

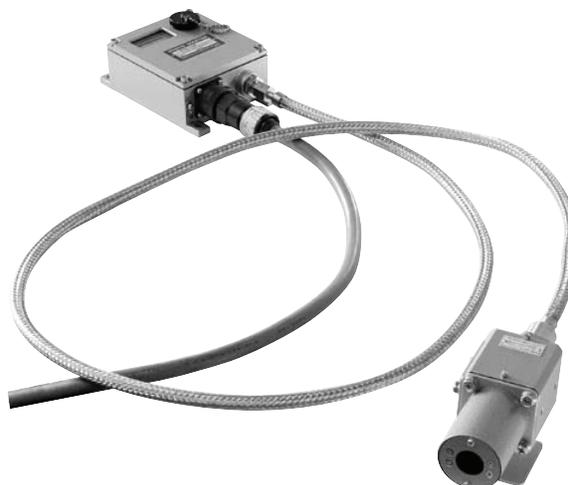
# Optical Fiber Type HMD

## PRV-10

**Miniaturized amplifier**  
**Easy to monitor light-receiving level with 8-point level lamp**  
**Detecting the heated materials with 360°C to 1,200°C**

Setting of sensitivity adjustment against temperature of detecting material had not been obvious. However this equipment displays reception level lamps in every twice using linear characteristic relationship between temperature and analog output voltage (8 levels). Operation setting can be made with level display or analog voltage. Also, there are three ranges, L/M/H as detection temperature changeover switch. Any parts such as slits etc. aren't required for 350 to 1,200°C. It is epoch-making HMD that operation point setting is possible with detecting condition before operation.

- It is capable of being used within the scope of 100 to 240VAC.
- 8-point LED display unable to monitor the margin and emitting state.
- Warning output is provided.
- We have wide variety of sensor head.



### Specifications

Type	Through-beam type
Model No.	<b>Amp. unit: PRV-10A*1</b> <b>Sensor head: FHM-201(Basic type), FHM-203 (Narrow directivity type), FHM-201-8W (Wide directivity type)</b> <b>Fiber unit*2: FHV-321 (2m) · FHV-351 (5m) · FHV-411 (10m)</b>
Power source	100 to 240VAC (10%, -15% 50/60Hz)
Power consumption	5VA or less
Detection distance	5m (Different depending on the size or temperature of detectable objects against detection range, or fiber length*3)
Detectable object	Heated materials with 360 to 1,200°C
Response time	Contact output: 20msec or less, Contactless output: 5msec or less
Operating mode	Changeover of Dark-ON/Light-ON
Control output	1C relay contact (250VAC 3A, 30VDC 5A, COS $\phi$ =1), Photo-coupler (120V or less, 100mA)
Warning output	
Analog output	Executed by changing light-entering amount/operation setting (Do not use it except for adjustment)
Indication lamps	Power (Green), operation (Orange), warning (Red), analog mode (Red), reception level 8 points (Orange)
Connection	Connector type (Cable 2m)
Fiber characteristics	Allowable bending radius: 100mm, Max. pressure: 784MPa, Tension strength: 490N
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 $\Omega$ or more (between power/output contact and case)
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 <sup>2</sup> , 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-203 Approx. 2.5kg, FHM-201-8 Approx. 1.7kg Fiber unit: FHV-321 Approx. 1.0kg, FHV-351 Approx. 1.8kg, FHV-411 Approx. 2.8kg

\*1. PRV-10C with detection temperature outside changeover function are also available.

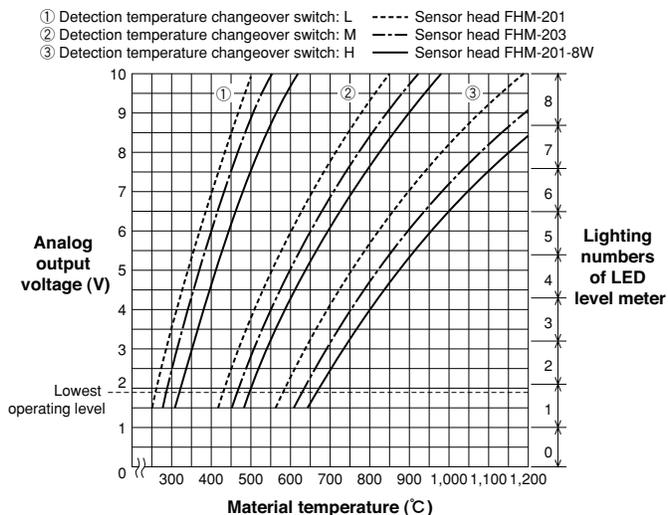
\*2. 3m, 15m and 20m type are also available.

\*3. Ask us in details.

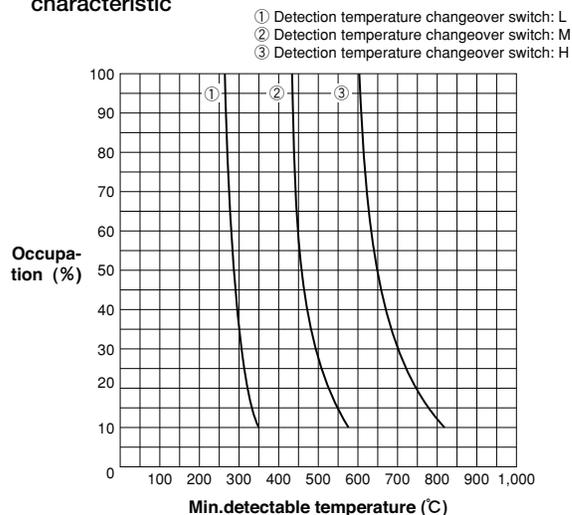
★Photo-mos relay type for control output is also lined-up.

## Characteristic data (Typical example)

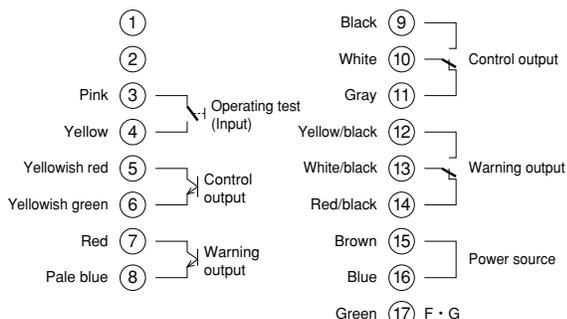
### Material detecting temperature characteristic



### Min. detectable object and detecting temperature characteristic



## Connection



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

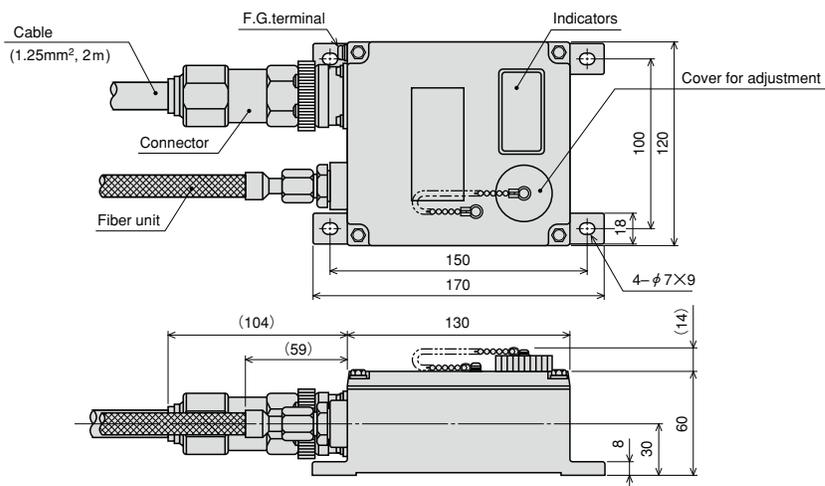
Operating mode	Operation when detecting			Operation when non-detecting			
	Connector pin No.	5-6	9-10	10-11	5-6	9-10	10-11
Power-off state		OFF	OPEN	CLOSE	OFF	OPEN	CLOSE
Power-on state	When detected	ON	CLOSE	OPEN	OFF	OPEN	CLOSE
	When non-detected	OFF	OPEN	CLOSE	ON	CLOSE	OPEN

### 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)



## Optical axis adjustment

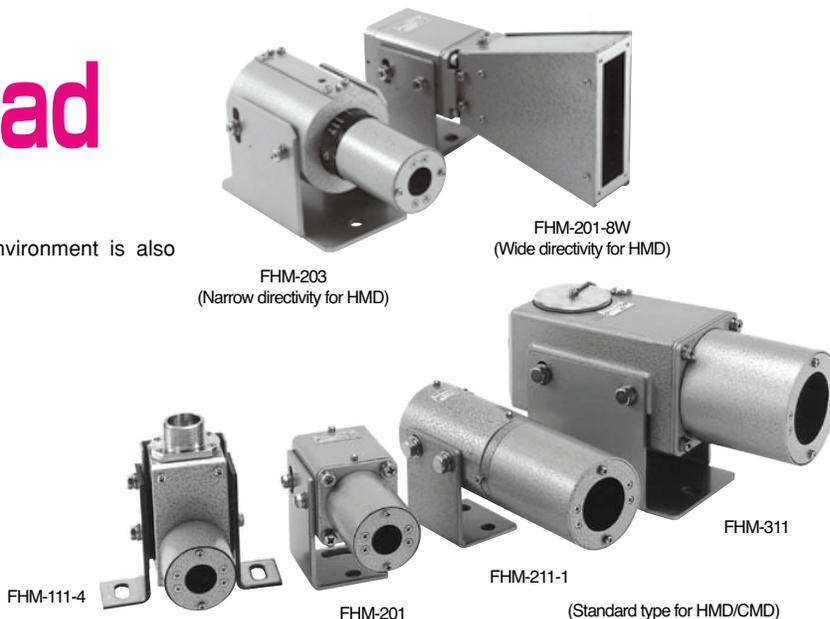
Optical axis adjuster, TES-113 and TES-140 are also available as an option. (Ask us in details) This is using red laser element (Class 2) and it is easy to adjust optical axis visually.

# Fiber Type Sensor Head

## Sensor Head

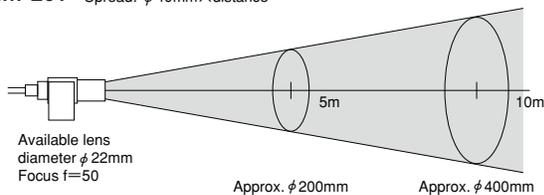
Sensor head for HMD/CMD.  
Fiber type and non-air dust-purge hood.

- Sensor head such as withstanding bad environment is also lined-up.

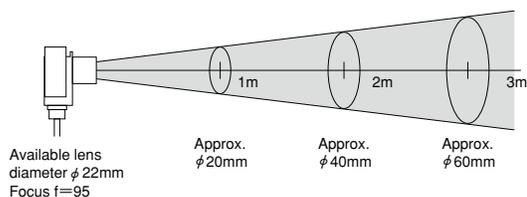


### ■ Spread of beam

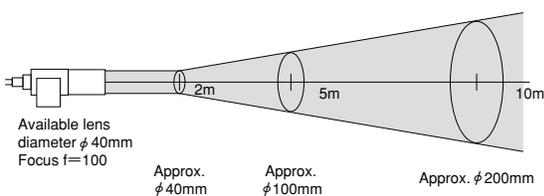
**FHM-201** Spread:  $\phi 40\text{mm} \times \text{distance}$



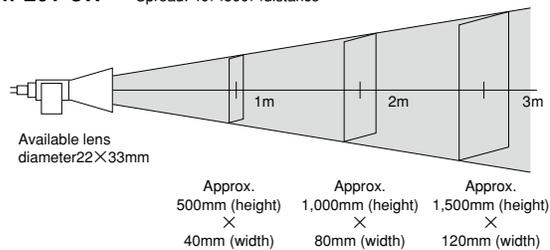
**FHM-111-4** Spread:  $\phi 20\text{mm} \times \text{distance}$



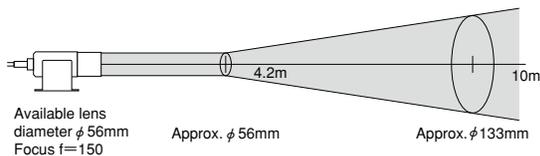
**FHM-211-1** Spread:  $\phi 20\text{mm} \times \text{distance}$  (but  $\phi 40\text{mm}$  up to 2m)



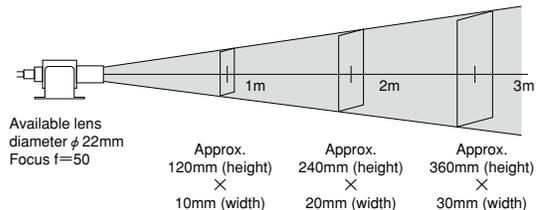
**FHM-201-8W** Spread:  $40 \times 500 \times \text{distance}$



**FHM-311** Spread:  $\phi 13.3\text{mm} \times \text{distance}$  (but  $\phi 56\text{mm}$  up to 4.2m)

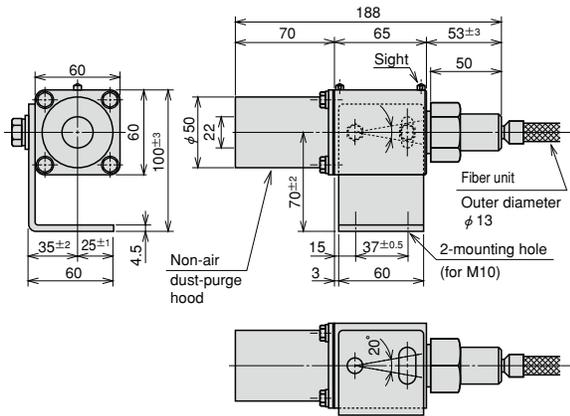


**FHM-203** Spread:  $10 \times 60 \times \text{distance}$

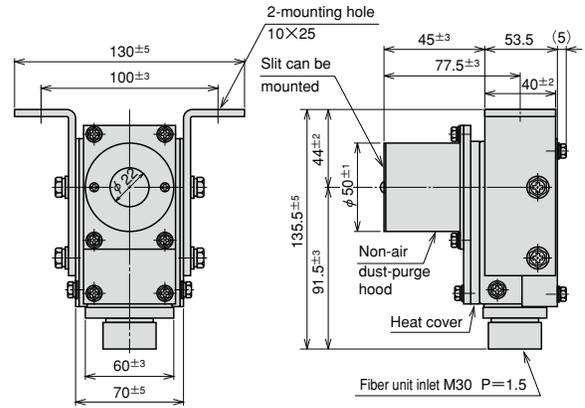


External dimensions

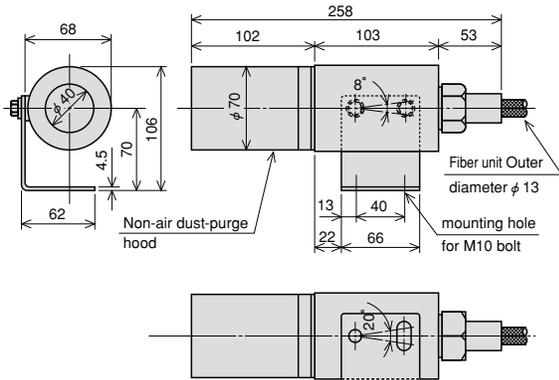
FHM-201



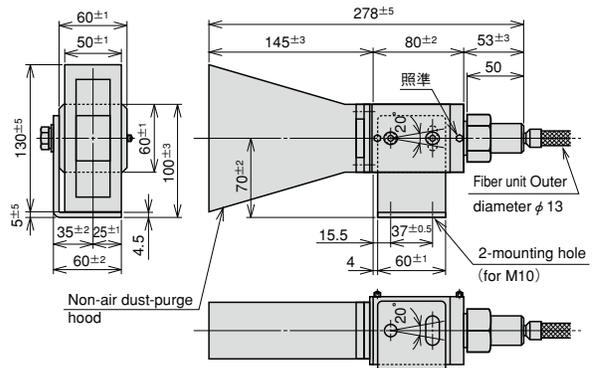
FHM-111-4



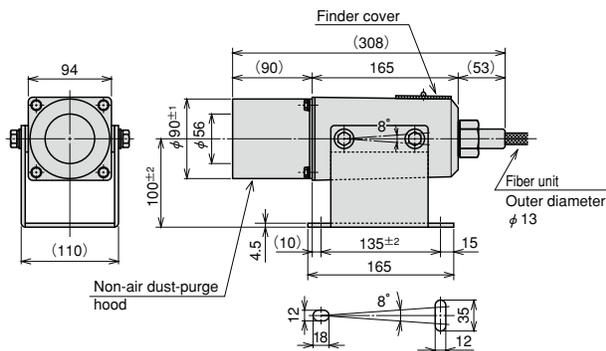
FHM-211-1



FHM-201-8W



FHM-311



FHM-203

