

How to Specify the Proper Monarch Tachometer and Sensor

Answering the following questions will help you to identify the tachometer best suited for your application.

1.) Does your tachometer application require a portable “hand-held” or “panel/bench top” model?

PORTABLE MODELS

POCKET TACH 99
POCKET LASER TACH 200 PLT200
PHASAR-LASER
PHASAR LASER-R

PANEL/BENCH TOP MODELS

ACT-1B
ACT-3X

Suffix “R” = Tachometer has a plug-in connection which accepts a 1/8” (3.5mm) phone plug from an optional Remote Optical Magnetic, Laser or Infrared Sensor. Two Tachs in One - internal and remote optics capability.

2.) What RPM range do you need to measure?

PORTABLE RPM RANGE

POCKET TACH 99 5-99,999
POCKET LASER TACH 200 5-200,000
PHASAR LASER/-R 5-100,000

PANEL/BENCH TOP RPM RANGE

ACT-1B 5-100,000
ACT-3X 5-999,990

3.) In addition to a tachometer, are a totalizer / counter or timer / stopwatch measurement required?

POCKET LASER TACH 200 is a Tachometer, Totalizer / Counter, Timer / Stopwatch
ACT-3X is a Tachometer, Totalizer / Counter

4.) Listed in order: What are the most popular tachometers and sensors?

Portable Models – POCKET LASER TACH 200 KIT, PT99. Panel Models - ACT models used with the Remote Optical Sensors (ROS-W, ROLS-W), ACT models with Proximity Sensor (P5-11) MT-190, M-190 and IRS-W .

5.) Does application require a remote optical sensor hand held or mounted in remote location?

PLT-200 can be used with a ROS-P, ROLS-P, MT-190-P, IRS-P sensor with 8 or 25-foot cable lengths.
PHASAR LASER-R can be used with a ROS-P or ROLS-P with 8 or 25-foot cable lengths.

The ACT Series used with Remote Optical Sensor (ROS-W) has a standard cable length of 8 feet with up to 400 feet available. Additional bulk cable is priced at \$1.00/foot over standard 8-foot cable length for sensor.

NOTE: W = Tinned Wires P = 1/8” (3.5mm) Phone Plug Plugs into a tach or strobe.

Optical Tachs and sensors will shoot/operate through glass, plastic and wire mesh protective screens.

6.) Can user shut down device and attach a 1/2 inch piece of reflective tape? If yes, use “Non-Contact” optical models. If not, use a contact tach - POCKET LASER TACH 200 KIT or a Stroboscope to measure RPM.

POCKET TACH 99 operates up to 36 inches ± 45° from reflective tape.
POCKET LASER TACH 200 operates up to 25 feet from reflective tape and +/- 70 degrees.
PHASAR LASER operates up to 10 feet and ± 45° from reflective tape.
ACT Series with a Remote Optical Sensor operates up to 36 inches ± 45° from reflective tape.
ACT Series with a Remote Optical Laser Sensor operates up to 25 feet from reflective tape.
ACT Series with SMART LASER SENSOR operates up to 65 feet ± 70° from reflective tape.

7.) Does Application Require “Contact” Tachometer to Read in RPM or Linear Speeds Such As a Conveyor Belt or Elevator Speed in Inches per Minute, Feet per Minute or Meters per Minute?

PLT200 KIT is a non-contact or with the included Remote Contact Assembly also a direct contact tach.
PLT200 KIT will measure all English or Metric linear unit rates. Best value for contact/non-contact linear speeds or RPM.



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8.) Does operating environment prevent using a reflective tape target?

Maximum temperature for Tape is 175°F (80 C). If dirt, oil or water gets on Optics or Target or speed exceeds 60,000 RPM then Reflective Tape could come off. Try to use a IRS-P infrared sensor (painted target) or magnetic or proximity sensor from a bolt head, gear teeth or drill and tap a ¼ -20 bolt into the coupling.

ACT models can be used with "Magnetic Sensor" (M-190W), "Magnetic Sensor with Amplifier" (MT-190W), "Proximity Sensor"(P5-11), "Infrared Sensor" (IRS-W), "Remote Optical Laser Sensor" (ROLS-W) and "Smart Laser Sensor" (SLS-115/230).

The gap for the Magnetic Sensor must be .005 inches max. to gear teeth. The MT-190W Magnetic Trigger Sensor with Amplifier allows an increased gap up to .250 inches from a ferrous target like bolts or teeth.

Proximity Sensor (P5-11) is mounted up to a .200 inch operating gap from a metallic target usually a bolt head, keyway or ANY 1/ 2 inch square area protruding on the rotating device. Operates up to 250 feet from Tachometer. The P5-11 is smaller and easier to install than a magnetic sensors.

The PLT200 or ACT Series used with an Infrared Sensor can be used on targets where tape cannot be used. Must mark surface with white/black contrast colored target such as wax crayon, paint or black felt tip marker pen. The Infrared Sensor's converging .5-inch beam could also be "Broken" by the rotating device to trigger an input to tachometer. Example you can shoot infrared beam through gear teeth.

9.) Do you require additional output options from the tachometer?

OPTIONS

Pulse Output 0-5VTTL
Trigger Signal

Current Output (IO) 4-20mA or
Voltage Output (AO) 0-5Vdc

Factory Serial
RS232 Bi-directional Interface
Ethernet
USB

High and Low Alarms

TACHOMETER REQUIRED

PLT200, ACT-1B, ACT-3X

ACT-1B user must specify full-scale RPM level 20mA or 5Vdc so factory can preset full-scale value.

ACT-3X push button or programmable by user for full scale settings and offset settings.

Example: 4 - 20 m A : 0 = 3000 RPM and 20 m A = 3600 RPM range.

Isolated or Non-Isolated outputs are available on both ACT-1B and ACT-3X.

ACT-1B, ACT-3X Using optional factory USB Programming Cable/Software
ACT-3X
ACT-3X
ACT-3X

ACT-3X push button or software programmable (set 2 limits) by user

NOTE: ACT-3X has all output options available and **INCLUDES N.I.S.T.** (National Institute of Standards and Technology) Certificate of Calibration for no extra charge. Best value for customer's dollar!

10.) What input power is available to power the tachometer?

Select the proper supply power for your ACT Series using the model number matrix or use a battery powered PT-99, PLT-200 when supply power is not available.

11.) What accessories / options do you need for your Monarch Instrument tachometer?

NOTE: Portable Tachometers can be ordered in a "Kit form", which usually adds a latching carrying case, roll of T-5 Reflective Tape and a Remote Contact Assembly (RCA) for contact measurements. Don't forget to order sensors or extra reflective tape.

12.) N.I.S.T. certificate of calibration required for instrument?

Pocket Laser Tach 200, Phasar Laser, SLS and ACT-3 Models include a N.I.S.T. Certificate of Calibration at no additional charge. All other digital instruments can be supplied with a Certificate of Calibration traceable to N.I.S.T. for an additional charge. Initial certificate is good for 12 –18 months.

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