Obstacle Detection Sensor
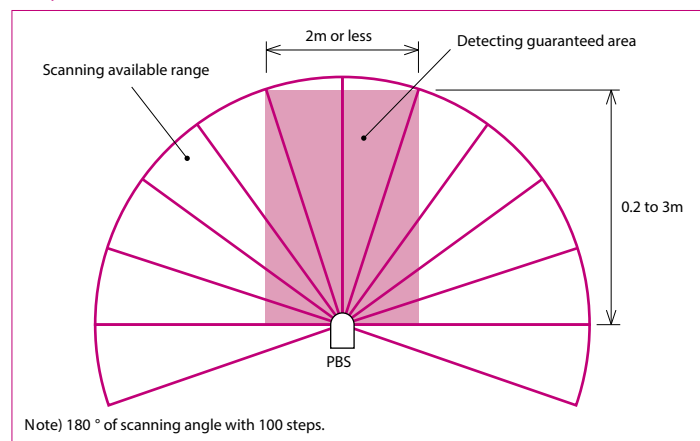
i̇MAJ TEKNİK

PBS SERIES

Wide scanning angle, Super small size!

- This is 60% smaller than PB9 about cubic volume. Scanning angle(Detection area) is increased to 180° and detectable dead zone is smaller.
- Operation principle is that semicircular field is scanned by LED(lambda=880 nm) and the coordinates are 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.

System structure

Scanning available range
2m or less
Detecting guaranteed area
0.2 to 3m
PBS

Note) 180° of scanning angle with 100 steps.

Max. 15 kinds of area can be registered by PC

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)
Detectable objects		White kent paper, 300mm □（Placed in parallel with sensor projecting/receiving surface)
Detecting range		0.2 to 3 × 2m(Origin point is scanning center position)but within scanning angle,180°
Area setting	Output 1	Free to set with pointer(Max. 7 points)(Possible to set from 0 to 6m for optical axis direction)
	Output 2, 3	Linear setting to progressive direction, Fan-shaped setting to optical axis direction, Percentage(%) setting against output 1 pointer
2-scanning operation mode		Setting from PC for each detecting output of detecting area
Hysteresis		10% or less of detecting distance(Not smaller than 60mm)
Output		Photo-coupler/open-collector output(30VDC, 50mA) Output1・2・3: OFF when detected in area, Trouble output: ON during normal operation ＊
Input		Photo-coupler input(Anode common, each input current 4mA or more), Changeover of setting area
Detecting area setting		Set area No. by Input 1, Input 2, Input 3 and Input 4 Stop emission by getting all Input 1, Input 2, Input 3 and Input 4 to ON(OFF: H level input, ON: L level input)
Output response time		180msec or less(Scanning speed: 1rev./100msec) 2-scanning operation mode: 280msec or less(Excluding for 100msec, area changeover time ）
Input response time		Input taking-in cycle: 1 scanning time(100msec)
Indicator		Power lamp(green): Flickered when troubles, output1・2・3 lamp(orange): Lights up when detected in area
Connection		Lead wire 1m long
Ambient illuminance Note）		Halogen/mercury lamp: 10,000lux or less,Fluoresncet lamp: 6,000lux or less
Ambient temperature/humidity		-10℃ to +50℃, 85％RH or less(Not condensing, not icing)
Protective structure		IP64(IEC standard)
Case materials		Front case: Polycarbonate, rear case: ABS resin
Weight		Approx. 500g

＊When trouble output was executed, all output 1 to 3 is indicating detection state.
Note) It may cause malfunctions if strong light such as sunlight etc. entered.
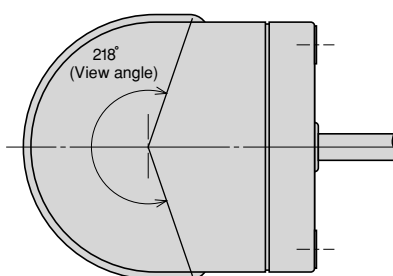
■Connection

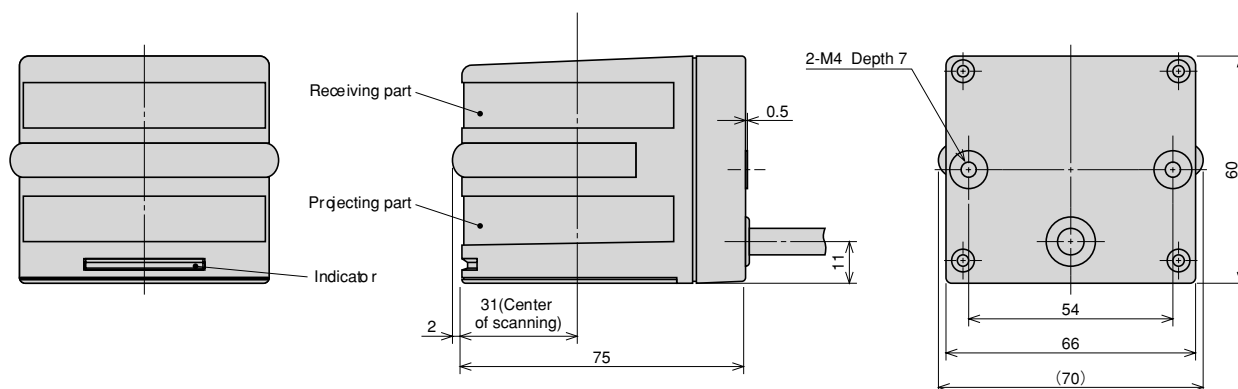### Input/output circuit
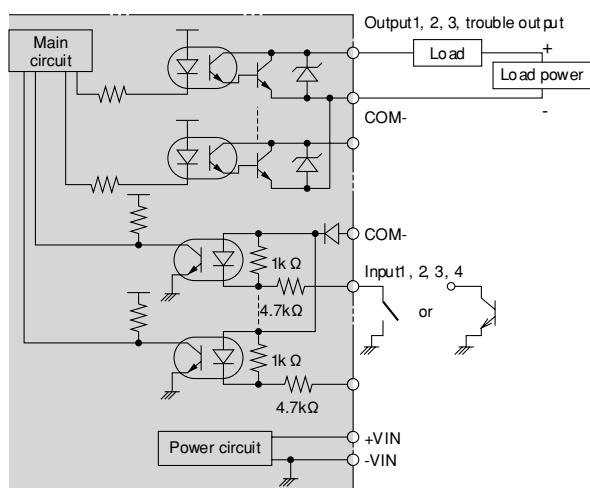
Connection table

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(24VDC)
Blue	-VIN
Yellow(red)	Serial input(RXD)
Yellow(green)	Serial output(TXD)
Yellow(black)	Serial GND

Note1) Colors in parenthesis indicate ink color of both sides line printing.
Note2) Connect unused input cable to input common +(Red) or open it.
　　　 Connect unused output cable to output common -(Gray) or open it.
Note3) Input/output direction is based on PB9.

■External dimension

218° (View angle)

Note) Detecting range is 180°.

Receiving part

Projecting part

Indicator

0.5

2-M4 Depth 7

31(Center of scanning)

2

75

11

60

54

66

(70)

■ Caution

(1) It may cause malfunction when there are any mirrors or reflective plates at 19m or more ahead. In case that, install the sensor in 6 degrees upward or downward.

(2) Don't close light-projecting/receiving window or interrupt area when installation

(3) Wiring should be kept away from power line or high voltage line or load line as far as possible because of affection of noise or surge induction.

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