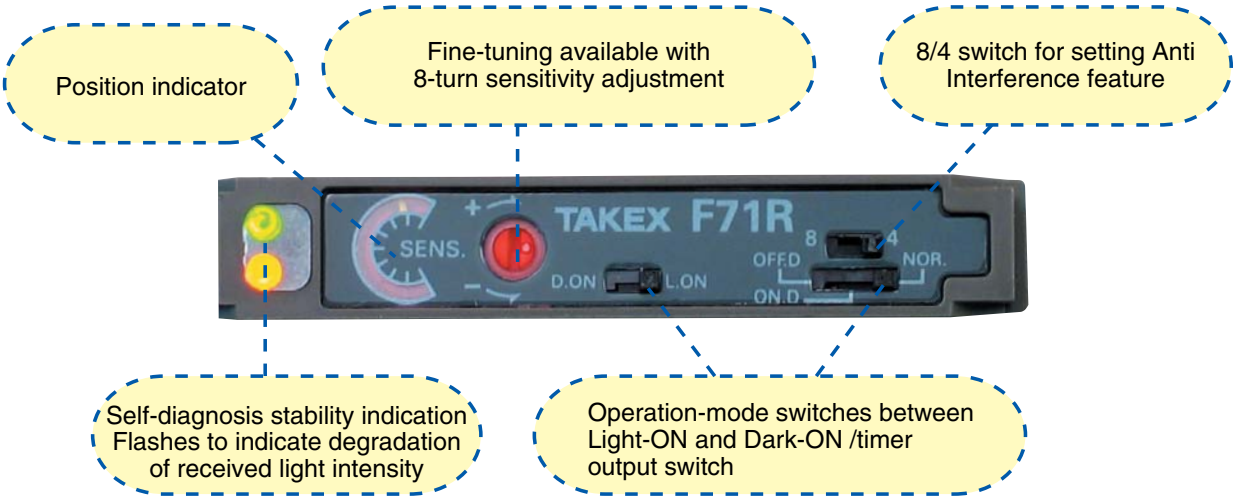
- Adjacent installation of up to 8 units
  - Proprietary Anti Interference feature is used -
- High-accuracy-8-turn sensitivity adjustment
  - Position indicator is provided -
- High-speed response of 30 μs
  - H type sensor -

Variation

Type	Model		Light source	Output mode
	NPN output	PNP output		
Manual setting general-purpose type	**F71R**	**F71RPN**	Red LED	Open collector (NPN/PNP)
	F71G	**F71GPN**	Green LED	
	F71B	**F71BPN**	Blue LED	
	F71W	**F71WPN**	White LED	
Manual setting high-speed type	**F71RH**	**F71RHPN**	Red LED	
	F71GH	**F71GHPN**	Green LED	
	F71BH	**F71BHPN**	Blue LED	
	F71WH	**F71WHPN**	White LED	

Manual high performance model

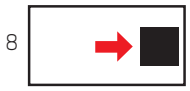
High-accuracy 8-turn adjustment is equipped with a position indicator, which allows direct reading of the adjustment position.



Useful 8-unit detection

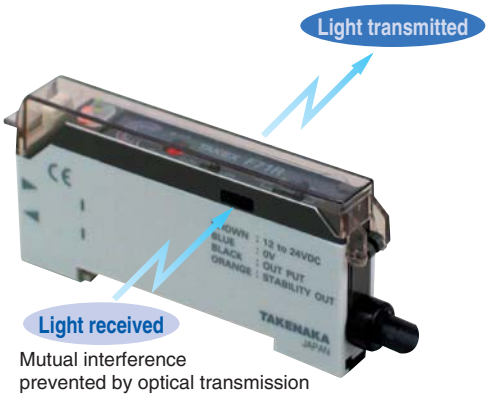
Optical transmission-type Anti Interference feature

The Anti Interference feature prevents false operation due to mutual interference even if up to 8 units are installed adjacently.



Anti Interference for up to 4 sensors (response time: 250 μs)

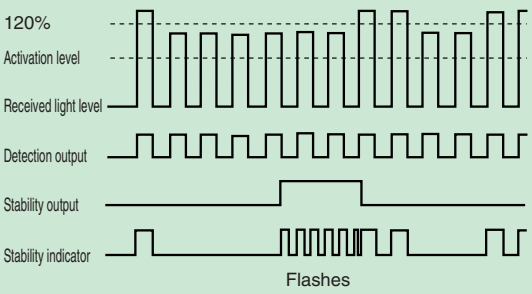
Anti Interference for up to 8 sensors (response time: 500 μs, turbo function enabled)



Mutual interference prevented by optical transmission when more than one unit is adjacently installed.

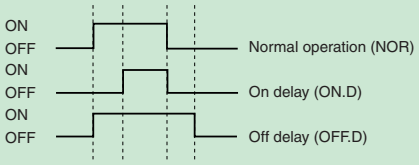
Easy-to-understand stability function

When four consecutive detections with a received light level of 120% or lower of the activation level have occurred, the stability output is activated. At the same time, the stability indicator flashes an alert.



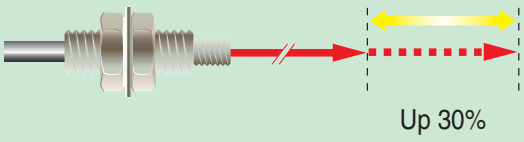
Timer operation

A delay timer of about 40 ms is provided to allow for a range of input conditions of the connected devices.
The timer is also useful for stabilization of detection output such as canceling signal chattering.



Turbo function increases detecting distance by 30%

When it is desirable to increase the detecting distance for the current condition of use, enabling the turbo function allows a distance increase of about 30%.



F71 series

Type

• Amplifier (main unit)

Type	Model		Light source	Output mode	Connection
	NPN output	PNP output			
Manual setting general-purpose type	**F71R**	**F71RPN**	Red LED	Open collector (NPN/PNP)	Permanently attached cord (M8 connector type also available)
	F71G	**F71GPN**	Green LED		
	F71B	**F71BPN**	Blue LED		
	F71W	**F71WPN**	White LED		
Manual setting high-speed type	**F71RH**	**F71RHPN**	Red LED		
	F71GH	**F71GHPN**	Green LED		
	F71BH	**F71BHPN**	Blue LED		
	F71WH	**F71WHPN**	White LED		

• Fiber optic cable

For different types and prices of fiber optic cables, see pp. 59-.

• M8 connector type

M8 connector connection type is separately available for all models.
For identification, “-J” follows the model number.
For connector specifications, see p. 23.
<Type of cords with M8 connector>
・Model：FBC-4R2S (equipped with straight M8 connector and 2-m cord)
・Model：FBC-4R2L (equipped with angled M8 connector and 2-m cord)

End unit

• Optional parts

Type	Model	Description
End unit	**FA7EU**	DIN rail mounting stopper
Mounting bracket*	**AC-BF2**	Amplifier unit mounting bracket

*Accessory

Rating/Performance/Specification

Rating/performance	Model	NPN type	F71R	F71G	F71B	F71W	F71RH	F71GH	F71BH	F71WH
		PNP type	F71RPN	F71GPN	F71BPN	F71WPN	F71RHPN	F71GHPN	F71BHPN	F71WHPN
	Power supply		12-24V DC ±10% / Ripple 10% max.							
	Current consumption	NPN type	35 mA max.							
		PNP type	40 mA max.							
	Output mode	Control output (*) NPN type	Open collector output / Rating: sink current 100 mA (30 VDC max.) / Residual voltage: 1 V or less							
		Control output (*) PNP type	Open collector output / Rating: source current 100 mA (30 VDC max.) / Residual voltage: 1 V or less							
		Stability output (*) NPN type	Open collector output / Rating: sink current 100 mA (30 VDC max.) / Residual voltage: 1 V or less							
		Stability output (*) PNP type	Open collector output / Rating: source current 100 mA (30 VDC max.) / Residual voltage: 1 V or less							
	Operation mode		Light-ON/Dark-ON selectable							
	Timer		On delay/off delay/disabled selectable Delay time: about 40 ms fixed							
	Response time		With switch at 4 (turbo function disabled): 250 μs max. With switch at 8 (turbo function enabled): 500 μs max.				30 μs max. (*1)			
Specification	Light source (wavelength)		Red LED (660mm)	Green LED (525mm)	Blue LED (470mm)	White LED	Red LED (660mm)	Green LED (525mm)	Blue LED (470mm)	White LED
	Indicator		Operation indicator: orange LED / Stability (STB) indicator: green LED							
	Volume (VR)		SENS: sensitivity adjustment volume (8-turn without stopper equipped with indicator)							
	Switch (SW)		• Light-ON/Dark-ON selector switch: L.ON for Light-ON, D.ON for Dark-ON • Timer selector switch: NOR. for ON/OFF operation, ON.D for on delay (40 ms), OFF.D for of delay (40 ms)							
			• Anti Mutual Interference/turbo mode selector switch (common) 8:Anti Mutual Interference for up to 8 units, turbo function enabled 4:Anti Mutual Interference for up to 4 units, turbo function disabled				————			
	Anti Mutual Interference		Provided				————			
	Short circuit protection		Provided							
	Material		Polycarbonate							
	Connection		Permanently attached cord (outer dimension: dia. 4.8) 0.2sq. 4 core 2 m length (-J type: M8 connector *2)							
	Mass		Approx. 90 g (including 2-m cord and mounting bracket)							
	Accessory		Mounting bracket / Screwdriver for adjustment / Light shielding sticker (excluding H type) / Operation manual							

(*) Avoid the transient condition (0.5 seconds) immediately after power-up for output.
(*1) The detecting distance for high-speed response H type is reduced to roughly 30% of the ordinary type.
(*2) For details about −J (M8 connector type), see p. 23.

Environmental Specification

Environment	Ambient light	Incandescent lamp: 10,000 lx max. / Sunlight: 20,000 lx max.
	Ambient temperature	1-3 adjacent units in operation: −25 - +55 °C 4-10 adjacent units in operation: −25 - +50 °C 11-16 adjacent units in operation: −25 - +45 °C Storage: −40 - +70 °C (non-freezing)
	Ambient humidity	35-85%RH (non-condensing)
	Protective structure	IP40
	Noise	Power supply line: 500 V / Cycle: 10 ms / Pulse duration: 1 μs Radiation: 1 kV / Cycle: 10 ms / Pulse duration 1 μs (with noise simulator)
	Vibration	10-55 Hz / 1.5 mm amplitude / 2 hours each in 3 direction
	Shock	100 m/s2 / 3 times each in 3 directions
	Dielectric withstanding	1,000 VAC for 1 minute
	Insulation resistance	500 VDC, 20 MΩ max.