

Tachometers and Tach/Hourmeters – AT and ATH Series



Features

- 4000 RPM –0 to 100,000 hours
- Sensing from Magnetic Sensor, Battery Charging Alternator or Ignition Signal
- High Visibility Analog Readout
- Air Core Movement
- Easy Calibration through Dip Switches
- Through Dial Lighting
- Powered by 11-28 VDC Battery Available



* Products covered by this bulletin comply with EMC Council directive 89/336/EEC regarding electromagnetic compatibility except as noted.

The AT Series tachometers are rugged, transistorized instruments with solid-state circuitry for indication of engine RPM. They are equipped with a bracket for mounting into a standard 3- 3/8 in. (86 mm) dash mounting hole. A full 270° sweep of the pointer gives an accurate indication on a large easy-to-read scale and the dial can be illuminated for night reading. The ATH Series models are also equipped with hourmeter to record the elapsed running time of an engine.

Models available for Alternator, Magnetic Sensor or Ignition signal These instruments are designed to function from pulses generated by an alternator with 4, 8, 12, 14, or 16 poles on the rotor. The pulses can also be obtained from the ring gear of an engine by means of an **electromagnetic sensor** (magnetic pickup). Murphy's magnetic sensor driven models are designed to function with flywheels having anywhere from 50 to 304 teeth. **Ignition signal** model available for 4, 6 or 8 cylinder, spark-ignited engines. All models are for negative ground, positive ground or isolated electrical systems and are protected against reverse polarity hookup.

All models are powered by a 11-28 VDC battery and are reverse polarity protected.

Series Models

ATS Series Magnetic Sensor Signal Tach

50 - 304 pulses* 11-28 VDC, 2733 Hz to 13.62 kHz @ 4000 RPM

ATHS Series Magnetic Sensor Signal Tachometer/Hourmeter

50-304 pulses* 11-28 VDC, 2733 Hz to 13.62 kHz @ 4000 RPM

* To determine pulses per engine revolution, work the formulas on the back page and use the pulses per revolution number to determine if the tachometer can be used for your application.

ATA Series Alternator Signal Tachometer

3-27 pulses* 12 VDC, 137 to 1330 Hz @ 4000 RPM

ATHA Series Alternator Signal Tachometer/Hourmeter

3-27 pulses* 12 VDC, 137 to 1330 Hz @ 4000 RPM or 193 to 1815 Hz @ 4000 RPM

ATHI Series Ignition Signal Tachometer/Hourmeter

4, 6 or 8 cylinder engines @ 4000 RPM

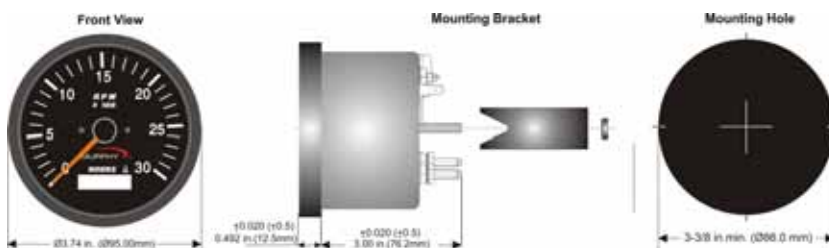
Bezel Styles



Applications

These tachometers are specially designed for use on truck, marine, industrial, or stationary engines.

Dimensions



How to Determine if the Tachometer or Tach/Hourmeter is Suitable for Your Equipment

- Ignition sensing Tach/hourmeters can be used on 4, 6 or 8 cylinder, spark ignited engines.
- Magnetic pick up sensing Tachometer or Tach/hourmeters will operate from 70 to 225 tooth flywheels.
- Alternator sensing Tachometer or Tach/hourmeters will operate from 3 to 27 pulses per engine revolution. To obtain the number of pulses per engine revolution, work the following formulas:

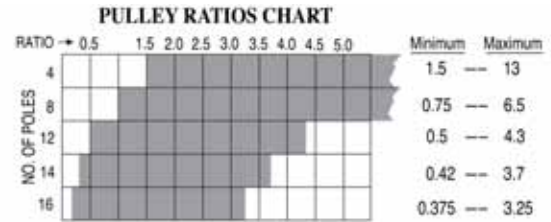
- Determine the number of poles on your alternator. Look for the designation/type in the manufacturer's manual or remove the pulley and fan to count the number of poles on the rotor.
- The **ALTERNATOR TACHOMETER CHART** lists common alternators and their minimum and maximum pulley ratios. Determine pulley ratio with the following formula:

$$\text{PULLEY RATIO} = \frac{\text{CRANK SHAFT PULLEY DIAMETER}}{\text{ALTERNATOR PULLEY DIAMETER}}$$

- Check that Pulley Ratio falls within the range shown on the **PULLEY RATIOS CHART** for a particular alternator. If ratio falls in the shaded area, the tachometer can be calibrated for the application.

- To determine the pulses per engine revolution:

$$\frac{\text{NUMBER OF POLES}}{2} \times \text{PULLEY RATIO} = \text{PULSES PER ENGINE REVOLUTION}$$



ALTERNATOR TACHOMETER CHART				
Manufacturer	Designation/Type	Poles	Minimum pulley-ratio	Maximum* pulley-ratio
Prestolite	All	8	0.75	6.5
Load Handler	88A, 8LHA, 89C, 8LHC	16	0.375	3.25
Load Handler	All 5 inch models	12	0.5	4.3
Leece Neville	All	12	0.5	4.3
Bosch	G and K Series	12	0.5	4.3
C.E. Nashoff	All	12	0.5	4.3
Delco Remy	30DN	4	1.5	13
Delco Remy	155I, 215I, 400N, 405I	12	0.5	4.3
Delco Remy	10DN, 105I, 125I	14	0.42	3.7
Delco Remy	20DN, 255I, 275I	16	0.375	3.25
Delco Remy	295I, 305I	16	0.375	3.25
Hitachi	LT125, LT130, LT133	8	0.75	6.5
Hitachi	LT150	12	0.5	4.3
Lucas	All	12	0.5	4.3
Mando	All	12	0.5	4.3
Motorcraft	All	12	0.5	4.3
Nippondenso	All	12	0.5	4.3
Powerline	Series 23	14	0.42	3.7
Powerline	Series 24, 25, 26	12	0.5	4.3
Valeo	All	12	0.5	4.3

Specifications

Power Input: 11-28VDC (70mA except lamp load).

Back Light: 3 to 4W Bulb Wedge base

RPM Input Signal Voltage: 1.5 Vrms min. from a magnetic pickup
V low: 0.5V ma, V high: 8.0V min. from Alternator Driven and Ignition Switch

Accuracy: Tachometer: ± 2% full scale

Hourmeter: +0.01% hours, +1 count.

Hourmeter: ± 0.01% hours, ± 1 count.

Temperature Range: -40°C to +82°C (no permanent damage shall occur).

Dial: 270° sweep white numerals (over black background)

Bezel: 304 Stainless Steel for bright and IS 513 E.E.E. CRCA steel for black.

Scales: 0-4000 RPM.

Case Material: Plastic.

Hourmeter Range: 99999.9 hours in 0.1 increments

Shipping Weight: 0.89 lb. (403 g).

Shipping Dimensions: 5-1/2 x 5-1/2 x 5-1/2 in. (140 x 140 x 140 mm).

How to Order

Order the Tachometer or Tachometer/Hourmeter by model number.

Magnetic Sensor Tachometer 4000 RPM; 50 - 304 pulses 11-28 VDC

Model # Designation

ATS-40-12 Bright Stainless Steel Bezel

ATS-40-12-A Black Stainless Steel Bezel

ATS-40-12-B SAE Bright Stainless Steel Bezel

ATS-40-12-C SAE Black Stainless Steel Bezel

Magnetic Sensor Tach/Hourmeter 3000 RPM; 50-304 pulses 11-28 VDC

ATHS-40-12 Bright Stainless Steel Bezel

ATHS-40-12-A Black Stainless Steel Bezel

ATHS-40-12-B SAE Bright Stainless Steel Bezel

ATHS-40-12-C SAE Black Stainless Steel Bezel

Alternator Signal Tachometer 3000 RPM; 3 - 27 pulses 11-28 VDC

ATA-40-12 Bright Stainless Steel Bezel

ATA-40-12-A Black Stainless Steel Bezel

ATA-40-12-B SAE Bright Stainless Steel Bezel

ATA-40-12-C SAE Black Stainless Steel Bezel

Alternator Signal Tach/Hourmeter 4000 RPM; 3 - 27 pulses 11-28 VDC

ATHA-40-12 Bright Stainless Steel Bezel

ATHA-40-12-A Black Stainless Steel Bezel

ATHA-40-12-B SAE Bright Stainless Steel Bezel

ATHA-40-12-C SAE Black Stainless Steel Bezel

ATHA-40-12-A Black Stainless Steel Bezel

Ignition Signal Tach/Hourmeter 4000 RPM; 4, 6 or 8 cylinder 11-28 VDC

ATHI-40-12-A Black Stainless Steel Bezel

Optional Power Input Converter

ATVC12/24 24 VDC to 12 VDC Converter

Warranty - A limited warranty on materials and workmanship is given with this FW Murphy product.
A copy of the warranty may be viewed or printed by going to <http://www.fwmurphy.com/warranty>