Manual
CMCP242 Laser Speed Sensor

WARNING
LASER RADIATION
DO NOT STARE INTO BEAM
CLASS II LASER PRODUCT

Specifications

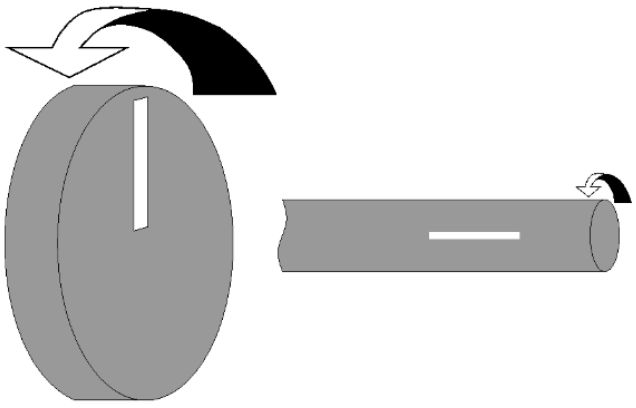
Optical Range:	100 - 2000 mm, typical
Fixing method (Threaded):	M20 x 1.5 mm thread (bulkhead fixing)
Fixing method (Plain body):	Slotted for bracket mounting
Supply current:	30 mA, typical

Pin	Molded Cable	Screened Cable	Description
1	Brown	Red	+5V
3	Blue	Green	Ground
4	Black	Yellow	Signal-Output (NPN, 4.7 KOhm Pull-up internally)

Table 1: Pin Connections

Instructions

1. Fix a piece of reflective tape as shown below.
2. The minimum size of the reflective target in the direction of travel should be twice the size of the light source image.
3. Arrange the laser speed sensor fixing so the beam is roughly in the center of the tape.
4. With the laser speed sensor connected, the LED should light as a signal is received back from the target. On fast rotating targets the LED will appear to be on continuously. 4.7k resistor pull-up resistor is connected internally sensor, no need to connect extra pull-up resistor externally.



Above: Tape orientation for use on discs or shafts

Use Without Reflective Tape

Under controlled conditions reflective tape may not be required. If there is an existing difference in reflectivity on part of the object to be monitored then this may be used e.g. keyways and slots in bright shafts, spokes of a wheel, fan blades etc. If there is more than one target per revolution of the shaft then the resulting reading must be divided by the number of targets to obtain the correct reading. In the case of multiple targets these must be equally spaced around the shaft or disc, or jitter will occur in the measured value, this effect is most apparent at slow speeds.
On bright shafts it is possible to paint a black non-reflective segment and conversely on non-reflective shafts a white mark can be painted.

Caution

The unit detects contrasts in reflectivity not differences in color.
As conditions can vary greatly from application to application some experimentation may be required to determine the best method.