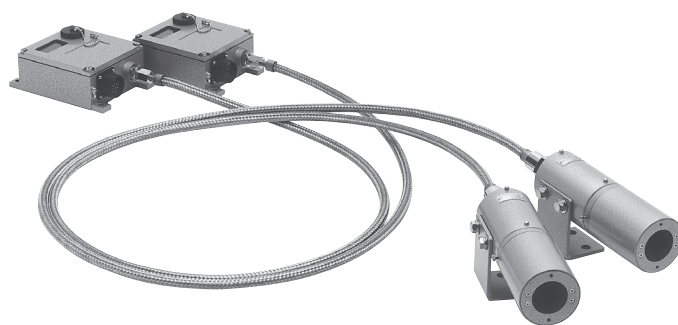


LED Type CMD

LAV-10/LAV-11

This is a new optical fiber type CMD using semi-conductor laser as light source. This equipment is composed of transmitter (Sensor head, heat-resistance fiber and amplifier) and receiver and detects steel material which passes through between them. It emits more powerfully compared with LED type so that high performance with margin in bad environment is possible.

- It is capable of being used within the scope of 100 to 240 VAC.
- 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	Amp. unit: basic type LAV-10P · Strong power type LAV-11P(Projector), LAV-10A(Receiver) Sensor head: FHM-211-1 · FHM-311 Fiber unit*1: FHV-321(2m) · FHV-351(5m) · FHV-411(10m)
Power source	100 to 240VAC(10%, -15% 50/60Hz)
Power consumption	Projector: 5VA or less, Receiver: 5.5VA or less
Safety standard	Class 1(JIS C6802)
Detecting distance	50m(Detection margin: 10,000 times or more at 10m*2)
Detectable object	Steel material with $\phi 100$ or more(FHM-311)
Response time	Contact output: 40msec or less, photo-coupler output: 30msec or less
Operating mode	Changeover of DARK-ON/LIGHT-ON
Control output	
Warning output	
Light-emission amount lowering output	1C relay contact(250VAC 3A, 30VDC 5A, $\cos\phi=1$), Photo-coupler(120V or less, 100mA)
Analog output	DC voltage output in proportion to light-reception amount(Saturated value 9V or more but do not use it except for adjustment)
Connection	Connector type(Cable 2m)
Fiber unit 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)
Protective structure	Amp. unit: IP64(IEC Standard), Sensor head: IP66(IEC Standard) Fiber unit: Corrugated tube with blade(SUS)
Case	Amp. unit: Aluminum die-casting, Sensor head: Aluminum
Weight	Amp. unit: Approx. 950g, Sensor head: FHM-211-1 Approx. 1.5kg, FHM-311 Approx. 4kg 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.

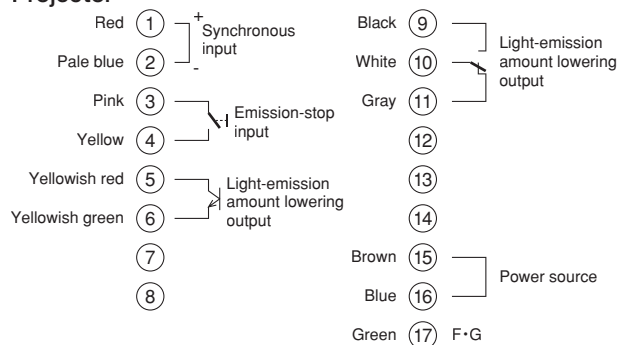
★Photo-mos relay type for control output is also lined-up.

Optical axis adjustment

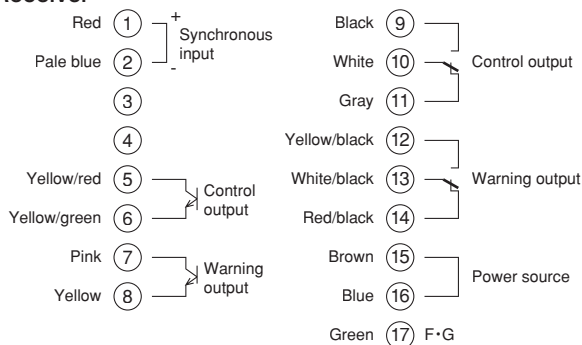
Optical axis adjuster, TES-110 is also available as an option.(Ask us in details) This is using red laser element(Class 2) and it is easy to adjust optical axis visually.

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)

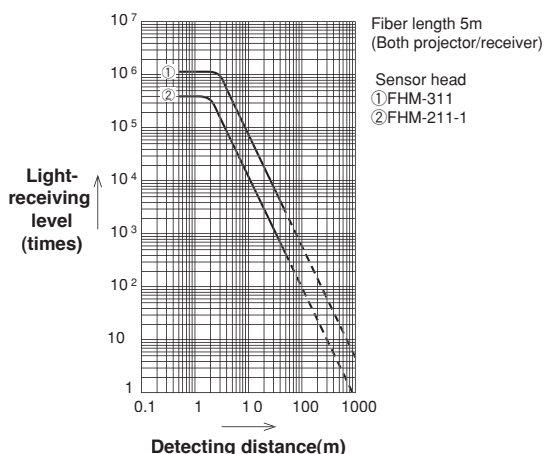
Operating mode		Light-ON			Dark-ON		
Connector pin No.		5-6	9-10	10-11	5-6	9-10	10-11
Power-off state		OFF	OPEN	CLOSE	OFF	OPEN	CLOSE
Power-on state	When light-entering	ON	CLOSE	OPEN	OFF	OPEN	CLOSE
	When light-interrupting	OFF	OPEN	CLOSE	ON	CLOSE	OPEN

● Warning output

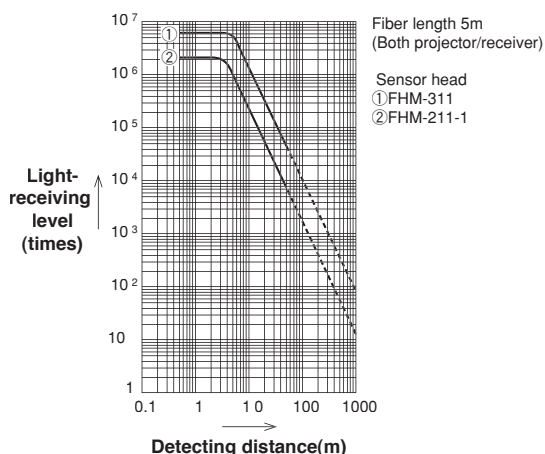
Connector pin No.		7-8	12-13	13-14
Power-off state		OFF	OPEN	CLOSE
Power-on state	When normal	ON	CLOSE	OPEN
	When troubled	OFF	OPEN	CLOSE

Characteristic data(Typical example)

Projector/receiver LAV-10P/LAV-10A



Projector/receiver LAV-11P/LAV-10A



External dimensions

Amplifier(Common use for projector/receiver)

