

**IO-Link Dual Display Fiber Optic Sensor** 

**Intensify Productivity** 

SAL us CE

F85RN-ILP

# Smart solution with IO-Link technology

**Consistent Quality** 

**Maximize Capacity Utilization** 

Visualize problems by IO-Link sensors and make smarter approach to ideal factory automation.



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- Wide range of applications
- User-friendly operability with essential functions
- PNP/NPN dual output and IO-Link communication

# **Smart solutions**

# **Intensify Productivity**

- •Read and change device parameters remotely.
- ·Download parameters for setting a sensor automatically.
- •Easy identification of a sensor by location indicator.
- •No special or complicated wiring is reauired.

# **Consistent Quality**

## Monitoring information

- · Receiving light intensity
- Detection frequency
- Detection counter

## **Diagnostic information**

- Inner temperature
- Operating voltage
- •Total operating hours

# **Maximize Capacity Utilization**

- ·Restore parameters for replaced sensors.
- •Easy identification of a specific sensor by location indicator.
- Check operation by remote by LED disable command.
- ·Easy wiring by connector cables.

IO-Link feature enhances the operability of F85RN to a new stage with wider and successful applications.



## Applications

Detect production speed reduction



Monitor and analyze production information including detection counter and frequency, the production speed can be precisely controlled.

## Detect unwanted light disturbance



Monitor the receiving light intensity and alart an intensity increase due to unwanted light reflection by dew or condensation.

# Detect dirt or dust on the sensing surface



Monitor the receiveing light intensity and alart an intensity decrease due to dust or dirt on the sensor.

## Identify a specific sensor



The location indicator activates the sensor display flashing and pinpoints a specific sensor as needed.

F85RN-ILP: Essesntial fanctions with simple operability

#### Simple teaching using a single button Simple to sequentially select from four teaching modes using the [SET] button. [SET] butto Four types of teaching mode are available Two-point teaching mode The threshold is set at the mid-point between the SET light intensity levels set in two-point teaching mode. Press and hole Position teaching mode 2 Set the threshold required at the detecting location Press and hold (approx 8 sec or mo Window mode teaching 3 Set two thresholds(High/Low) in the Window Comparator mode. Press and hold Maximum sensitivity teaching mode 4 The threshold level is automatically set to a value higher than the maximum light intensity being SET received while [SET] is pressed. Press and hold (approx. 8 sec or mo Full auto teaching mode -5 The threshold level is set at the midpoint between the maximum and minimum values being received SET while [SET] is pressed.

# What is 🚷 IO-Link ?

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IO-Link is a point-to-point serial communication protocol between sensors and/or actuators. TAKEX is a member of the International IO-Link Consortium to promote the IO-Link communication protocol due to its significant advantages for the industry.



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#### SPECIFICATION

Model		F85RN-ILP				
Power supply		12 to 24VDC Ripple 10% or less %				
Power consumption		1000mW or less (40mA or less at 24V)				
Control output		PNP open collector output / Load current 100mA (30VDC, class2) or less / Residual voltage: 2V or less NPN open collector output / Load current 100mA (30VDC, class2) or less / Residual voltage: 2V or less				
Operation mode		Light ON / Dark ON				
	Timer	ON delay, OFF delay, ON/OFF delay, One-shot, Timer off Delay timer : 1ms to 9999ms (set in millisecond)				
Response time		H-SP mode : 50 $\mu s$ or less / Standard mode : 500 $\mu s$ or less / Long mode : 4ms or less / Super long mode : 32ms or less				
Light source (wavelength)		Four-element (ALGaInP) LED (660nm)				
Indicator		Operation indicator, Setting / Teaching indicator, Light ON/Dark ON indicator: orange LED				
Display Sensitivity setting		Received light level : 4 digits in red LED (high-speed mode (0 to 3800), standard/long/super long modes (0 to 9999)) Threshold : 4 digits in green LED (high-speed mode (0 to 3500), standard/long/super long modes (0 to 9700))				
		2-point teaching / Max sensitivity teaching / Full auto teaching / Positioning teaching / Window mode teaching				
Light source level adjustment		Provided (auto / manual)				
Mutual Interference prevention		UP to 8 units (standard, long, and super long modes) / 0 unit (high speed)				
Protection circuit		Power reverse connection / Output short-circuit protection				
Material		Polycarbonate				
Wiring		Cable with M12 connector (cable length: 0.15m) 0.2mm <sup>2</sup> ×4-core, o.d. Ø4.2mm)				
Weight		Approx. 35g				
Accessory		Instruction manual				

% UL: Class 2 power source

### ENVIRONMENTAL SPECIFICATION

Ambient light	Illumination on light receiving surface: 3,500 lx or less (incandescent lamp)			
Ambient temperature	1 to 5 adjacent units in operation : -25 to +55°C 6 or more adjacent units in operation : -25 to +50°C ※1 Storage: -40 to +70°C (no freezing or condensation)			
Ambient humidity	35 to 85% RH (no condensation)			
Protective structure	IP40			
Vibration	10 to 55 Hz / 1.5 mm double amplitude / 2 hours each in X, Y, and Z directions			
Shock	500 m/s² / 3 times each in X, Y and Z directions			
Dielectric withstanding	1000 VAC for 1 minute			
Insulation resistance	500 VDC mega, 20 M $\Omega$ or more			

%1 UL: Maximum ambient temperature: +50°C for single use, +40°C for two or more units connected installation.



• This product is designed for industrial applications to detect a various kinds of objects. It has no function to prevent disasters, accidents, death or injuries. • TAKEX will not held responsible for any damage or loss incurred due to accidents, faulty installation, abuse, misuse, improper maintenance or acts of God including liahtnina surae.

• This product cannot be used as safety equipment.

• This product is designed and manufactured for industrial use. It cannot be used where there is a requirement for a high degree of reliability or considerable care or attention to safety.

Read this instruction manual carefully and use the product properly according to it.
This instruction manual including the specifications and dimensions may be subject to change without notice.

## DIMENSIONS (in mm)



41

#### (Cable with connector) (available separately)

•FAC-D4R2L(L:2m)



(Mounting bracket) (available separately)



## DETECTING DISTANCE

		Detecting method	Detecting distance (mm)			
Appearance	Model		super long (SLnG)	Long (LonG)	standard (Stnd)	High speed (H-SP)
de-	FR5BC	Reflective	550	500	330	160
ar ar	FT5BC	Through beam	1500	1300	800	360

#### MOUNTING BRACKET

	Model		
<b>A</b>	AC-BF3		







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