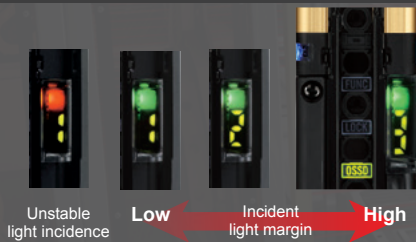# Panasonic

Industry's First [*1]

◉ IO-Link Communication Unit

For **"visualization"** of
safety light curtains [*2]

*1 As of June 2018, in-company survey
*2 **SF4D** series only

Easy add-on!
No alteration of safety circuit necessary

Remote monitoring of safety light curtain status

Unstable light incidence

Low ← Incident light margin → **High**

Line A – Safety light curtain operating status

Incident light intensity 3 | Incident light intensity 3
Lockout occurred in Process 3 safety light curtain.
Error code 4:
Receiving extraneous light or light from another device.
Incident light intensity 1 | **OSSD: OFF**

Confirmation of light intensity margin

Incident light intensity information enables the determination of whether maintenance is necessary or not. This helps prevent shut-down of the line due to light beam deviation or dirty sensor. The information is also useful in conducting remote inspection or the like at the start of work.
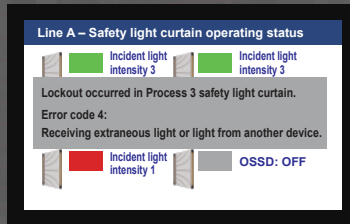
Confirmation of error history

If an error occurs, the source of the error and its detail can be checked remotely, thus facilitating the identification of the problem location and analysis of the cause.

### Storage of setting data, restoration of settings

One-touch setting after replacement

The setting data stored in the communication unit allows one-touch restoration of the settings when the safety light curtain is replaced.

Configuration diagram

Safety output is separated from IO-Link communication.

PC

PLC

◉ IO-Link master unit

Safety PLC

Safety Light Curtain
SF4D series
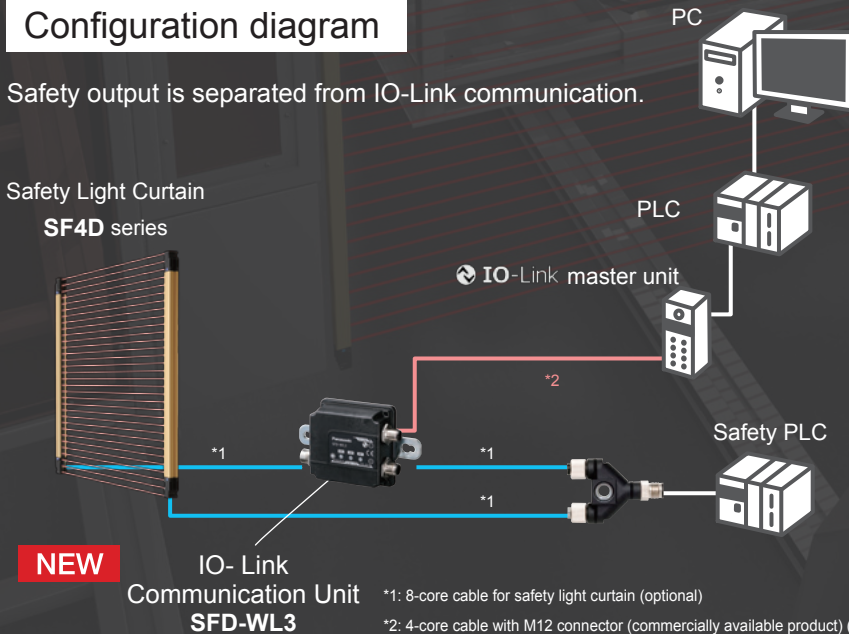
NEW

IO-Link Communication Unit
SFD-WL3

*1: 8-core cable for safety light curtain (optional)
*2: 4-core cable with M12 connector (commercially available product) (Note)

Note: The product and IO-Link master unit must be connected with a cable of 0.3 mm² or more. The total length of the cable must not exceed 20 m 65.517 ft.

Example of IO-Link data output

Process data
- Light received / blocked information
- Stable / unstable incident light information
- Extraneous light information
- Emitter / receiver lockout information
- Incident light intensity information (OFF, 1, 2, 3)
- OSSD output information
- Communication control status
- Number of units in series connection

Service data
- Safety light curtain main unit information
- **SFD-WL3** main unit information
- Incident light intensity information of individual beams (32 levels)
- Error code

SPECIFICATIONS

Product name	IO-Link communication unit for safety light curtain **SF4D** series					
Model No.	**SFD-WL3**					
Regulatory compliance	EMC Directive, RoHS Directive					
Communication method	Safety light curtain communication side	RS-485 bidirectional communication (dedicated protocol)				
	IO-Link communication side	IO-Link specifications: Ver. 1.1				
		Baud rate: COM3 (230.4 kbps)				
		Data length: 18 bytes, process data (PD)				
		Minimum cycle time: 1.5 ms				
Supply voltage	Safety light curtain communication side	24V DC $^{+20}_{-30}$ % Ripple P-P 10 % or less				
	IO-Link communication side	24V DC $^{+20}_{-25}$ % Ripple P-P 10 % or less				
Current consumption	Safety light curtain communication side	15 mA or less				
	IO-Link communication side	30 mA or less				
Functions	• IO-Link communication function • Safety light curtain setting data copy function (Note 1)					
Number of connectable units	This product	1 unit				
	Safety light curtains in series connection	Up to 5 units (total number of beam channels 256 or less)				
Environmental resistance	Dielectric strength voltage	1,000 V AC for one minute, between all supply terminals connected together and enclosure				
	Insulation resistance	20 MΩ or more, with 500 V DC megger, between all supply terminals connected together and enclosure				
	Vibration resistance	10 to 55 Hz, 0.75 mm 0.030 in double amplitude in X, Y, and Z directions for two hours each Malfunction resistance 10 to 55 Hz, 0.75 mm 0.030 in double amplitude in X, Y, and Z directions twenty times each					
	Shock resistance	300 m/s^2 acceleration (30 G approx.) in X, Y, and Z directions three times each Malfunction resistance 100 m/s^2 acceleration (10 G approx.) in X, Y, and Z directions 1,000 times each					

Degree of protection	IP64	
Excess voltage category	I	
Pollution degree	3	
Operating altitude	2,000 m 6561.68 ft or less (Note 2)	
Ambient temperature	-10 to +55 ˚C +14 to +131 °F (No dew condensation or icing allowed), Storage: -25 to +60 °C -13 to +140 °F	
Ambient humidity	30 to 85 % RH, Storage: 30 to 95 % RH	
Connection method	Safety light curtain communication side	8-core cable for safety light curtain (optional)
	IO-Link communication side	4-core cable with M12 connector (commercially available product)
Material	Main unit case: PA66 (with glass) Base plate: SPCC + Plating Product model nameplate: Polyester External connection connector: Brass + Plating	
Weight	270 g approx.	

Use the safety light curtain monitoring information obtained via IO-Link only for diagnostic purposes. Do not use it for safety control purposes.

Notes: 1) • The internal memory (nonvolatile) of this product has a service life. Settings cannot be configured more than 100,000 times.
　　　 • This product cannot be used to directly enter settings from the IO-Link master unit to a safety light curtain using IO-Link communication.
　　　 • The safety light curtain setting data copy function is designed only for use in maintenance / replace of safety light curtains.
　　　　Use the copy function only for loading the setting data of the previous safety light curtain to a new unit. Loading the data to a device other than a newly installed safety light curtain may result in improper device operation.
　　　 • This function cannot be used unless the product is connected with the IO-Link master unit and IO-Link communication is used.
　　 2) Do not use or store in an environment pressurized to atmospheric pressure or higher at an altitude of 0 m.

DIMENTIONS (Units: mm in)

The CAD data can be downloaded from our website.

Through hole for M8 mounting bolt [Recommended tightening torque: 5.5 (N·m)]
Through hole for M6 mounting bolt [Recommended tightening torque: 2.5 (N·m)]

130 5.118
112 4.409
100 3.937
79 3.110

(Through hole for M8 mounting bolt)
(Through hole for M6 mounting bolt)

16.2 0.638
79 3.110
20 0.787
7 0.276
32.4 1.276

4-core M12 connector (plug) on IO-Link side
8-core M12 connector (plug) on safety light curtain side
8-core M12 connector (socket) on safety light curtain side

15.8 0.622
73 2.874
16.5 0.650
33.7 1.327
19.7 0.776
3.2 0.126

Regarding the information of the safety light curtain **SF4D** series, please see our catalog.

Visit our website for details!
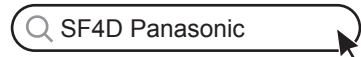
SF4D Panasonic

Please contact ....

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