

# FE8V Series

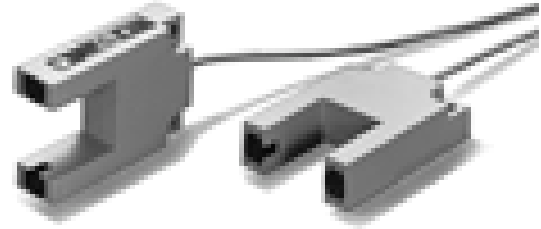
## Diecast Vane type Photoelectric Sensors

### FEATURES

Rugged Housing and IP67 Protection Suitable for Use Even under Water Splashes.

Vane Width 30mm, Vane Depth 35mm.

- *Built-in amplifier.*  
This series features a built-in amplifier. Models for DC and AC operation are available.
- *Durable zind diecast housing.*
- *Output short-circuit protection.*  
The DC models have output short-circuit protection.



### APPLICATION EXAMPLES

- **Cargo-handling and transportation machines**  
Detecting the address and position of a stacker machine system in ware house

### ORDER GUIDE

Shape	Detection method	Scanning distance	Operating mode	Power supply	Output mode	Catalog listing
	Thru scan	 30mm (fixed)	Dark operated	10 to 28Vdc	3-wire NPN open collect	<b>FE8V-TA6</b>
			Light operated			<b>FE8V-TB6</b>
			Dark operated	85 to 250Vac	2-wire SCR	<b>FE8V-TT2</b>
			Light operated			<b>FE8V-TU2</b>

## SPECIFICATIONS

### Specifications of DC FE8V model

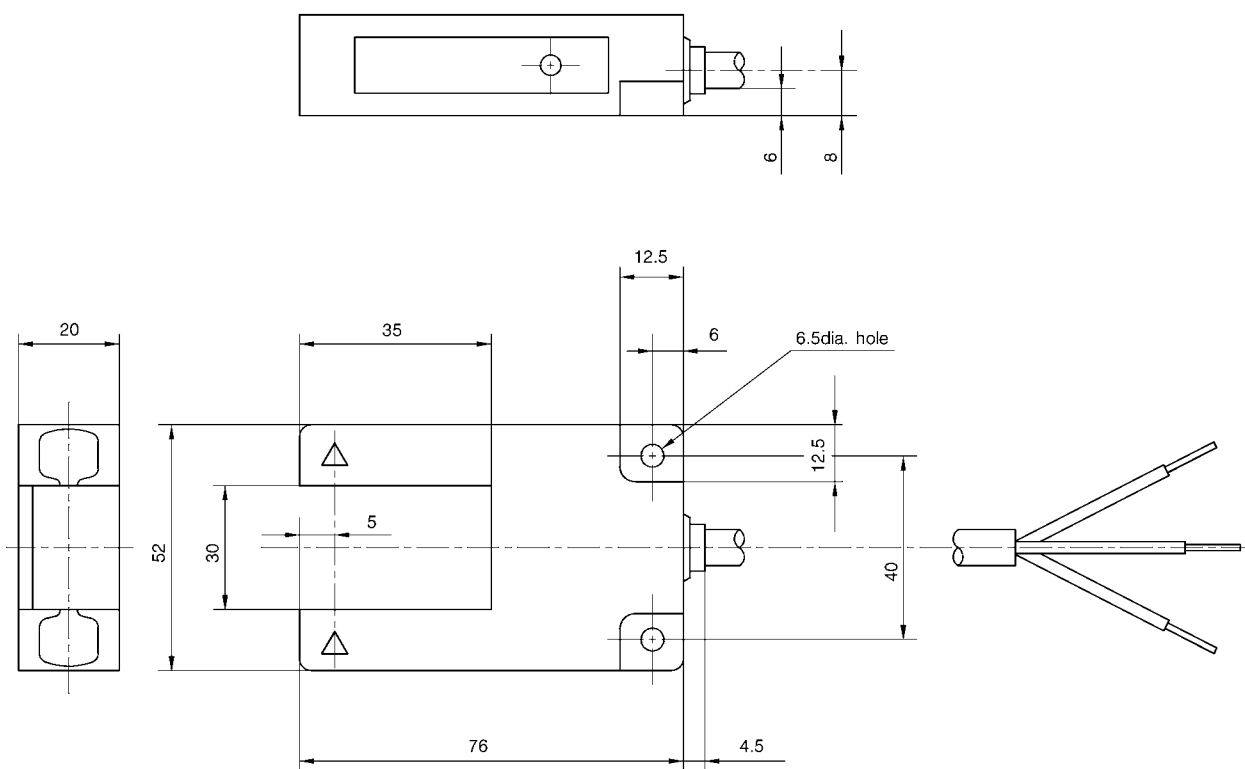
Type	DC type		AC type	
Catalog listing	<b>FE8V-TA6</b>	<b>FE8V-TB6</b>	<b>FE8V-TT2</b>	<b>FE8V-TU2</b>
Supply voltage	10 to 28Vdc (ripple not over 10%)		85 to 250Vac 50/60Hz	
Current consumption	Max. 30mA		—	
Operation mode	Dark operated	Light operated	Dark operated	Light operated
Output form	NPN (open collector)		SCR	
Output	Max. 100mA (with short-circuit protection circuit)		Max. 1.5mA (100Vac at load of 10k $\Omega$ ) ON current: 5 to 100mA, OFF current: Max. 10V	
Response time	200Hz (ON/OFF time: Max. 2ms)		10Hz	
Light emitter	Infrared LED			
Indicator	Operation indicator: Red or green lit Stability indicator : Green		Operation indicator: Red	
Ambient light immunity	Incandescent: Max. 3,000lx			
Operating temperature range	- 20 to +60°C			
Storage temperature	- 40 to +70°C			
Humidity rang	45 to 85%RH			
Insulation resistance	Min. 20M $\Omega$ (500Vdc, megger)			
Dielectric strength	500Vac, 1 minute		2,000Vac, 1 minute	
Vibration resistance	Double amplitude 1.5mm, 10 to 55Hz, 2 hours along each of X, Y, Z axes			
Shock resistance	500m/s <sup>2</sup> , 10 times along each of X, Y, Z axes			
Protection	IP67			
Weight	450 to 550g			
Wiring method	Pre-leaded (2m cord)			
Material	Case: Zinc die cast, Lens: PMMA resin			

- Installation Instructions No.: CP-UM-3028E

## EXTERNAL DIMENSIONS

### External dimensions

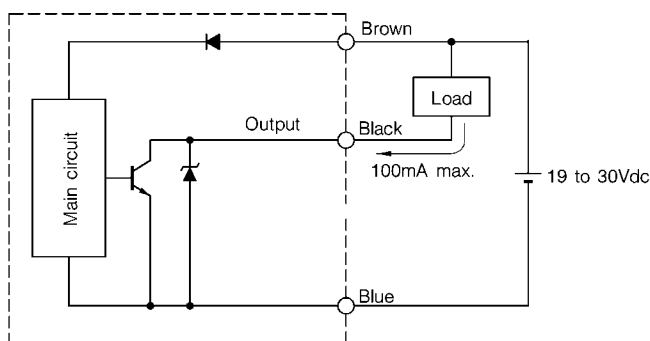
(unit: mm)



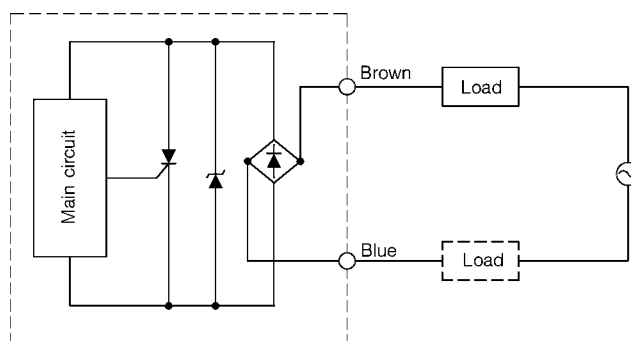
Cable lead of 4.0mm outer diameter, 0.2mm<sup>2</sup> 16/0.12, 3 cores.

## OUTPUT CIRCUIT DIAGRAM

### • DC FE8V model



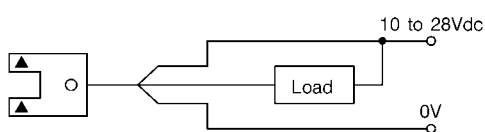
### • AC FE8V model



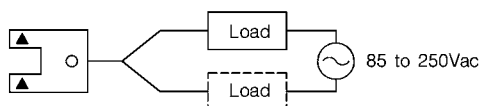
## WIRING DIAGRAM

### • Connection of DC models

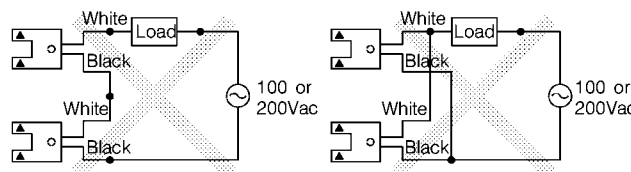
- When a load is driven directly



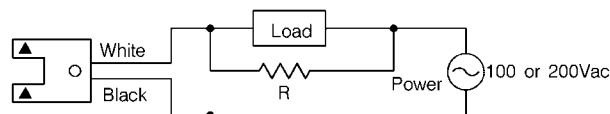
### • Connection of AC models



- (1) When two or more photoelectric sensors must be used, do not form a series or parallel circuit consisting of photoelectric sensors only.



- (2) When a load whose load current is 5mA or smaller (such as a CR timer) must be connected to a photoelectric sensor, connect a resistor in parallel with the load, as illustrated.



R: 18k $\Omega$  1W (100Vac)

R: 39k $\Omega$  2W (200Vac)

## BASIC PRECAUTIONS

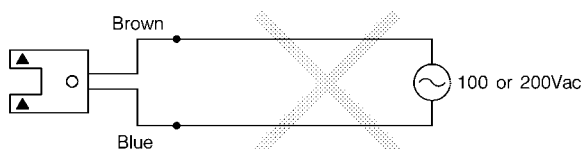
### • Basic instructions

#### (1) Wiring for DC

- Connect a photoelectric sensor to power unit and load correctly.
- If a high-voltage cable or a power cable exists near a photoelectric sensor lead, isolate the sensor lead in order to prevent surge and noise influence.
- Connect the ends of leads securely using a crimp terminal.
- Use a lead at least 0.3mm<sup>2</sup>. The lead should not be longer than 100m. Consider the influence of noise due to lead extensions.
- If a switching power supply is used, ground its frame.

#### (2) Wiring for AC

- A photoelectric sensor will be damaged if it is connected directly to a power unit. Be sure to connect a load and power unit in series. However, a through scan control may be connected directly to a power unit.



### • Handling

- Do not swing a photoelectric sensor by its cable.
- Do not impact or damage the sensing head.
- Do not apply excessive force to the leads of a photoelectric sensor. The maximum tensile strength is about 49N at 50cm from the end of the conduit.



## RESTRICIONS ON USE

This product has been designed, developed and manufactured for general-purpose application in machinery and equipment. Accordingly, when used in applications outlined below, special care should be taken to implement a fail-safe and/or redundant design concept as well as a periodic maintenance program.

- Safety devices for plant worker protection
- Start/stop control devices for transportation and material handling machines
- Aeronautical/aerospace machines
- Control devices for nuclear reactors

Never use this product in applications where human safety may be put at risk.

**YAMATAKE**

*Specifications are subject to change without notice.*

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