



**Combined speed sensor and controller . . . stops jammed or overloaded motors and machines before damage occurs**



Detects under-speed conditions in conveyor lines, machine tools, ventilating systems, or any other rotating shaft where a minimum speed requirement exists. Typically, a "flat", keyway, or bolt-head, is detected, precisely timed, and compared during each revolution to a set-point adjustment made at "minimum" speed. Any drop in speed immediately produces an output which may be used for emergency stop or other control function. The Motion Detectors operate as AC or DC switches and are available with high- and low-speed ranges.

- Economical protection of equipment – can easily pay for itself
- Detects under-speed in one shaft revolution
- Self-contained tubular design is easy to install and adjust
- AC or DC operation within same model
- Power-up delay timer bypasses control during start up
- High- and low-range types for 6 to 3000 RPM operation
- Accurate and repeatable to 5% of nominal speed
- Reliable operation over wide temperature range
- 25 turn potentiometer and LED indicator simplifies precise set-point adjustment

Use of these protective devices in many applications throughout a plant can save many times their cost in reduced downtime and equipment repairs.

**SPECIFICATIONS**

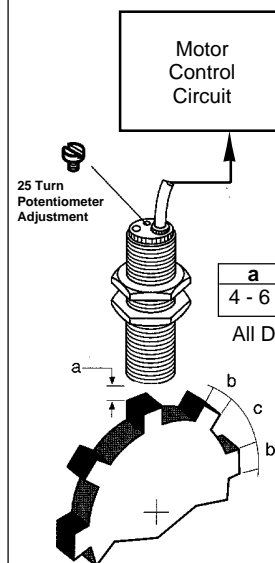
**Electrical Characteristics:**

- Operating Voltage Range:** 20-264 AC/DC
- Operating Line Frequency (Hz):** DC: 0; AC: 45-65
- On-State Voltage Drop (volts):** 5.7 Max.
- Load Current:**
  - Maximum Continuous (mA):** DC: 200; AC: 350
  - Minimum Continuous (mA):** 5
  - Inrush (A):** 2
- Leakage Current (mA):** 1.5
- Output State:** Speed above set-point: Closed, below set-point: Open
- Termination:** 2-wire cable, 20 AWG, PVC Jacket, 2 meters long

**Operating Characteristics:**

- Nominal Sensing Distance (mm):** 0 to 8
- Power-Up Time Delay (seconds):** 9, fixed
- Adjustable Frequency Range (set-point):**
  - 109888-0001: 6 to 150 pulses-per-minute
  - 109888-0002: 120 to 3000 pulses-per-minute
- Maximum Operating Frequency:**
  - 109888-0001: 6000 pulses-per-minute
  - 109888-0002: 48,000 pulses-per-minute
- Hysteresis (% of nominal):** 5 to 15
- Repeatability (% of nominal):** 3
- Operating Temperature Range:** -13° to +158°F (-25° to +70°C)
- Enclosure Ratings:** NEMA type: 1, 3, 4, 6, 12, 13, 13; GENELEC type: IP67
- Enclosure Material:** Nickel-plated brass

**Application:**



**Setpoint adjustment:** A 25 turn potentiometer is used to set the speed threshold (pulses per minute) to the normal operating speed. The output circuit will remain closed unless the speed falls below the setpoint at which time it will open. At power up, a 9 second delay overrides under-speed detection to allow the equipment to reach normal operating speed.

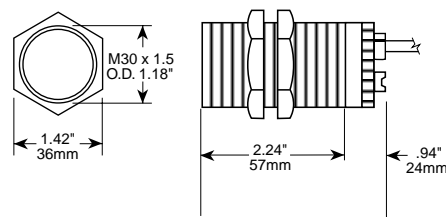
<b>a</b>	<b>b</b>	<b>c</b>
4 - 6	30 x 30	60

All Dimensions in mm

A single or multiple targets may be used (even numbers are recommended to maintain mechanical balance). The more targets, the faster the response to an underspeed condition. The number of targets is limited by the maximum operating frequency stated in Specifications.

Model No.	Adjustable Speed Detection Range (Targets/Minute)	Operating Voltage Range	Power-Up Time Delay (Seconds)	Program-mable Controller Compatible	LED	Output Func.	Max. Sens. Dist. (mm)
109888-0001	6-150 (0.1-2.5 Hz)	20-264 VAC/DC	9 ±20%	Yes	Yes	N.O.	8
109888-0002	120-3000 (2-50 Hz)	20-264 VAC/DC	9 ±20%	Yes	Yes	N.O.	8

**Dimensions:**



**11 PRECISION AND SWITCHES**