YUMO®

YUEQING YING'S IMPORT & EXPORT CO., LTD

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PBS   Obstacle detection sensor
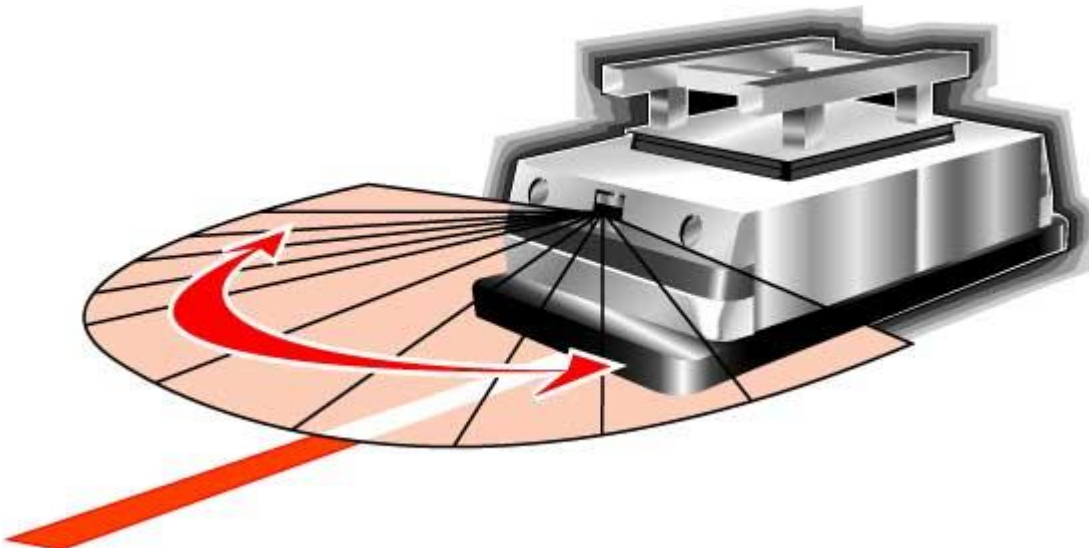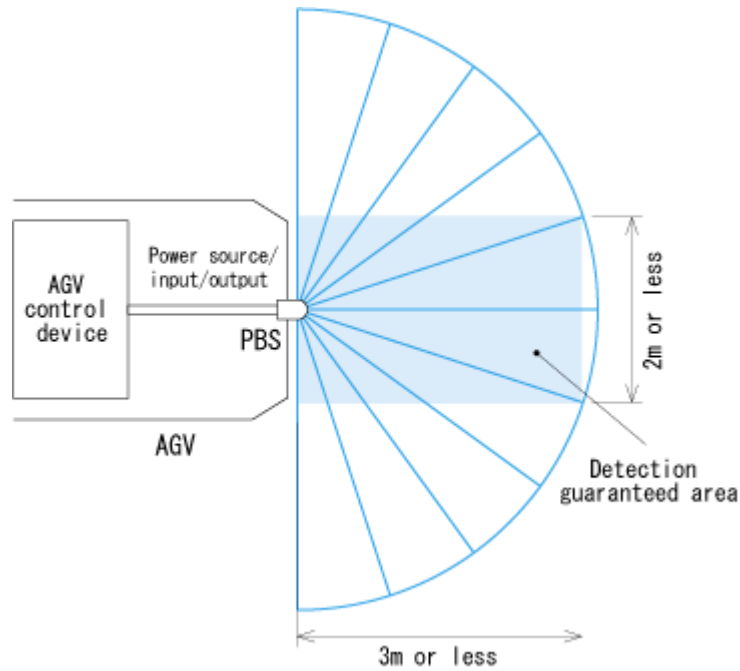
Wide scanning angle ! Super-small size !

Feature

- This was 60% smaller than PB9 about cubic volume. Scanning angle(Detection area) is increased to 180° and detectable dead zone is getting smaller.

- Operation principle is that semicircular field is scanned by LED(lambda = 880nm) and the coordinates is calculated by measuring distance to object and its step angle and then it detects obstacle in setting area.

- Detection area can be set by PC(RS-232C). Detection distance with 3 steps output for each area can be set.

- Changeover for Max. 15 kinds of detection area set by PC can be made by outer bit input.

Typical applications

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Structure(Light scanning image)
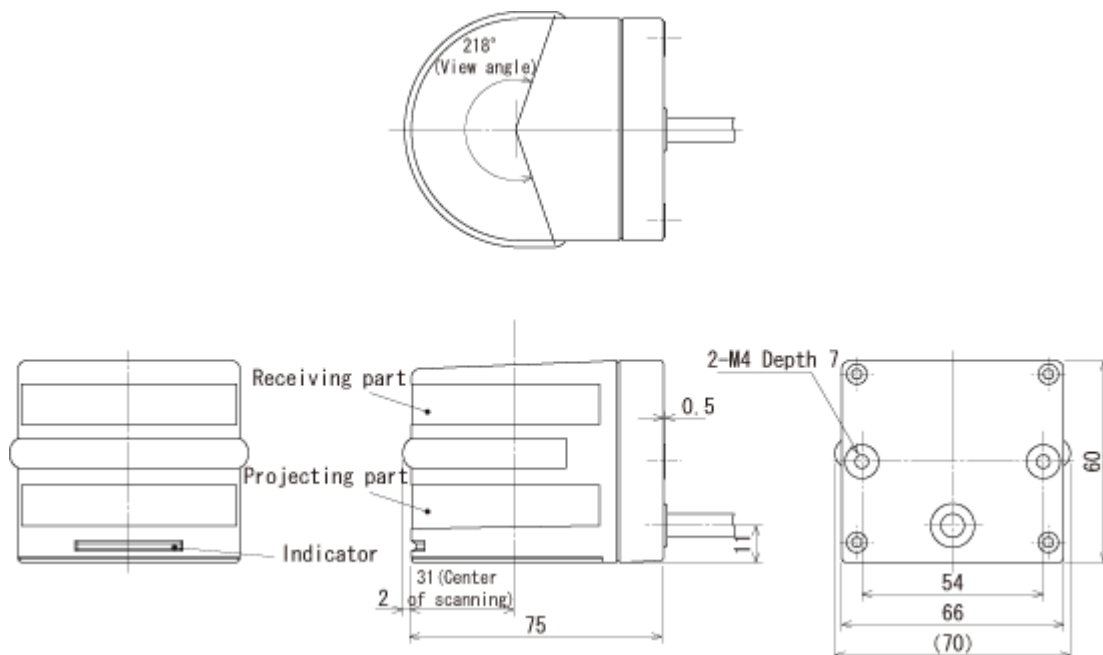

Specifications

Model No.	PBS-03JN
Power source	24VDC(Allowable range 18 to 30VDC including ripple)
Current consumption	250mA or less(100mA or less when emission stops) Except for I/O terminal current and rush current(500mA)
Light source	Infra-red LED
Detectable object and detection area	White paper with 300×300mm(Placed in parallel with sensor projection surface), 0.2 to 3m×2m(Origin point is scanning center position) but within scanning angle 180°
Area setting — Output 1	It is free to set from 0 to 10m for optical axis direction with 7 points pointer.
Area setting — Output 2,3	Linear setting to progressive direction, fan-shaped setting to optical axis direction, Percentage(%) setting against output 1 pointer
2 scanning mode	When each detecting area setting, it sets individually for each output.
Hysteresis	10% or less of detection distance(it is not getting 60mm or less)
Output	Photo-coupler/NPN open-collector output(30VDC 50mA or less) Output 1,2,3 : output OFF when detecting within area, trouble output : output ON when normal operation*
Input(Input 1 to 4)	Photo-coupler input(Anode common, each input current 4mA or more), This can changes setting detection area.

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Detecting area setting	It set the area No. by Input 1, 2, 3 and 4 It stops the emission by getting all Input 1, 2, 3 and 4 to ON(OFF : H level input, ON : L level input)
Output response time	180msec or less(Scanning speed 1 rev./100msec) 280msec or less when 2 scanning mode(but except for 100msec, area changeover time)
Input response time	Input taking-in cycle : 1 scanning time(100msec)
Lamps	Power lamp(Green) : Flickered when trouble Output 1, 2 and 3 lamp(Orange) : Lights up when detected in area
Connection	Cable 1m long
Ambient illuminance(note)	Halogen/mercury lamp : 10,000lx or less, Fluorescent lamp : 6,000lx or less
Ambient temperature/humidity	-10 to +50 degrees C, 85%RH or less(Not condensing, not icing)
Vibration resistance	10 to 55Hz, double amplitude 1.5mm Each 2 hour in X, Y and Z directions
Impact resistance	490m/s², Each 10 time in X, Y and Z directions
Protective structure	IP64(IEC standard)
Life	5 years(motor life)
Materials	Front case : Polycarbonate, rear case : ABS
Weight	Approx. 500g

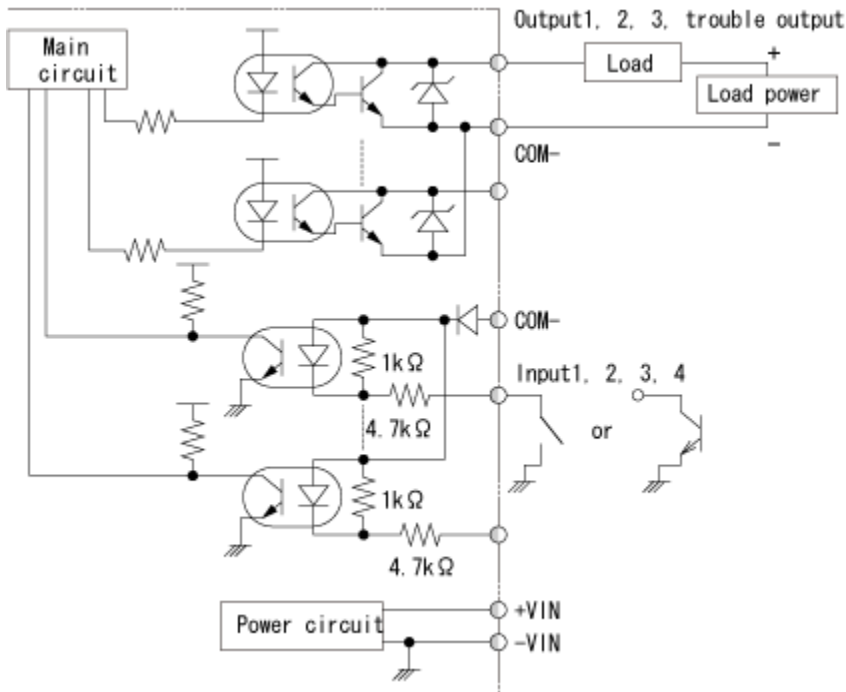＊ Output 1 to 3 show the state that it is detecting object when this output executed

Note) It may malfunction when receiving strong light such as sun light etc.

External dimension

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Note) Detecting area is 180°

Input/output circuit

Connection

Colors	Signals
Black	Output 1
White	Output 2
White(Blue)	Output 3
Orange	Trouble output
Gray	Output common minus
Red	Input common plus
Green	Input 1
Yellow	Input 2
Purple	Input 3
White(Yellow)	Input 4
Brown	+VIN
Blue	-VIN
Yellow(Red)	Serial input(RXD)
Yellow(Green)	Serial output(TXD)
Yellow(Black)	Serial GND

Note)Input/output direction is mentioned on the basis of PBS.