



ROS - Remote Optical Sensor



SAFEGUARDS AND PRECAUTIONS:



Read and follow all instructions in this instruction sheet carefully, and retain this sheet for future reference.

Do not use this instrument in any manner inconsistent with these operating instructions or under any conditions that exceed the environmental specifications stated.

This instrument is not user serviceable. For technical assistance, contact the sales organization from which you purchased the product.

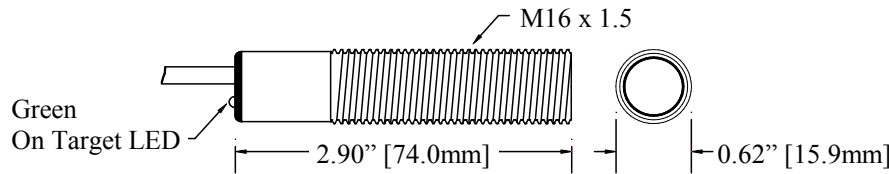
DESCRIPTION:

The Remote Optical Sensor has a visible red LED light source and green LED on-target indicator. The red LED light source acts as the aiming device during setup and can accurately measure speeds from 1-250,000 RPM from a distance of up to 36 inches with a maximum offset angle of 45 degrees from the rotating object. The sensor is housed in a threaded 303 stainless steel tube and supplied with a 90 degree mounting bracket, jam nuts and an 8 foot (ROS-P and ROS-W) or 25 foot (ROS-P-25) shielded cable. ROS-P and ROS-P-25 come with a 3.5mm (1/8") male stereo plug adapter. ROS-W comes with 4 tinned wires.



SPECIFICATIONS:

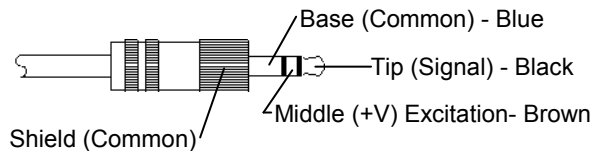
- Speed Range:** 1-250,000 RPM
- Illumination:** Visible Red LED
- On-Target Indicator:** Green LED on wire end cap
- Operating Range:** up to 36" [0.9 m] and 45 degrees offset from target
- Power Requirement:** 3.0 - 15 Vdc @ 40mA
- Output Signal:** Negative pulse input voltage (+V) to 0
- Operating Temp.:** 14° to 158° F [-10° to 70° C]
- Humidity:** Maximum relative humidity 80% for temperature up to 88 °F [31 °C] decreasing linearly to 50% relative humidity at 104 °F [40 °C]
- Connection:** 3.5 mm [1/8 inch] male stereo plug (ROS-P, ROS-P-25); Tinned wires (ROS-W)
- Cable Length:** ROS-P and ROS-W: 8 feet [2.4 m]; ROS-P-25: 25 feet [7.6 m]
- Material:** 303 Stainless Steel supplied with two M16 Jam Nuts and Mounting Bracket
- Lens:** Acrylic Plastic
- Dimensions:** Threaded Tube 2.90 in x 0.62 in diameter [M16 x 1.5 x 74 mm] long



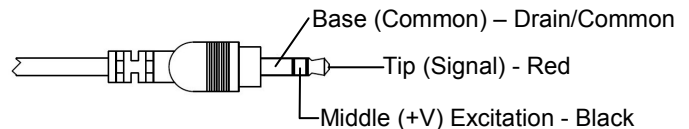
CONNECTION DETAIL for Tinned Wires (ROS-W):

Wire Color	Function	
Brown	Positive Power Supply	(+V)
Blue	Common	(Com)
Black	Signal (+V to 0 Vdc Pulse)	(Sig)
Shield	Housing Ground	(Com)

CONNECTION DETAIL for Metal Plug:



CONNECTION DETAIL for Molded Plug:



OPERATING INSTRUCTIONS:

The ROS Remote Optical Sensor is capable of detecting a reflected pulse from a target consisting of T-5 Reflective Tape at distances of up to 36 inches [1 m] from the rotating object and angles up to 45 degrees. For most applications, a 1/2" [12 mm] square piece of Reflective Tape (T-5) should be applied to a clean area on the rotating object.

The ROS should be mounted (using the supplied jam nuts and aluminum mounting bracket) and optically aligned to illuminate the on-target indicator once per revolution. The user must hold "steady" or mount the ROS to obtain an accurate measurement. The optical Sensor must be placed at a slight angle (15 degrees recommended) from perpendicular, so that the Sensor will receive only pulses from the reflective marker. The ROS must be at least 1 inch from the reflective target to avoid false triggering. The green LED On-Target Indicator will blink at the input frequency rate when the ROS is properly aimed. **NOTE:** The green LED On-Target Indicator will blink on and off at slow speeds and remain on steady at high speeds.

The ROS is supplied with an 8 foot [2.4 m] cable terminated with 4 tinned wires (ROS-W) or a 3.5 mm [1/8 inch] male stereo plug (ROS-P) or optionally a 25 foot [7.6 m] cable terminated with a 3.5 mm [1/8 inch] male stereo plug (ROS-P-25). The plug may be cut from the cable and the leads stripped and connected as shown in connection detail on the reverse side. An optional 25 foot [7.6 mm] extension cable EC-25P is available with a female socket for the plug on one end, and a 3.5 mm [1/8 inch] male stereo plug on the other (for ROS-P).

The ROS-W will work with all Monarch panel instruments that accept pulse inputs (e.g. ACT Series, F2A1X and F2A3X Frequency to Analog Converters, DataChart 1250, DataChart 6000). The ROS-P and ROS-P-25 will work directly with all Monarch Handheld Tachometers, Deluxe Nova-Strobe (dax, dbx, DBL) and Phaser Strobe (pbx, PBL) Stroboscopes. A sensor power supply (SPSR) with BNC output is available for those applications that require a separate power source for the sensor.

ACCESSORIES:

SPSR-IM	Self Powered Sensor - Interface Module
EC-25P	25 foot [7.6 m] Extension Cable for ROS-P
T-5	Reflective Tape - 5 foot [1.5 m] roll
T-5WP	Waterproof Reflective Tape - 5 foot [1.5 m] roll
ROS-NUT	Set of two M16 Jam Nuts
ROS-MNT	90° Slotted Mounting Bracket
PLUG	3.5 mm [1/8 inch] male stereo plug
WIRE	3-wire shielded Sensor Cable, bulk lengths



In order to comply with EU Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE):

This product may contain material which could be hazardous to human health and the environment. DO NOT DISPOSE of this product as unsorted municipal waste. This product needs to be RECYCLED in accordance with local regulations, contact your local authorities for more information. This product may be returnable to your distributor for recycling - contact the distributor for details.

CE Compliant. RoHS Compliant. Meets the safety requirements of EN61010-1. This product is not waterproof.

Monarch Instrument's Limited Warranty applies. See www.monarchinstrument.com for details.

Warranty Registration and Extended Warranty coverage available online at www.monarchinstrument.com.

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