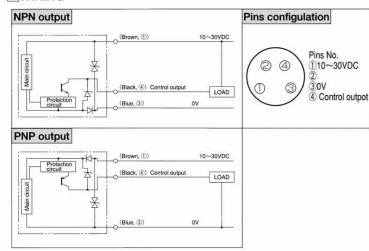


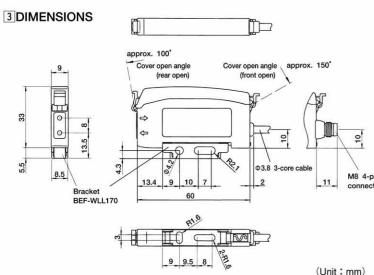
1 SPECIFICATION

		Cable type		M8 Connector type		
_	Standard	TRF-N.P	TGF-N,P	TRF-CN,CP	TGF-CN,CP	
Type	with Precise sens. volume	VRF-TN, TP	VGF-TN, TP	VRF-TCN, TCP	VGF-TCN, TCP	
Supply voltage		DC10~30V including 10% of ripple				
Current consumption		50mA Max.				
Response time		500μs (700μs for different frequency type)				
Light source		Red LED	Green LED	Red LED	Green LED	
Indicator		Output (Orange) / Stability (Green) indicator				
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°C / 35~85 %RH (no freezing)				
Environmental illuminance		Sunlight: 10000lx max. Incandescent light: 3000lx max.				
Protection category material		IEC IP50 Case : ABS Cover : PC				

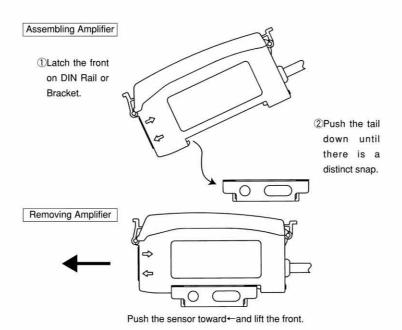
(Note) Different frequency type is added "Z" in the type model name (e.g. TRF-ZN)

2 WIRING





4 AMPLIFIER UNIT/FIBER OPTICS



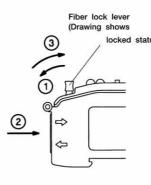
Assembling and Removing Fiberoptics 1) Set the locking lever, horizontally.

2Insert the fiberoptic until the end

from entry.

3Set the locking lever, vertically Then the fiberoptic is locked.

To remove the fiberoptic, set the locking lever, horizontally (unlocked), and pull it off.

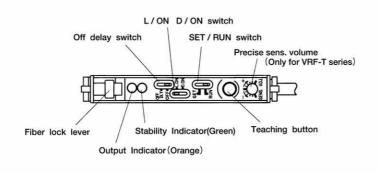


5 OTHER PRECAUTIONS

- OBe 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.
- ODo not use organic solvent, such as thinner, to remove contaminants from the body case, lid, and lens which are all of prastics. Using a dry rag, just wipe clean.
- OWhen a switching regulator is to be used with a power supply, be sure to ground the Frame Ground Terminal.
- ODo not use the sensor in a transient state at power on. (about 100ms)
- ODo 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.

Must not use this item as safety equipment for the purpose of human body protection.

6 PARTS NAME



7 SENSITIVITY ADJUSTMENT

1 Maximum sensitivity teaching

1	Set the Mode Selector to SET position.			
2	For Throgh-beam press the teachig button with detecting object. For Diffuse-reflection press the Teaching button without detecting object			
	Through-beam	DiffuseReflection		
			Orange indicator comes up.	
	Light interrupted.			

	I		
	Light interrupted.		
3	Set the Mode Selector to Run position. Now sensitivity setting is completed.		
wc	p-point teaching		
1	Place the fiber unit within the scanning distance.		
2	Set the Mode Selector to SET position.		
3	Press the Teaching button with detecting object.		
4	Output indicator (orange) lights up.		
5	Press again the Teaching button without detecting object.		
6	Stability indicator (Green) lights up.		
;	*Setting error is informed by both orange and green LED blinking.		
	(How to reset) Set the Mode selector to RUN position. Set the Mode selector to SET position. Resetting is completed. 		
	Adjust positioning of the object and try it again.		
7	Set the Mode Selector to RUN position. Now sensitivity setting is completed.		

3 One-Point teaching

1	Place the fiber unit within the scanning distance.
2	Set the Mode Selector to SET position.
3	For VRF-T/ VGF-T Series : Press the Teaching button with / without detecting objections and the series of the seri
	Volume Setting : Middle Volume setting : Max.
1	*Above One-point can be set by Precise sensitivity volume.
3	For TRF/TGR Series : Press the Teaching button without detecting object
	Jan 1997 Control of the control of t
	*
	This one-point teaching is not available for through-beam fiberoptic.
4	Output indicator (orange) lights up.
5	Set the Mode Selector to RUN position.

4 Teaching with a moving object.

1	Set the Mode Selector to SET position.
2	Press the Teaching button once without detecting object.
3	Keep on pressing the button (3sec or more) while the object is running *This sensor will decide the proper sensitivity judging from incident quantity given during the button pressed.
4	Release the Teaching button. **If sensitivity can not be set, repeat step 1-5 after reset (refer to section 2-6)
5	Set the Mode Selector to RUN position.

8 Precise Sensitivity Adjustment (Only for VRF-T/VGF-T Series)

It is possible to precisely adjust the sensitivity by the precise sensitivity volume-which is set by Teaching button-if it is necessary. Turning clockwise (+), sensitivity is increased. Turning counterclockwise (-), the sensitivity is decreased.

①Using Two-point teaching

It is possible to adjust the function level within the range of the two-point tolerance.

2Using One-point teaching

It is possible to adjust the detecting distance +/-35%, approximately.

Note: • If the precise sensitivity volume is not on middle position, the sensitivity is set according to the position.

• If the sensitivity is set on max. by "Maximum sensitivity teaching", the precise adjustment is only available for "-" direction: Sensitivity can not be changed for "+" direction.

9 OPTICAL ALIGNMENT (THROUGH-BEAM)

1 Set the Mode Selector to SET position.

When through-beam fiber unit is used, possible to search the adequate alignment by knowing a peak quantity of light.

2 Move the fiber unit while pressing the Teaching button. (3 sec, or more)

Stability indicator (Green) lights up. Then move the fiber unit till Stability Indicat Try to find the point which Stability indicator Then try to find the point at which Stability I lights up.	r blinking.
(Green LED OFF)	(Green LED blinking) (Green LED ON)
Release the Teaching button.	

- 5 Set the Mode Selector to RUN position.
- 6 Set the Mode Selector to SET position.
- 7 Try the sensitivity adjustment. (refer to section 7)
 - Specifications and equipment are subject to change without any obligations on the part of manufacture.
 - For more information, questions and comments regarding products, please contact us below.

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