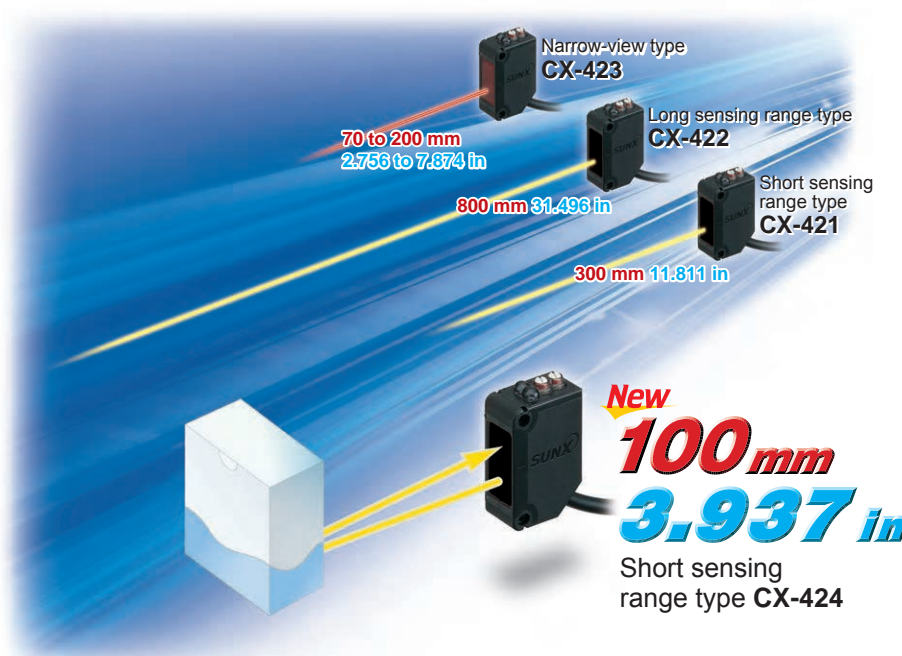


## New CX-424

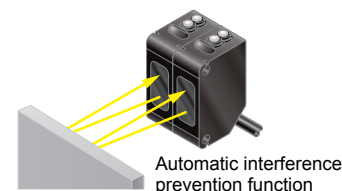


# New 100 mm 3.937 in short sensing-range type



### Ideal for sensing over short distances

These sensors are ideal for sensing over short ranges of 100 mm 3.937 in. They have a wider volume adjustment range and allow more stable sensing compared to long sensing range types. In addition, an automatic interference prevention function is provided so that two sensors can be mounted close together.



### Full lineup of 100 models

The CX-400 series include 300 mm 11.811 in and 800 mm 31.496 in diffuse reflective type sensors, and also a 200 mm 7.874 in narrow-view type. Plus there are retroreflective types and thru-beam types, for a total of 100 different models in the overall lineup, so that there is a sensor for any application you may choose.

### Less processing

M8 plug-in connector type and M12 pigtailed type are available. This contributes to less time spent in setting up and maintenance.

### Less energy used • Less resources used

These sensors consume only 60 % of the power of previous models. In addition, cable types are available with cable lengths of 0.5 m 1.640 ft, 2 m 6.562 ft and 5 m 16.404 ft. Reduces waste and contributes to environmental conservation.



### Strong against noise

The sensors are fully protected against electrical noise and extraneous light such as high frequency fluorescent light.

### Strong even in cold environments

Stable performance can be maintained even in environments of  $-25^{\circ}\text{C}$   $-13^{\circ}\text{F}$ .

## ORDER GUIDE

Type			Model No.	Standard (Cable length: 2 m 6.562 ft)	0.5 m 1.640 ft cable length type	5 m 16.404 ft cable length type	M8 plug-in connector type (Note 1)	M12 pigtailed type (Note 1)
Diffuse reflective	100 mm 3.937 in	NPN output	CX-424	CX-424-C05	CX-424-C5	CX-424-Z	CX-424-J	
		PNP output	CX-424-P	CX-424-P-C05	CX-424-P-C5	CX-424-P-Z	CX-424-P-J	
	300 mm 11.811 in	NPN output	CX-421	CX-421-C05	CX-421-C5	CX-421-Z	CX-421-J	
		PNP output	CX-421-P	CX-421-P-C05	CX-421-P-C5	CX-421-P-Z	CX-421-P-J	
	800 mm 31.496 in	NPN output	CX-422	CX-422-C05	CX-422-C5	CX-422-Z	CX-422-J	
		PNP output	CX-422-P	CX-422-P-C05	CX-422-P-C5	CX-422-P-Z	CX-422-P-J	
	Narrow- view	NPN output	CX-423	CX-423-C05	CX-423-C5	CX-423-Z	CX-423-J	
		PNP output	CX-423-P	CX-423-P-C05	CX-423-P-C5	CX-423-P-Z	CX-423-P-J	

Notes: 1) Please order the suitable mating cable separately for M8 plug-in connector type and M12 pigtailed type.

2) Refer to the 'sensor general catalog 2003-2004' or the 'CX-400 series catalog' for other lineup (thru-beam type and retroreflective type).

### • Mating cables

#### For M8 plug-in connector type

Straight type CN-24A-C2 (2 m 6.562 ft) CN-24A-C5 (5 m 16.404 ft)  
Elbow type CN-24AL-C2 (2 m 6.562 ft) CN-24AL-C5 (5 m 16.404 ft)

#### For M12 pigtailed type

4-core CN-24-C2 (2 m 6.562 ft) CN-24-C5 (5 m 16.404 ft)

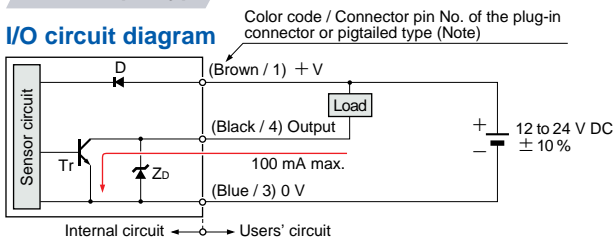
## SPECIFICATIONS

Type	NPN output	PNP output
Item	Model No.	Model No.
Sensing range	100 mm 3.937 in (Note)	
Sensing object	Opaque, translucent or transparent object	
Hysteresis	15 % or less of operation distance	
Repeatability	1 mm 0.039 in or less (perpendicular to sensing axis)	
Supply voltage	12 to 24 V DC $\pm 10$ % Ripple P-P 10 % or less	
Current consumption	20 mA or less	
Output	NPN open-collector transistor • Maximum sink current: 100 mA • Applied voltage: 30 V DC or less • Residual voltage: 1 V or less (at 100 mA sink current) 0.4 V or less (at 16 mA sink current)	PNP open-collector transistor • Maximum source current: 100 mA • Applied voltage: 30 V DC or less • Residual voltage: 1 V or less (at 100 mA source current) 0.4 V or less (at 16 mA source current)
Output operation	Switchable either Light-ON or Dark-ON	
Short-circuit protection	Incorporated	
Response time	1 ms or less	
Operation indicator	Orange LED (lights up when the output is ON)	
Stability indicator	Green LED (lights up under stable light received condition or stable dark condition)	
Sensitivity adjuster	Continuously variable adjuster	
Automatic interference prevention function	Incorporated (Two units of sensors can be mounted close together.)	
Protection	IP67 (IEC)	
Ambient temperature	- 25 to + 55 °C - 13 to + 131 °F (No dew condensation or icing allowed), Storage: - 30 to + 70 °C - 22 to + 158 °F	
Ambient humidity	35 to 85 % RH, Storage: 35 to 85 % RH	
Emitting element	Infrared LED (Peak emission wavelength: 860 nm 0.034 in, modulated)	
Material	Enclosure: PBT (polybutylene terephthalate), Lens: acrylic, Indicator cover: acrylic	
Cable	0.2 mm <sup>2</sup> 3-core cable, 2 m 6.562 ft long	
Weight	50 g approx.	

Note: The sensing range is specified for white non-glossy paper (200 × 200 mm 7.874 × 7.874 in) as the object.

## I/O CIRCUIT AND WIRING DIAGRAMS

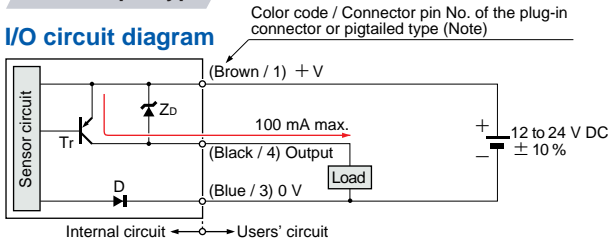
### NPN output type



Note: Refer to the 'sensor general catalog 2003-2004' or the 'CX-400 series catalog' for connector pin position of the M8 plug-in connector and M12 pigtailed types.

Symbols ... D : Reverse supply polarity protection diode  
Zd : Surge absorption zener diode  
Tr : NPN output transistor

### PNP output type



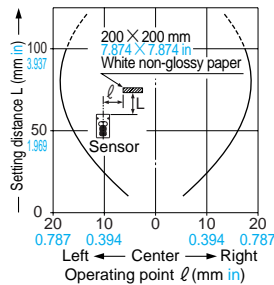
Note: Refer to the 'sensor general catalog 2003-2004' or the 'CX-400 series catalog' for connector pin position of the M8 plug-in connector and M12 pigtailed types.

Symbols ... D : Reverse supply polarity protection diode  
Zd : Surge absorption zener diode  
Tr : PNP output transistor

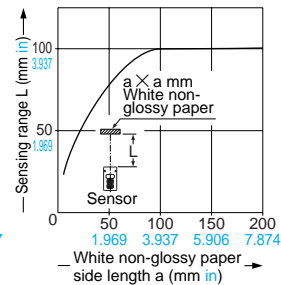
All information is subject to change without prior notice.

## SENSING CHARACTERISTICS (TYPICAL)

### Sensing field



### Correlation between sensing object size and sensing range (Note)



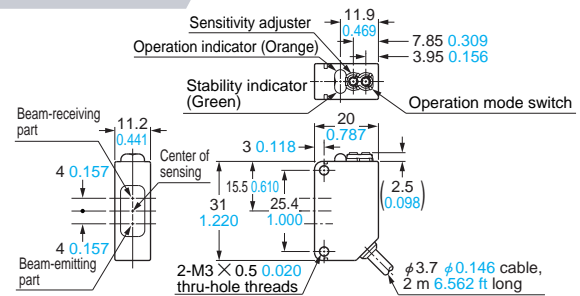
Note: As the sensing object size becomes smaller than the standard size (white non-glossy paper 200 × 200 mm 7.874 × 7.874 in), the sensing range shortens, as shown in the above graph. (For plotting the above graph, the sensitivity has been set such that a 200 × 200 mm 7.874 × 7.874 in white non-glossy paper is just detectable at a distance of 100 mm 3.937 in.)

## DIMENSIONS (Unit: mm in)

The CAD data in the dimensions can be downloaded from the SUNX website

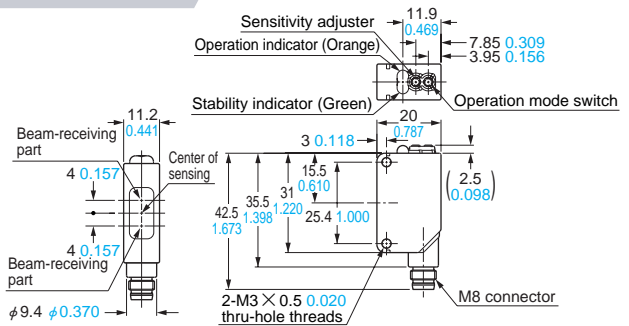
### CX-424

#### Sensor



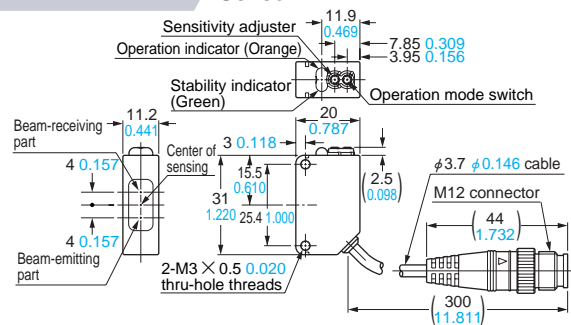
### CX-424-Z

#### Sensor



### CX-424-J

#### Sensor



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