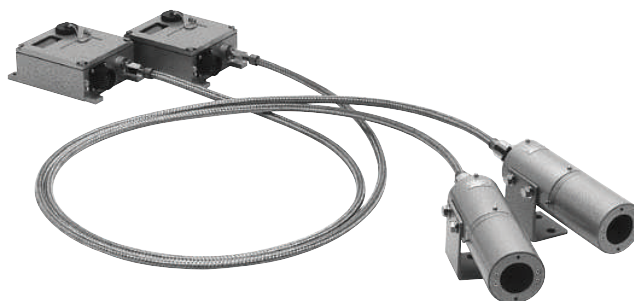


LED Type CMD

PHV-10



Using LED as Light source

This is a new optical fiber type CMD using LED as light source. This equipment is composed of projector (Sensor head, heat-resistance fiber and amplifier) and receiver and detects steel material which passes through between them.

- This doesn't specify power source. It is capable of being used within the scope of 100 to 240VAC.
- Water-cooling or air-purge isn't required for sensor head because non-air dust purge hood is applied.
- 8-point LED display unable to monitor the margin and emitting state.
- Warning output is provided.

Specifications

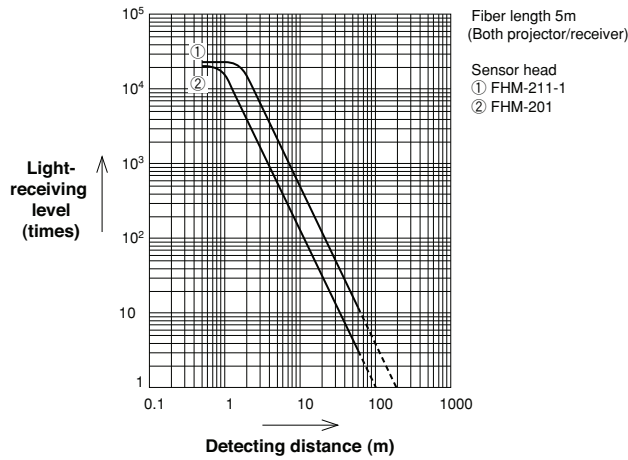
Type	Through-beam type
Model No.	Amp. unit: PHV-10P (Projector) · PHV-10A (Receiver) Sensor head: FHM-201 · FHM-211-1 Fiber unit*: FHV-321 (2m) · FHV-351(5m) · FHV-411 (10m)
Power source	100 to 240VAC (10%, -15% 50/60Hz)
Power consumption	Projector: 4VA or less, receiver: 5.5VA or less
Detection distance	20m (Detecting margin: 80 times or more at 20m* ²)
Detectable object	Steel material with ϕ 30 or more (FHM-201), Steel material with ϕ 50 or more (FHM-211-1)
Response time	Contact output: 10msec or less, photo-coupler output: 3msec or less
Operating mode	Changeover of Dark-ON/Light-ON
Control output	1C relay contact (250VAC 3A, 30VDC 5A, COS ϕ =1), Photo-coupler (120V or less, 100mA)
Warning output	
Light-emission amount lowering output	
Analog output	DC voltage output in proportion to light-reception amount (Saturated value 10V or more but do not use it except for adjustment)
Connection	Connector type (Cable 2m)
Fiber characteristics	Allowable bending radius: 100mm, Max. pressure: 784MPa, Tension strength: 490N
Ambient illuminance	10,000lux or less (Incandescent lamp)
Ambient temperature	Amp. unit: -10 to +55°C, Sensor head · Fiber unit: -10 to +200°C
Ambient humidity	45 to 85%RH (not icing, not condensing)
Insulation resistance	20M Ω or more (between power/output contact and case, by megohmmeter with 1,000V)
Withstand voltage	AC1,500V, 1min. (between power/output contact and case)
Vibration resistance	Double amplitude 1.5mm, 10 to 55Hz, each 2 hour in X, Y and Z directions
Impact resistance	490m/s ² , each 3 times in X, Y and Z directions
Protective structure	Amp. unit: IP64 (IEC Standard), Sensor head: IP66 (IEC Standard) Fiber unit: Corrugated tube with blade (SUS)
Case materials	Amp. unit: Aluminum die-casting, Sensor head: Aluminum
Weight	Amp. unit: Approx. 950g, Sensor head: FHM-201 Approx. 1.2kg, FHM-211-1 Approx. 1.5kg Fiber unit: FHV-321 Approx. 1.0kg, FHV-351 Approx. 1.8kg, FHV-411 Approx. 2.8kg

*1. 3m, 15m and 20m type are also available.

*2. In case of using FHV-321 and FHM-211-1.

★Photo-mos relay type for control output is also lined-up.

Characteristic data (Typical example)

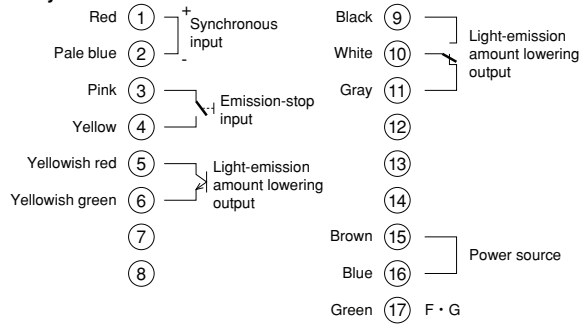


Optical axis adjustment

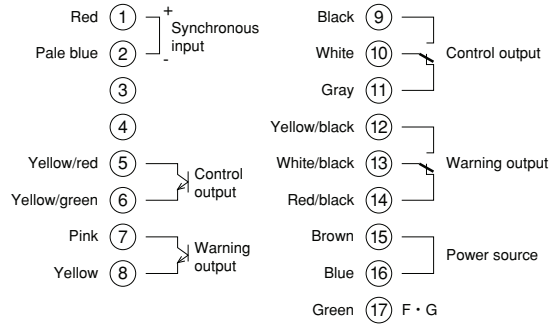
Optical axis adjuster, TES-113 is also available as an option. (Ask us in details) This is using red laser element (Class 2) and it is easy to adjust optical axis visually.

Connection

Projector



Receiver



Light-emission amount lowering output

Operating mode		NORMAL		
Connector pin No.		5-6	9-10	10-11
Power-off state		OFF	OPEN	CLOSE
Power-on state	When normal	ON	CLOSE	OPEN
	When troubled	OFF	OPEN	CLOSE

Operating mode		ABNORMAL		
Connector pin No.		5-6	9-10	10-11
Power-off state		OFF	OPEN	CLOSE
Power-on state	When normal	OFF	OPEN	CLOSE
	When troubled	ON	CLOSE	OPEN

Control output (Operating mode can be changed by inner switch)

Operating mode		Light-ON			Dark-ON		
Connector pin No.		5-6	9-10	10-11	5-6	9-10	10-11
Power-off state		OFF	OPEN	CLOSE	OFF	OPEN	CLOSE
Power-on state	When light-entering	ON	CLOSE	OPEN	OFF	OPEN	CLOSE
	When light-interrupting	OFF	OPEN	CLOSE	ON	CLOSE	OPEN

Warning output

Connector pin No.		7-8	12-13	13-14
Power-off state		OFF	OPEN	CLOSE
Power-on state	When normal	ON	CLOSE	OPEN
	When troubled	OFF	OPEN	CLOSE

External dimensions

Amplifier (Common use for projector/receiver)

