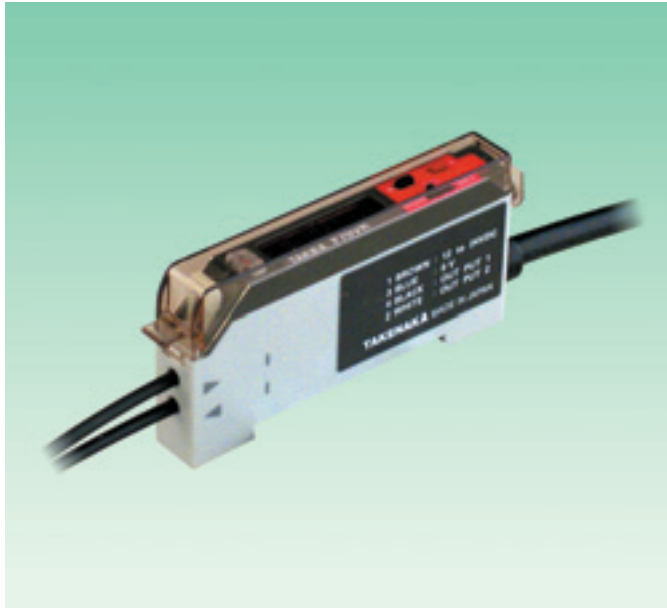


# F70V Series

Preset counter-equipped  
Fiber optic sensors



- Equipped with two preset up/down counter circuits
- Sensor on/off output and preset counter output are provided

## Type

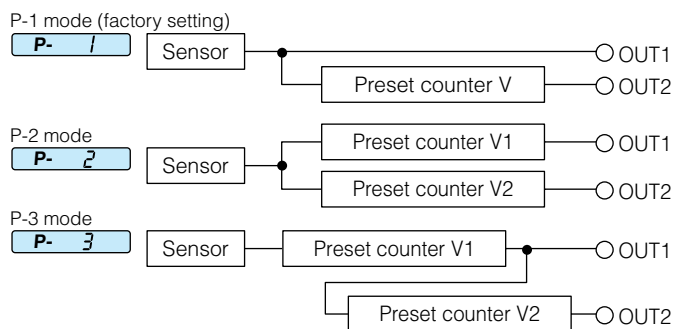
Detection method/ detecting distance	Model		Operation mode	Output mode	Light source
	NPN output	PNP output			
Dependant on fiber optic cable.	<b>F70VR</b>	<b>F70VRPN</b>	Light-ON/Dark-ON selectable	2 open collector outputs	Red LED

## About Preset Counter

Counts the number of sensor activations/deactivations and outputs a one-shot signal when the count has reached the predefined setting (preset value).

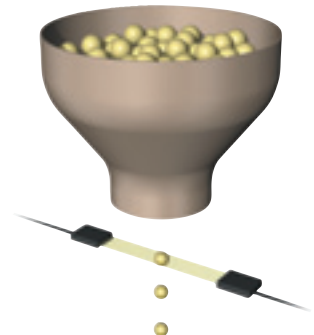
The green indicator is illuminated while the one-shot signal is output.

The preset counter has the following three modes:



## Application example

Counting works



Wide area fiber optic cable used for wide-view detection. Outputs a signal when the predefined number of falling works has been counted, eliminating the need for a separate counter unit.

# Fiber optic sensors

## Rating/Performance/Specification

	Type	NPN output type	PNP output type	
	Model	F70VR	F70VRPN	
Rating/performance	Detection method	Through-beam type, reflective type		
	Detecting distance	(Dependant on fiber optic cable)		
	Power supply	12~24V DC $\pm 10\%$ / Ripple 10% max.		
	Current consumption	39 mA max.	50 mA max.	
	Control output	2 open collector outputs		
	Output mode	OUT 1: sink current 100 mA (30 VDC max.) OUT 2: sink current 50 mA (30 VDC max.) Residual voltage: 1 V or less	OUT 1: source current 100 mA (30 VDC max.) OUT 2: source current 50 mA (30 VDC max.) Residual voltage: 1 V or less	
	Operation mode	Light-ON/Dark-ON selectable		
	Timer	On delay/off delay/on-off delay/disabled selectable		
		Delay time: 40 ms fixed		
	Response time	1 ms max.		
	Accessory	Mounting bracket / Operation manual		
	Specification	Light source (wavelength)	Red LED (660nm)	
		Indicator	Operation indicator: OUT 1 = Orange LED / OUT2 = Green LED	
Display		LCD display with backlight		
Preset counter		Single preset counter: 1 mode / Double preset counter: 2 modes		
Output		One-shot signal		
Output signal length		Selectable between 50 ms, 100 ms, 200 ms, 500 ms and 1 s (factory setting: 100 ms)		
Counter setting		Variable between 2 and 9999		
Switch		2 set buttons / Mode selector switch: RUN/SELECT/SET		
Teaching method		Full auto teaching / Auto teaching		
Teaching input		Set button		
Short circuit protection		Provided		
Material		Polycarbonate		
Connection		Permanently attached cord (outer dimension: dia. 4.8) 0.2sq. 4 core 2 m length		
Mass	Approx. 80 g (including mounting bracket)			

## Environmental Specification

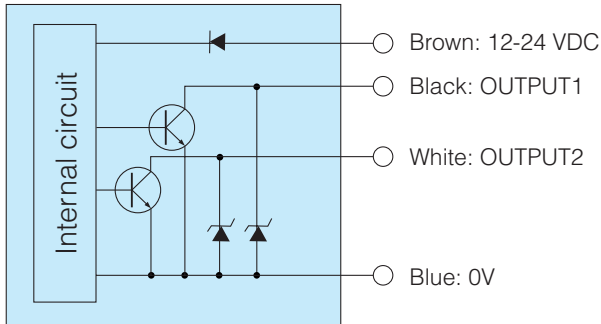
Environment	Ambient light	Incandescent lamp: 10,000 lx max. / Sunlight: 20,000 lx max.
	Ambient temperature	-25 ~ +55 °C Storage: -40 ~ +70 °C (non-freezing)
	Ambient humidity	35~85%RH (non-condensing)
	Vibration	10~55 Hz / 1.5 mm amplitude / 2 hours each in 3 direction
	Shock	500 m/s <sup>2</sup> / 3 times each in 3 directions

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

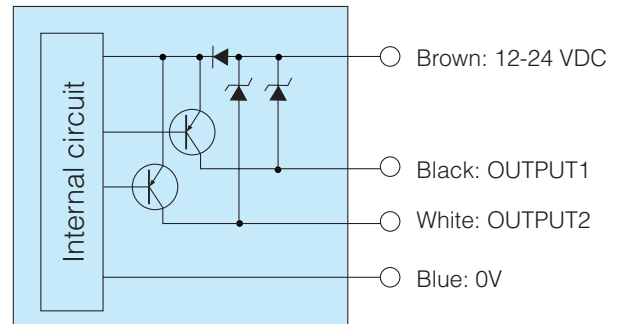
# F70V

## Input/Output Circuit and Connection

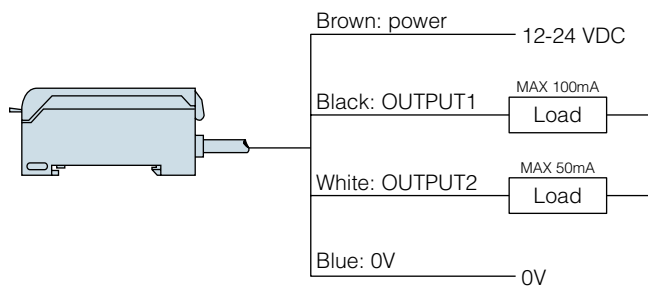
- NPN output



- PNP output

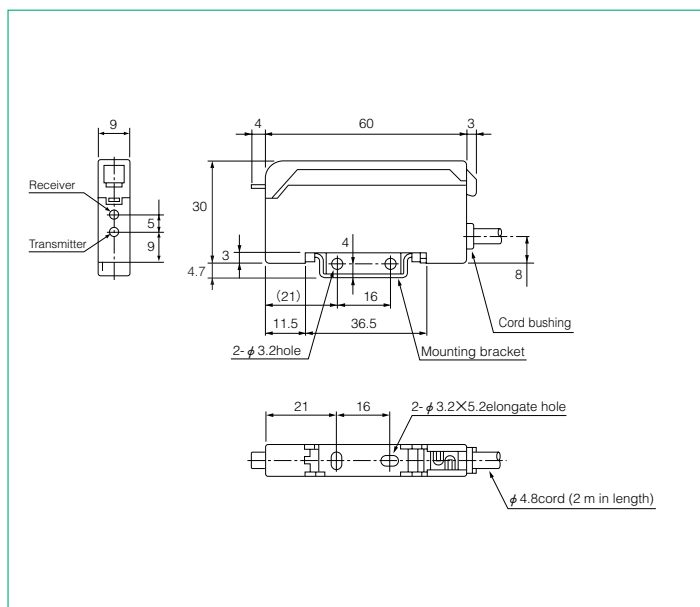


- Connection



- To extend the cord, use wires of at least 0.3 mm<sup>2</sup> and limit the length to within 100 m.

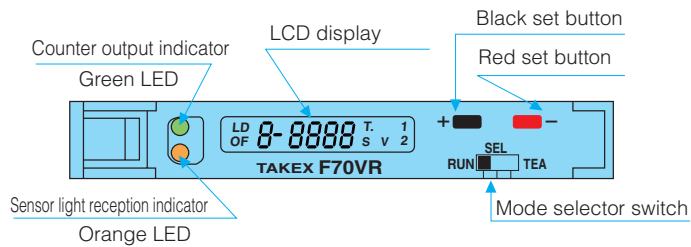
## Dimensions (in mm)



## For Correct Use

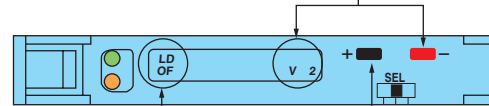
Be sure to follow the instructions in the operation manual provided for correct use of the product.

### Part names



### Operation and setting mode selection

Press red button to select between setting modes (teaching/sensitivity setting/preset counter setting)



Press black button to select between operation modes

**LCD display**

Operation mode  
 L: Light-ON  
 D: Dark-ON  
 O: On delay  
 F: Off delay

Position on electronic volume  
 (8-step indication: 1, 2, ..., 8)

Received light level

Preset counter channel indication

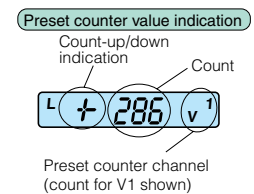
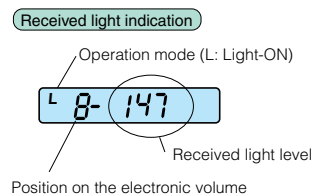
Function

V: Illuminated when the preset counter value is displayed.  
 T (Teaching): Flashes when in the teaching mode.  
 S (Sensitivity adjustment): Indicates that the operation level is being set manually and flashes when

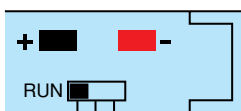
### Switching between indications

The display switches between indications for received light level and preset counter value.

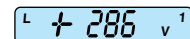
To switch between indications, with the selector switch at the RUN position, press the black button.



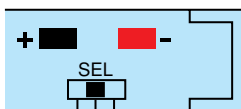
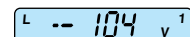
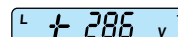
### Overview of operation



Black button: Switches between indications



Red button: Switches between preset count-up and count-down displays.



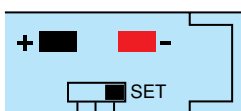
Black button: Switches between operation modes including Light-ON, Dark-ON and timer functions.

Red button: Selects between operation modes.

T: Teaching

S: Sensitivity setting

V, V1, V2: Preset value setting



Operation mode



Teaching: Press the red button for teaching.



Increase/decrease the sensitivity.



View/set the preset value.