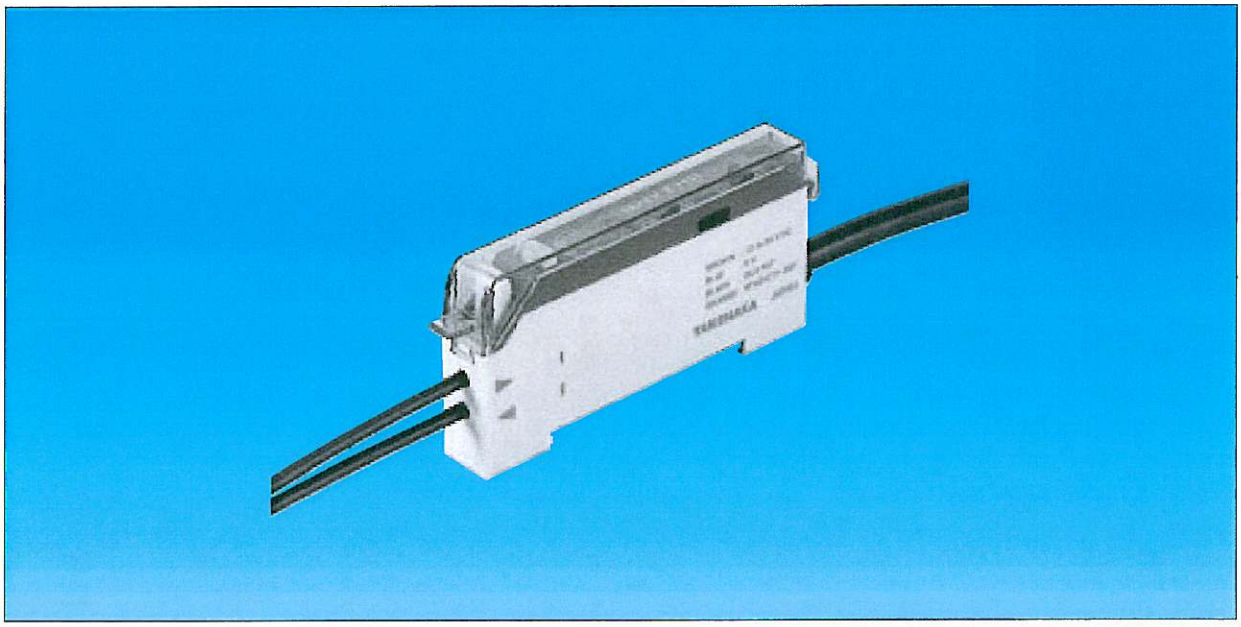
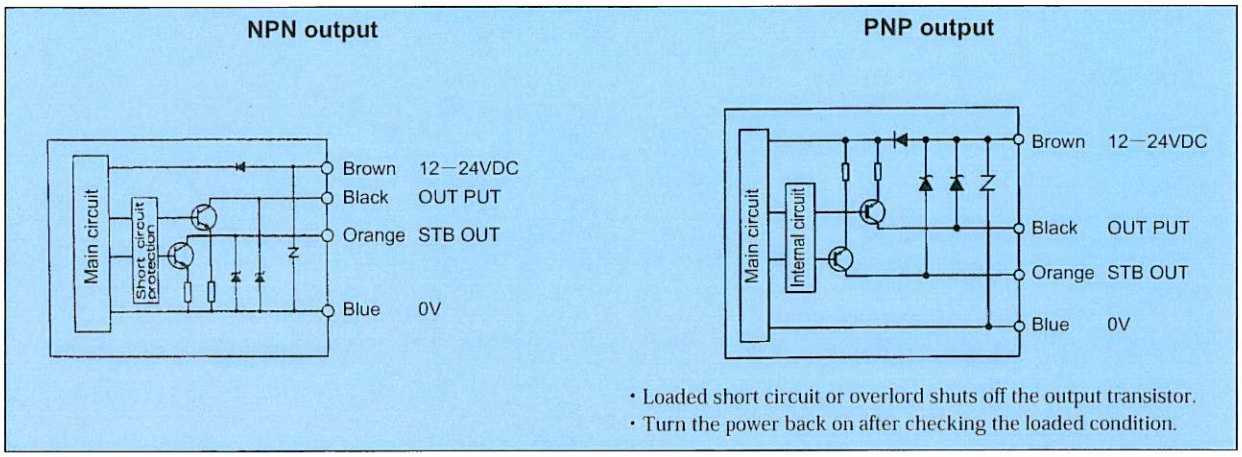
# F71R series

- This is an ultra thin type and therefore it does not need a large space even when more than two units are installed close to each other. In addition to this, an eight tum sensitivity adjustment is used, which enables fine setting by looking directly at the indicator.
- Using the optical transfer technology for the first time in the industry, the Anti Mutual Interference function for up to 8 units and the turbo function are built in.



## ■ OUTPUT CIRCUIT



## ■ SPECIFICATIONS

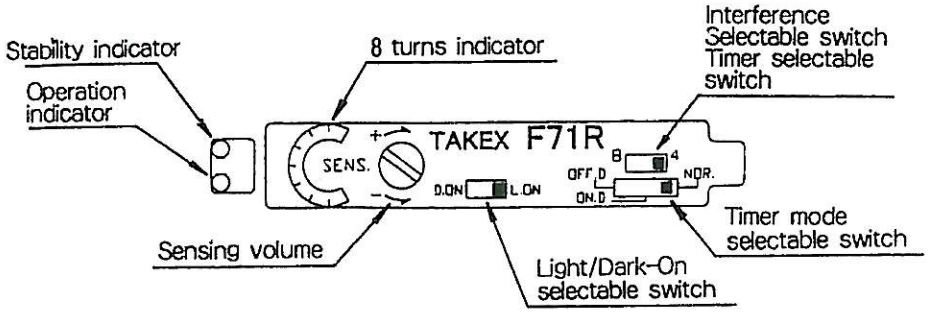
| Model | F71R | F71RPN | F71RH | F71RHPN |
|---|---|---|---|---|
| Detection method | Through-beam, Reflection (By fiber unit) | | | |
| Range | Reflection FR5BC : 100mm (10×10cm white paper)<br>Through-beam FT5BC : 270mm | | | |
| Power supply | 12−24V DC ±10%, Ripple 10% (Max.) | | | |
| Current consumption | 35mA (Max.) | 40mA (Max.) | 35mA (max.) | 40mA (Max.) |
| Output mode | NPN | PNP | NPN | PNP |
| rating | Open Collector : 100mA (DC30V) Max.<br>residual Voltage 1V (Max.) | | | |
| Operating mode | Light-ON/Dark-ON Selectable | | | |
| Timer | Timer function selectable | | | |
| Exterference function | Built-in | | | |
| Response time | 250 μs | | 30 μs (Max.) | |
| Light source | Red LED (660nm) | | | |
| Indicators | Operation : Orange LED, Stability : Green LED | | | |
| Sensitivity adj. | 8 Turns VR with indicator | | | |
| Switch | Light/Dark-On selectable switch<br>L.ON side : Light-On mode<br>D.ON side : Dark-On mode<br>Timer selectable switch<br>NOR. side : On/Off operating<br>ON.D side : On-Delay operating (40ms)<br>OFF.D side : Off-Delay operating (40ms)<br>Interference/Turbo mode selectable switch<br>8 side : 8 unit do not interfere (Turbo : ON)<br>4 side : 4 unit do not interfere (Turbo : OFF) | | | |
| Short protection | Built-in short protection (Normal/Stability output) | | | |
| Material | Case/Case cover : Polycarbonate | | | |
| Connection | Flying lead (Outer dia 4.8mm) 2m length 0.2sq×4 core ※ | | | |
| Weight | 80g Max. (Mounting bracket included) | | | |
| Notes | (The mode setting when shipment)<br>Sensitivity : Max.<br>Light/Dark-On selectable SW : L.ON side<br>Interference selectable SW : 4 side<br>Timer selectable switch : NOR. side | | | |

※In-Line connector type is available (−J type : 0.3m length M8)

## ■ ENVIRONMENT

| | |
|---|---|
| Ambient light | Tungsten lamp : Withstands 10,000 lx (Max.)<br>Sun light : Withstands 20,000 lx (Max.) |
| Operating temp. | −25～+55℃ (Storage : −40～+70℃) |
| Humidity | 35 to 85% RH |
| Noise | By Noise simulator<br>Power line : 500V Cycle : 10ms, Palse duration 1 μs<br>Radiation : 1kV Cycle : 10ms, Palse duration 1 μs |
| Vibration | 10Hz to 55Hz, 1.5mm Amplitude, 2 Times, 3 direction |
| Shock | 100m/s² 3 Times, 3 direction |
| Dielectric withstanding | AC1,000V 1 mimute |
| Insulation resistance | 500VDC, 20MΩ (Max.) |

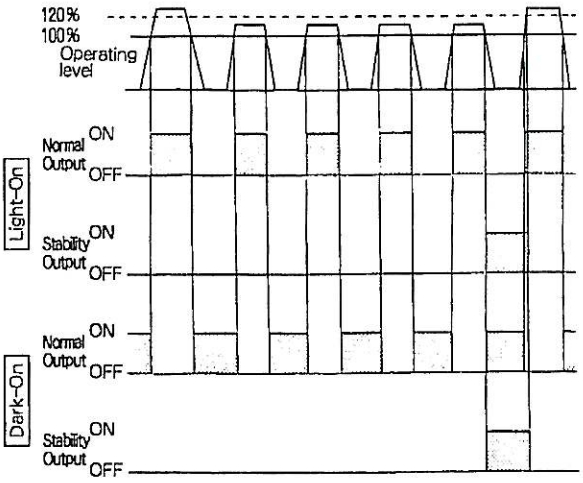
## ■ PANEL AND OPERATION




| | |
|---|---|
| SENS. | : 8 turns sensitivity adjustment volume |
| L. ON/D. ON | : Light/Dark-On selectable switch |
| 4/8 | : Interference Selectable switch |
| | : Turbo Function Selectable switch |
| NOR./ON.D/OFF.D | : Timer mode selectable switch |
| | NOR. side : On/Off operating |
| | ON. D side : On-Delay operating(40ms) |
| | OFF. D side : Off-Delay operating(40ms) |

Operation indicator : It lights when output transistor becomes ON.
Stability indicator : It lights when the light quantity of receiver has 120% sufficient margin.

## ■ STABILITY OUTPUT



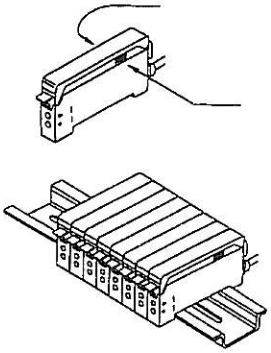

- This is used for an initial check of environmental changes and level reduction during operation.
- If the amount of received light exceeds the operation level but does not reach 120% (no stability) and this happens 4 times consecutively, the control output will go low (OFF) at light ON operation.
  Also, the stability indicator flashes at the same time the stability output operates. When stability returns, the Stability Output will be OFF, and the stability indicator will be ON continuously (normal ON) not flashing.

## TURBO FUNCTION

- When the turbo mode changeover switch is set to "8", the turbo function will operate. When the turbo function operates, the response time will be 500 $\mu$ sec, but the detection distance will be increased by approx. 30% from when the turbo function is OFF ("4").

## ANTI MUTUAL INTERFERENCE

- This product has an Anti Mutual Interference function that uses optical transfer. For the optical transfer there is a window on the side of the unit which is the optical path. There are transmitter and receiver windows.
  Therefore, install the units on a DIN rail and match the transfer windows of the amplifier units next to each other, as shown in the drawing, in order to ensure the function of the Anti Mutual Interference.



Cautions : If the amplifier units are mounted next to each other and they are not aligned, or
If the gaps between the amplifer units are too large, or
If the light path between the transfer window is blocked,
the optical transfer will become impossible and malfunction will occur.

## DIMENSIONS