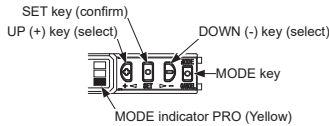


12 PRO MODE

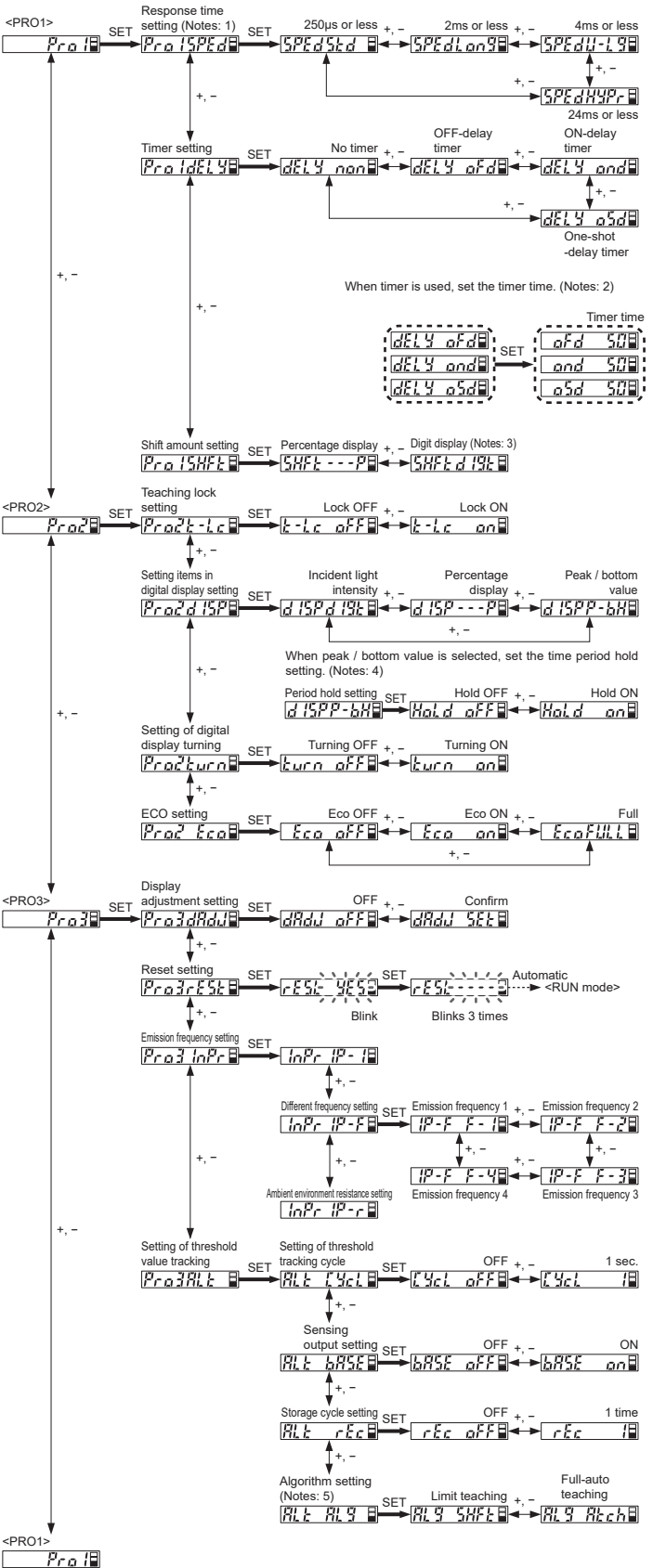
- When MODE indicator: PRO (yellow) lights up, PRO mode can be set (And during IO-link communication).



Procedure

The changed settings are not stored if turning the power OFF while setting. Therefore, confirm the settings by pressing the SET key before turning the power OFF.

If settings are configured simultaneously on the main unit side and on the IO-Link communication side, the settings that are applied last will be enabled.



Notes: 1) Display of incident light intensity depends on the response time.

Response time	Incident light intensity
"5td"	Max. 4,000
"Lon9"	Max. 8,000
"U-L9", "HYPr"	Max. 9,999

Notes: 2) When timer is used, set the timer time.

Timer range	Timer time	Display
"1/10ms"	Approx. 0.1 to 999.9ms	1~9999

Notes: 3) When setting the shift value using the digit display, the setting range differs depending on the response time, as shown in the table below.

Response time	Shift value setting range
"5td"	Max. 4,000
"Lon9"	Max. 8,000
"U-L9", "HYPr"	Max. 9,999

Notes: 4) To clear the value, turn off the time period holding function. Turning off the power switch also clears the value. Notes: 5) When "SHFt" is set, limit teaching is conducted according to the change in the incident light intensity, and then the threshold value is reset. Shift direction of the threshold value differs depending on the combination of sensing output status and sensing output operation, as shown in the table below.

Sensing output status	Sensing output operation	Shift direction of threshold value
Sensing output ON	Light-ON	Limit teaching is conducted for the negative (-) side of the threshold value.
Sensing output ON	Dark-ON	Limit teaching is conducted for the positive (+) side of the threshold value.
Sensing output OFF	Light-ON	Limit teaching is conducted for the positive (+) side of the threshold value.
Sensing output OFF	Dark-ON	Limit teaching is conducted for the negative (-) side of the threshold value.

Item	Default setting	Description
PRO1 mode	Response time setting	SPEd5td
	Timer setting	dELy non
	Timer range setting	aFd 50
	Shift amount setting	SHFt ---P
PRO2 mode	Teaching lock setting	t-Lc aFF
	Digital display item setting	dISP d19t
	Period hold setting	Hold aFF
	Digital display turning on setting	turn aFF
PRO3 mode	ECO setting	eco aFF
	Display adjustment setting	dRdu aFF
	Reset setting	---
	Emission frequency setting	inPr iP-1
PRO3 mode	Setting of threshold value tracking	tYcl aFF
	Sensing output setting	bRSE aFF
	Storage cycle setting	rEc aFF
	Algorithm setting	RL9 SHFt

13 ERROR INDICATION

- In case of errors, attempt the following measures.

Error indication	Description	Remedy
Er01	Non-volatile memory is broken or reached the end of its working life.	Please replace the product.
Er02	Non-volatile memory writing error	
Er11	Load of the sensing output is short-circuited causing an over-current to flow.	Turn OFF the power and check the load.

14 SPECIFICATIONS

Type	Discrete wire type	M12 connector type
Model No.	FX-551L3-P-C2	FX-551L3-P-J
Supply voltage	12 to 24V DC ⁻¹⁰ % Ripple P-P10% or less	
Power consumption	Normal operation: 960mW or less (current consumption 40mA or less at 24V supply voltage) Eco mode: 720mW or less (current consumption 30mA or less at 24V supply voltage)	
IO-Link communication (C/Q) (Notes: 1)	IO-Link specification: Ver1.1	
Baud rate	COM3(230.4kbps)	
Process data length	PD : 4byte	
Control output (DO) (Notes: 2)	PNP open-collector transistor • Maximum source current: 50mA • Applied voltage: 30V DC or less (Between sensing output and +V) • Residual voltage: 2V or less (Notes: 3) [At 50mA source current]	
Output operation	Switchable either Light-ON or Dark-ON	
Short-circuit protection	Incorporated	
Response time (Notes: 4)	STD: 250 µs or less, LONG: 2ms or less, U-LG: 4ms or less, HYPR: 24ms or less, Selectable	
Interference revention function	Incorporated Emission frequency selection method (Functions at emission frequency 1, 2, 3 or 4) (Notes: 5)	
Ambient environment resistance setting	Incorporated	
Protection	IP40 (IEC)	
Over voltage category	1	
Degree of pollution	2	
Operating altitude	2,000m or less (Notes: 6)	
Ambient temperature (Note 7)	-10 to +55°C (when 4 to 7 units are installed: -10 to +50°C, when 8 to 16 units are installed: -10 to +45°C) (No dew condensation or icing allowed), Storage: -20 to +70°C	
Ambient humidity	35 to 85% RH, Storage: 35 to 85% RH	
Material	Enclosure: Polycarbonate, Key: Polyacetal, Protective cover: Polycarbonate	
Cable	0.2mm ² 4-core cabtire cable (2 m)	0.2mm ² 4-core cabtire cable with M12 connector (0.3m)
Weight (Main body only)	Approx. 55 g	Approx. 90 g

Notes: 1) For the IO-Link communication setting, refer to the attached sheet, "Index List." (IMJE-FXINDEX)
2) When the product is used as a general-purpose sensor, the IO-Link communication (C/Q) is generated in the same way as control output (DO).
3) This value is applicable when the cable length is 2 m.
4) Response time varies depending on the emission frequency setting. Regarding the response time in the case "iP-F" or "iP-r" is selected, refer to <PRO3> in "PRO MODE."
5) When the interference prevention function is used, hysteresis increases. Before using this function, check the detection conditions.
6) Do not use or store in an environment pressurized to atmospheric pressure or higher at an altitude of 0m.
7) The number of units installed is applicable when units are installed close to each other.

15 CAUTIONS

- This product has been developed / produced for industrial use only.
- Make sure that the power supply is OFF while adding or removing the amplifiers.
- Take care that if a voltage exceeding the rated range is applied, or if an AC power supply is directly connected, the product may get burnt or be damaged.
- Take care that short-circuit of the load or wrong wiring may burn or damage the product.
- Do not run the wires together with high-voltage lines or power lines, or put them in the same raceway. This can cause malfunction due to induction.
- The specification may not be satisfied in a strong magnetic field.
- Verify that the supply voltage variation is within the rating.
- If power is supplied from a commercial switching regulator, ensure that the frame ground (F.G.) terminal of the power supply is connected to an actual ground.
- In case noise generating equipment (switching regulator, inverter motor, etc.) is used in the vicinity of this product, connect the frame ground (F.G.) terminal of the equipment to an actual ground.
- The ultra long distance (U-LG, HYPR) mode is more likely to be affected by extraneous noise since the sensitivity of that is higher than the other modes. Make sure to check the environment before use.
- Do not use during the initial transient time after the power supply is switched ON.
- When extending the cable length, use a cable with a conductor cross-sectional area of 0.3 mm² or more. Note that the maximum allowed cable length is 20 m. However, in order to reduce noise, make the wiring as short as possible.
- Set the power supply voltage by considering the voltage drop resulting from the conduction resistance of the cable.
- Make sure that the cable joint is not applied with stress, such as strain caused by forcible bending or pulling.
- This product is suitable for indoor use only.
- Avoid dust, dirt, and steam.
- Take care that the product does not come into contact with organic solvents such as thinner.
- Take care that the product does not come into contact with strong acids or alkalis.
- Take care that the product does not come into contact with oil or grease.
- This product cannot be used in an environment containing inflammable or explosive gasses.
- Never disassemble or modify the product.
- This product adopts Non-volatile memory. Settings cannot be done 1 million times or more because of the Non-volatile memory's lifetime.

Panasonic Industry Co., Ltd.

1006, Oaza Kadoma, Kadoma-shi, Osaka 571-8506, Japan
<https://industry.panasonic.com/>

Please visit our website for inquiries and about our sales network.

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