

FIBER SENSORS

LASER SENSORS

PHOTOELECTRIC SENSORS

MICRO PHOTOELECTRIC SENSORS

AREA SENSORS

SAFETY COMPONENTS

PRESSURE SENSORS

INDUCTIVE PROXIMITY SENSORS

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WIRE-SAVING SYSTEMS

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STATIC CONTROL DEVICES

LASER MARKERS

Selection Guide

Fibers

FT / FD / FR

Fiber Sensor Amplifiers

FX-100**FX-300****FX-410****FX-311****FX-11A****FX-301-F**

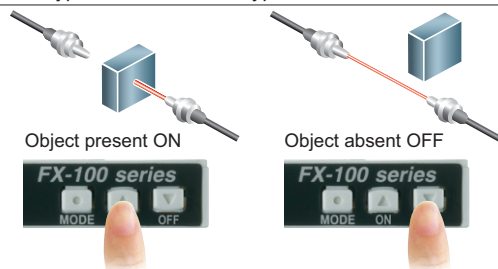
Other Products

Teaching using ON / OFF buttons [SET mode]

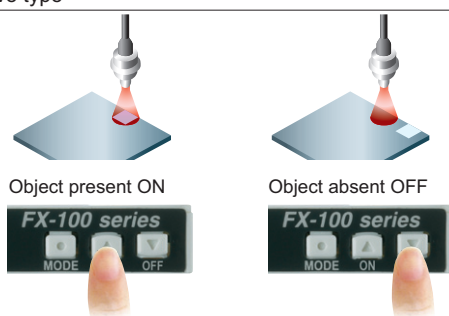
Simply press the ON button when an object is present and OFF when it is not. There is no need to switch settings or make judgments between Light-ON (*l_on*) and Dark-ON (*d_on*).

<Setting example>

Thru-beam type / Retroreflective type



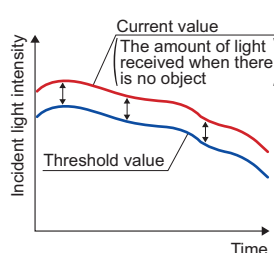
Reflective type

**Limit teaching function**

This carries out teaching and sets threshold values only when no object is present (when the incident light amount is stable). This is useful when sensing objects if there are other objects in the background and when sensing minute objects. Teaching can also be carried out using external input.

Threshold tracking function [PRO mode]

This function seeks changes in the light emitting amount resulting from changes in the environment over long periods (such as dust levels), so that the incident light intensity can be checked at desired intervals and the threshold values can be reset automatically.

**GETA function [PRO mode]**

The display value for the incident light intensity can be offset by the desired value (target value). The target value can be set to between 0 and 2,000 (in increments of 100). For example, if the incident light intensity is 1,500 and the target value is set to 2,000, then "2,000" will appear in the digital display.

Variations in the amount of light received

Unify at 500 using the GETA function

**Attenuation function [SET mode]**

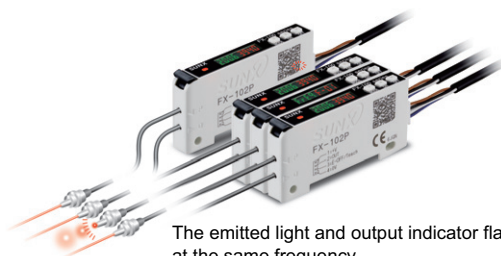
If the light receiving level becomes saturated when sensing over short distances or when sensing transparent objects or minute objects, the light emitting amount can be reduced so that stable sensing can be provided without needing to change the response time.

Interference prevention function [SET mode]

(FX-101□: Interference prevention for up to 3 units)
(FX-102□: Interference prevention for up to 4 units)

The emission frequencies can be set separately for each unit in order to avoid interference. The emitted light flashes while setting is in progress, so that you can see at a glance which fiber sensor is currently being set. In addition, this interference prevention is not done by using optical communication. This means that there is no need to place the amplifiers close together like there was before, and so the amplifiers can be set up apart from each other.

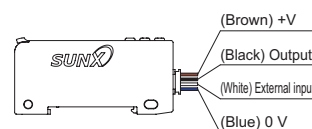
* When the emission frequencies are changed, the response times will also change.



The emitted light and output indicator flash at the same frequency.

Multi-function external input [PRO mode]

Settings such as emission halt, limit / auto teaching and ECO settings can be carried out via external input.



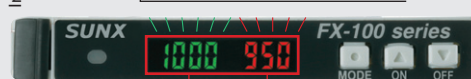
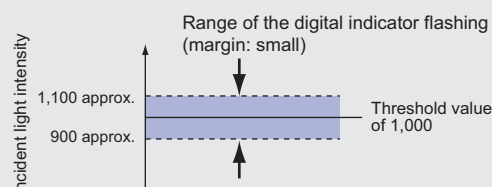
External input lines are equipped as standard

Alert function [PRO mode]

When the amount light received approaches the threshold value, the display can be made to blink in order to alert the operator.

<When using at a shift amount of 20% and a threshold value of 1,000>

The amount of light received ranges from about 900 to 1,100 when the digital indicator flashes.



The digital indicator flashes.

ORDER GUIDE**Amplifiers**

Type	Appearance	Model No.	Emitting element	Output
Standard type		FX-101 (Note 2)	Red LED	NPN open-collector transistor
		FX-101-Z (Note 3)		NPN open-collector transistor
		FX-101P (Note 2)		PNP open-collector transistor
		FX-101P-Z (Note 3)		PNP open-collector transistor
Long sensing range type		FX-101-CC2		NPN open-collector transistor
		FX-101P-CC2		PNP open-collector collector transistor
		FX-102 (Note 2)		NPN open-collector transistor
		FX-102-Z (Note 3)		NPN open-collector transistor
		FX-102P (Note 2)		PNP open-collector transistor
		FX-102P-Z (Note 3)		PNP open-collector transistor
		FX-102-CC2		NPN open-collector transistor
		FX-102P-CC2		PNP open-collector transistor

Accessory• **CN-14A-C2**(Connector attached)
cable 2 m 6.562 ft

* Only include cable set type

Notes: 1) The connector attached cable **CN-14A-C2** is supplied with the amplifier.2) Make sure to use the optional connector attached cable **CN-14A(-R)-C□** or the connector **CN-14A**, or a connector manufactured by J.S.T. Mfg. Co., Ltd. (contact: SPHD-001T-P0.5, housing: PAP-04V-S)3) Make sure to use the optional M8 connector attached cable **CN-24A-C□**.**OPTIONS**

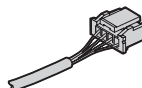
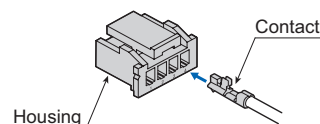
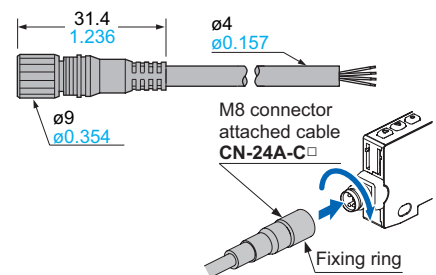
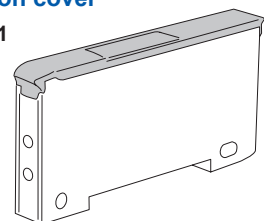
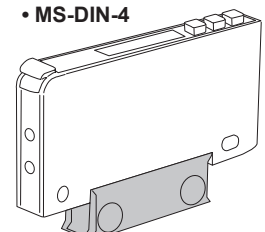
Designation	Model No.	Description	
Connector attached cable	CN-14A-C1	1 m 3.281 ft	0.02 mm ² 4-core cabtyre cable with connector on one end Cable outer diameter: ø3.7 mm ø0.146 in
	CN-14A-C2 (Note)	2 m 6.562 ft	
	CN-14A-C3	3 m 9.843 ft	
	CN-14A-C5	5 m 16.404 ft	
Connector attached cable (Flexible type)	CN-14A-R-C1	1 m 3.281 ft	For M8 plug-in connector type The connector on one end Cable outer diameter: ø4 mm ø0.157 in
	CN-14A-R-C2	2 m 6.562 ft	
	CN-14A-R-C3	3 m 9.843 ft	
	CN-14A-R-C5	5 m 16.404 ft	
M8 connector attached cable	CN-24A-C2	2 m 6.562 ft	For M8 plug-in connector type The connector on one end Cable outer diameter: ø4 mm ø0.157 in
	CN-24A-C5	5 m 16.404 ft	
Connector	CN-14A	Set of 10 housings and 40 contacts	
Protection cover	FC-FX-1	This protects the operating surfaces.	
Amplifier mounting bracket	MS-DIN-4	Mounting bracket for amplifier	
End plates	MS-DIN-E	When it moves depending on the way it is installed on a DIN rail these end plates ensure that all amplifiers are mounted together in a secure and fully connected manner.	
		Two pcs.per set	

Note: The connector attached cable **CN-14A-C2** is supplied with the cable set type **FX-10□(P)-CC2**.**Recommended connector**Contact: SPHD-001T-P0.5, Housing: PAP-04V-S
(Manufactured by J.S.T. Mfg. Co., Ltd.)

Note: Contact the manufacturer for details of the recommended products.

Recommended crimping toolModel No.: YC-610R
(Manufactured by J.S.T. Mfg. Co., Ltd.)

Note: Contact the manufacturer for details of the recommended products.

Connector attached cable• **CN-14A(-R)-C□****Connector**• **CN-14A****M8 connector attached cable**• **CN-24A-C□****Protection cover**• **FC-FX-1****Amplifier mounting bracket**• **MS-DIN-4**

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