

Optical Detector



LG-9200



Overview

The LG-9200 is a non-contact type optical detector which emits red visible light and detects the reflected light on a rotating shaft. The LG-9200 has a built-in compact amplifier and outputs the square wave (voltage) after waveform shaping.

Feature

- Upgraded performances (compared to the previous model LG-916)
Detection distance: up to 40 mm / Response speed: up to 40 m/s
- Easy to adjust a position by red visible light
- Possible to detect from lower speed almost 0 r/min
- A unified structure of light source, receiver and amplifier
(weight: 150 g)
- Provided a drop-proof connector as standard

Red visible light from the LG-9200



<Specification>

Detection method : Light reflection using an optical fiber sensor

Light source : Light emitting diode (red visible light)

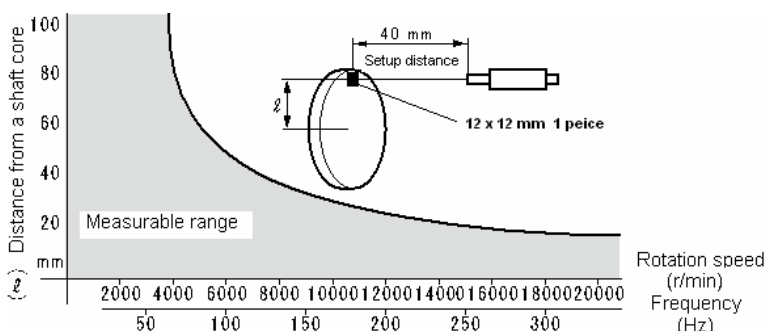
Detection distance : 20 to 40 mm (recommended distance)

*when using 12-mm square reflective mark

Max. response speed : 40 m/s

(converted by the circumferential speed of a rotating shaft)

Measurement range: Refer to the following graph



<Notice>

- Measurement range may change depending on the quality of the surface materials or color of the object.
- Compliant to CE marking when the LG-9200 is used with the following products by Ono Sokki.
Tachometer : TM-3100 series, FT-2500, CT-6520B
F/V converter : FV-1400 Connecting cable: MX-7100, 8100 series

Output : Rectangular wave

(Hi:+5 ±0.5 V, Lo:+0.5 V or less)

Output impedance : approx. 1 kΩ

Response delay time : 1 ms or less

Vibration resistance : 19.6 m/s² in each of X and Y direction
(1 hour per each). (JISC0911-1960)

Shock resistance : 490 m/s² in each of X and Y direction ,
three times for each of X,Y and Z
directions. (JISC0912-1960):

Operating temperature range: -10 to +60 °C

Storage temperature range: -20 to +80 °C

Weight : approx. 150 g

Power supply : DC12 V±2 V

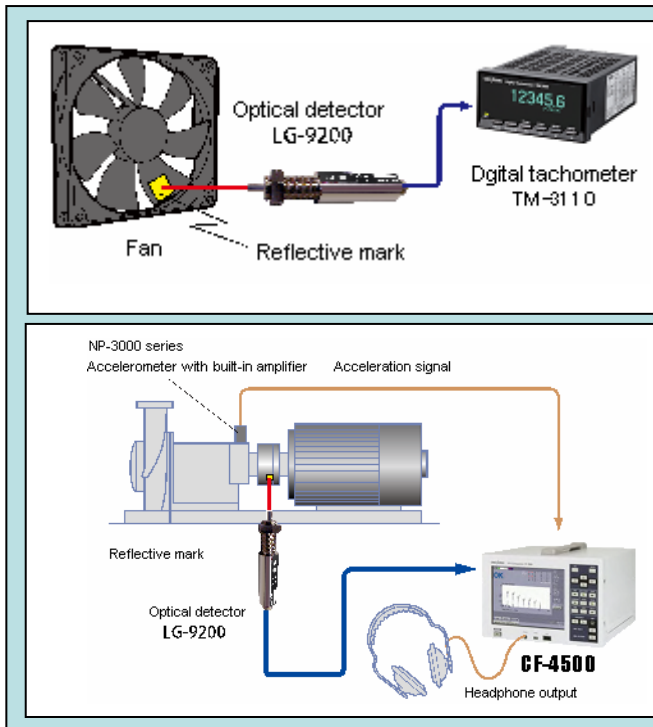
Power consumption : 60 mA or less (at 12 V)

Applicable display : TM series, RV-3150, FV-5300

Applicable FV converter : FV-1400

Applicable standard: CE marking

Accessories : reflective mark x 1, lock nut x 2
instruction manual x 1



Rotation measurement of FAN

A reflective seal is stuck on feather and Light from LG-9200 is applied to feather.

LG-9200 is connected with Digital Tachometer (TM-3100 series).

Rotation display, Analog output are possible for TM-3100 series.

Tracking analysis

Diagnosis of bearing requires oscillating measurement and rotation measurement.

LG-9200 is possible direct connection to FFT Comparator (CF-4500), FFT Analyzer(CF-7200A)

Exclusive amplifier for LG-9200 is unnecessary..

Digital Tachometer TM-3100 series



- High response speed at 100 kHz
- Able to add more functions by optional cards
- Applicable to CE marking

| TM-3100 Specifications | | Model name | Product name |
|-----------------------------|------------------------------|------------|---|
| Display device | Fluorescent display tube | TM-3110 | Digital Tachometer(Display only) |
| Input amplification | AC or DC | TM-3120 | Digital TachometerBCD output (open collector) |
| Signal frequency range | 100kHz | TM-3130 | Digital Tachometer(Analog output) |
| Measurement method | Periodic calculation method | TM-3140 | Digital Tachometer(Comparator output) |
| Calculation time | 10ms +1 period time | TM-0301 | DC power operated card |
| Input terminal | M3 free terminal screw | TM-0321 | BCD TTL output card(TTL Level) |
| Output | Pulse output | TM-0322 | BCD open collector output card (Open collector) |
| Operating temperature range | 0 ~ + 50 °C | TM-0330 | Analog output card |
| Power rating | AC100 ~ 240 V 50/60 Hz | TM-0340 | Comparator output card |
| Outer dimensions | 96 (W) × 48 (H) × 140 (D) mm | TM-0350 | RS-232C card/gate card |
| Weight | Approx. 310g | | |
| Applicable standard | CE marking | | |