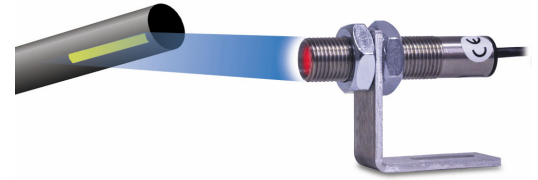


ROS Remote Optical Sensor

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.

Common usage: Wide range of general purpose applications in relatively clean environments.



Specifications

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 Input:	3.3 to 15Vdc @ 45mA
Output Signal:	TTL same as source
Standard Cable:	8 feet (2.4m)
Dimensions:	2.9" (L) x 0.625" diameter (73 x 16mm)

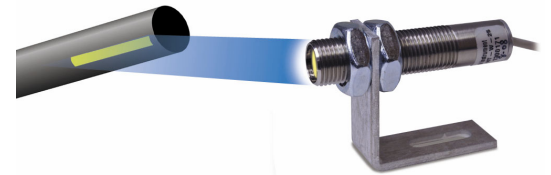
Ordering Information

Item	Description	Part No.
ROS-W	Sensor with 8 ft. cable with tinned leads, mounting bracket and 12" of T-5 tape	6180-056
ROS-P	Sensor with 8 ft. cable, 1/8" phone plug, mounting bracket and 12" of T-5 tape	6180-057
ROS-P-25	Sensor with 25 ft. cable, 1/8" phone plug, mounting bracket and 12" of T-5 tape	6180-057-25

ROS-HT Remote Optical Sensor - High Temp

ROS-HT (Remote Optical Sensor, High Temp): Threaded stainless steel remote optical sensor with visible incandescent white light source. Ideal for automotive and truck cooling system testing up to 257°F (125°C).

Common usage: Automotive and heavy truck cooling fan speeds.



Specifications

Operating Distance:	2 feet (61cm) and 45° offset from target
Speed Range:	1-50,000 RPM
Operating Temperature:	-13° to 257° F (-25° to 125°C)
Power Input:	6-24Vdc, 40mA
Output Signal:	TTL same as source
Standard Cable:	25 feet (7.6m)
Dimensions:	2.9" (L) x 0.625" diameter (73 x 16mm)

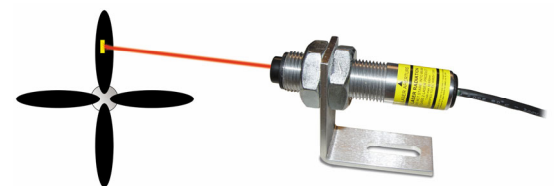
Ordering Information

Item	Description	Part No.
ROS-HT-W-25	Sensor with 25 ft. cable with tinned leads, mounting bracket and 12" of T-5 tape	6180-058-25

ROLS Remote Optical Laser Sensor

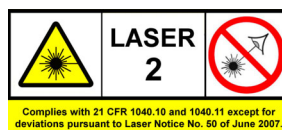
ROLS (Remote Optical Laser Sensor): Threaded stainless steel remote optical laser sensors have a visible red laser light source and green LED 'On Target' indicator. Performs over a wide speed range and operating envelope.

Common usage: Wide range of applications where distance to target is large.



Specifications

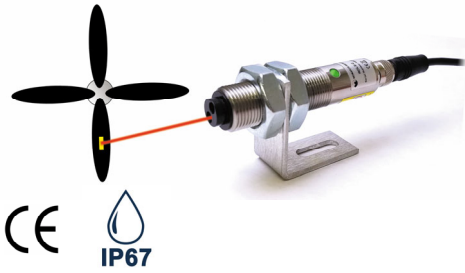
Operating Distance:	Up to 25 feet (7.62m) and 70° offset from target
Speed Range:	1-250,000 RPM
Operating Temperature:	14° to 158°F (-10° to 70°C)
Power Input:	3.3 to 15Vdc, 35mA
Output Signal:	TTL same as source
Standard Cable:	8 feet (2.4m)
Dimensions:	3.12" (L) x 0.71" (M16 x 18 x 79.4mm)



Ordering Information

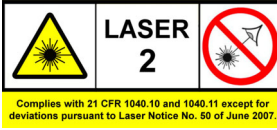
Item	Description	Part No.
ROLS-W	Sensor with 8 ft. cable with tinned leads, mounting bracket and 12" of T-5 tape	6180-030
ROLS24-W	Same as above with 24Vdc input power	6180-035
ROLS-P	Sensor with 8 ft. cable, 1/8" phone plug, mounting bracket and 12" of T-5 tape	6180-029
ROLS-P-25	Same as ROLS-P, with 25 ft. cable	6180-029-25

RLS Rugged Laser Sensor



RLS (Rugged Laser Sensor): Threaded 316L stainless steel remote optical laser sensor with a visible red laser light source and green LED 'On Target' indicator. Performs over a wide speed range and operating envelope. The Rugged Laser Sensor is **IP67 rated** and includes a removable cable with water tight M12 connector for easy removal and cleaning.

Common usage: Wide range of applications where distance to target is large or accidental exposure to water, oil, dust and other contaminants is possible.



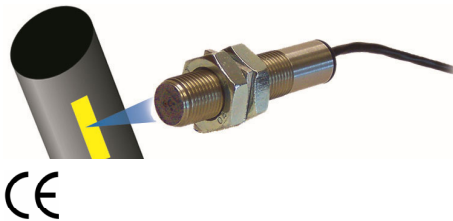
Specifications

Operating Distance:	Up to 25 feet (7.62m) and 70° offset from target
Speed Range:	1-250,000 RPM
Operating Temperature:	14° to 158°F (-10° to 70°C)
Power Input:	3.3 to 15Vdc, 35mA or 24Vdc ± 10%
Output Signal:	TTL same as source
Standard Cable:	8 feet (2.4m)
Dimensions:	3.12" (L) x 0.71" (M16 x 18 x 79.4mm)

Ordering Information

Item	Description	Part No.
RLS-P	Rugged Laser Sensor with 3m cable, 1/8" phone plug and mounting bracket	6180-081
RLS-W	Rugged Laser Sensor with 8 ft. cable, and tinned leads and mounting bracket	6180-080
RLS24-P	24 Vdc powered Rugged Laser Sensor with phone plug cable and bracket	6180-083
RLS24-W	24 Vdc powered Rugged Laser Sensor with tinned leads cable and bracket	6180-082

IRS Infrared Sensor



IRS (Infrared Sensor): Ideal sensor for working up to 0.5" (12mm) from high speed equipment or other applications providing only contrasting light and dark surfaces or beam interruption by solid objects as small as 0.30" (1mm).

Common usage: Dentist and other high speed drills, slots or gear teeth. Does not require reflective tape. Use black/white contrasting colors.

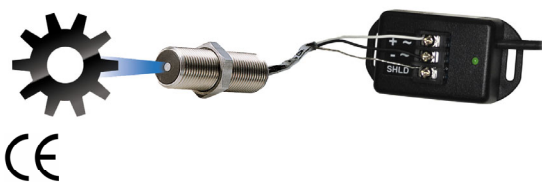
Specifications

Operating Distance:	0.5" (12mm)
Speed Range:	1-999,990 RPM
Operating Temperature:	-40° to 185°F (-40° to 85°C)
Power Input:	3.3 to 15Vdc, 40mA
Output Signal:	TTL same as source
Standard Cable:	8 feet (2.4m)
Dimensions:	2.9" (L) x 0.625" diameter (73 x 16mm)

Ordering Information

Item	Description	Part No.
IRS-P	Sensor with 8 ft. cable with 1/8" phone plug connector and mounting bracket	6180-020
IRS-W	Sensor with 8 ft. cable with tinned lead and mounting bracket	6180-021

M-190 and MT-190 Magnetic Sensor/Amplifier



M-190 (Magnetic Sensor): Most popular sensor for use with 60 tooth 20 pitch gears. Sensor mounts within 0.005 inches (0.127mm) of a minimum 0.1 inch (2.5mm) target. Requires no power from the display module and self-generates an AC signal.

MT-190 (Magnetic Sensor with Amplifier): Extends operating gap to 0.25 inches (6.35mm) from the target. Frequently used on gears as the M-190, but can also sense bolt heads or shaft keys and provides a TTL output signal that is equal to the source voltage.

Common usage: Ferrous metal targets including gear teeth bolt heads or shaft keys for on-line systems.

Specifications M-190

Operating Distance:	0.005" (0.127mm) gap w/ 0.1" target (2.5mm) min.
Speed Range:	1-99,999 RPM
Operating Temperature:	-100° to 225°F (-73° to 107°C)
Power Input:	None (self generating)
Output Signal:	190V Peak to Peak
Standard Cable:	8 feet (2.4m)
Dimensions:	2.0" (L) x 0.625" (50 x 16mm)

Specifications MT-190

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 Input:	3.3 to 12Vdc, 15mA
Output Signal:	TTL same as source
Standard Cable:	8 feet (2.4m)
Dimensions:	2.0" (L) x 0.625 diameter (50 x 16mm)

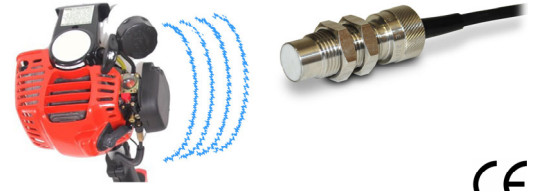
Ordering Information

Item	Description	Part No.
M-190-W	Sensor with 8 ft. cable with tinned leads	6180-012
MT-190W	Sensor with 8 ft. cable with tinned leads Includes amplifier with tinned leads	6180-037
MT-190P	Sensor with 8 ft. cable with tinned leads Includes amplifier with phone plug connector	6180-036

GE-200HP Inductive Gasoline Engine Sensor

GE-200HP: Ideal sensor for detecting gasoline engine RPM. Up to 12 inch (304mm) working distance from ignition coil or magneto.

Common usage: 2-cycle and 4-cycle gasoline/petrol engines.



Specifications

Operating Distance:	Up to 12 inches (304mm)
Speed Range:	200-30,000 RPM
Operating Temperature:	0° to 175°F (-18° to 80°C)
Power Input:	3.3 to 24Vdc, 4mA
Output Signal:	TTL same as source
Standard Cable:	15 feet (4.5m)
Dimensions:	2.16" (L) x 0.82" diameter (55 x 21mm)

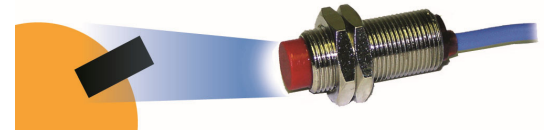
Ordering Information

Item	Description	Part No.
GE-200HP	Electromagnetic inductive spark plug sensor with 15 feet of cable. <i>Amplifier module required for proper operation</i>	6180-014
Mag Amp	Amplifier for GE200 HP Sensor. 3 ft. cable with 1/8" phone plug	4180-405
Mag Amp	Amplifier for GE200 HP Sensor. 3 ft. cable with tinned leads	4180-406

P5-11 Proximity Sensor

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

Common usage: Permanent installation in harsh industrial environments.



Specifications

Operating Distance:	0.2" (5mm) from 0.5" (12mm) metal target
Speed Range:	1-60,000 RPM
Operating Temperature:	-4° to 140°F (-20° to 60°C)
Power Input:	5.0 to 24Vdc, 3mA
Output Signal:	Namur (DIN 19 234)
Standard Cable:	6 feet (1.8m)
Dimensions:	1.3" (L) x 0.54" diameter (33 x 13.7mm)

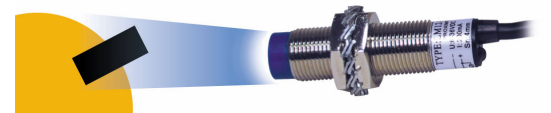
Ordering Information

Item	Description	Part No.
PS-11	Proximity sensor with 6 ft. cable	6180-013

PS-12 Proximity Sensor

PS-12: A three wire threaded IP67 metal sensor outputs an open collector PNP pulse. Operates at a 0.15 inch (4mm) gap with a .45 inch (12mm) target. Includes red LED on target indicator.

Common usage: Permanent installation in harsh industrial environment. Online vibration data collectors.



Specifications

Operating Distance:	0.15" (4mm) from 0.5" (12mm) metal target
Speed Range:	1-24,000 RPM
Operating Temperature:	-13° to 167°F (-25° to 75°C)
Power Input:	6 to 36Vdc, 15mA
Output Signal:	PNP Open Collector
Standard Cable:	6 feet (1.8m)
Dimensions:	2.0" (L) x 0.48" diameter (50 x 12mm)

Ordering Information

Item	Description	Part No.
PS-12	Proximity sensor with 6 ft. cable	6180-032

SPSR Self Powered Sensor



Specifications

Range (RPM):	Same as sensor
Output Signal:	TTL 0-5V or 5-0V (user selectable polarity)
Pulse Width:	Determined by size of target and rotational speed
Output Connector:	BNC connector
Power:	Rechargeable NiMH batteries, 40 hours or continuous with 115/230 Vac supply/recharger with interchangeable wall plugs

The unique **Self-Powered Sensor (SPSR)** provides a square wave pulse output from any of four input sensors: ROLS-P, ROS-P, IRS-P or MT-190P (See pages 17-18 for details). The TTL compatible pulse output is switch selectable as either positive going 0-5V pulses or negative going 5-0V pulses provided on a BNC connector. Internal rechargeable batteries provide 40 hours of operation between charges. For continuous operation, all SPSR configurations can be powered by the included 115/230Vac universal recharger/power supply with interchangeable wall plugs. Self-powered sensors are a critical element for providing one TTL pulse per revolution for vibration analyzers, spectrum analyzers, stroboscopes, data acquisition equipment, tachometers, balancers, waveform analyzers and magnetic tape recorders.

Ordering Information

Item	Description	Part No.
SPSR-115/230	SPSR interface module, power supply/recharger, ROS-P and 12 inches of T-5 tape	6150-020
SPSR-IM	SPSR interface module, power supply/recharger	6150-021

CSLS Compact Smart Laser Sensor



Specifications

Optical:	Class 3R (per IEC 60825-1) visible laser 650nm @ 3mW peak power
Operating Range:	Up to 65 feet (19.8m) from T-5 reflective tape
Speed Range:	1-500,000 RPM
Output Signal:	TTL 0-3.0V typical (positive going pulse)
Operating Temp:	32° to 104°F (0° to 40°C)
Dimensions:	3.5(L) x 2.4(W) x 2.2(H) (8.9 x 6.0 x 5.5mm)
Power:	5Vdc ±5% @ 30mA max

The **Compact Smart Laser Sensor (CSLS)** is a self-contained optical sensor intended to be used to make non-contact speed measurements from rotating targets at distances up to 65 feet (19.8 m). The sensor has both digital pulse and analog outputs to provide non-contact reference points to balancing equipment or signals to a vibration analyzer. The sensor will track surface irregularities on rotating shafts and provide pulse outputs from reflective tape, contrasting colors and keyways. The sensor is IP64 rated and is suitable for use in dusty damp environments. Includes ¼-20 tripod mounting bushing.



Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50 of June 2007.

Ordering Information

Item	Description	Part No.
CSLS	Compact Smart Laser Sensor, 6 foot power/output cable and 12 inches of T-5 tape	6180-038

SLS Smart Laser Sensor



Specifications

Optical:	Class 3R (per IEC 60825-1) visible laser 650nm @ 3mW peak power
Operating Range:	Up to 65 feet (19.8m) from T-5 reflective tape
Speed Range:	1-500,000 RPM
Output Signal:	TTL 0-5 or 5-0V (user selectable polarity), RS232
Operating Temp:	32° to 104°F (0° to 40°C)
Dimensions:	5.41(L) x 2.35(W) x 2.14(H) (13.74 x 6.43 x 5.43mm)
Mounting:	¼-20 UNC bushing for tripod

The **Smart Laser Sensor (SLS)** is an internal battery-powered optical speed sensor utilizing a visible Class 3R Laser for a TTL pulse output. Operating range up to 65 feet (19.8 m) with reflective tape and up to 3 feet (1 m) from contrasting color targets, keyways, bolt heads or blades.

Features

- "Smart" auto gain provides best performance in picking up target reflections
- TTL pulse output signal inverter switch
- Manual sensitivity knob provides dynamic fine tuning of sensor response
- Signal/Pulse/RS232 Output DIN connector port
- External DC power/recharger port for continuous operation (24/7)



Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50 of June 2007.

Ordering Information

Item	Description	Part No.
SLS 115/230	Smart Laser Sensor with 115/230 VAC universal power supply/ Recharger, BNC cable, 12 inches of T-5 tape and NIST certificate	6180-022