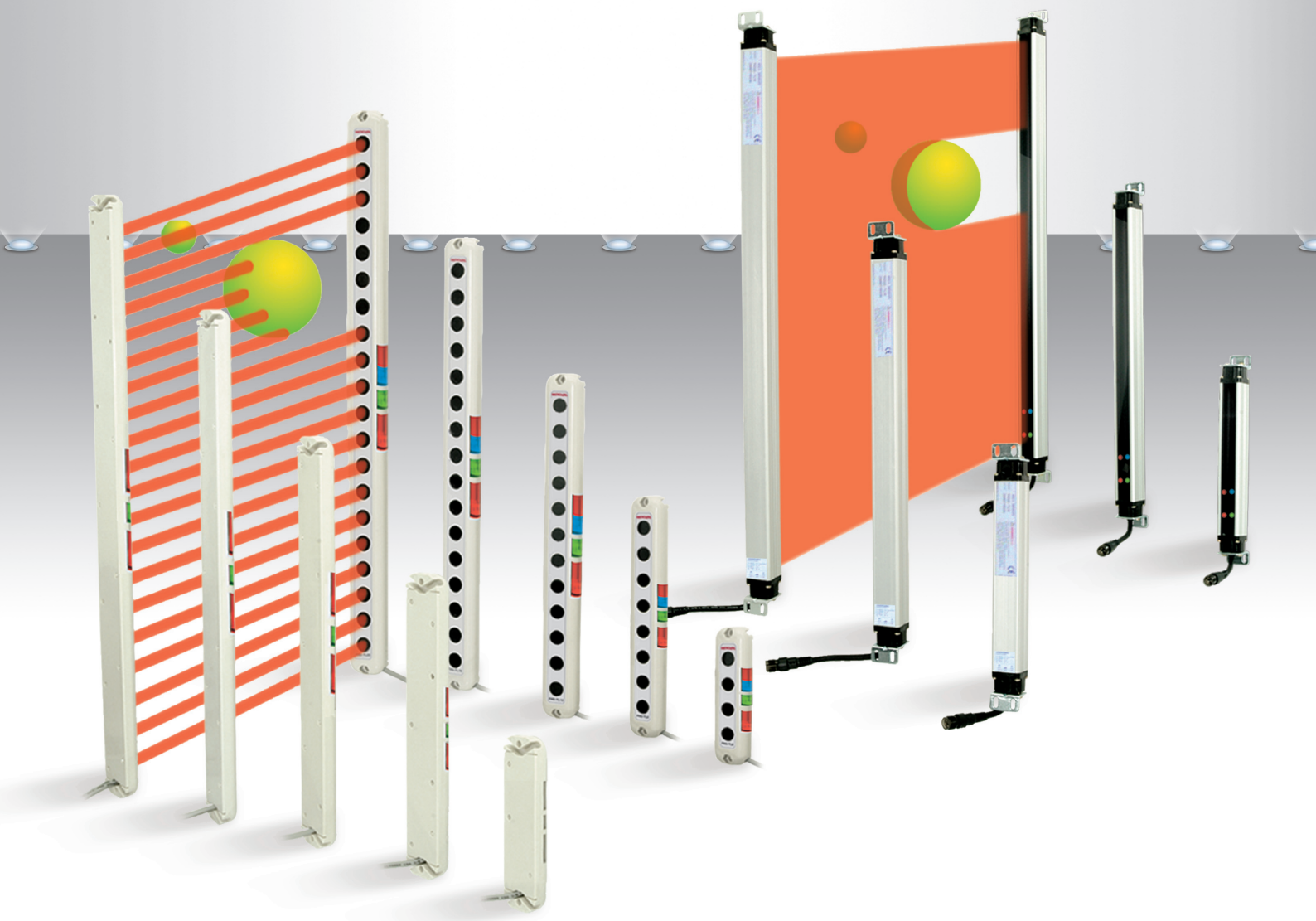


# PAS series

Area sensor

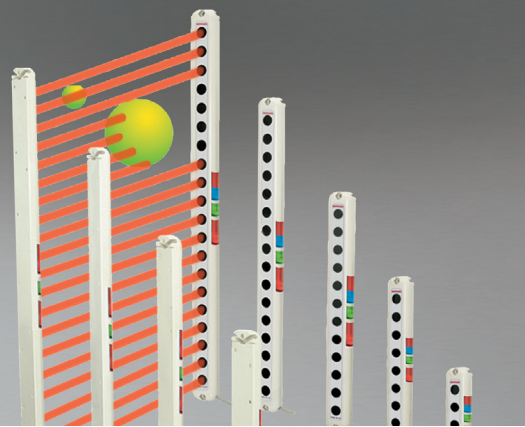
# PAN series

High reliable optical area sensor with an exclusive I.C.



# AREA SENSOR

# PAS series



## Area sensor

- ▶ Simple installation, less space (Thickness: 13.5 mm, Width : 30 mm)
- ▶ Built in the auto sensitivity compensating function
- ▶ Built in the mutual interference preventing function
- ▶ Minimum sensing object (Ø 33 mm)

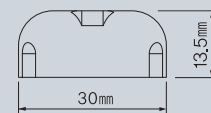
### → Suffix code

Model	Code	Description
PAS -	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Area sensor
Sensing method	T	Through beam
Number of optical axis	4	4 optical axis
	8	8 optical axis
	12	12 optical axis
	16	16 optical axis
	20	20 optical axis
Control output	N	NPN open collector
	P	PNP open collector

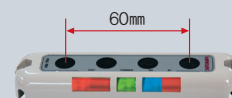
### → Specification

Model	NPN	PAS-T4N	PAS-T8N	PAS-T12N	PAS-T16N	PAS-T20N
	PNP	PAS-T4P	PAS-T8P	PAS-T12P	PAS-T16P	PAS-T20P
Number of optical axis		4	8	12	16	20
Sensing width		60 mm	140 mm	220 mm	300 mm	380 mm
Sensing method	Through beam type					
Sensing distance	5 m					
Sensing object	Opaque object above Ø30 mm					
Optical axis pitch	20 mm					
Power supply voltage	12 - 24 V d.c ±10 % (max Ripple 10%)					
Current consumption	max 80 mA	max 90 mA	max 100 mA	max 110 mA	max 110 mA	max 120 mA
Output	NPN/PNP open collector output less than 100 mA (30 V d.c) Induced load : 50 mA, Remaining voltage : max 1 V d.c					
Output mode	All optical axes L.ON, then ON operation (More than 1 optical axis D.ON then OFF operation)					
Output action	All optical axes L.ON, then ON operation (More than 1 optical axis D.ON then OFF operation)					
Weight	max 160 g	max 180 g	max 200 g	max 220 g	max 220 g	max 240 g
Response time	max 7 ms					
Pointing angle	Within ±5° (Only with distance more than sensing distance (2m))					
Light source (wave length)	Infrared LED (880 nm)					
LED	Trns : Power display(Green LED), M/S display(Red LED), Output Display(Red LED) Rcvr : Light on stability display(Green LED), Output Display(Red LED) E1 display(Red LED), E2 display(Blue LED)					
Ambient illumination	Sunlight : max 10,000 Lux					
Ambient temperature	-10 ~ 55 °C (surrounding storage temperature : -25 ~ 70 °C)					
Ambient humidity	35 ~ 85 % R.H. (without no condensation)					
Protective structure	IP 40 (IEC)					
Insulation resistance	min 20 MΩ (500 V d.c)					
Dielectric strength	1,000 V a.c, 50/60 Hz for 1 min (Between the current part and case)					
Vibration resistance	10 - 55 Hz, double amplitude : 1.5 mm, for 2 hours in X, Y and Z direction					
Shock resistance	500 ٪, 3 times each in X, Y and Z directions					
Connection method	Cable extended type, 0.2 mm <sup>2</sup> 5pin, Thickness : Ø4.3 mm, Length : 3 m					
Material	Case : ABS, Display unit : Acryl					
Protective function	Auto sensitivity compensation, mutual interference prevention in parallel installation (M/S mode) reverse polarity protection, over current protection					

- 13.5 mm Slim size  
(Simple installation at the narrow space)



- Minimized 4 optical axis  
(Sensing width : 60 mm)

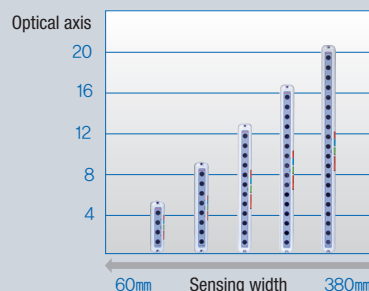


- Auto sensitivity compensating function  
- using exclusive ASIC IC

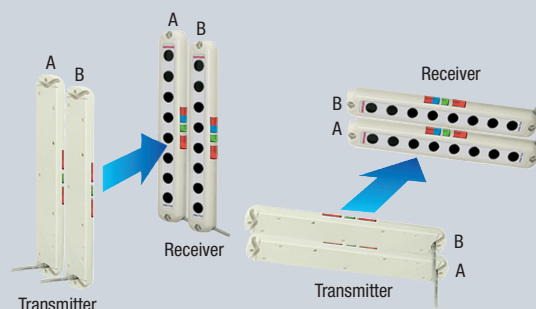


- Picking sensing function

- Various sensing width 60 mm - 380 mm

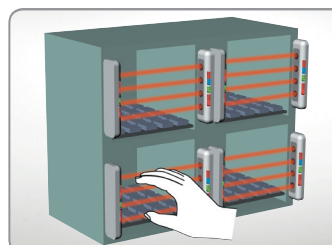


- In case of using mutual interference preventing function  
- not effected by another near sensor

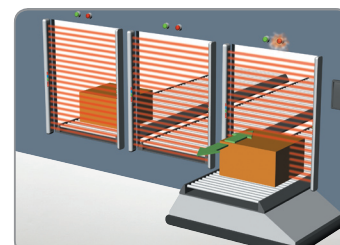


## Example of using PAS series

### → Picking sensor application



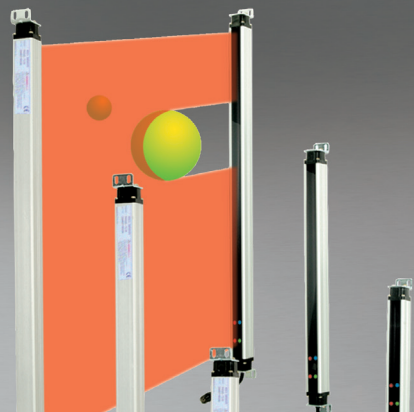
When taking an object out of box or container



When putting in and taking out an object

High reliable optical area sensor with an exclusive I.C.

# PAN series



## High reliable optical area sensor with an exclusive I.C.

- ▶ Various gap of optical axis
- ▶ Built in the mutual interference preventing function
- ▶ Built in the output break protecting circuit
- ▶ A, O operation mode selection  
(When all optical axes/1 optical axis light on then ON)

### ➔ Suffix code

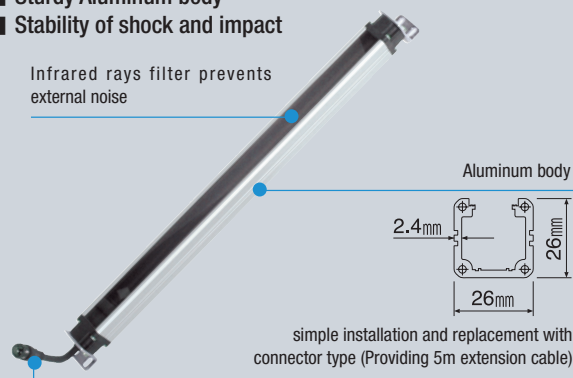
Model	Code	Description
PAN -	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Area sensor
Optical axis pitch	10	10 mm gap (coming soon)
	20	20 mm gap
	40	40 mm gap
Sensing method	T	Through Beam
Number of optical axis	16	Number of optical axis (please refer to the dimension)
Output	N	NPN open collector
	P	PNP open collector

### ➔ Specification

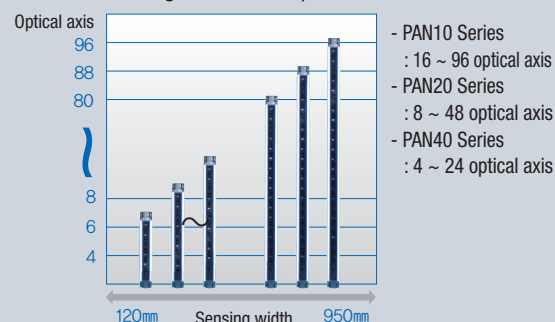
Model	NPN	PAN10-T <input type="checkbox"/> N	PAN20-T <input type="checkbox"/> N	PAN40-T <input type="checkbox"/> N
	PNP	PAN10-T <input type="checkbox"/> P	PAN20-T <input type="checkbox"/> P	PAN40-T <input type="checkbox"/> P
Sensing method	Through beam			
Sensing distance	2 m		7 m	
Sensing object	opaque object min Ø17 mm		opaque object min Ø32 mm	opaque object min Ø52 mm
Optical axis pitch	10 mm		20 mm	40 mm
Power supply voltage	12 - 24 V d.c ±10 % ( Ripple less than 10 % )			
Current consumption	max 220 mA		max 170 mA	max 100 mA
Response time	max 30 ms		max 15 ms	max 7 ms
Weight	Approx 1400 g (Included the weight of box)		Approx. 1400 g (Included the weight of box)	Approx. 1400 g (Included the weight of box)
Output	NPN/PNP open collector output , max 100 mA (30 V d.c) Inductive load : 50 mA, Remaining voltage : max 0.5 V d.c			
Operation mode	Transmitter : select the master/slave operation (mutually preventing interference function) Receiver : A mode (ON when all optical axis L.ON)/O mode (select ON when 1 optical axis L.ON)			
Light source (wave length)	Infrared LED (880 nm)			
LED	Transmitter : Power indicator(Green LED), M/S display(Red LED) Receiver : Light on stability display(Green LED), output Display(Red LED) E1 display(Red LED), E2 display(Blue LED)			
Protective circuit	Built in the reversed power supply connection protective circuit and output short protective circuit			
Ambient illumination	Sunlight : max 11,000 Lux, Incandescent lamp : max 3,000 Lux			
Ambient temperature	-10 ~ 55 °C (Surrounding storage temperature : -25 ~ 70 °C)			
Ambient humidity	35 ~ 85 % R.H. (With no condensation)			
Protective structure	IP 65 (IEC)			
Insulation resistance	min 20 MΩ (500 V d.c between the code and case)			
Dielectric strength	500 V a.c, 50/60 Hz for 1 min			
Vibration resistance	10 - 55 Hz, double amplitude : 1.5 mm, for 2 hours in X, Y and Z direction			
Shock resistance	500 ٪, 3 times each in X, Y and Z directions			
Connection method	Connector cord extended type, cord length : 200 mm, Applying code : 0.5 mm×4, Dimension : Ø5.5 mm connector			
Material	Case : aluminum, front cover and lens: acryl			

- Sturdy Aluminum body
- Stability of shock and impact

Infrared rays filter prevents external noise



- Various optical axis number (Maximum optical axis: 96 optical axes)
- Various sensing width (minimum sensing width 120mm to maximum sensing width 950mm)



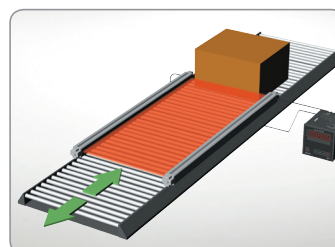
- 2 operation modes selection

- A operation mode: all optical axis sensing - output ON
- O operation mode: at least one axis sensing - output ON

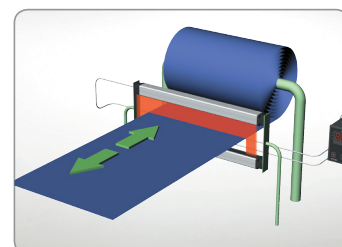


## Example of using PAN series

### ➔ Automation device application



moving control with conveyer



defective detection



Control Switch



Control Instrument



Photo Sensor / Proximity Sensor



Thyristor Power Regulator



Sign tower / Signal light

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Sign tower / Signal light / Buzzer / Terminal block / Fuse holder / Control box / Cable connector