TAKEX

IO-Link Dual Display Fiber Optic Sensor

F85RN-ILP

Smart solution with IO-Link technology

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

IO-Link

Improve Productivity and Reduce Operating Costs through IO-Link Technology

F85RN-ILP realizes high visibility in the field and visualizes various data through IO-Link.

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

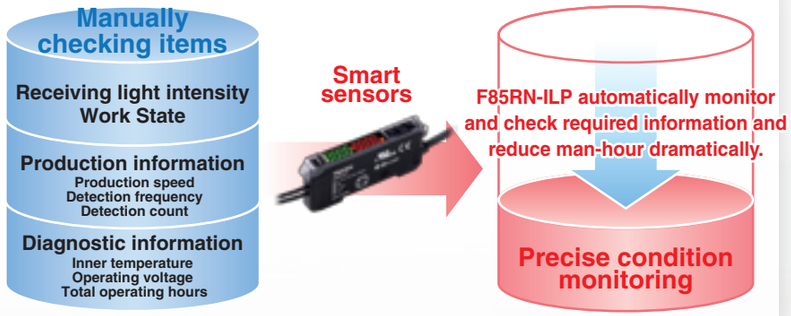
SMART AND EFFECTIVE SOLUTIONS:

	Issues to be solved	IO-Link	Smart solutions	
Production Line Start-up	• Start-up time and man-hour reduction	Cost saving	• Quick and smart ! • Automatic setting • Remote adjustment	**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 required.
Mass Production	• Precise condition monitoring	Improve productivity Higher production quality	Increased data availability • Production information • Sensor status • Irregular operation	**Consistent Quality** **Monitoring information** • Receiving light intensity •Detection frequency •Detection counter **Diagnostic information** • Inner temperature •Operating voltage •Total operating hours
Maintenance	• Reduce downtime • Quick recovery	Preventive maintenance Eliminate downtime	• Failure prediction • Diagnostic information • Preventive maintenance	**Maximize Capacity Utilization** •Restore parameters for replaced sensors. •Easy identification of a specific sensor by location indicator. •Check operation remotely 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.

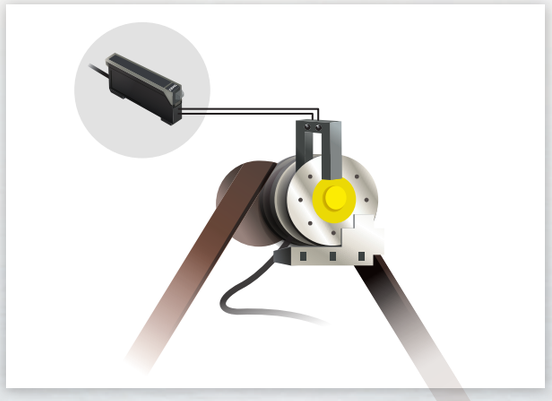
Preventive Maintenance

being achievable with lesser man-hour by introducing smart sensor: F85RN-ILP.



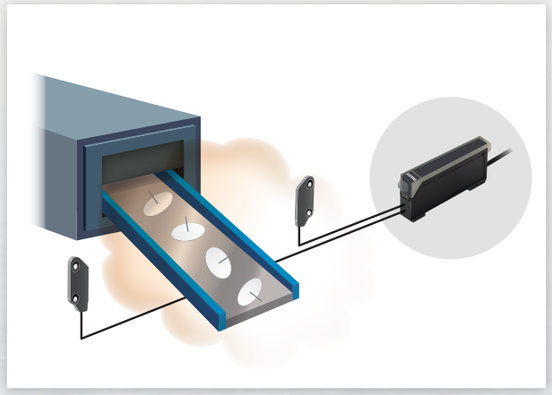
Applications

Detect production speed reduction



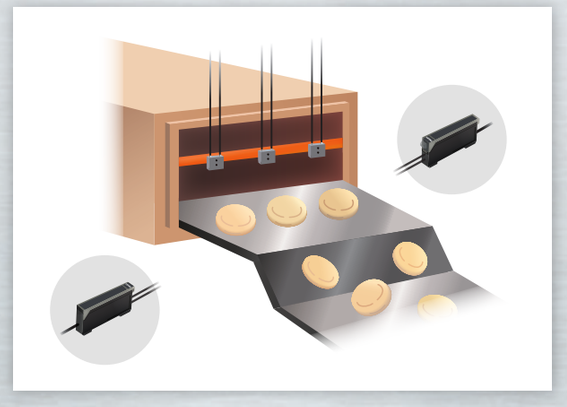
Monitor and analyze production information including detection counter and frequency, the production speed can be precisely controlled.

Detect dirt or dust on the sensing surface



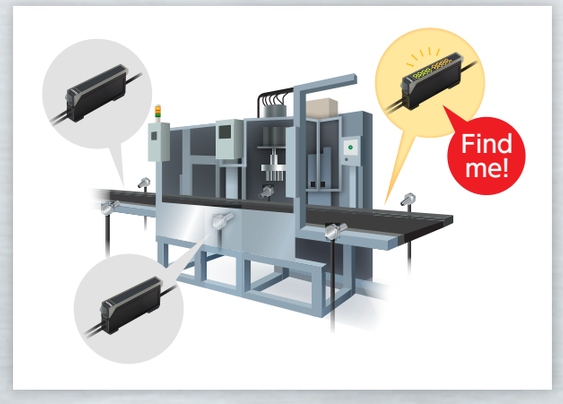
Monitor the receiving light intensity and alert an intensity decrease due to dust or dirt on the sensor.

Detect unwanted light disturbance



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

Identify a specific sensor



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

F85RN-ILP: Essential functions with simple operability

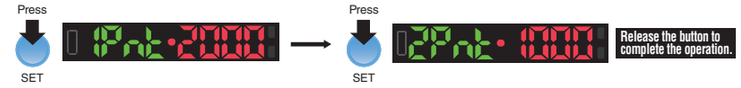
Simple teaching using a single button

Simple to sequentially select from five teaching modes using the [SET] button.

Five types of teaching mode are available

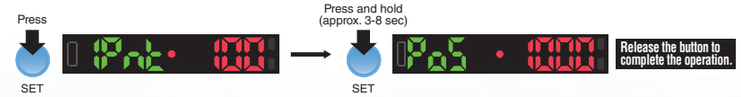
1 Two-point teaching mode

The threshold is set at the mid-point between the light intensity levels set in two-point teaching mode.



2 Position teaching mode

Set the threshold required at the detecting location.



3 Window mode teaching

Set two thresholds(High/Low) in the Window Comparator mode.

4 Maximum sensitivity teaching mode

The threshold level is automatically set to a value higher than the maximum light intensity being received while [SET] is pressed.

5 Full auto teaching mode

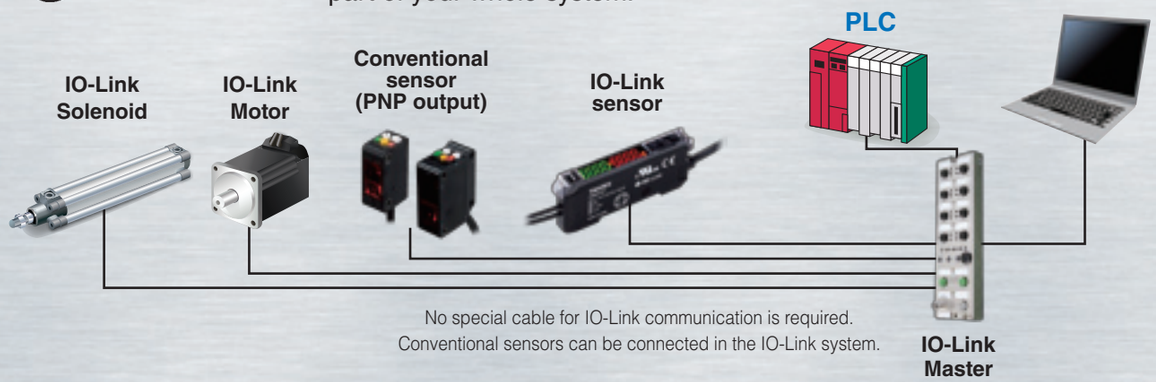
The threshold level is set at the midpoint between the maximum and minimum values being received while [SET] is pressed.

What is IO-Link ?

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.

IO-Link System

IO-Link Flexible solution: IO-Link feature can be added only for a required part of your whole system.



※IODD file can be downloaded from TAKEX WEB site.

※What is IODD?

IODD (IO Device Description) file contains definitional information of a device including device identification, parameters, process data, communication properties and the design of the user interface. IODD file is provided by the device vendor and enables to set up a device by downloading the file. IO-Link Community has a multi-vendor database service for IODDs called IODDfinder.

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 µs or less / Standard mode : 500 µs 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	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))
Sensitivity setting	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) 0.2mm²×4-core, o.d. Ø4.2mm)
Weight	Approx. 35g
Accessory	Instruction manual

※ UL: Class 2 power source

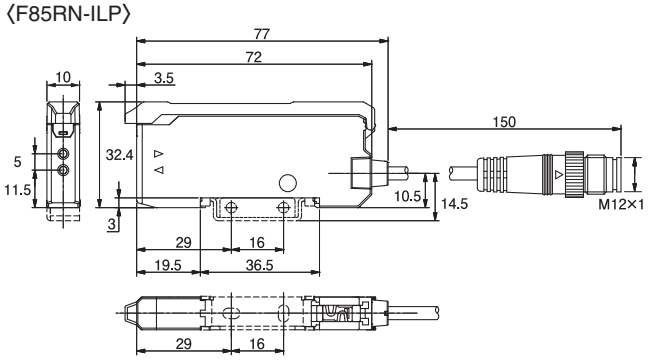
ENVIRONMENTAL SPECIFICATION

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 MΩ or more

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

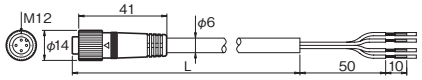
DIMENSIONS (in mm)

〈F85RN-ILP〉

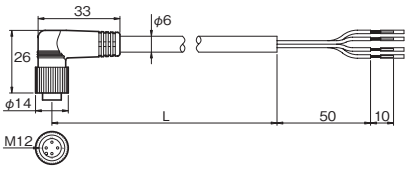


〈Cable with connector〉 (available separately)

•FAC-D4R2S (L:2m)
•FAC-D4R5S (L:5m)

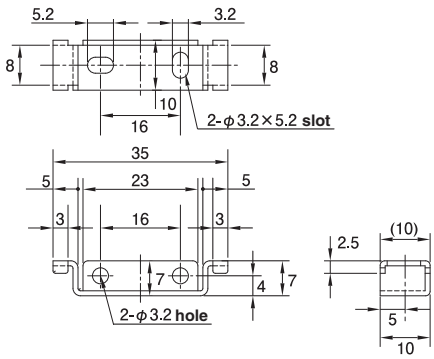


•FAC-D4R2L (L:2m)
•FAC-D4R5L (L:5m)



〈Mounting bracket〉 (available separately)

•AC-BF3



DETECTING DISTANCE

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

● MOUNTING BRACKET

	Model
	AC-BF3

● TERMINAL UNIT

	Model
	FA7EU

CAUTION

- 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 lightning surge.
- 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 reliabilty 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.

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