# SPD-108 and SPD-108L

## Signal-Powered Tachometer

## Calibration Instructions

The SPD-108 and SPD-108L 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 this card to calculate Signal Frequency and Gate Time.***

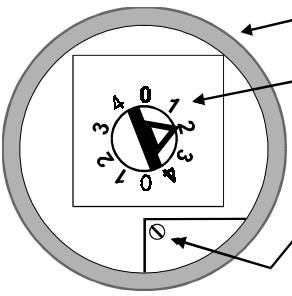
### To calibrate an SPD-108 or SPD-108L

**1.** Remove the sealing plug on the back of the housing.

**2.** Apply the calculated signal frequency to terminals 1 and 2. *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 SPD-108; SPD-108L; or Item 3, reverse side of card.*

**4.** Adjust the vernier potentiometer for the desired display. *See below.*




**Shown with sealing plug removed**

**4-position switch**

**Vernier potentiometer**
[clockwise to increase display reading; counterclockwise to decrease]

**Example:** *If 3390 Hz = 1800 RPM, then gate time is 0.53 seconds.*
**1.** Apply 3390 Hz to terminals 1 and 2 on tachometer (no polarity).
**2.** Turn the gate time range switch to (either) position number 2 to select gate time range of 0.38–0.76 seconds.
**3.** Adjust the vernier potentiometer to obtain a display of 1800.

**See label on back of SPD-108, SPD-108L 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)**

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## 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.

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

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

## 2. Calculating Gate Time (In seconds)

Divide the number to be displayed on the SPD-108 or SPD-108L by the corresponding signal frequency.

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

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

Select either position for each number pair on the switch:

| | |
|---|---|
| **Position 1: 0.14–0.38 sec.** | **Position 2: 0.38–0.76 sec.** |
| **Position 3: 0.76–1.51 sec.** | **Position 4: 1.51–3.02 sec.** |

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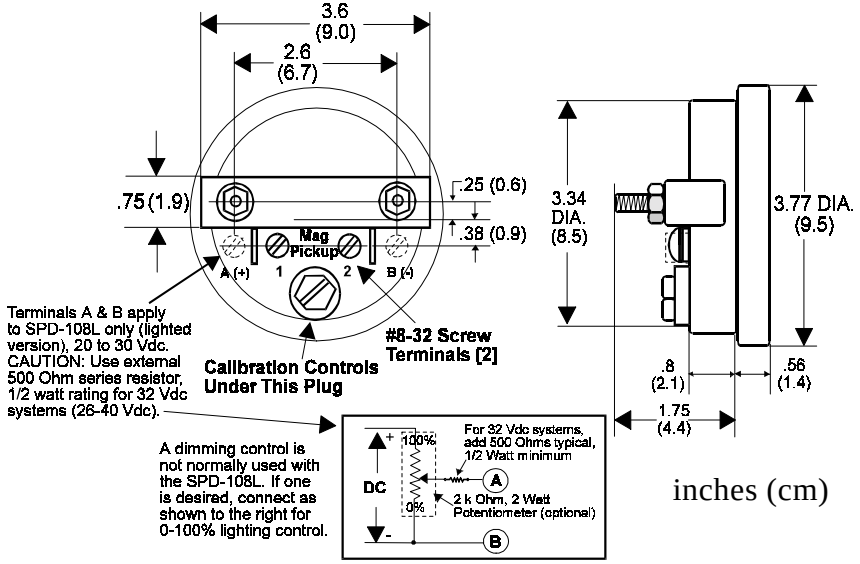
**Optional Calibration Method: On-engine**

**A.** Select the appropriate gate time range on the 4-position switch.
**B.** Connect the magnetic pickup output to terminals 1 & 2.
**C.** Adjust vernier potentiometer on SPD-108 or SPD-108L until its display agrees with another precise digital tachometer.

## OUTLINE AND CONNECTION DRAWING

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Azonix-Dynalco, 3690 N.W. 53rd Street, Fort Lauderdale, FL 33309 U.S.A.
☎ (954) 739-4300 • Fax (954) 484-3376 • www.dynalco.com • mailbox@dynalco.com