

**Auxiliary Sensor for PX-2 series
PX-SB1**

MJE-PXSB No.0033-64V

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.

Hazard Indications

In this instruction manual, **WARNING** and **CAUTION** are indicated depending upon the level of danger. Please observe them strictly for the safe use of this sensor.

WARNING

'WARNING' indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION

'CAUTION' indicates a hazardous situation that, if not avoided, may result in minor or moderate injury. Further, they also indicate the condition of risk of physical damage to machinery.

WARNING

Installation of a Touch Bumper

You are requested to always install a touch bumper when this product is used on an automatic guided vehicle (AGV).

CAUTION

Use Outside Japan

This sensor conforms to the EMC Directive. However, it is not certified by a competent body in accordance with other country safety standards. Since each country has its regulations, please follow the local and national regulations of the country where this sensor is used.

CAUTION

Fail-safe measures

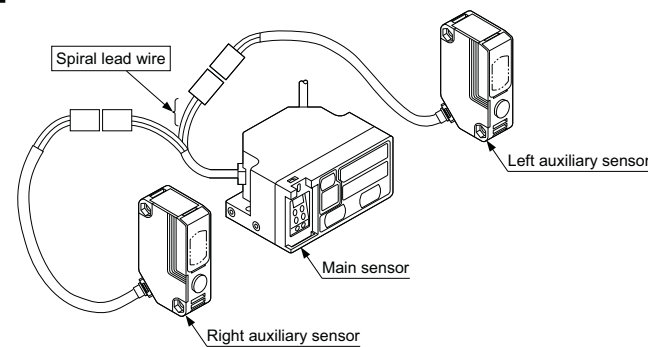
This sensor is meant for proximity detection and does not possess control functions for safety maintenance. If fail-safe measures are required, consider their incorporation in the total system. Further, do not connect the sensor output directly to a stopping mechanism (brake).

CAUTION

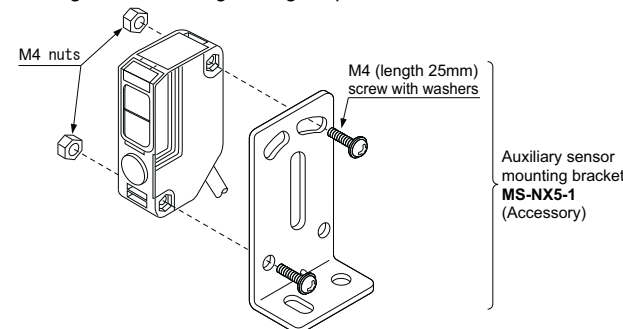
Periodical Maintenance Check

The person incharge must periodically confirm the performance of the product and maintain a record of such checks. In addition, whenever the operating environment of the product is changed due to system modification, etc., performance check must be done.

1 CONNECTION

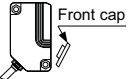

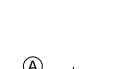
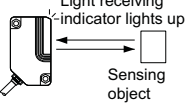

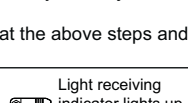




- Connect the cable with connector of the main sensor to the cable with connector of this product.
- Connect the left auxiliary sensor to the spiral side of the cable with connector of the main sensor.
- When this product is mounted by using the attached auxiliary sensor mounting bracket, the tightening torque should be 0.8N·m or less.



- Mount the sensor, horizontally, at least 300mm above the floor, to avoid reflection from the floor.

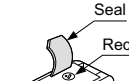
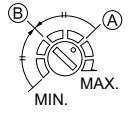
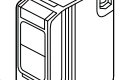
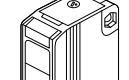
2 SENSITIVITY ADJUSTMENT

Step	Emission adjuster	Operation
1	—	Remove the front cap. 
2		Turn the emission adjuster counterclockwise fully.
3		Place an object at the position where you expect the sensor to detect it. Turn the emission adjuster clockwise up to the point A where the sensor turns on. Make sure that the sensor detects only the object, not your hand adjusting. If the sensor does not turn on, repeat the above steps and check the position of point A. 
4		Move the object out and find out the point B where the sensor turns on again with some background by turning the adjuster further clockwise. Make sure that the clearance between point A and point B is more than one graduation on the scale of the adjuster. 
5		Turn the adjuster back to the point A.
6	—	Make sure that the sensor turns on only where the object is in the set area, no the other area that the sensor receives beam emitted from the main sensor by moving the object in all possible way.
7	—	Put the front cap back on the sensor. 

- Notes: 1) Use the accessory adjuster screwdriver to turn the emission adjuster slowly. Turning with excessive strength will cause damage to the adjuster.
2) Angle the sensor not to make the superfluous sensing area that beam emitted from the main sensor enters into the sensor.
3) When two products are used, do the above job individually.

Supplementary sensing adjustment with sensitivity adjuster

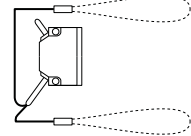
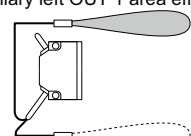
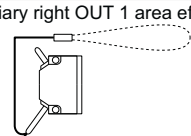
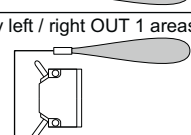
- If the sensor receives beam emitted from the main sensor, you will not be able to adjust the sensing range at shorter distance. In such case, follow the below procedures to modify the sensitivity.

Step	Receiving adjuster	Operation
8	—	Peel the seal off the sensor at the top. 
9		Position the receiving adjuster at the intermediate point B between the minimum point and the present point A. 
10	—	Attune the emission adjuster again so as to obtain your expecting sensing range in the manner of the procedure on the above table.
11	—	Make sure that the sensor turns on only with own-beam reflection by moving the object in all possible way. If not yet, decrease the sensitivity a little. (Note 4)
12	—	Put the front cap back on the sensor. 

Notes: 4) If the receiving adjuster is fully minimized, the sensor goes into insensitive condition.

3 SELECTION OF THE AUXILIARY SENSING AREAS

- The auxiliary sensing areas are controlled by the auxiliary area ineffective inputs of the main sensor.

Sensing area	Area ineffective input	Auxiliary left OUT 1 area	Auxiliary right OUT 1 area
Auxiliary left / right OUT 1 areas ineffective		L	L
Auxiliary left OUT 1 area effective		H	L
Auxiliary right OUT 1 area effective		L	H
Auxiliary left / right OUT 1 areas effective		H	H

L: Low (0 to 1V), H: High (4.5 to 31V or open)

Note: The auxiliary area changing function is effective when the main sensor is not in the sleep state, regardless of the selector switch position (INT. / EXT.) of the main sensor remote control function.

4 SPECIFICATIONS

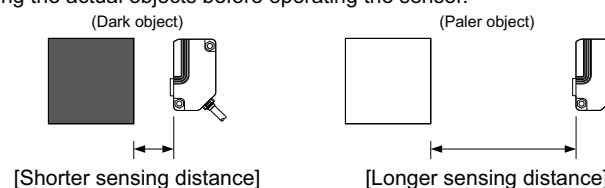
Item	Designation	Auxiliary sensor for PX-2 series
Model No.		PX-SB1
Applicable main sensor		PX-24, PX-24ES, PX-23ES, PX-26
Connectable units		Up to two PX-SB1 's can be connected to one main sensor
Sensing range (Note)		700mm
Hysteresis		15% or less of operation distance
Supply voltage		Supplied from the main sensor
Current consumption		Current consumption of the main sensor increases by 30mA approx. per auxiliary sensor
Output		• OR operation with main sensor's OUT 1 • Either light OUT 1 ON or dark OUT 1 ON is toggled with the operation mode switch on the main sensor
Operation indicator		Red LED (lights up when the beam is received)
Sensitivity adjuster		Continuously variable adjuster
Protection		IP65 (IEC)
Ambient temperature		-10 to +55°C (No dew condensation or icing allowed) Storage: -20 to +70°C
Ambient humidity		35 to 85% RH, Storage: 35 to 85% RH
Connection method		Connection with connectors
Material		Polycarbonate
Cable		0.3mm ² 5-core cabtyre, 2m long
Weight		130g approx.
Accessories		MS-NX5-1 (Auxiliary sensor mounting bracket): 1 set Adjusting screwdriver: 1 pc

Note: The sensing range is specified for white non-glossy paper (300 × 300mm) as the object.

5 CAUTIONS

- This sensor must always be used with the applicable main sensor as stipulated in the specifications. This sensor does not work by its stand-alone operation.
- It cannot be used with **PX-22** or **PX-21**.

- This product has been developed / produced for industrial use only.
- Make sure that the power supply is off while wiring.
- Take care that wrong wiring will damage the sensor.
- 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 run the wires together with high-voltage lines or power lines or put them in the same raceway. This can cause malfunction due to induction.
- Take care that the sensor is not directly exposed to fluorescent lamp from a rapid-starter lamp, a high frequency lighting device or sunlight etc., as it may affect the sensing performance.
- Extension up to total 10m is possible with a 0.3mm², or more, cable. However, in order to reduce noise, make the wiring as short as possible.
- Make sure that stress by forcible bend or pulling is not applied to the sensor cable joint.
- This sensor is suitable for indoor use only.
- Do not use this sensor in places having excessive vapor, dust, etc., or where it may come in direct contact with water, or corrosive gas.
- Take care that the sensor does not come in contact with water, oil, grease, organic solvents, such as, thinner etc., or strong acid, and alkaline.
- The sensor must be used where no specular objects such as mirror exist in the background of the object.
- The sensing range varies depending on factors such as color, glossiness and size of the object to be detected. Check the sensing range using the actual objects before operating the sensor.



6 INTENDED PRODUCTS FOR CE MARKING

- The models listed under "4 SPECIFICATIONS" come with CE Marking. As for all other models, please contact our office.
- Contact for CE
<Until June 30 ,2013>
Panasonic Electric Works Europe AG
Rudolf-Diesel-Ring 2, D-83607 Holzkirchen, Germany
<From July 1 ,2013>
Panasonic Marketing Europe GmbH Panasonic Testing Center
Winsbergring 15, 22525 Hamburg, Germany

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