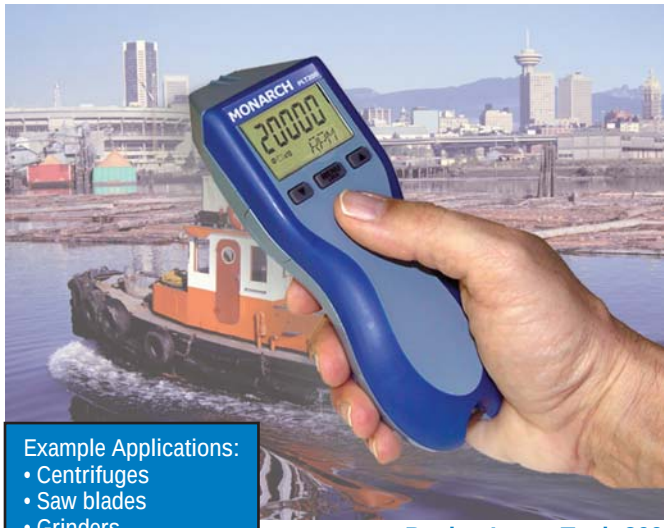
PORTABLE TACHOMETERS/TOTALIZERS (Contact/Non-Contact)

Pocket Laser Tach PLT200

RoHS NIST CE



Pocket Laser Tach 200

Example Applications:
- Centrifuges
- Saw blades
- Grinders
- Elevators/escalators
- Engines
- Motors
- Conveyor belts
- Fans
- Propellers
- Vibration Studies

"Safety First"
Safe and Accurate Non-Contact Measurements-View Target & Display Simultaneously, a Monarch Exclusive.

Two Tachs in One ... the only portable laser tachometer available with both Remote Contact and Remote Sensors.

Optional plug-in Remote Sensors with 8 foot cable. (25 foot cables available). See page 9 for details.

Remote Optical Sensor (ROS-P) Gap 36 inches

Remote Magnetic Sensor (MT-190-P) Gap 0.25 inches

Remote Infrared Sensor (IRS-P) Gap 0.50 inches

Remote Contact Assembly (RCA) with 6 foot (1.82m) cable, Contact Tips and 10 cm Linear Contact Wheel (Shows optional 12 inch circumference Linear Contact Wheel)

Optional RCA

The rugged and versatile Pocket Laser Tach is ideally suited for non-contact, contact and linear speed measurements.

Pocket Laser Tach 200 (PLT200) is a digital, battery-powered portable optical tachometer, which operates up to 25 feet (8 meters) from a reflective target using a class 2 laser light source. The ergonomic design allows safe, direct line-of-sight viewing of both the target and the display at the same time, while providing a non-slip rubber surface for single hand operation.

Multi-Function For Pro-Active Maintenance

PLT200 is a 32 function Tachometer/Ratemeter, Totalizer/Counter and Timer (stopwatch), which is programmable in both Imperial and Metric rates. Two phono plug connectors for our optional Remote Contact Assembly (RCA) or remote sensors. The PLT200 also has a TTL compatible pulse output to trigger devices like vibration data collectors or stroboscopes. The KIT is supplied complete with a Remote Contact Assembly including concave and convex tips and a 10 cm linear speed wheel all in a latching carrying case.

Pocket Laser Tach 200 Kit includes: Tachometer, RCA, Contact Tips, 10cm Linear Contact Wheel, 5 feet of Reflective Tape and a Latching Carrying Case.

PLT200 Kit

Specifications PLT200

- Display: 5 Digits, 5 Alphanumeric LCD
- Range(s) *Optical: 5 to 200,000 RPM
  **Contact:0.5 to 20,000 RPM

Rates	10cm Contact Wheel	12 inch circumference Contact Wheel
Inch/min	1.969 to 78,740 IPM	6.000 to 144,000 IPM
Feet/min	0.164 to 6,561.7 FT/M	0.500 to 12,000 FT/M
Yard/min	0.055 to 2,187.2 YPM	0.167 to 4,000.0 YPM
Cm/min	5.000 to 200,000 cm/M	15.240 to 365,760 cm/M
M/min	0.050 to 2,000.0 M/M	0.153 to 3,657.6 M/M

- Totalizer: 1-999,990 (events or length)
- Timer: 99:59.9 Min, sec, tenths
- Accuracy: Optical:±0.01% of reading; Contact: ±0.05% of reading (rpm)
- Resolution: 0.001 to 10 RPM (range dependent)
- Operating Distance: 2" to 25' (5cm to 7.62m), ±70° from perpendicular
- Memory: Maximum, Minimum and Last
- Power: (2) "AA" 1.5 VDC batteries (30 hours)
- Environmental: 5° to 40°C (40° to 105°F); 80% RH up to 31°C (88°F)
- Dimensions: 6.92 "H x 2.4"W x 1.6"D (17.58 x 6.10 x 4.06cm)
- Weight: 7 oz. (210 g)

*** performance subject to intensity of ambient light irradiation.**
**** also reads units per second and per hour.**

N.I.S.T. INCLUDED CALIBRATION

LASER RADIATION
DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT
1mW max @ 650nm
CLASSIFIED TO IEC60825-1:2001

TTL pulse Input/output cable with BNC connector

Protective Carry Pouch with belt loop (optional)

PLT200 shown with optical sensor and TTL output cable

PLT200 and PT99 have a 1/4 20 threaded bushing for tripod mounting

Ordering Information

Pocket Laser Tach 200 Tachometer, N.I.S.T. traceable certificate of calibration, 12 inches of Reflective Tape.
Pocket Laser Tach 200 Kit Tachometer with Latching Carrying Case, RCA, Tips and Linear Speed Wheel, Battery, 5 foot roll Reflective Tape, N.I.S.T. traceable certificate of calibration.
ROS-P Remote Optical Sensor with Mounting Bracket and 8 foot cable for Pocket Laser Tach 200 only.
ROS-P-25 Same as above with 25 foot cable.
T-5 Reflective Tape, 5 foot roll, 1/2" wide.
TTL pulse output cable
Latching Carrying Case

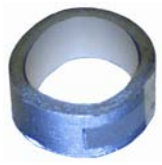
PORTABLE TACHOMETERS (Non-Contact)

Pocket-Tach PT99

RoHS CE

Pocket Tach 99 (PT99) is a digital, battery-powered portable non-contact optical tachometer, which operates up to 36 inches from a reflective target using a bright red LED light source. The ergonomic design allows safe, direct line-of-sight viewing of both the rotating target and the display at the same time, while providing a non-slip rubber surface for single hand operation. Pocket Tach 99 is the value-leader of the world-class Pocket Tach Series from Monarch.

Protective Carry Pouch with belt loop (optional)



T-5 Reflective Tape 5' x 1/2" wide roll

PLT200 and PT99 have a 1/4 20 threaded bushing for tripod mounting

Specifications PT99	
• Display:	5 Digits, 5 Alphanumeric LCD
• Range:	5 to 99,999 RPM
• Accuracy:	±0.01% or ±1 Digit
• Resolution Autoranging:	0.001 to 1.0 RPM
Fixed:	1 Digit RPM
• Operating Range:	2 inches to 36 inches, ±45°
• Memory:	Maximum, Minimum and Last
• Power:	(2) "AA" 1.5 VDC batteries (60 hours)
• Environmental:	5° to 40°C (40° to 105°F)
	80% RH up to 31°C (88°F)
• Dimensions:	6.92 "H x 2.4"W x 1.6"D (17.58 x 6.10 x .06cm)
• Weight:	7 oz. (210 g)

Pocket Tach 99

Example Applications:
- Grinders
- Abrasives
- Motors
- Engines
- Pumps

Ordering Information
Pocket-Tach 99 Tachometer, Battery & 6 inches Reflective Tape.
Carry Pouch
T-5 Reflective Tape, 5 foot roll, 1/2" wide.

PORTABLE TACHOMETERS (Non-Contact with Pistol Grip)

Phasar-Laser Tach Series

NIST CE

Phasar-Laser combines the accuracy and safety of a non-contact optical tachometer with the convenience and ease of operation of a pistol grip instrument, housed in a rugged steel enclosure. The tachometer provides a convenient visible red laser for easy targeting along with a latching trigger for hand held operation and a mounting bushing for tripod mounted use.

Phasar-Laser-R provides for an optional remote sensor for difficult to reach locations in addition to the standard internal measurement optics.

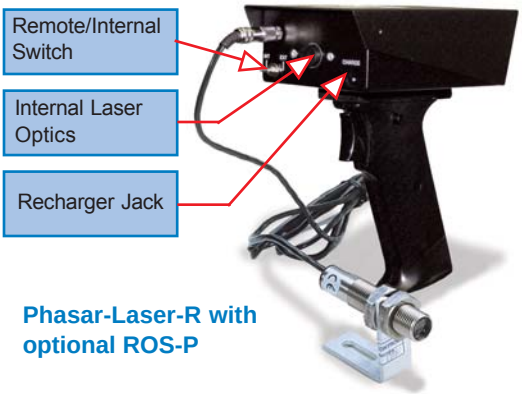
Features
- Convenient pistol grip design
- Rugged steel enclosure
- Safe non-contact operation to 10 feet (3 m) and 45 degrees from reflective tape
- On-target and low battery indicators
- Last measurement memory

Phasar-Laser

Example Applications:
- Engines
- Dynamometers
- Pumps
- Fan blades
- Centrifuges
- Motors

N.I.S.T. INCLUDED CALIBRATION

LASER RADIATION
DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT
1mW max @ 650nm
CLASSIFIED TO IEC60825-1:2001



Phasar-Laser-R with optional ROS-P

Specifications	Phasar-Laser and Laser-R
Range	5-100,000 RPM
Accuracy	±1 RPM or 0.01% of reading
Resolution	1 RPM
Display	6 digit, 0.5" high Liquid Crystal Display
Power On	Pistol grip trigger with latching "on" Switch
Operating Range	10 feet (3m) and 45° from reflective tape
Power	(4) "AA" (LR6) Alkaline batteries or *optional NiCad batteries and AC recharger

Ordering Information
Phasar-Laser Tachometer, 12" of Tape, and Alkaline Batteries
Phasar-Laser Kit Tachometer, Recharger, 5 foot roll of Tape, NiCad Batteries in Latching Case
Phasar-Laser-R Kit Tachometer, Recharger, Remote Optical Sensor, 5 foot roll of Tape, NiCad Batteries in Latching Carrying Case

for Tachometers & Stroboscopes or stand alone use

Optical LED (1-250,000 RPM) *Most popular.*

ROS (Remote Optical Sensor): Threaded stainless steel remote optical sensors have a visible red LED light source and green LED 'On Target' indicator. Performs over a wide speed range and operating envelope. Modulated and High Temperature versions available (to 257°F). **Common usage**: Wide range of general purpose applications in relatively clean environments.

Operating Distance	3 feet (1 m) and 45° from reflective tape
Speed Range	1-250,000 RPM
Operating Temperature	-14° to 158°F (-10° to 70°C)
Power Required	3.3 to 15 Vdc @ 45 mA
Output Signal	TTL same as source
Standard Cable	8 feet (2.4 m)
Dimensions	2.9" (L) x 0.625" diameter (73 x 16mm)

Optical Laser (1-250,000 RPM) *Distances to 25 feet.*

ROLS (Remote Optical Laser Sensor): Threaded stainless steel remote optical laser sensors have a visible red laser light source and green LED 'On Target' indicator. Performs over a wide speed range and operating envelope.

Operating Distance	Up to 25 feet (7.62 m) and 60° offset from target
Speed Range	1-250,000 RPM
Operating Temperature	-40° to 180° F -40° to 80° C
Power Required	3.3-15 Vdc @ 35mA
Output Signal	TTL Same as Source
Standard Cable	8 Feet (2.4 m)
Dimensions	3.12" (L) x 0.71" (M16 x 18 x 79.4mm)

Proximity (1-60,000 RPM) *Rugged industrial sensor.*

P5-11: A two wire probe style inductive sensor for use up to 0.2 inches (5 mm) from 0.5 inch (12 mm) metallic target such as bolt head or shaft locking key. **Common usage:** Permanent installation in harsh industrial environments.

Operating Distance	0.2" (5mm) from 0.5" (12mm) metallic target
Speed Range	1-60,000 RPM
Operating Temperature	-4° to 140° F (-20° to 60° C)
Power Required	7.7 to 9 Vdc, 3mA
Output Signal	Namur (DIN 19 234)
Standard Cable	6 Feet (1.8 m)
Dimensions	1.3" (L) x 0.43" (32 x 11 mm)

Magnetic (1-99,999 RPM) *Self-powered gear sensor.*

M-190W or M-190P: Most popular sensor for use with 60 tooth 20 pitch gears. Sensor mounts within 0.005 inches (0.127 mm) of a minimum 0.1 inch (2.5 mm) target. Requires no power from the display module and self-generates an AC signal. **Common usage**: Ferrous metals, primarily gear teeth.

Operating Distance	0.005" (0.127 mm) gap with 0.1" target (2.5mm) min.
Speed Range	1-99,999 RPM
Operating Temperature	-100° to 225°F (-73° to 107°C)
Power Required	None (Self Generating)
Output Signal	190V P-P
Standard Cable	8 Feet (2.4 m)
Dimensions	2.0" (L) x 0.625" (50 x 16mm)

Magnetic with Amplifier Module (1-99,999 RPM) *Enhances performance of M-190 magnetic sensor.*

MT-190W or MT-190P: Amplifier extends operating gap to 0.25 inches (6.35 mm) from the target. Frequently used on gears as the M-190, but can also sense bolt heads or shaft keys and provides a 0-5V TTL output signal. **Common usage:** Ferrous metals including bolt heads or shaft keys in addition to gear teeth.

Operating Distance	0.25" (6.35mm) gap with 0.1" target (2.5mm) min.
Speed Range	1-99,999 RPM
Operating Temperature	-100° to 225°F (-73° to 107°C)
Power Required	3.3 to 24 Vdc, 4mA
Output Signal	TTL Same as Source
Standard Cable	8 Feet (2.4m)
Dimensions	2.0" (L) x 0.625" (50 x 16mm)

Inductive (200-20,000 RPM) *Gasoline Engine RPM.*

GE-200: Ideal sensor for gasoline engine RPM, working 0.5 to 4.0 inches (12 to 100 mm) from ignition coil or magneto.
Common usage: 2-cycle and 4-cycle gasoline engines.

Operating Distance	Up to 4 inches (100mm)
Speed Range	200-20,000 RPM
Operating Temperature	0° to 175°F (-18° to 80°C)
Power Required	3.3 to 24 Vdc, 4mA
Output Signal	TTL Same as Source
Standard Cable	15 Feet (4.5 m)
Dimensions	2.16" (L) x 0.82" (55 x 21 mm)

Infrared (1-999,990 RPM) *High speed sensor.*

IRS-W or IRS-P: Ideal sensor for working 0.5 to 1.0 inch (12 to 25 mm) from high speed equipment or other applications providing only contrasting light and dark surfaces or beam interruption by solid objects.
Common usage: Dentist and other high speed drills, slots or gear teeth. Does not require reflective tape.

Operating Distance	0.5 to 1.0" (12 to 25 mm)
Speed Range	1-999,990 RPM
Operating Temperature	-10° to 212°F (-23° to 100°C)
Power Required	3.3 to 15 Vdc
Output Signal	TTL Same as Source
Standard Cable	8 Feet (2.4 m)
Dimensions	2.9" (L) x 0.625" diameter (73 x 16mm)

NOTE: W = tinned wire leads, P = 1/8" (3.5mm) phone plug connector. ROS is available with 8 or 25 foot cable.

NOTE: Additional cable length for all sensors (up to 500 feet) can be purchased and added in the field.