Panasonic
INDUSTRY

Manually Set Fiber Sensor

FX-311 SERIES

Manually Set Fiber Sensor
FX-311 SERIES

CE UL Recognition

PNP output type available

Timer

Interference prevention

Highly sensitive manual tuning made easy

12-turn potentiometer with visible indicator

12-turn potentiometer has been incorporated for fine adjustments.
It enables detection of very fine differences.
Moreover, since the pointer of indicator has a red backlight, you can confirm the position at a glance, even in a dark area.

Indicator

12-turn potentiometer
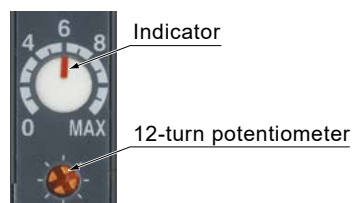
Long life and reduced maintenance work-hours

The light-emitting elements of conventional fiber sensors are affected by temperature and long-term use, changing their emission over time and requiring sensitivity readjustment. **FX-311** (Red LED type) employs the new "four-chemical LED", first used in the **FX-301** (red LED type).
This emitter greatly reduces adverse influences on emission performance, resulting in stable operation that almost never needs adjustment.

Rapid flashing "assist function" eases adjustment for optimum sensitivity

The **FX-311** series has a convenient built-in "assist function" which indicates the optimum sensitivity position by flashing rapidly when optimum sensitivity is reached. This enables easy and reliable sensitivity adjustment, which is convenient for a narrow sensing range requiring fine tuning.

* In order enable the "assist function", switch the operation selection switch from L-ON→D-ON→L-ON .

1 Find the point Ⓐ where the sensor is switched ON in the sensing (beam received) condition

Sensing method
Sensing (beam received) condition

Ⓐ ON

The pointer flashes once at point Ⓐ

2 In the non-sensing (beam not received) condition, turn the adjuster until ON state again, turn the adjuster counterclockwise and find the point Ⓑ where it is switched OFF

Sensing method
Non-sensing (beam not received) condition

Ⓐ Ⓑ OFF ON

Confirm operation indicator lights up

The pointer flashes twice at point Ⓑ

3 Optimum sensitivity point located

Ⓐ Ⓑ

Sensing range

The pointer flashes faster at optimum sensitivity

ORDER GUIDE

Amplifiers | Quick-connection cable is not supplied with the amplifier. Please order it separately.

Type		Appearance	Model No.	Emitting element	Output
Manually set	NPN output		**FX-311**	Red LED	NPN open-collector transistor
			FX-311B	Blue LED	
			FX-311G	Green LED	
	PNP output		**FX-311P**	Red LED	PNP open-collector transistor
			FX-311BP	Blue LED	
			FX-311GP	Green LED	

Quick-connection cables | Quick-connection cable is not supplied with the amplifier. Please order it separately.

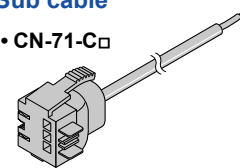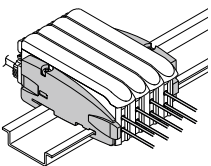| Type	Model No.	Description	
Main cable (3-core)	**CN-73-C1**	Length: 1 m 3.281 ft	0.2 mm² 3-core cabtyre cable, with connector on one end. Cable outer diameter: ø3.3 mm ø0.130 in
	CN-73-C2	Length: 2 m 6.562 ft	
	CN-73-C5	Length: 5 m 16.404 ft	
Sub cable (1-core)	**CN-71-C1**	Length: 1 m 3.281 ft	0.2 mm² 1-core cabtyre cable, with connector on one end. Cable outer diameter: ø3.3 mm ø0.130 in
	CN-71-C2	Length: 2 m 6.562 ft	
	CN-71-C5	Length: 5 m 16.404 ft	

Main cable

• **CN-73-C□**
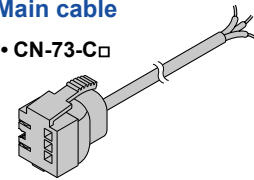
Sub cable

• **CN-71-C□**

End plates | End plates are not supplied with the amplifier. Please order them separately when the amplifiers are mounted in cascade.

Appearance	Model No.	Description
	MS-DIN-E	When amplifiers are mounted in cascade, or when an amplifier moves depending on the way it is installed on a DIN rail, these end plates clamp amplifiers into place on both sides. Make sure to use end plates when cascading multiple amplifiers together. 2 pcs. per set

■ OPTIONS

| Designation	Model No.	Description
Amplifier mounting bracket	**MS-DIN-2**	Mounting bracket for amplifier
Hand-turned knob attached cover	**FX-AJ1**	Hand-turned knob allows easy adjustment of sensor sensitivity.
Fiber amplifier protection seal	**FX-MB1**	10 sets of 2 communication window seals and 1 connector seal Communication window seal: It prevents malfunction due to transmission signal from another amplifier, as well as, prevents effect on another amplifier. Connector seal: It prevents contact of any metal, etc., with the pins of the quick-connection cable.

Amplifier mounting bracket

• **MS-DIN-2**
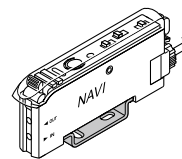
Hand-turned knob attached cover

• **FX-AJ1**

Fiber amplifier protection seal

• **FX-MB1**

Communication window seal

Connector seal
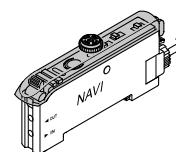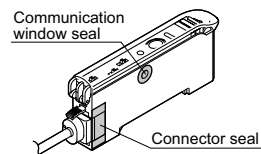
■ LIST OF FIBERS

Refer to our website for details of each fiber.
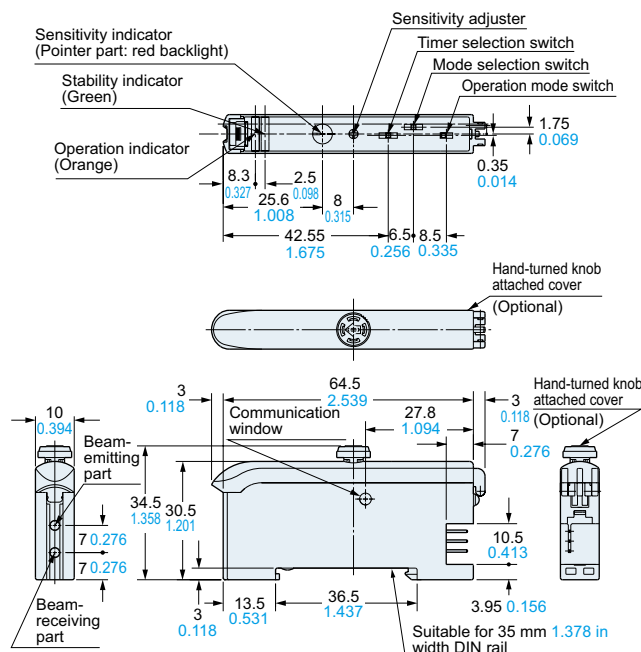
■ DIMENSIONS (Unit: mm in)

The CAD data can be downloaded from our website.
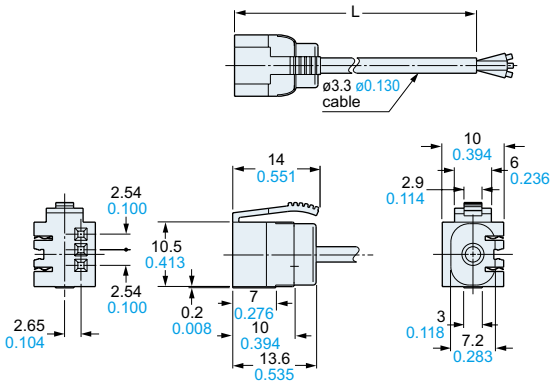
FX-311□ FX-311□P   `Amplifier`

Mounting drawing with a hand-turned knob attached cover FX-AJ1 (Optional)

■ DIMENSIONS (Unit: mm in)
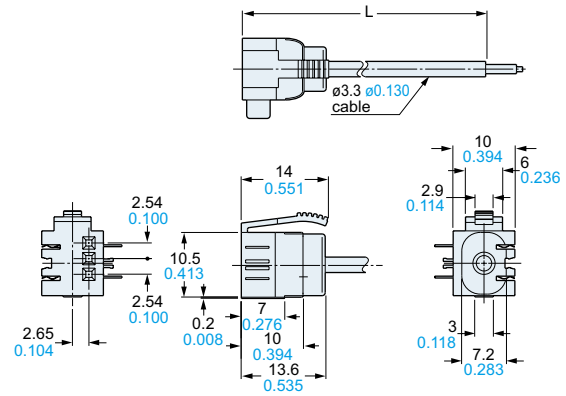
The CAD data can be downloaded from our website.

CN-73-C□ — Main cable (Optional)

ø3.3 ø0.130 cable

14 (0.551)
2.54 (0.100)
10.5 (0.413)
2.54 (0.100)
2.65 (0.104)
0.2 (0.008)
7 (0.276)
10 (0.394)
13.6 (0.535)

10 (0.394)
6 (0.236)
2.9 (0.114)
3 (0.118)
7.2 (0.283)

• Length L

Model No.	Length L	
CN-73-C1	1,000	39.370
CN-73-C2	2,000	78.740
CN-73-C5	5,000	196.850

CN-71-C□ — Sub cable (Optional)

ø3.3 ø0.130 cable

14 (0.551)
2.54 (0.100)
10.5 (0.413)
2.54 (0.100)
2.65 (0.104)
0.2 (0.008)
7 (0.276)
10 (0.394)
13.6 (0.535)

10 (0.394)
6 (0.236)
2.9 (0.114)
3 (0.118)
7.2 (0.283)

• Length L

Model No.	Length L	
CN-71-C1	1,000	39.370
CN-71-C2	2,000	78.740
CN-71-C5	5,000	196.850

MS-DIN-2 — Amplifier mounting bracket (Optional)

21.6 (0.850)
16 (0.630)
5.2 (0.205)
8.5 (0.335)
3.2 (0.126)
5.2 (0.205)
3.2 (0.126)
35 (1.378)
10 (0.394)
5 (0.197)

0.4 (0.016)
ø1.8 ø0.071
2 (0.079)
2 (0.079)
7.5 (0.295)
4.2 (0.165)
t 1 t 0.039
2-ø3.2 ø0.126 holes
27 (1.063)
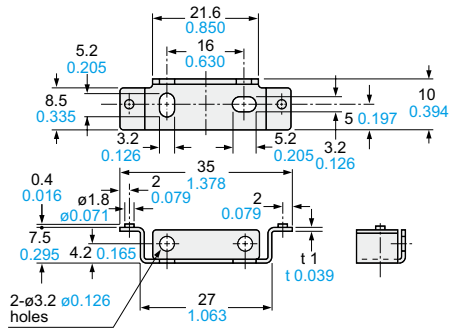
Material: Cold rolled carbon steel (SPCC)
(Uni-chrome plated)

MS-DIN-E — End plate (Optional)

2.75 (0.108)
M3 (length 18 mm 0.709 in) pan head screws

3 (0.118)
60 (2.362)
3 (0.118)
15 (0.591)
5.6 (0.220)
24.7 (0.972)
1.6 (0.063)
32 (1.260)
4 (0.157)
M3 square nut

Suitable for 35 mm 1.378 in width DIN rail
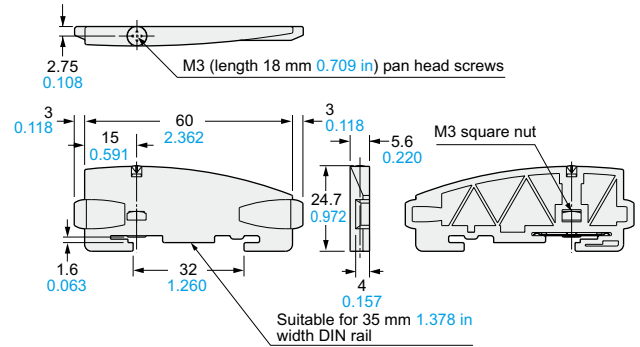
Material: Polycarbonate

Panasonic

INDUSTRY

Panasonic Industry Co., Ltd.

Industrial Device Business Division
7-1-1, Morofuku, Daito-shi, Osaka 574-0044, Japan
industrial.panasonic.com/ac/e/