

Series 1520 / 1580 / 1585 Optical RPM Probe Datasheet





Introduction

Accurately measure motor rotation speed with the optical RPM probe. Use this optical probe if the electrical probe provided with your test stand is not compatible with your motor/ ESC/ voltage combination. This probe is an alternative for situations where the electric probe does not meet your specific needs.

Description

This optical RPM probe v2.2 will come with a different **installation kit** depending on the product used (Series 1520 or Series 1580/1585). This optical probe uses a reflective sensor (reflective tape is included in the optical probe kit) to detect the rotating speed of the motor and transmit the data to the 1520/1580/1585 PCB with a 3 pin servo connector and servo extension cable.

Features

- High accuracy and reliability
- Compatible with the Series 1520/1580/1585 - different installation kits
- 3 pin servo connector
- Adjustable position
- Supported by the RCbenchmark GUI Software



Technical Specifications

Table 1 Technical	Specifications (of the O	ptical RPM Probe
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Specification	Min.	Max.	Unit
Detected Speed	0	100k	RPM*
*DDM. Develutions			

*RPM: Revolutions per minute

Materials List

Series 1520:

- M5 Screw 30 mm (2)
- M5 Washer (2)
- Spacer 11/64" Long (2)
- Spacer 9/32" Long (2)
- Spacer 7/32" Long (2)

- Optical RPM Probe v2.2 (1)
- Servo Extension 20 cm Female to Female (1)
- 2" Reflective Tape (1)
- 1520 Optical RPM Probe Kit Installation Instruction (1)



Series 1580/1585:

- M4 Low-Profile Screw 12 mm (2)
- M4 Screw 10 mm (2)
- M4 Washer (4)
- M4 Nut (4)
- Optical RPM Probe v2.2 (1)

- Servo Extension 20 cm Female to Female (1)
- Aluminum Arm (1)
- 2" Reflective Tape (1)
- 1580 Optical RPM Probe Kit Installation Instruction (1)

Installation Instructions

Series 1520

- 1. Make a connection between the 1520 PCB and the optical RPM probe via the servo extension. The black wire should be connected to the '-' pin in the 'S1' plug on the 1520 PCB.
- 2. The probe should be powered by 5 V using your own BEC or ESC. The pinout of probe is:
 - Black GND Red - VCC White - RPM SIGNAL
- 3. Cut the reflective tape to a correct size and place it on the rotating part of the motor.
- 4. Install the optical RPM probe following figure 1, 2 and 3. Use different combinations of the spacers to adjust the position of the optical RPM probe depending on your motor width.
- 5. The distance between the optical probe and the tape **must be less than 4 mm**.



Fig. 1: Series 1520 optical probe installation - part 1





Fig. 2: Series 1520 optical probe installation - part 2



Fig. 3: Series 1520 optical probe installation - part 3



Series 1580/1585

- 1. Make a connection between the 1580/1585 PCB and the optical RPM probe via the servo extension. The black wire should be connected to the '-' pin in the "S1" plug on the 1580/1585 PCB.
- 2. The probe should be powered by 5 V using your own BEC or ESC. For the Series 1585, the circuit provides a 5 V selector. If the user needs to power the optical probe, please put the jumper on the selector.
- 3. The pinout of probe is:
 - Black GND Red - VCC White - RPM SIGNAL
- 4. Cut the reflective tape to a correct size and place it on the rotating part of the motor.
- 5. Follow figure 4 and 5 to install the optical RPM probe on your Series 1580/1585 dynamometer
- 6. The distance between the optical probe and the tape **must be less than 4 mm**.



Fig. 4: Series 1580/1585 optical probe installation - part 1





Fig. 5: Series 1580/1585 optical probe installation - part 2