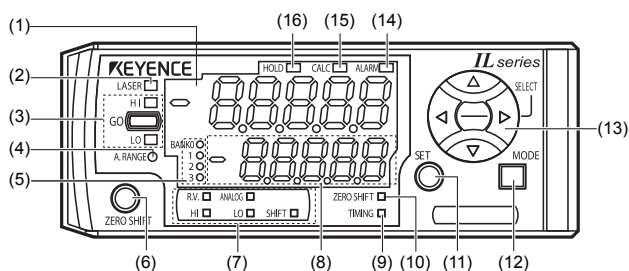


CMOS Multi-Function Analog Laser Sensor IL Series Setting Guide



Amplifier Display

Names of the part of the amplifier



- (1) Main display
- (2) Laser emission LED
- (3) Judgment LED
- (4) Analog range LED
- (5) Program bank LED
- (6) ZERO SHIFT button
- (7) Sub display explanation LED
- (8) Sub display
- (9) Timing input LED
- (10) Zero Shift input LED
- (11) SET button
- (12) MODE button
- (13) Arrow buttons
- (14) Alarm LED
- (15) Calculation LED
- (16) Hold input LED

Digital LED Display

Main Display



Normal

The internal measurement value is displayed.

[HOLD] lights up.



When Hold function is used

The held value is displayed.

[CALC] lights up.



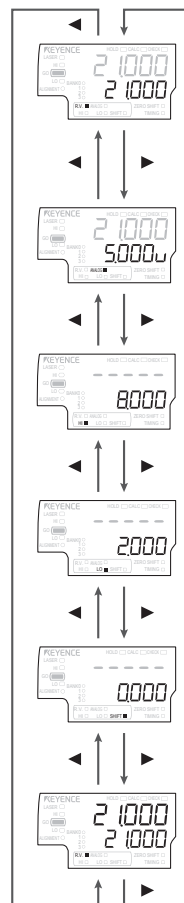
When Calculation function is used

Main: The calculation result is displayed.
When the hold mode is used, the value would be held also.

Expansion: The measurement value of the expansion unit itself is displayed.

Sub display

The Sub display can be switched by pressing the left/right arrow buttons.



R.V.(Internal measurement value)

The actual measurement value is displayed. This is not held.

Analog output (when it is set ON)

The voltage value (V) or the current (mA) value is displayed.

HIGH Limit setting value

The upper limit set is displayed.

LOW limit setting value

The lower limit set is displayed.

Shift target value

When the ZERO SHIFT button is pressed, the R.V. will be matched to the value set here.

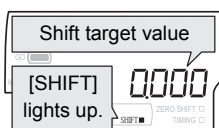
Calculation value

The Calculation value is displayed. This is not held.

Setup Functions

■ Set the R.V. value to the Shift target value

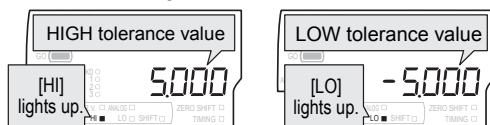
1. Press the left/right arrow buttons until the sub display shows the Shift target value.



2. Press the up/down arrow button to change the Shift target value.
3. Press the [ZERO SHIFT] button.
4. The current R.V. value would be set to the Shift target value.

■ Set the HIGH and LO tolerance.

1. Press the left/right arrow buttons until the sub display shows the HIGH/LOW limit setting value.



2. Input the HIGH or LO tolerance by pressing the up/down arrow buttons.
3. The HIGH and LOW tolerance will be set.

■ Setting the Key Lock

1. Press the [MODE] and the up (or down) arrow button for at least 2 seconds.



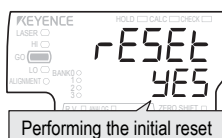
2. The Key Lock display would appear.

■ Canceling the Key Lock

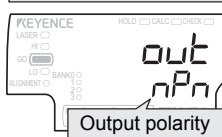
1. When the Key Lock is set, press the MODE and the up (or down) arrow button for at least 2 seconds.
2. The Key Lock would be cancelled.

■ Initializing the sensor

1. Press the SET button 5 times while pressing the MODE button. The main display will show "rESEt".



2. Select "YES" by pressing the up/down arrow button, and press the [MODE] button. The main display will show "out".



3. Select the output polarity from "NPN" and "PNP" by pressing the up/down arrow button, and press the [MODE] button. The main display will show "AnLG".

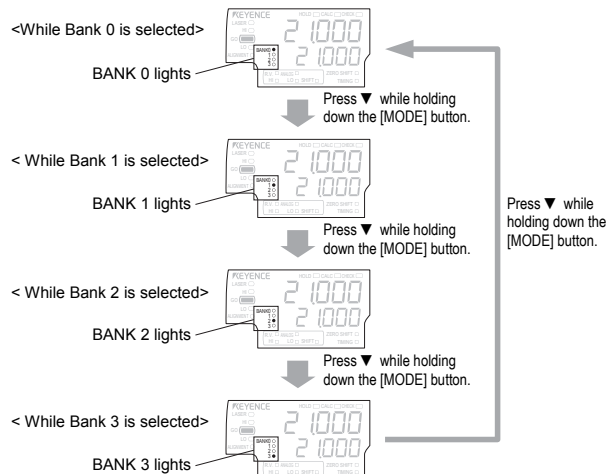


4. Select the analog output from "oFF", "0-5V", "-5-5V", "1-5V" and "4-20mA" by pressing the up/down arrow button, and press the [MODE] button. The sensor will be initialized.



■ Changing the bank (program)

1. Press the up/down arrow button while pressing the [MODE] button.



2. The bank (program) would be switched to another one. Each bank (program) will have an own HIGH limit setting value/LOW limit setting value/Shift target value/Analog output upper and lower range.

Basic setting mode

■ How to enter the Basic setting mode

1. Press the [MODE] button for at least 2 seconds.
2. Press the [MODE] or left/right arrow button and select the function number.

■ 01 Measurement direction

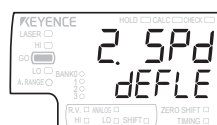


Set the measurement direction from [Normal] and [Reverse].

[Normal]: The value increases when the target comes close to the sensor head.

[Reverse]: The value decreases when the target comes close to the sensor head.

■ 02 Sampling rate



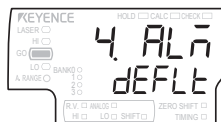
Set the measurement sampling rate.

■ 03 Average rate



Set the average rate. High-pass filter and Step count filter can be set here.

■ 04 Alarm setting



Set the Alarm setting from [Default], [Clamp] or [User setting].
 [Default]: When the measurement fails (out of the measurement range) for 6(sampling rate set to 0.33ms) or 7(sampling rate set to except 0.33ms) times, the previous value is held until the next measurement is successful.
 [Clamp]: When the measurement fails (out of the measurement range), the previous value is held until the next measurement is successful.
 [User setting]: When the measurement fails (out of the measurement range) for a certain number of times, the previous value is held until the next measurement is successful.

■ 05 Output state

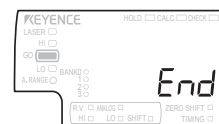


Set the output status from [Normally Open] or [Normally Closed].

Advanced setting mode

■ How to enter the Advanced setting mode

1. Press the [MODE] button for at least 2 seconds.
2. Press the [MODE] or left/right arrow button until the sub display will show "End".
3. Press the up/down arrow button. The main display will show "Pro".



4. Press the [MODE] or left/right arrow button and select the function number.

Function	Explanation
06 Hold function 6. HLD	Set how to hold the value from [Sample], [Peak], [Bottom], [Peak to peak], [Auto peak] and [Bottom peak].
07 Timing input 7. t in	Set how the timing input for the hold function is used from [Level] and [Edge].
08 Delay timer 8. dLY	Set the delay timer for the judgment output from [Off], [ON-delay], [OFF-delay] and [1-shot].
09 Hysteresis 9. HYS	Set the hysteresis for the judgment value.
10 Analog output scaling 10. AnG	Set how the analog voltage or current should output, related to the value.
11 External input 11. in	Assign each input function to the 4 external inputs.
12 Bank switching method 12. bnt	Set the way how to switch banks from [Button] or [External input].
13 Memorizing the zero shift 13. SFT	Set if the shift target value has to be memorized to the EEPROM or not, when the zero shift was input.
14 Interference prevention 14. inF	Set to use the interference prevention function.
15 Number of digit 15. dSP	Set the number of digits from [Default], [0.001], [0.01], [0.1] and [1].
16 Power saving 16. Eco	Set to use the power saving function.
17 Head display mode 17. HED	Set the lighting conditions for the light on the sensor head.
18 Display color 18. Col	Set the color of the judgment light, and the color of the main display.