

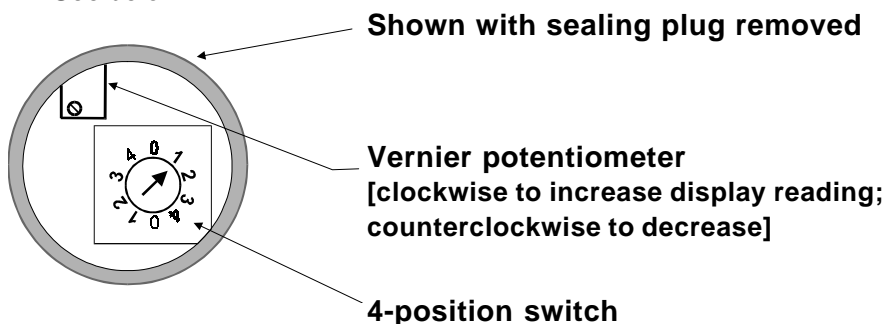
## LST-100 and LST-100L SELF-POWERED TACHOMETER Calibration Instructions

The LST-100 and LST-100L tachometers are normally factory-calibrated to the customer-specified number of sensing teeth or discontinuities, sensing speed, and desired numerical display.

***If necessary, turn to the reverse side of the card to calculate Signal Frequency and Gate Time.***

### To calibrate the LST-100 or LST-100L:

1. Remove the sealing plug on the back of the housing.
2. Apply the calculated signal frequency to terminals A and B. *A Dynalco F-16 or F-15 signal generator is ideal.*
3. Select the appropriate gate time range on the 4-position switch. *See label on back of LST-100; LST-100L; or Item 3, reverse side of card.*
4. Adjust the vernier potentiometer for the desired display. *See below.*



**Example:** *If 3390 Hz = 1800 RPM, then gate time is 0.53 seconds.*

1. Apply 3390 Hz to terminals A and B on tachometer (no polarity).
2. Turn the gate time range switch to (either) position number 1 to select gate time range of 0.26 – 0.72 seconds.
3. Adjust the vernier potentiometer to obtain a display of 1800.

**See label on back of LST-100, LST-100L for additional information**

**QUICK GATE TIME CALCULATION** }  $\frac{60}{\text{Number of Teeth}}$  { Assumes the pickup is "seeing" the gear of interest directly, not through a step up or step down ratio.

(For example: 60/113 teeth = 0.53 sec. gate time)

## 1. Calculating Signal Frequency (in Hz)

Multiply RPM times the number of teeth (or discontinuities), then divide by 60. For example, sensing a ring gear with 113 teeth rotating at 1800 RPM gives a frequency of 3390 Hz.

$$\text{Signal Frequency in Hz} = \frac{(\text{RPM}) \times (\text{Teeth or Discontinuities})}{60}$$

$$\text{Signal Frequency in Hz} = \frac{(1800 \text{ RPM}) \times (113 \text{ Teeth})}{60} = 3390 \text{ Hz}$$

## 2. Calculating Gate Time (In seconds)

Divide the number to be displayed on the LST-100 or LST-100L by the corresponding signal frequency.

$$\text{Gate Time} = \frac{1800 \text{ RPM}}{3390 \text{ Hz}} = 0.53 \text{ seconds}$$

## 3. Gate Time Range Selection on 4-Position Switch

Select either position for each number pair on the switch:

Position 1: 0.26–0.72 sec.

Position 2: 0.72–1.43 sec.

Position 3: 1.43–2.85 sec.

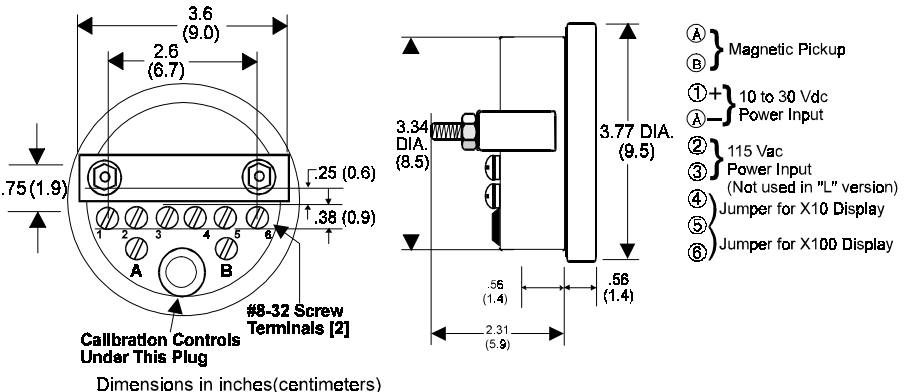
Position 4: 2.85–5.70 sec.

**4. Pulse Rate Multiplier:** Required gate time *divided by ten*: jumper terminals 4 to 5. The input pulse rate will be multiplied by ten times. ♦ Required gate time *divided by one hundred*: jumper terminals 5 to 6. The input pulse rate is multiplied by one hundred.

## Optional Calibration Method: On-engine

- Select the appropriate gate time range on the 4-position switch.
- Connect the magnetic pickup output to terminals A & B.
- Adjust vernier potentiometer on LST-100 or LST-100L until its display agrees with another precise digital tachometer.

## OUTLINE AND CONNECTION DRAWING



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