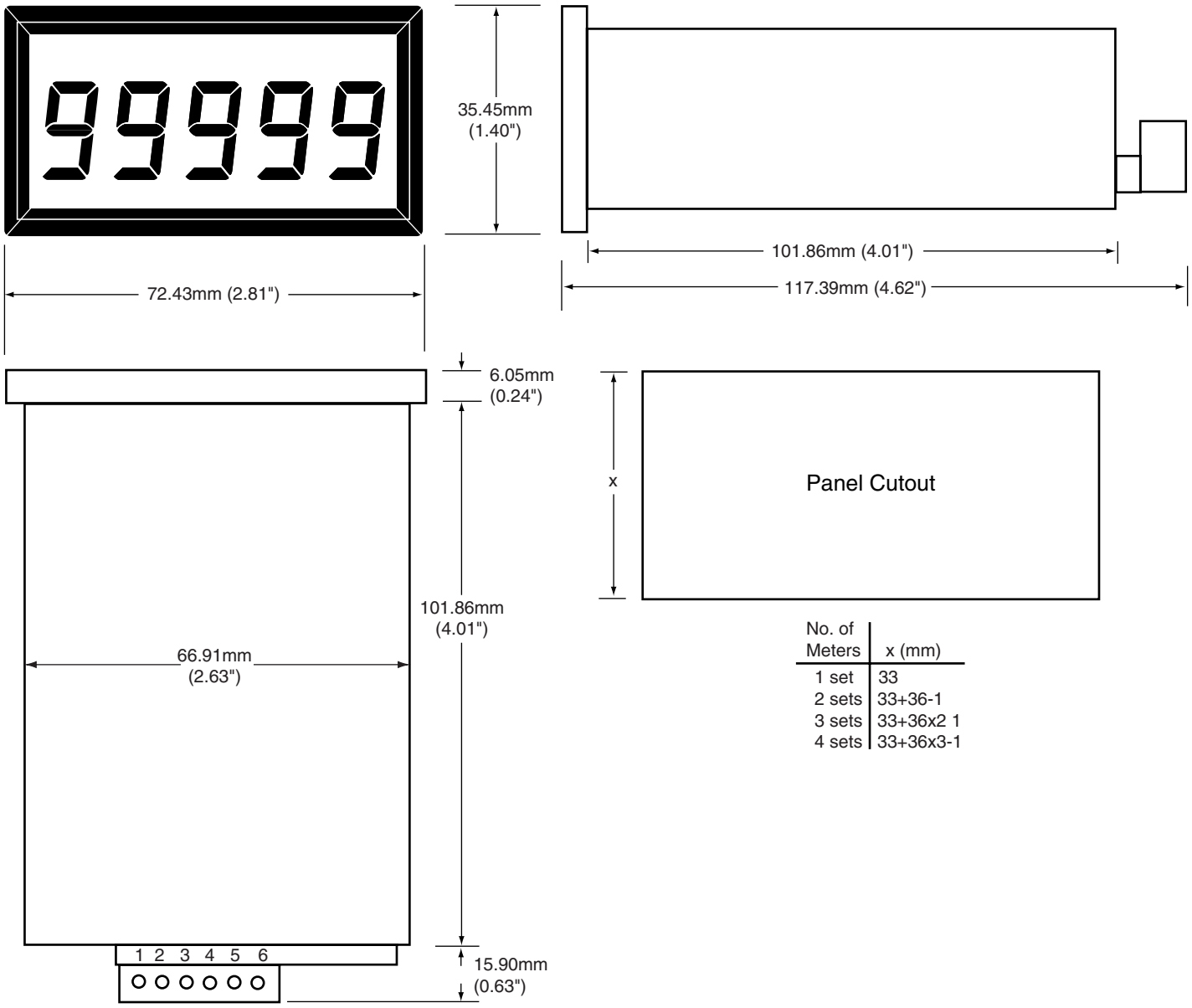
$$\text{RPM} = \frac{60 \times N}{DT \times PPR} = \frac{60\ f_{in}}{PPR}$$

where PPR = Number of Pulse/Revolution
N = Number of input pulses during the scanning time DT
DT = Scanning Time

Therefore: $\frac{N}{DT} = f_{in} =$ input frequency

DIMENSIONS AND CUTOUTS

9/128 DIN, 72x36mm (2.84"x1.42")



No. of Meters	x (mm)
1 set	33
2 sets	33+36-1
3 sets	33+36x2 1
4 sets	33+36x3-1

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 has facilities in Japan, New Zealand, Taiwan, and Thailand. We also have authorized distributors throughout the USA and in 28 other countries.

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