OPTEX FA

INSTRUCTION MANUAL

FIBEROPTIC SENSOR

VRF series	Standard type
VRF-H series	High Speed type
VRF-A series	Analog Output type

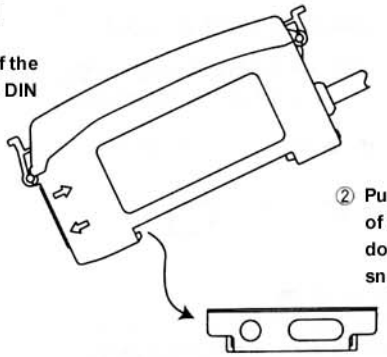
- Thank you for purchasing. Check that the specifications agree with yours.
- Please read this manual through before using the sensor, and retain it for future reference.

AMPLIFIER UNIT/FIBER OPTICS

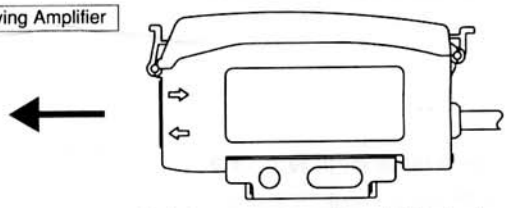
Assembling Amplifier

① Attach the front of the amplifier onto the DIN rail or bracket.

② Push the back of the amplifier down until it snaps into place.



Removing Amplifier



Push the sensor toward←and lift the front.

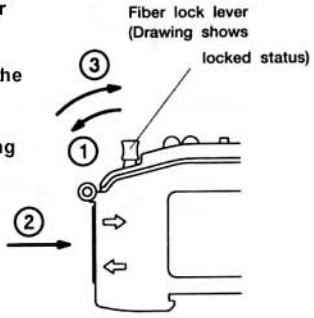
Inserting and Removing the fiberoptic cables

① Open the fiber lock by moving the lever towards position 1.

② Push the ends of the fiber cables into the amplifier until it stops.

③ Lock the fiber cables in place by moving the lever towards position 3

To remove the fiber cables open the lock and remove the cables.

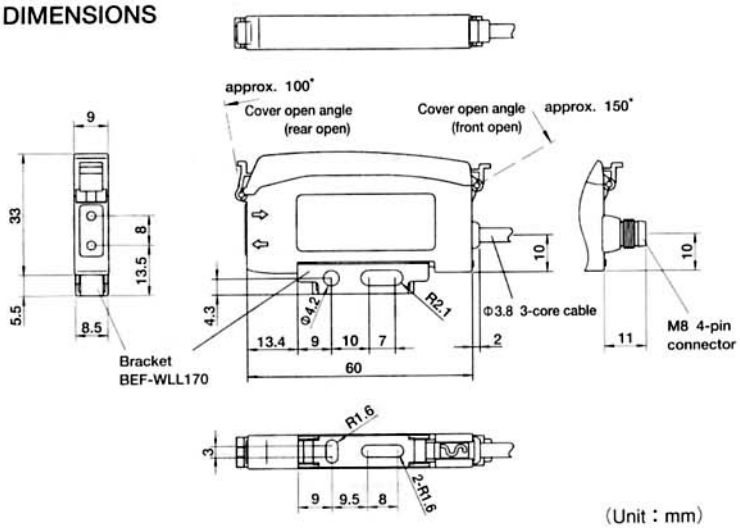


PRECAUTIONS

- Be carefull not to install the sensor at the following locations,as it may otherwise malfunction.
  - Where a lot of dust, vapor, or the like is present.
  - Where corrosive gas is produced.
  - Where water,oil or the like flies directly onto the sensor.
  - Where strong vibration or shock is caused to the sensor.
- When a switching regulator is to be used with a power supply, be sure to ground the Frame Ground Terminal.
- Do not use the sensor in a transient state at power on. (about 100ms)
- Do not run sensor cable near a high-voltage lines, or power lines or put them together in the same raceway.This warning should be strictly observed to prevent malfunctions caused by inductive interference.

• Do not use this product as a safety device for ensuring safety of persons.

DIMENSIONS



(Unit : mm)

Optex-FA U.S. Sales
Ramco Innovations
(800) 280-6933
www.optex-ramco.com

SPECIFICATION

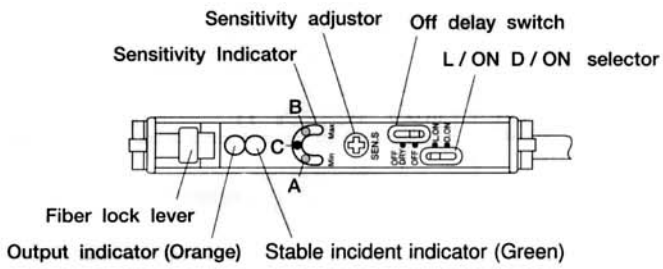
Standard ／ High speed type

		Standard Type	High speed Type
Type	2m Cable	VRF-N,P	VRF-HN,HP
	M8 Connector	VRF-CN,CP	VRF-HCN,HCP
Supply voltage		DC10～30V including 10% ripple	
Current consumption		40mA max.	
Response time		350 μS	50 μS
Light source		Red LED	
Indicator		Output（Orange）／Stability（Green）Indicator	
Sensitivity Adjustment		7 rotation volume	
Control output		Open collector Max.100mA／DC30V	
Timer function		Off delay fixed at 40ms（can be turned off by switch）	
Circuit protection		Reverse protection, Over current protection	
Ambient temperature		−25～55℃／35～85%RH（no freezing）	
Environmental illuminance		Sunlight:10,000 lx max. Incandescent light : 3,000 lx max.	
Protection category / Material		IEC IP50／Case : ABS Cover : PC	

SENSITIVITY ADJUSTMENT

Standard ／ High speed type

○Name of Parts



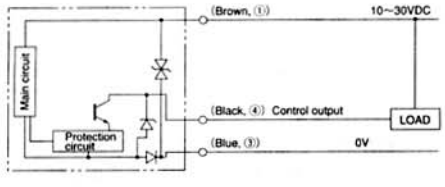
○Sensitivity Adjustment

1. Set the detectable object at the detecting position and turn the sensitivity adjustment slowly from MIN foward MAX until the output indicator(Orange) lights up. Call it position A.
2. Remove detectable object and turn the sensitivity adjustment from MAX foward MIN position where the output indicator is extinguished. Call it position B.
3. Point C midway between A and B is the optimum sensitivity position.

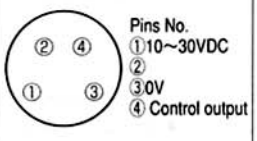
   The position A and B may reverse by types and situation of detection.

WIRING

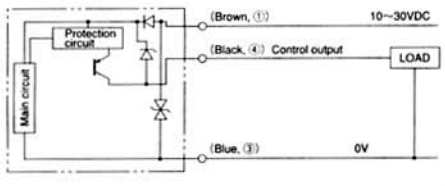
NPN output



Pin Configuration



PNP output



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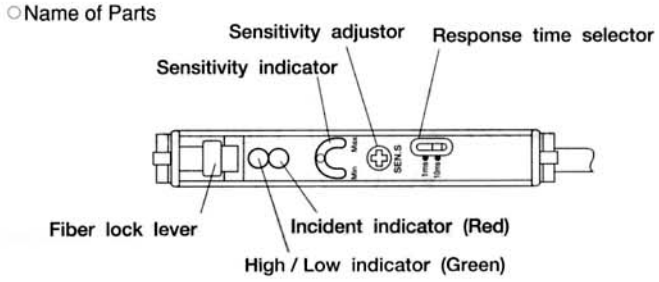
Analog Output type

		Analog output Type
Type	2m Cable	VRF-A
	M8 Connector	VRF-CA
Supply voltage		DC10～30V including 10% ripple
Current consumption		40mA max.
Response time		1ms ／ 10ms selectable by switch
Light source		Red LED
Indicator		High ／ Low (Green) ／ Incident (Red)
Sensitivity Adjustment		7 rotation volume
Analog Output		Output : 1～5V, 5mA max. Impedance : 47Ω Load resistance : 2kΩ min. Drift : 0.3% F.S ／℃
Circuit protection		Reverse protection
Ambient temperature		−25～55℃ ／ 35～85%RH (no freezing)
Environmental illuminance		Sunlight : 3,000 lx max. Incandescent light : 1,000 lx max.
Protection category / Material		IEC IP50 ／ Case : ABS Cover : PC

Analog Output type

○Name of Parts



Incident indicator(Red) : Light up if analog value is within 1 to 5V (detecting status).

High ／ Low indicator(Green) : Lights up in case it is impossible to detect due to too high / low receiving light level.

○Sensitivity Adjustment

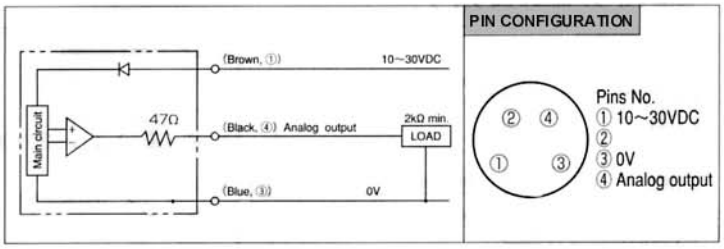
1. Turn sensitivity adjustment at MIN position.
2. Place detectable object at the detecting position.
   For through-beam application, align the light path without any objects.
   (Align with the status receiving light quantity is maximum.)
3. Turn the sensitivity adjustment foward MAX and stop at the position High/Low indicator(Green)lights up.
   Then turn foward MIN until High/Low indicator goes off.
   The most appropriate position is at maximum status but not higher the saturation point.

RESPONSE TIME SETTING

Response time is selectable 1ms or 10ms for analog output type.

10ms is recommended except short response time such as 1ms is absolutely required.
Because at 10ms is insensitive to ambient light and EMC for stable function.

Analog Output type



Developed by

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Manufactured by

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