

# Digital Tach/Hourmeter w/Adjustable Overspeed Trip Point

## SHD30 and SHD30-45 Models

The SHD30 and SHD30-45 are microprocessor-based tachometers with hourmeter and an overspeed trip point. The trip point can be connected as either a form C relay output or as a normally open SCR output for alarm or shutdown on overspeed.

The SHD30 features a panel-mounting design, plastic enclosure that is 5-1/16 in. (129 mm) long and 4-1/4 in. (108 mm) high.

The SHD30-45 has the same enclosure, but it also has a backplate with studs to mount like an OPLFC. The SHD30 models power and RPM data are supplied by either a magnetic pickup or a capacitor discharge (CD) ignition. The hourmeter is adjustable to a preset time and resettable to zero. Should power be lost, on-board batteries maintain the run hours display and allow for resetting the overspeed relay output.

When a tach signal is present the SHD30 models display RPM. When a tach signal is not present, the display is blank unless the Read Hours membrane key on the faceplate is pressed and held.

The five-digit, liquid crystal display is updated every second. The run hours, overspeed set point and current pulses per engine revolution can be displayed by manipulating the membrane switches. Run hours can be displayed even after power is lost. The run hours display can be configured to alternate with the RPM display.

### Applications

- Gas Compressors
- Oil Field Equipment

### Specifications

#### Power input:

##### CD ignition:

90 to 350 VDC  
150  $\mu$ A typical @ 90 VDC  
300  $\mu$ A @ 350 VDC

##### Magnetic Pickup:

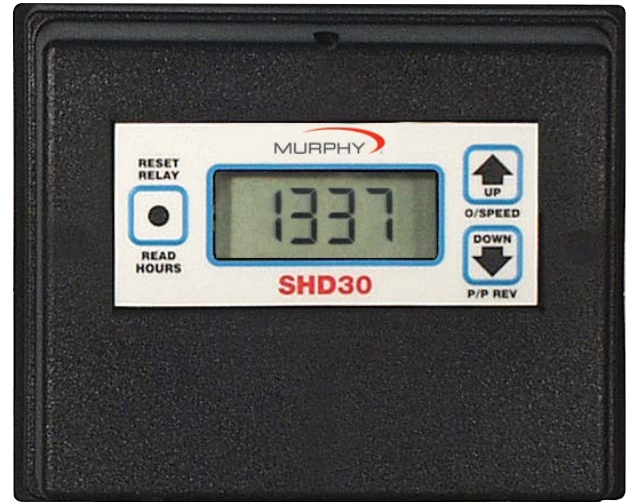
5 to 120 Vrms  
325  $\mu$ A typical @ 5 Vrms, 100 Hz  
450  $\mu$ A typical @ 5 Vrms, 1 kHz  
1 mA typical @ 5 Vrms, 5 kHz  
2 mA typical @ 5 Vrms, 10 kHz  
15 mW max. @ 5 Vrms, 10 kHz  
2.8 W max. @ 120 Vrms, 10 kHz

**Backup Batteries:** 2 replaceable, long-life lithium batteries, Panasonic CR2032 or equivalent, 3 V, 220 mAh power. Shelf life expectancy 10 yr.

**Operating Temperature:** -4° to 158° F (-20° to 70° C)

**Storage Temperature:** -40° to 300° F (-40° to 150° C)

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\* When installed per FW Murphy drawing 20-08-0258

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### Ease of Calibration

The SHD30 models calibration is accomplished by entering the number of pulses per engine revolution using the Pulses per Revolution and Overspeed Set point membrane keys on the faceplate. The number of pulses is determined by the number of cylinders, cycles and ignition features. It is also determined by the number of ring gear teeth of the engine's flywheel on a magnetic pickup system.

Presetting and resetting running hours is done from the back and front of the SHD30 models.

**Case Material:** Plastic

**Ignition Frequency Range:** 3 to 666 Hz

**Magnetic Pickup Frequency Range:** 1 to 10 kHz

#### Overspeed Output:

Connected to S.C.R. (Silicon Controlled Rectifier) terminals:

0.5 A, 350 VDC continuous

Connected to Form C Relay terminals:

Relay Contact, 0.5 A, 30 VDC, 125 VAC resistive

**Tachometer Accuracy:**  $\pm 0.5\%$  of the display reading or  $\pm 1$  RPM whichever is greater

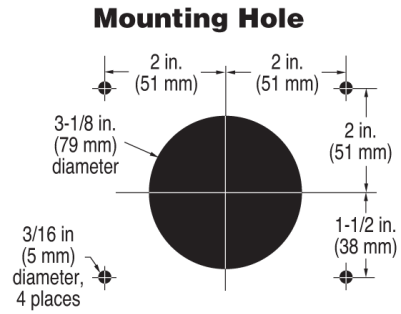
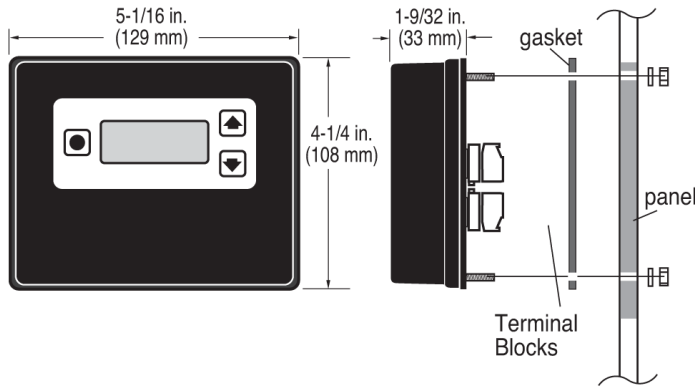
**Hourmeter Range:** 0 to 65535 hrs

**Hourmeter Accuracy:**  $\pm 15$  minutes per year

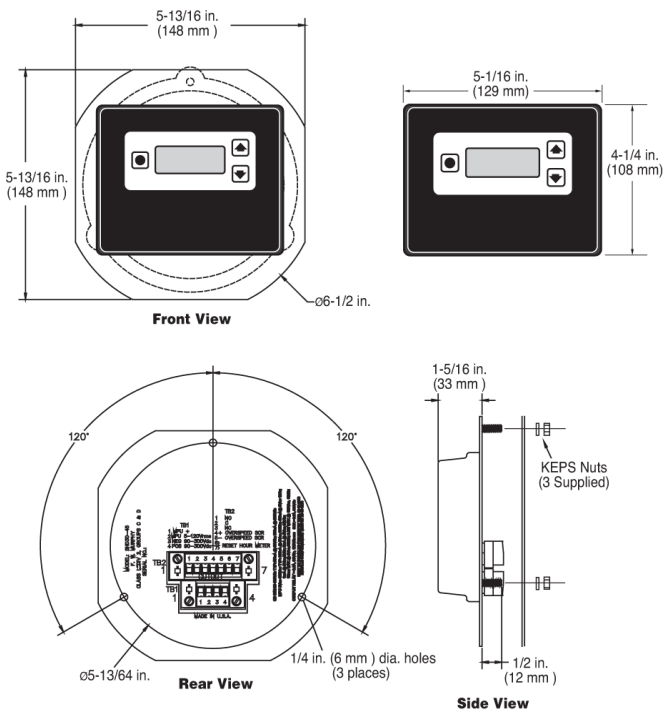
**Laboratory Approvals:** CSA (Canadian Standards Association) approved for Class I, Division 2, Groups C & D hazardous areas

# Dimensions

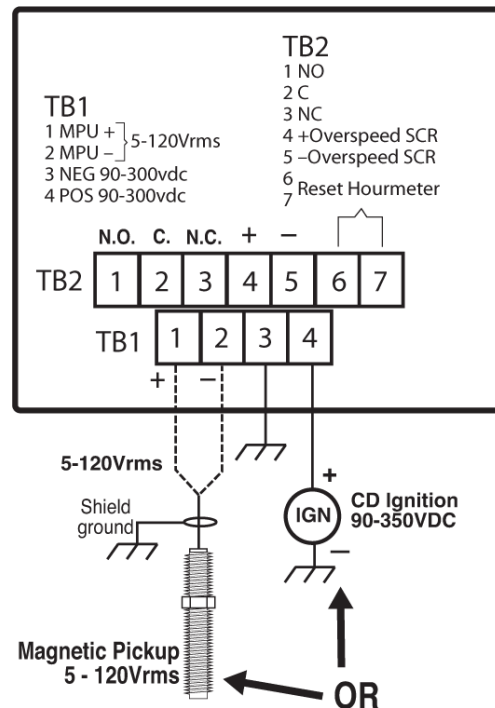
## SHD30



## SHD30-45



## Typical Wiring Diagram



**WARNING:** In hazardous areas, the overspeed relay contact is certified for use ONLY with FW Murphy non-incendive or intrinsically safe products. In non-hazardous areas, overspeed relay contact may be used to switch electromechanical Tattletale® or Magnetic Switches that do not exceed the relay contact rating: 1 A, 30 VDC; 0.3 A, 110 VDC; 0.5 A, 125 VAC. However, the preferred output to switch electromechanical Tattletale® or Magnetic Switches is the N.O. SCR.

## How to Order

Part Number	Model and Description	Notes
Specify Model Number	SHD30 Tach/Hourmeter with Overspeed	
	SHD30-45 Tach/Hourmeter with Overspeed to mount like SHD45 or OPLFC	

Approximate Shipping Weight and Dimensions		
Model	Weight	Dimension
SHD30	1 lb (0.5 kg)	9-1/4 x 8-1/4 x 5-1/4 in. (235 x 210 x 133 mm)
SHD30-45		(adds backplate and studs to shipping weight)