

8 THRESHOLD VALUE FINE ADJUSTMENT FUNCTION

- Set the fine adjustment of threshold value in RUN mode.
- Also, the threshold value fine adjustment function can be used in forced ON output mode and forced OFF output mode.
- For setting of the sensing output, refer to <PRO6> in “10 PRO MODE OPERATION DESCRIPTION.”

<Normal mode, Rising differential mode or Trailing differential mode>

Press down UP / DOWN key

Press down SET key

Confirmed

(Automatically set without pressing down SET key in approx. 2 sec.)

<Window comparator mode or Hysteresis mode>

- When setting sensing output to the window comparator mode or hysteresis mode, “1.5L” and “2.5L” can be changed to another by pressing down SET key for 2 sec.
- In case conducting threshold value fine adjustment of “1.5L” or “2.5L”, press down UP key or Down key, and “1.5L” or “2.5L” are displayed. Then, the threshold value fine adjustment can be conducted.

Press down UP / DOWN key

Press down SET key

Confirmed

(Automatically set without pressing down SET key in approx. 2 sec.)

9 KEY LOCK FUNCTION

- The key lock function prevents key operations so that the conditions set in each setting mode are not inadvertently changed.
- If operating key switch after key lock is set, “Lac on” is indicated on the digital display.

<Set key lock>

Press down for 3 sec. or more SET key + MODE key

Automatic

Confirmed

<Release key lock>

Press down for 3 sec. or more SET key + MODE key

Automatic

Confirmed

10 SENSING OUTPUT OPERATION MODE

- When MODE indicator: L / D (yellow) lights up, sensing output operation can be set.

Press down UP / DOWN key

Press down SET key

Confirmed

Confirmed

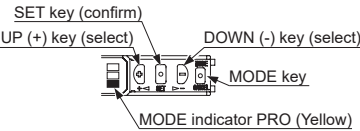
11 CUSTOM MODE

- When MODE indicator: CUST (yellow) lights up, Response time setting, Emission power setting or Hysteresis setting can be displayed. For the setting procedure, refer to <PRO5> in “10 PRO MODE OPERATION DESCRIPTION.”
- By pressing UP key or DOWN key, the setting in each item will be changed.
- Press SET key to confirm the setting.
- For setting of each item, refer to the following table.

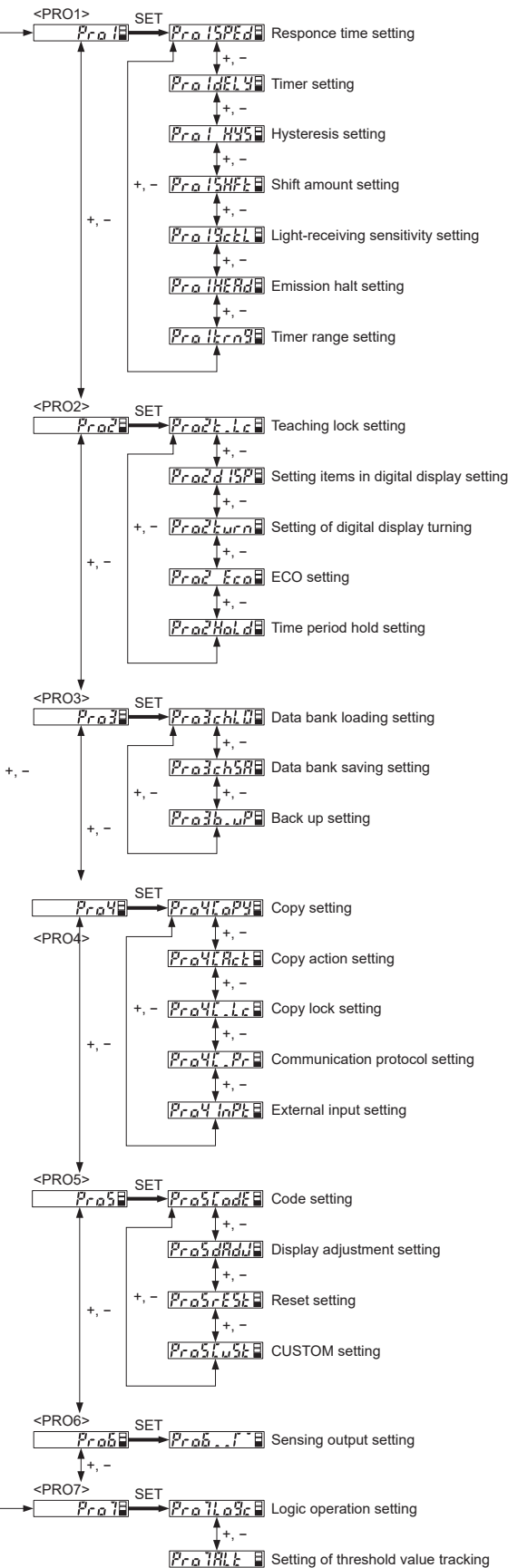
Item	Digital display	Reference item
Response time setting	SPEdLanS	<PRO 1: Response time setting>
Light-receiving sensitivity setting	gctL''''''	<PRO1: Light-receiving sensitivity setting>
Emission halt setting	HEPd on	<PRO1: Emission halt settings>
Data bank loading setting	chLG ldtch	<PRO3: Data bank loading setting>
Code setting	00300030	<PRO5: Code setting>
Hysteresis setting	HYSH-02	<PRO 1: Hysteresis setting>

12 PRO MODE

- When MODE indicator: PRO (yellow) lights up, PRO mode can be set.
- For detail of PRO mode, refer to “10 PRO MODE OPERATION DESCRIPTION.”



Procedure

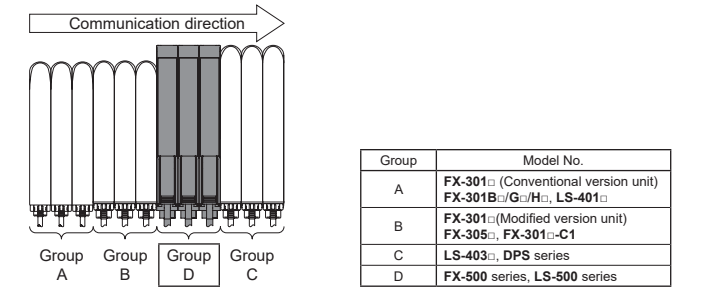


13 OPTICAL COMMUNICATION

- When the setting of data bank loading / saving, copy setting, or copy action setting is conducted via optical communications, cascade the sub amplifiers right side to the main amplifier as follows. However, in case using data bank loading / saving, use LS-501 or LS-501-C2 as main amplifier.
- If an amplifier is under any of the following conditions, the setting of data bank loading / saving, or copy setting cannot be carried out.
 - Copy lock setting is set to copy lock ON “Lc on”.
 - Digital display is blinking
 - External input setting of main amplifier is set to “InPt SEtF.” (Only databank loading / saving)
- When communication protocol of a sub amplifier is set to communication emission halt “LPr OFF” the setting of data bank loading / saving, or copy setting cannot be carried out to sub amplifiers subsequent to the mentioned amplifier.
- Make sure to mount closely like follows since interference prevention function is conducted by optical communication.



- When this product and other products (e.g. fiber sensor amplifiers, pressure sensor controllers, etc.) are connected together in cascade, install those products so that they are in order of Group A, B, D and C as shown in the right figure. This product is included in Group D.



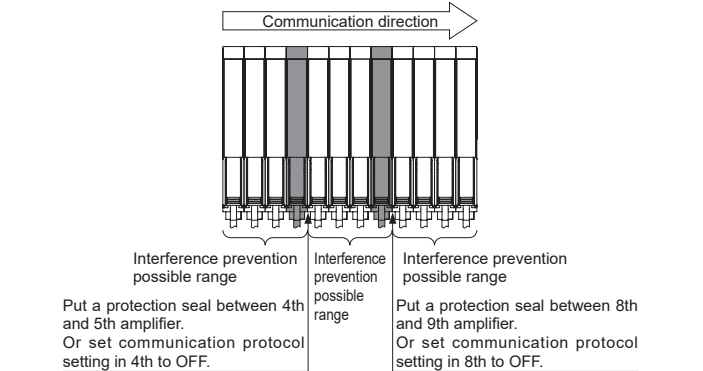
- Within each group, identical models should be connected in a lump.
- In case conducting copy setting of this device and other LS-500 series together, functions which are incorporated in this device will be copied but functions which are not incorporated in this device will not be copied.

14 INTERFERENCE PREVENTION FUNCTION

- Possible number of amplifiers for interference prevention function is different as shown in table below.

Response time	H-SP	FAST	STD	LONG	U-LG	HYPR
Number of amplifiers	0	2	4	4	4	4

- In case putting in more amplifiers than limit of interference prevention function, put the amplifier protection seal to amplifier which is adjacent of end of an amplifier that the interference function is valid or set OFF in communication protocol setting of the end of amplifier that the interference prevention function is valid.
Example: Putting in 12 of this device and set STD of response time setting.
 - Possible number of interference prevention is 4.
- Put the amplifier protection seals 4th and 5th amplifiers and between 8th and 9th amplifiers or change the communication protocol setting of 4th and 8th to OFF since interference prevention works from 1st to 4th, from 5th to 8th and 9th to 12th.



- In case mounting more amplifiers whose response time setting are different, put protection seal between amplifiers that have different response time setting or set communication protocol setting of the upper amplifier to OFF.
- For communication protocol setting procedure, refer to <PRO4> in “10 PRO MODE OPERATION DESCRIPTION.”

15 ERROR INDICATION

- In case of errors, attempt the following measures.

Error indication	Description	Remedy
Er01	EEPROM is broken or reached the end of its working life.	Please contact our office.
Er02	EEPROM writing error	
Er11	Load of the sensing output 1 is short-circuited causing an over-current to flow.	Turn OFF the power and check the load.
Er12	Load of the sensing output 2 is short-circuited causing an over-current to flow.	
Er42	Fault error of sensor head.	Check the connection of sensor head. If the error persists despite checking the connection, please contact us.
Er52	Communication error when the amplifiers are mounted in cascade.	Verify that there is no loose or clearance between amplifiers.
Er53	Communication error between the upper communication unit and amplifiers.	Verify that there is no loose or clearance between the upper communication unit and amplifiers.

16 SPECIFICATIONS

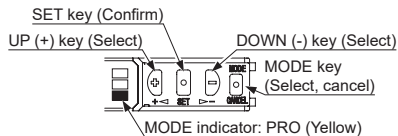
Type	Cable type	
	NPN output	PNP output
Model No.	LS-501-C2	LS-501P-C2
Supply voltage	12V to 24V DC ⁺¹⁰ / ₋₁₅ % Ripple P-P10% or less	
Power consumption	Normal operation: 1,200mW or less (current consumption 50mA or less at 24V supply voltage) Eco mode: 980mW or less (current consumption 40mA or less at 24V supply voltage)	
Sensing output (Sensing output 1 / 2)	NPN open-collector transistor • Maximum sink current: 50mA (Note 1) • Applied voltage: 30V DC or less (Between sensing output and 0V) • Residual voltage: 2V or less (At 50mA sink current)	PNP open-collector transistor • Maximum source current: 50mA (Note 1) • Applied voltage: 30V DC or less (Between sensing output and +V) • Residual voltage: 2V or less (At 50mA source current)
Output operation	Switchable either Light-ON or Dark-ON	
Short-circuit protection	Incorporated	
Response time	H-SP: 60μs or less, FAST: 150μs or less, STD: 250μs or less, LONG: 500μs or less U-LG: 5ms or less, HYPR: 24ms or less, Selectable	
Monitor current output	• Output current: approx. 4mA to 20mA [Display in H-SP, FAST, STD: 0 to 4,000 (Note 2)] • Response time: 2ms or less • Zero-point: Within 4mA ±1%F.S. • Span: Within 16mA ±5%F.S. • Linearity: Within ±3%F.S. • load resistance: 0 to 250Ω	
External input	• Signal condition High: +8V to +V DC or Open Low: 0V to +1.2V DC (at 0.5mA source current) • Input impedance: Approx. 10kΩ	• Signal condition High: +4V to +V DC (at 3mA sink current) Low: 0V to +0.6V DC or Open • Input impedance: Approx. 10kΩ
Protection	IP40 (IEC)	
Ambient temperature	-10°C to +55°C (If 4 to 7 units are mounted in cascade: -10°C to +50°C or if 8 to 16 units are mounted in cascade: -10°C to +45°C) (No dew condensation or icing allowed) Storage: -20°C 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 6-core cabtyre cable, 2m long	
Weight (Main body only)	Approx. 75g	
Accessory	FX-MB1 (Amplifier protection seal): 1 set.	

Notes: 1) Excluding power consumption of the monitor current output
2) If the display adjustment was conducted, it is not in this range.

17 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 (H-SP, FAST, STD: 0.5 sec., LONG, U-LG, HYPR: 1 sec.) after the power supply is switched ON.
- Extension up to total 100m is possible. However, in order to reduce noise, make the wiring as short as possible. When you extend the cable, be sure to use cables which have 0.3mm² or more of conductor cross-section area. Set the power supply voltage while taking into account the voltage drop in the power cable due to its resistance.
- Make sure that stress by forcible bend or pulling is not applied to the sensor cable joint.
- This product is suitable for indoor use only.
- Avoid dust, dirt, and steam.
- Take care that the product does not come in contact with oil, grease, organic solvents such as thinner, etc., strong acid or alkaline.
- This product cannot be used in an environment containing inflammable or explosive gasses.
- Never disassemble or modify the product.
- This product adopts EEPROM. Settings cannot be done 100 thousand times or more because of the EEPROM's lifetime.

Part description

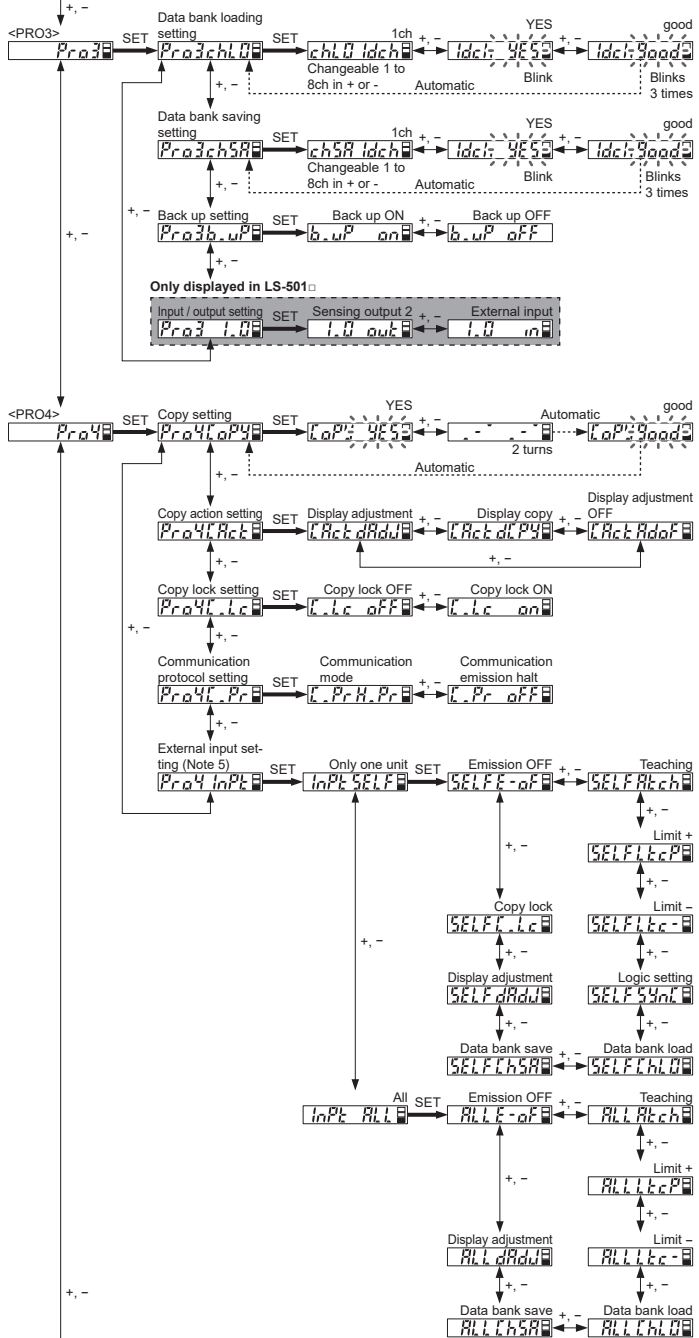
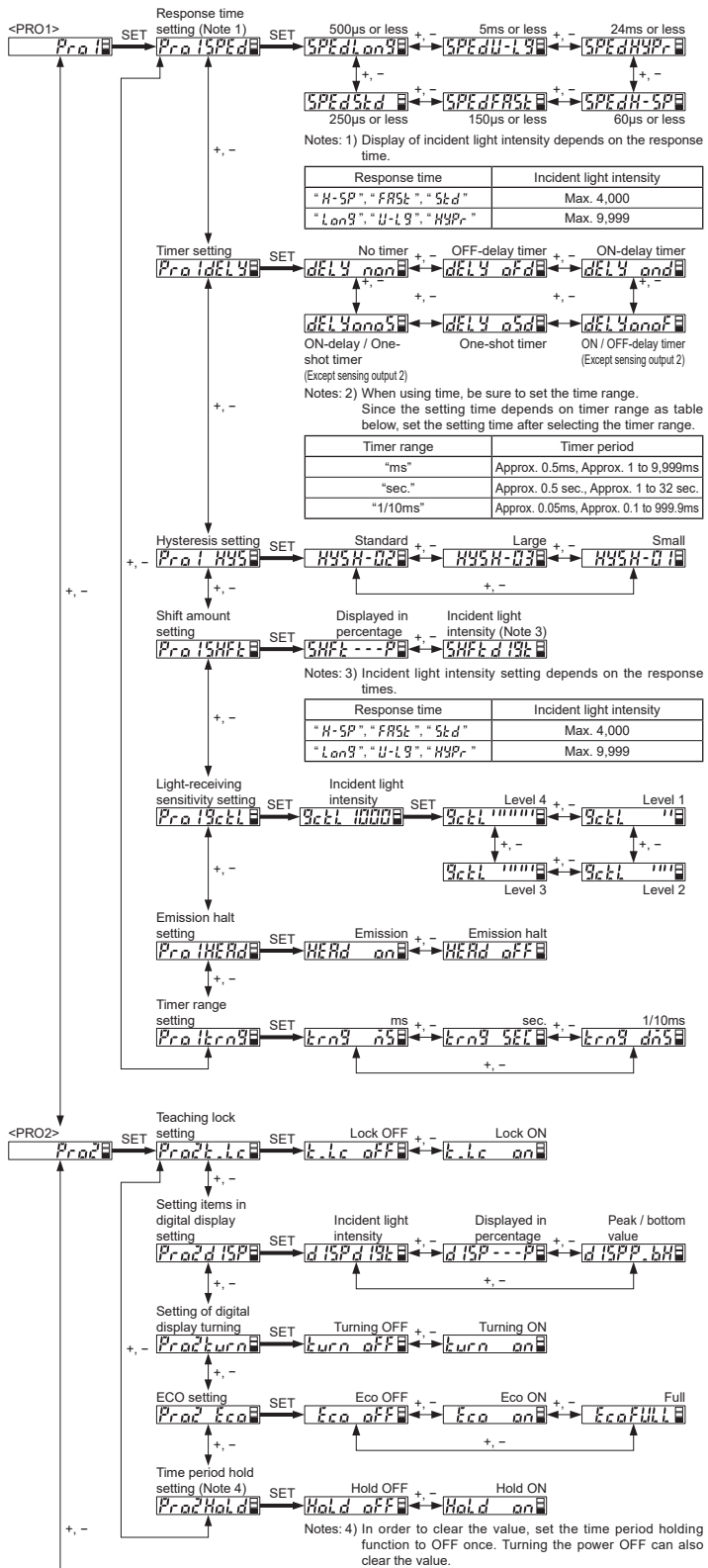


Symbol explanation

SET
: Press the SET key

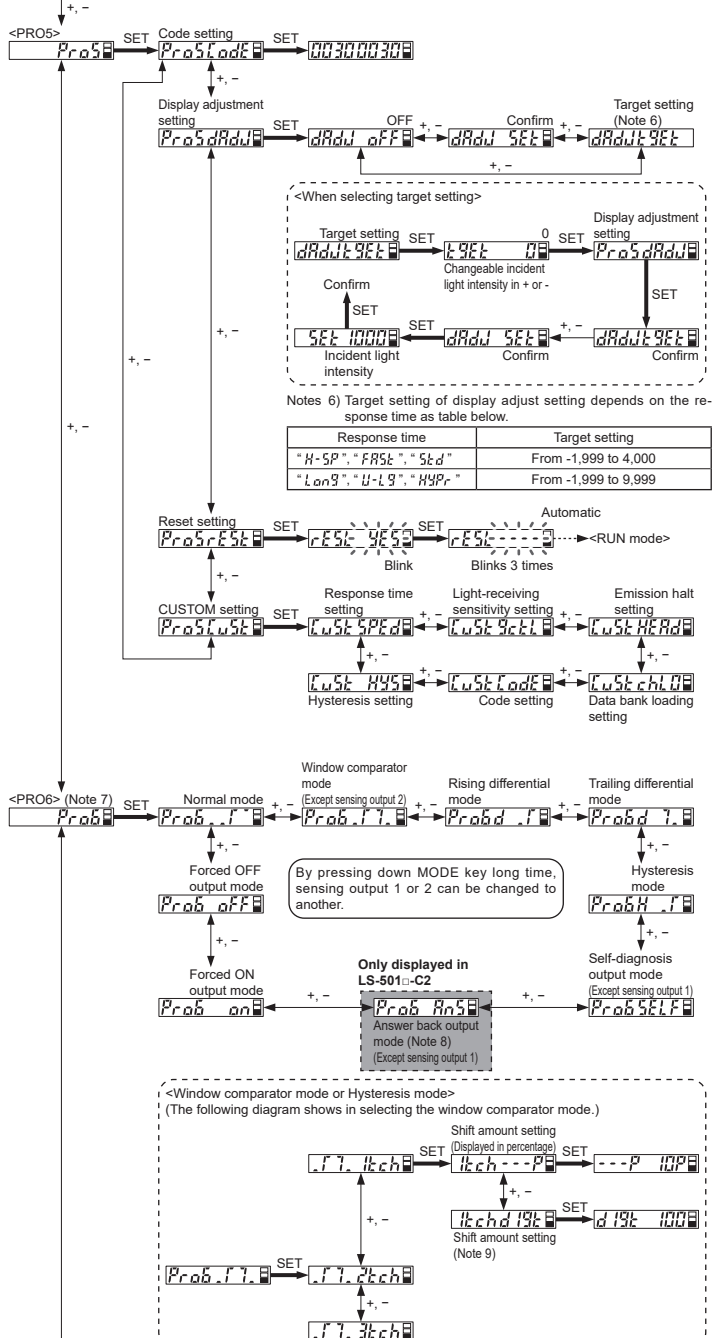
+, -
: Press the UP (+) key or DOWN (-) key.

Automatic
: Automatically move to next



Notes: 5) The signal input time from outside is as follows.

	Input time
2 point teaching	
Limit teaching	20ms to under 500ms
Display adjust	
Full auto teaching	600ms or more (sampling during input)
Emission OFF, Logic setting	
Copy lock	2ms or more (conducted during inputting)
Data bank loading	
Data bank saving	Input pulse of the specified channel number (1 pulse: 16ms to 300ms). However, the pulse cycle is under 500ms.



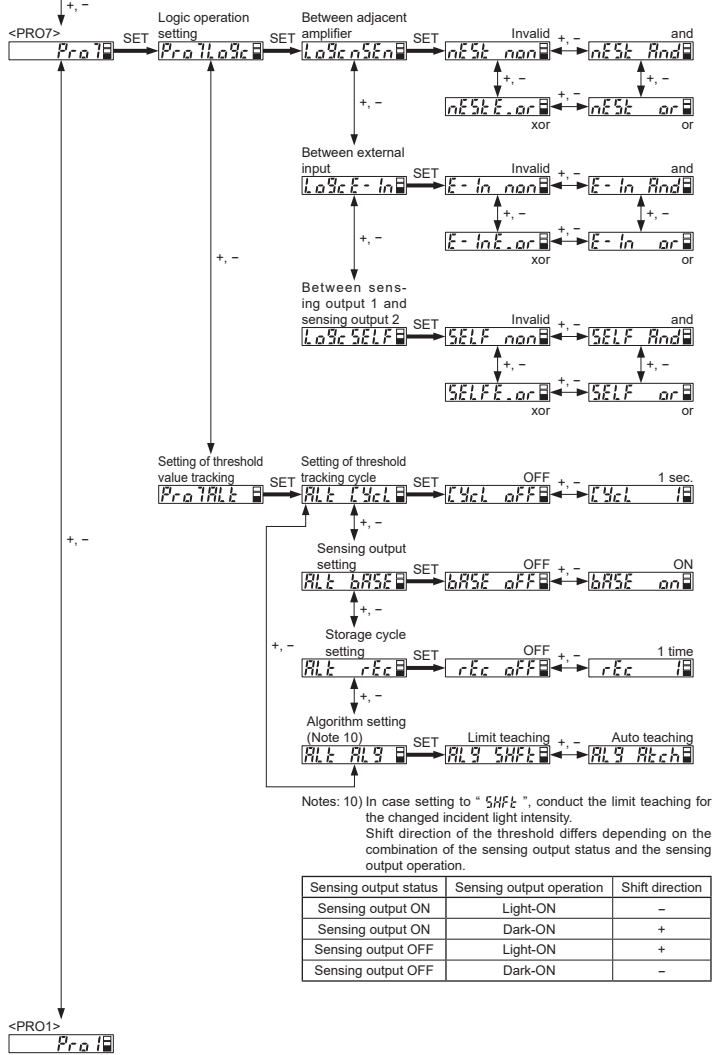
Notes: 7) Set the sensing output setting after input / output setting for **LS-501□**.

8) After external input, the time given until an answer back output is as follows. However, in case timer of the sensing output 2 is valid, the output time is different from the following table.

	Input time
2 point teaching Limit teaching Full auto teaching	After 20ms from the input end, the answer back output is read out when result of the teaching is "Good".
Display adjust	After 20ms from the input end, the answer back output is read out.
Data bank loading Data bank saving	After 520ms from rising of last input pulse, the answer back output (pulse) of the number of channel in the data bank is read out.

9) Incident light intensity depends on the response time as table below.

Response time	Incident light intensity
"H-SP", "FRSt", "Std"	Max. 4,000
"Long", "U-Lg", "HYP"	Max. 9,999



Notes: 10) In case setting to "SHFL", conduct the limit teaching for the changed incident light intensity.
Shift direction of the threshold differs depending on the combination of the sensing output status and the sensing output operation.

Sensing output status	Sensing output operation	Shift direction
Sensing output ON	Light-ON	-
Sensing output ON	Dark-ON	+
Sensing output OFF	Light-ON	+
Sensing output OFF	Dark-ON	-

	Item	Default setting	Description
PRO1 mode	Response time setting	<i>SPEdLanG</i>	Set response time.
	Timer setting	<i>dELYnan</i>	Set operation and period of the timer.
	Hysteresis setting	<i>HYSH-02</i>	Hysteresis can be set when the normal mode or the window comparator mode is selected.
	Shift amount setting	<i>SHFt---P</i>	Set shift amount of threshold value in limit teaching.
	Light-receiving sensitivity setting	<i>ScLlmmmm</i>	Selects light-receiving sensitivity from 4 levels. " <i>mm</i> ": Level 1 " <i>mm</i> ": Level 2 " <i>mm</i> ": Level 3 " <i>mm</i> ": Level 4
	Emission halt setting	<i>HEAd on</i>	Selects laser emission from the sensor head to execute or halt.
PRO2 mode	Timer range setting	<i>ErnGns</i>	Change unit time of timer.
	Teaching lock setting	<i>t-Lc oFF</i>	Be able to prevent from wrong operation of teaching. " <i>oFF</i> ": Teaching mode is valid " <i>on</i> ": Teaching mode is invalid
	Digital display item setting	<i>dISPdI9t</i>	Incident light intensity can be displayed in percentage or the peak / bottom value can be displayed on the digital display (red).
	Digital display turning on setting	<i>turn oFF</i>	Sets the viewing orientation of the digital display.
	ECO setting	<i>Ec o oFF</i>	Power consumption can be lowered. " <i>oFF</i> ": ECO OFF " <i>on</i> ": If any key operation is not carried out for 20 sec. in RUN mode, the digital display turns OFF. " <i>FULL</i> ": If key operation is not done in 20 sec. or setting the key lock function in Run mode, all indicators turns OFF.
	Period hold setting	<i>Hold oFF</i>	" <i>oFF</i> ": Peak / bottom value in the digital display refreshing condition can be displayed. " <i>on</i> ": Peak / bottom value in the hold condition can be displayed.
PRO3 mode	Data bank loading setting	<i>chLGldch</i>	Load a setting from specified data bank. (1 to 8 channel)
	Data bank saving setting	<i>chSRldch</i>	Save a setting to specified data bank. (1 to 8 channel)
	Back up setting	<i>b.uP on</i>	Select to save or not to save the threshold value by teaching in EEPROM.
PRO4 mode	Input / output setting (LS-501□ only)	<i>l.O ouL</i>	Select either sensing output 2 or external output.
	Copy setting	—	Using optical communications, be able to copy setting contents in main amplifier to all of the sub amplifiers connected from the main amplifier. LS-501□ cannot send or receive threshold value when conducting copy.
	Copy action setting	<i>LRcLdRdd</i>	Copy of items in display adjustment setting and incident light intensity are conducted or canceled by using optical communication. In case incident light intensity does not have enough margin, automatically set optimum value. " <i>dRdd</i> ": Display adjustment of main amplifier and sub amplifiers can be conducted. Set to the target value of display adjustment in each amplifier. " <i>dLpY</i> ": Incident light intensity of main amplifier can be copied to sub amplifier. However, when the difference between main amplifier and sub amplifier is big, it will not be copied. " <i>RdoF</i> ": Display adjust of main and sub amplifier can be set to OFF. Do not press down the SET key many times when display is " <i>RdoF</i> ". When " <i>RdoF</i> " is not displayed in confirmation, also do not press down set key many times.
	Copy lock setting	<i>L.Lc oFF</i>	When conducting the setting of copy setting or data bank loading / saving from the main amplifier via optical communications, it is possible that only the sub amplifier which is set to copy lock ON " <i>L.Lc on</i> " does not receive the set contents. However, even if copy lock ON " is set, the copy action setting is communicated.
	Communication protocol setting	<i>L.PrH.Pr</i>	When conducting the copy setting or setting of data bank loading / saving from the main amplifier via optical communications, the optical communications through a sub amplifier which is set to communication emission halt " <i>L.Pr oFF</i> " and the following sub amplifiers can be halted.
	External input setting	<i>InPtSELF</i>	Set external input.
PRO5 mode	Code setting	<i>00300030</i>	Consistent setting can be done by inputting 8-digit code instead of independent setting. In addition, present setting can be confirmed.
	Display adjustment setting	<i>dRdd oFF</i>	Set incident light intensity to target value. If conducting display adjustment setting when incident light intensity does not have enough margin, " <i>dUEr</i> " is blinked. " <i>oFF</i> ": Display adjustment OFF " <i>SEt</i> ": Slide to (smaller side) incident light intensity from the set of target setting. " <i>t9Et</i> ": Set incident light intensity to value you want (negative side). In case setting to 0-adjustment, set to 0.
	Reset setting	—	If setting to " <i>YES</i> ." returns to default settings (factory settings).
	CUSTOM setting	<i>LUStSPEd</i>	Select an item in CUSTOM mode to display.
PRO6 mode	Sensing output mode	<i>ProB...F</i>	Set sensing output 1 mode and sensing output 2 mode. " <i>. . . F</i> " (Normal mode) • Sets a threshold value for ON / OFF operation. " <i>. F 7</i> ." (Window comparator mode) (Except sensing output 2) • Sets two threshold values and judges they are within the required range or not. This can be selected in 1 / 2 / 3-point teaching. " <i>d . F</i> " (Rising differential mode) • Only drastic rises in incident light intensity are detected. " <i>d 7</i> ." (Trailing differential mode) • Only drastic drops in incident light intensity are detected. " <i>H . F</i> " (Hysteresis mode) • Changes hysteresis to ignore small change of incident light intensity. • This can be selected in 1 / 2 / 3-point teaching. " <i>SELF</i> " (Self diagnosis output mode) (Except sensing output 1) • Conduct self diagnosis output " <i>PR5</i> " (Answer back output mode) (Only displayed in LS-501□-C2 but except sensing output 1) • Conduct Answer back output toward external input. " <i>on</i> " (Forced ON output mode) • Sets forcibly the output to ON. " <i>oFF</i> " (Forced OFF output mode) • Sets forcibly the output to OFF.

	Item	Default setting	Description																										
PRO7 mode	Logical operation setting	L o g c n S E n	Select for logical operation and set logical operation methods (and, or, xor). " n S E n ": Logical operation is sensing output 1 of this device and conduct logical operation between the sensing output 1 and sensing output 1 of this device. The calculation result of upper amplifiers and this product is output from the sensing output 1 of this product. " E - I n ": Logical operation is sensing output 1 of an upper adjacent amplifier and conduct logical operation between the sensing output and sensing output 1 of this device. " S E L F ": Logical operation is outer input and conduct logical operation between the output and sensing output 1 of this device.																										
			<table><tr><th rowspan="2">Logical operation</th><th rowspan="2">Sensing output 1 of this device</th><th colspan="3">Setting of logical operations</th></tr><tr><th>and</th><th>or</th><th>xor</th></tr><tr><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td></tr><tr><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td><td>ON</td></tr><tr><td>OFF</td><td>ON</td><td>OFF</td><td>ON</td><td>ON</td></tr><tr><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr></table>	Logical operation	Sensing output 1 of this device	Setting of logical operations			and	or	xor	ON	ON	ON	ON	OFF	ON	OFF	OFF	ON	ON	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
	Logical operation	Sensing output 1 of this device	Setting of logical operations																										
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	OFF	ON	OFF	ON	ON																								
	OFF	OFF	OFF	OFF	OFF																								
	Setting of threshold value tracking	E y c L o f f	This mode can change the threshold value depending on the cycle (1 to 9,999 sec.) that is set with the variations of the incident light intensity. The tracking shift amount is the one which is set at the shift setting.																										
	Sensing output setting	b R S E o f f	Selects whether tracking threshold when the output is OFF or when the output is ON.																										
Storage cycle setting	r E c o f f	Selects a threshold storage cycle in EEPROM from 1 to 250 times.																											
Algorithm setting	R L 9 S H F t	When setting to limit teaching, threshold value is followed up on the bases of shift amount. Furthermore, when setting to auto teaching, threshold value be followed up on the bases of each cycle.																											

LS-501□ / Code setting table

- Green digital display (right side is the first digit)

Code	Forth digit		Code	Third digit		Code	Second digit	Code	First digit
	Sensing output operation mode			Timer operation			Timer period		CUSTOM setting
	Sensing output 1	Sensing output 2		Sensing output 1	Sensing output 2				
G	Light-ON	Light-ON	G	No timer	No timer	G	0.5ms	G	Response time setting
I	Light-ON	Dark-ON	I	OFD	No timer	I	1ms	I	Light-receiving sensitivity setting
2	Dark-ON	Light-ON	2	OND	No timer	2	3ms	2	Emission halt setting
3	Dark-ON	Dark-ON	3	ONOF	No timer	3	5ms	3	Data bank loading setting
4	—	—	4	OSD	No timer	4	10ms	4	Code setting
5	—	—	5	ONOS	No timer	5	30ms	5	Hysteresis setting
6	—	—	6	No timer	OFD	6	50ms	6	—
7	—	—	7	No timer	OND	7	100ms	7	—
8	—	—	8	No timer	OSD	8	300ms	8	—
9	—	—	9	—	—	9	500ms	9	—
R	—	—	R	—	—	R	1 sec.	R	—
b	—	—	b	—	—	b	2 sec.	b	—
c	—	—	c	—	—	c	3 sec.	c	—
d	—	—	d	—	—	d	4 sec.	d	—
E	—	—	E	—	—	E	5 sec.	E	—

(OFD: OFF-delay timer, OND: ON-delay timer, ONOF: ON / OFF-delay timer, OSD: One-shot timer)
(ONOS: ON-delay / One-shot timer)

- Red digital display (right side is the first digit)

Code	Forth digit		Code	Third digit		Code	Second digit	Code	First digit
	Copy lock setting	Hysteresis setting		Setting items in digital display setting	Back up setting		Response time setting		Sensing output setting (Note)
<i>G</i>	Copy lock OFF	H-02	<i>G</i>	Incident light intensity	Back up ON	<i>G</i>	H-SP	<i>G</i>	Normal mode
<i>I</i>	Copy lock ON	H-02	<i>I</i>	Incident light intensity	Back up OFF	<i>I</i>	FAST	<i>I</i>	WC mode
<i>2</i>	Copy lock OFF	H-03	<i>2</i>	Displayed in percentage	Back up ON	<i>2</i>	STD	<i>2</i>	Rising differential mode
<i>3</i>	Copy lock ON	H-03	<i>3</i>	Displayed in percentage	Back up OFF	<i>3</i>	LONG	<i>3</i>	Trailing differential mode
<i>4</i>	Copy lock OFF	H-01	<i>4</i>	Peak / bottom value	Back up ON	<i>4</i>	U-LG	<i>4</i>	HYS mode
<i>5</i>	Copy lock ON	H-01	<i>5</i>	Peak / bottom value	Back up OFF	<i>5</i>	HYPR	<i>5</i>	—

(WC mode: Window comparator mode, HYS mode: Hysteresis mode)

Note: It is a setting only for sensing output 1. Sensing output 2 cannot be set.

LS-501□-C2 / Code setting table

- Green digital display (right side is the first digit)

Code	Forth digit		Code	Third digit		Code	Second digit	Code	First digit
	Sensing output operation mode			Timer operation			Timer period		CUSTOM setting
	Sensing output 1	Sensing output 2		Sensing output 1	Sensing output 2				
G	Light-ON	Light-ON	G	No timer	No timer	G	0.5ms	G	Response time setting
I	Light-ON	Dark-ON	I	OFD	No timer	I	1ms	I	Light-receiving sensitivity setting
2	Dark-ON	Light-ON	2	OND	No timer	2	3ms	2	Emission halt setting
3	Dark-ON	Dark-ON	3	ONOF	No timer	3	5ms	3	Data bank loading setting
4	—	—	4	OSD	No timer	4	10ms	4	Code setting
5	—	—	5	ONOS	No timer	5	30ms	5	Hysteresis setting
6	—	—	6	No timer	OFD	6	50ms	6	—
7	—	—	7	No timer	OND	7	100ms	7	—
8	—	—	8	No timer	OSD	8	300ms	8	—
9	—	—	9	—	—	9	500ms	9	—
R	—	—	R	—	—	R	1 sec.	R	—
b	—	—	b	—	—	b	2 sec.	b	—
c	—	—	c	—	—	c	3 sec.	c	—
d	—	—	d	—	—	d	4 sec.	d	—
E	—	—	E	—	—	E	5 sec.	E	—

(OFD: OFF-delay timer, OND: ON-delay timer, ONOF: ON / OFF-delay timer, OSD: One-shot timer)
(ONOS: ON-delay / One-shot timer)

- Red digital display (right side is the first digit)

Code	Forth digit		Code	Third digit		Code	Second digit	Code	First digit
	Copy lock setting	Hysteresis setting		Setting items in digital display setting	Back up setting		Response time setting		Sensing output setting
	Copy lock OFF	Copy lock ON		Incident light intensity	Back up ON		Back up OFF		Sensing output 1Sensing output 2
<i>G</i>	Copy lock OFF	H-02	<i>G</i>	Incident light intensity	Back up ON	<i>G</i>	H-SP	<i>G</i>	Normal modeNormal mode
<i>I</i>	Copy lock ON	H-02	<i>I</i>	Incident light intensity	Back up OFF	<i>I</i>	FAST	<i>I</i>	Normal modeRising differential mode
<i>2</i>	Copy lock OFF	H-03	<i>2</i>	Displayed in percentage	Back up ON	<i>2</i>	STD	<i>2</i>	Normal modeTrailing differential mode
<i>3</i>	Copy lock ON	H-03	<i>3</i>	Displayed in percentage	Back up OFF	<i>3</i>	LONG	<i>3</i>	Normal modeHYS mode
<i>4</i>	Copy lock OFF	H-01	<i>4</i>	Peak / bottom value	Back up ON	<i>4</i>	U-LG	<i>4</i>	Normal modeSelf-diagnosis output mode
<i>5</i>	Copy lock ON	H-01	<i>5</i>	Peak / bottom value	Back up OFF	<i>5</i>	HYPR	<i>5</i>	Normal modeAnswer back mode
<i>6</i>	—	—	<i>6</i>	—	—	<i>6</i>	—	<i>6</i>	WC modeNormal mode
<i>7</i>	—	—	<i>7</i>	—	—	<i>7</i>	—	<i>7</i>	WC modeHYS mode
<i>8</i>	—	—	<i>8</i>	—	—	<i>8</i>	—	<i>8</i>	Rising differential modeTrailing differential mode
<i>9</i>	—	—	<i>9</i>	—	—	<i>9</i>	—	<i>9</i>	HYS modeNormal mode

(WC mode: Window comparator mode, HYS mode: Hysteresis mode)

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