

**Amplifier Built-in Leak Detection Sensor
EX-F60 Series**

MJEC-EXF60 No.0054-72V

1 SPECIFICATIONS

Type	PFA mounting bracket type (For screw-fixing)		PVC mounting bracket type (For adhesive-fixing)	
	3m cable length type	5m cable length type	3m cable length type	5m cable length type
Model No.	EX-F61	EX-F61-C5	EX-F62	EX-F62-C5
NPN output type	EX-F61-PN	EX-F61-PN-C5	EX-F62-PN	EX-F62-PN-C5
Sensing object	Agent, such as Sulfuric acid, Hydrochloric acid, Phosphoric acid or Ammonia etc. (Note 1, 2)			
Supply voltage	12 to 24V DC ± 10% Ripple P-P 10% or less			
Current consumption	15mA or less			
Output	<NPN output type> NPN open-collector transistor		<PNP output type> PNP open-collector transistor	
	<ul style="list-style-type: none"> Maximum sink current: 50mA Applied voltage: 30V DC or less (between output and 0V) Residual voltage: 1.0V or less (at 50mA sink current) 0.4V or less (at 16mA sink current) 		<ul style="list-style-type: none"> Maximum source current: 50mA Applied voltage: 30V DC or less (between output and +V) Residual voltage: 1.0V or less (at 50mA source current) 0.4V or less (at 16mA source current) 	
Output operation	ON when normal operation, OFF when leak is detected or the sensor is mounted improperly.			
Short-circuit protection	Incorporated			
Response time	50ms or less			
Abnormality indicator	Red LED (lights up when leak is detected or the sensor is mounted improperly.)			
Normal indicator	Green LED (lights up when the sensor is mounted properly.)			
Protection	IP67(IEC)			
Ambient temperature	-10 to +60°C (No dew condensation or icing allowed) (Note 3, 4), Storage: -20 to +70°C			
Ambient humidity	35 to 85% RH, Storage: 5 to 85% RH			
Ambient illuminance	Incandescent light: 1,000 lx or less at the light-receiving face			
Emitting element	Infrared LED (non-modulated)			
Material	Enclosure: PFA			
Cable	0.1mm ² 3-core PFA cabtyre cable, 3m long	0.1mm ² 3-core PFA cabtyre cable, 5m long	0.1mm ² 3-core PFA cabtyre cable, 3m long	0.1mm ² 3-core PFA cabtyre cable, 5m long
Weight	60g approx.	80g approx.	60g approx.	80g approx.
Accessories	PFA mounting bracket: 1 pc.		PVC mounting bracket: 1pc.	

- Notes: 1) Highly viscous liquid may not be stably detected.
 2) The agents mentioned above are examples. Further, PVC mounting bracket may not be used depending on type or viscosity etc. of the agent. For details, please contact us.
 3) Liquid being detected should be also kept within the rated ambient temperature range.
 4) The specified ambient temperature is only for fixed product.

2 CAUTIONS

- This product has been developed / produced for industrial use only.
- This product is suitable for indoor use only.
- Avoid using the product in an explosive atmosphere because this product does not have an explosive-proof protective construction.
- Make sure to carry out the wiring in the power supply off condition.
- Take care that wrong wiring will damage the sensor.
- Verify that the supply voltage variation is within the rating.
- Take care that if a voltage exceeding the rated range is applied, or if an AC power supply is directly connected, the sensor may get burnt or damaged.
- If power is supplied from a commercial switching regulator, ensure that the frame ground (F.G.) terminal of the power supply is connected to an actual ground.
- Do not use during the initial transient time (50m sec. approx.) after the power supply is switched on.
- In case noise generating equipment (switching regulator, inverter motor, etc.) is used in the vicinity of this product, connect the frame ground (F.G.) terminal of the equipment to an actual ground.
- Cable extension is possible up to total 50m with 0.3mm², or more, cable. However, in order to reduce noise, make the wiring as short as possible.
- The extension of a power supply line and the output line of less than 10m is acceptable in case using this product as conforming to S-mark.
- Do not run the wires together with high-voltage lines or power lines or put them in the same race way. This can cause malfunction due to induction. In case a surge is generated in the used power supply, connect a surge absorber to the supply.

Thank you very much for purchasing Panasonic products. Please read this Instruction Manual carefully and thoroughly for the correct and optimum use of this product. Kindly keep this manual in a convenient place for quick reference.

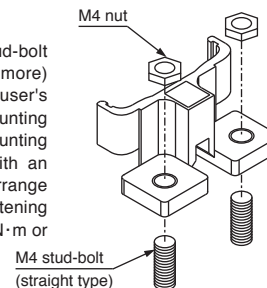


- This product is a sensor for detecting leak of fluids.
- When this product is used with safety devices, construct the system such that the device itself always operates in the safety side.

3 MOUNTING

EX-F61

- Insert the M4 stud-bolt (length 10mm or more) welded on the user's facilities into the mounting hole of the PFA mounting bracket and screw with an M4 nut (please arrange separately). The tightening torque should be 0.98N·m or less.

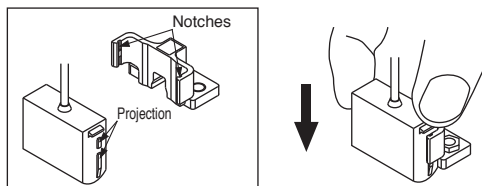


EX-F62

- Please note that if the excess adhesive from the bottom surface of the exclusive mounting bracket is remained, the sensing capability may be affected.
- Use adhesive for polyvinyl chloride(PVC).

How to fit the sensor body to the exclusive mounting bracket

- Align the projections in the sensor body with the notches of the exclusive mounting bracket and slide till a click is felt.



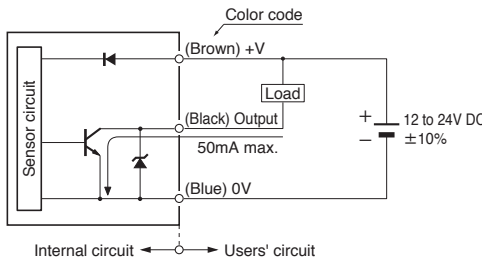
How to remove the sensor body from the exclusive mounting bracket

- Pinch the projections of the sensor body and pull the body upwards. Never pull the cable, since it may cause a cable break.

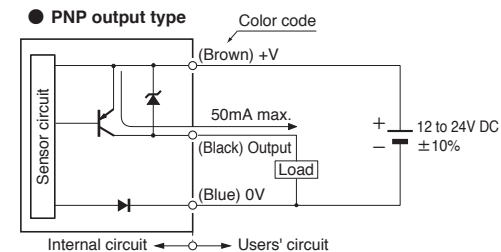


4 I/O CIRCUIT DIAGRAMS

- NPN output type

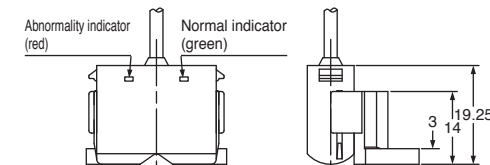
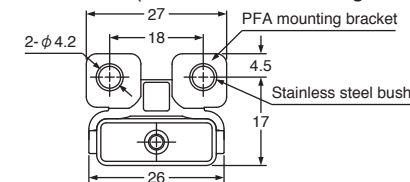


- PNP output type

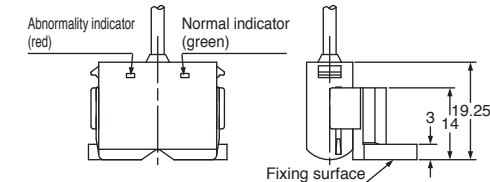
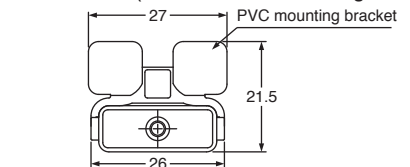


5 DIMENSIONS (Unit: mm)

- EX-F61 (Sensor with PFA mounting bracket)



- EX-F62 (Sensor with PVC mounting bracket)



6 INTENDED PRODUCTS FOR CE MARKING

- The models listed under '1 SPECIFICATIONS' come with CE Marking. As for all other models, please contact our office.
- Contact for CE
Panasonic Marketing Europe GmbH Panasonic Testing Center
Winsbergring 15, 22525 Hamburg, Germany

Panasonic Industrial Devices SUNX Co., Ltd.

http://panasonic.net/id/pids/global

Overseas Sales Division (Head Office)

2431-1 Ushiyama-cho, Kasugai-shi, Aichi, 486-0901, Japan
 Phone: +81-568-33-7861 FAX: +81-568-33-8591

For sales network, please visit our website.