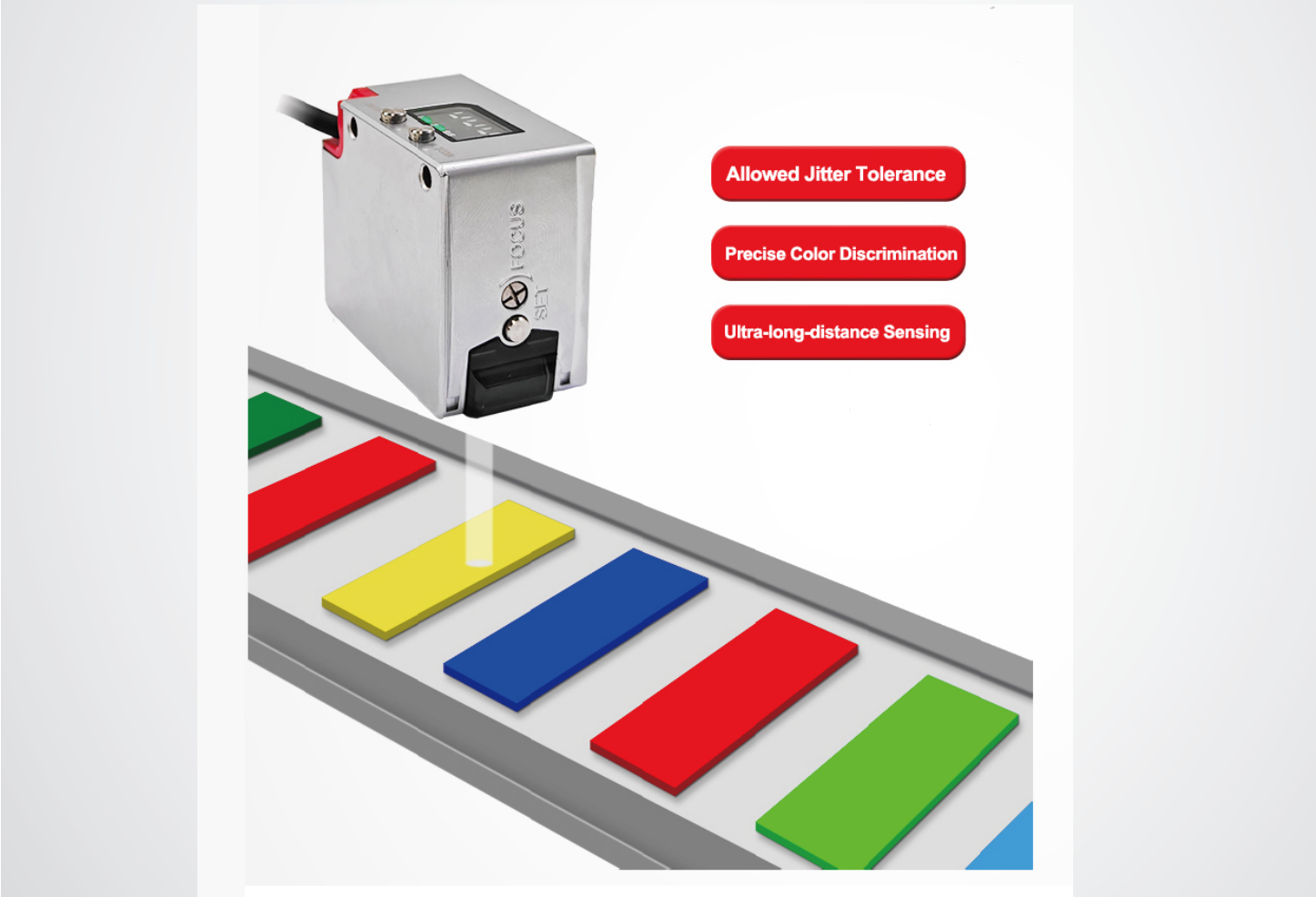




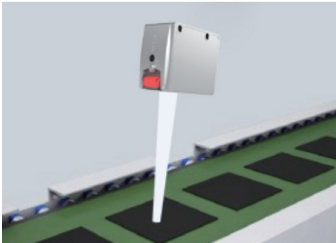
Stainless Steel Color Sorting Sensor

SISCO-CS-250/207

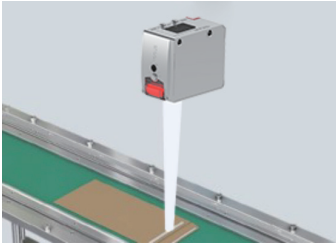


- White LED light source,wide wavelength,can stably detect color or appearance differences
- It has good anti-jitter performance and backg-round suppression function
- Spot modulation(CS-207can be selected for single or double spot,CS-250 can modulate the size of the spot)
- Long distance detection(70mm and 500mm detection distance)
- The color standard can store 9 colors at the sametime
- You can choose to use IO-LINK communication

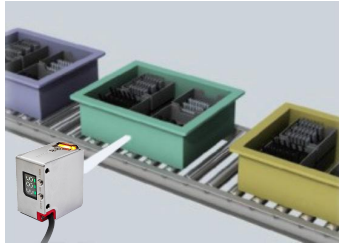
Applicatione xamples



Test for the presence of thin si-ices



Test for the presence of glue



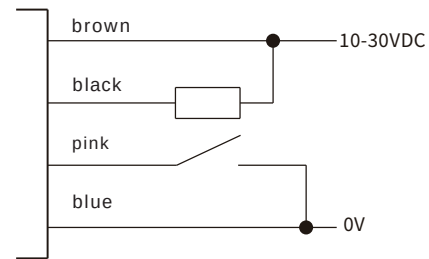
Detect the color of the transmiss-ion belt

Size of product

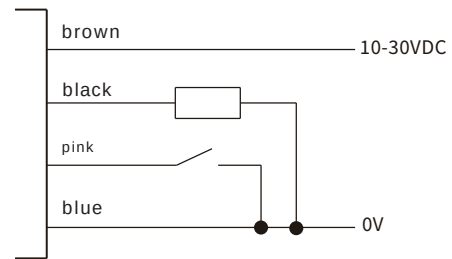
Model	NPN/PNP	SISCO-CS-207	SISCO-CS-250
Detection distance		30-70mm	50-500mm
Minimum spot diameter		At 50mm,it is about 1.6 × 2.9mm	Approximately Φ3.5mm(at100mm),approximately Φ9mm(at 250mm) and approximately Φ20mm(at 500mm)
Response time		200μs/1ms/10ms/100ms/500ms	
Light source		White LED	
Reduce mutual interference function		Set different frequencies,up to 2 units	
Source	Supply voltage	10 to 30 VDC with ripple(P-P)10%,Class 2,or LPS	
	Consume current	24V 50mA below,12V 100mA below	
Timer		OFF/Connect delay/disconnect delay/single	
I/O	Control output	NPN open collector/PNP open collector switching type below 30V, below 100mA,residual voltage below 2V N.O./N.C. switching type	
	External input	Tune/stop transmitting on a switchable basis	
Guard circuit		Power reverse protection,power surge protection,output overcurrent protection,output surge protection	
Environmental lighting		Incandescent lamp:below 10000lx sunlight:below 20000lx	
Ambient temperature		-20 to +50 (no freezing)	
Relative humidity		35 to 85%RH(no condensation)	
Resistance to hock		1'000m/s² X,Y,Z,6 times in each direction	
Resistant to vibrat-ion		10 to 55Hz double amplitude 1.5mm X,Y,Z in all directions for 2 hours	
Levels of protection		IP65	
Material		Shell:Zinc casting(chromed)Indicator light cover:PC button:Stainless steel	
Weight		128g	

Input/output wiring diagram

NPN output

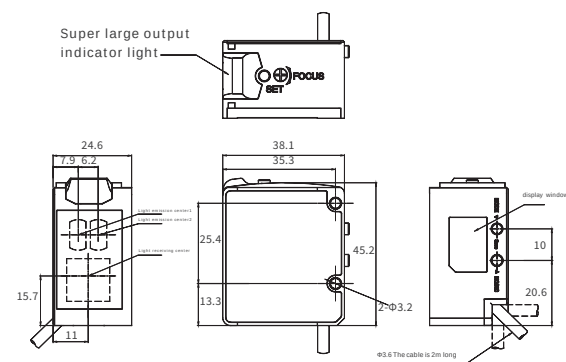


PNP output

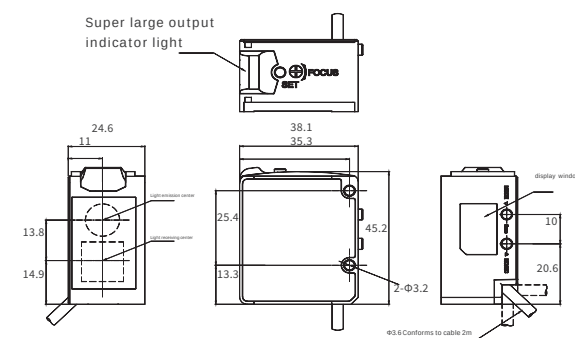


Dimensional drawing

SISCO-CS-207



SISCO-CS-250

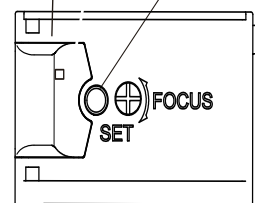


Names of sections

pilot lamp
Off:Output
OFF Orange:
Output ON Red
(flashing):
Error

push-button

The method of adjusting
sensitivity is different,the
operation method is also
different

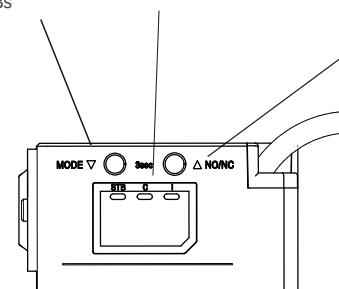


[▼] Button
· Change the
set value
within 1s
· Enter the
set screen
after 3s

STB : The light is green when the light is available

C : The C/C+I mode lights up the green light

I : C+I/Super I mode lights up the green light



[▲]Button
· Less than 1s
Change the set value
· switch NO/NC after 3s

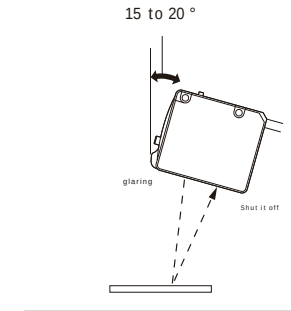
Operating guide

During installation

- Fastening torque of the mounting hole:0.63N · m(M3 screw)
- When the detection is unstable,it maybe that the detection target has a gloss.In this case,please tilt the sensor about 15 to 20°.

About ambient light

If the light of high frequency lighting such as inverter fluorescent lamp directly enters or reflects to the detectiontarget and then enters the receiving part,it may cause a false operation.
In this case,please take measures such as in stalling a shade or changing the installation position.



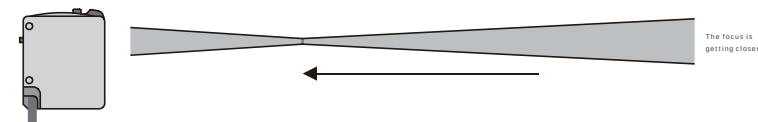
Adjust the spot diameter

- The diameter of the light point can be adjusted by the side knob

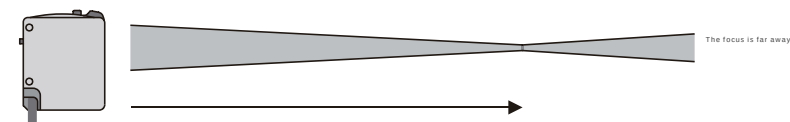


Pay attention to Torque when adjusting the knob:less than 0.2N · m

- Turn to the right and the focal distance becomes closer



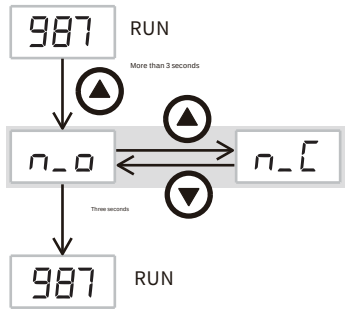
- Turn to the left and the focus distance becomes farther





Basic Settings

- Switch output logic(switch NO/NC)
Set NO/NC
 - n_o (LON)Output ON if the set condition is met(ON when light enters)
 - n_l (don)Output ON if the set condition is not met(ON when no light enters)

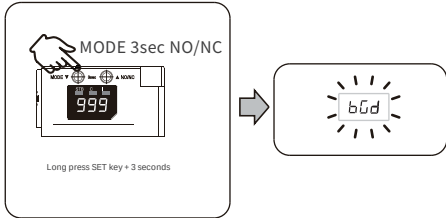


Detection mode

Detection mode	Explain
Auto(initial value)	When adjusting the sensitivity,the most appropriate mode is automatically selected from C+I mode or C mode
C+I pattern	Using color components(R,G,B)and light and shade(detected by light exposure)
C pattern	Color components(R,G,B)are used for detection
Super I mode	Use light and shade(light amount)to detect

Remove the background

When the detection object is similar to the background color,press SET+ Δ for 3 seconds at the same time against the background,and release the button to display after the screen flashes bcd, Can eliminate the current detection background.When the sensitivity is reset,this function auto matically cancels.



Adjust sensitivity

- Auto/C+I/C pattern

About display values

- Consistency

It shows the degree of consistency between the "color" of the detection target set asa benchmark and the "color" of the detection target being detected at present.

Display range : 0 to 999(the more consistent the value)

- set value

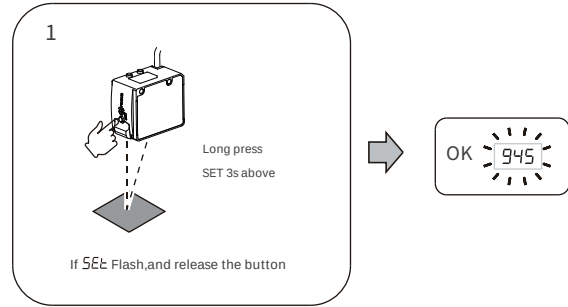
The degree to which the "color" is consistent with the detection target set as a benchmark is determined as the same "color",which is shown as the threshold.Refer to the tutorial on confirming and adjusting the set value when confirming or manually fine-tuning the set value

※The value displayed by flashing after tuning is the set value.

- Set sensitivity(choose one of the following three methods)

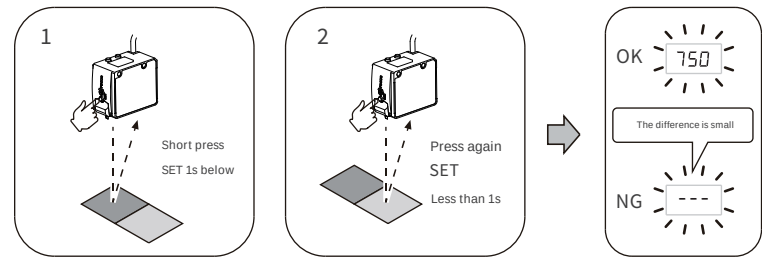
- 1 Point tuning(when detecting a specified "color")

Set the "color" of the test target to be used as a benchmark.When selecting [Auto],it acts as [C+I mode].



- 2 point tuning (when performing 2 "colors" discrimination)

Set the "color" of the detection target to be used as abenchmark and the "color" of the detection target to be judged.(The first point is the benchmark color)



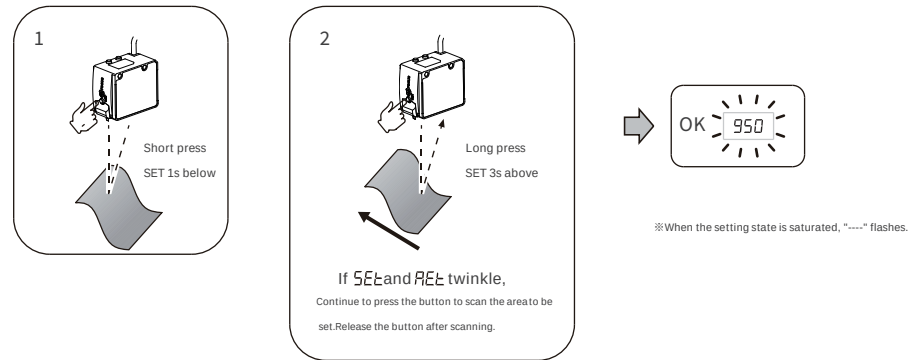
- Standard sample tuning (allowing deviation within the same detection target)

Allow the "color" of the detection target to be uneven and the deviation of the detection target.When the [SET] button is pressed for a short time,the "color" of the registered reference is registered,and when pressed for along time,continuous sampling is performed.The reference is added during sampling and judged as the same "color".

When the reference is added,the indicator light flashes green (1 time).

When the standard sample tuning is executed,the set value becomes 950 (initial value).To change this value,refer to thestandard sample tuning set value."

In addition,when [Auto] is selected,it acts as [C+I mode].



※When the setting state is saturated, "----" flashes.

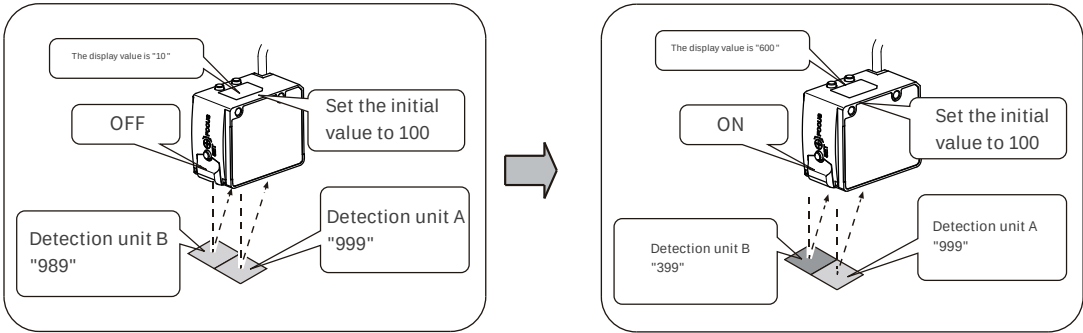


Differential mode (for SISCO-CS-207only)

- Two color differences can be detected without tuning

This is a function that detects the difference in consistency between one light point and another.No tuning is required.For example,if the "color" of two light points is exactly the same,the display value becomes "0",and the greater the color difference, the greater the display value.

<Example of action>



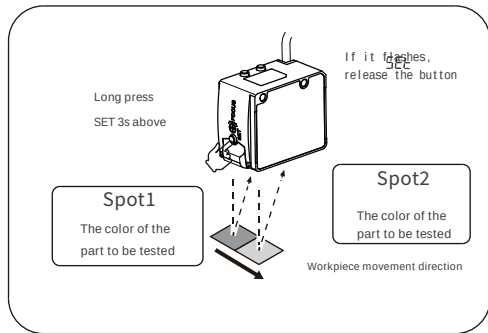
※When confirming or manually fine-tuning the set value,please refer to the above instructions.in[Differential mode],the larger the value of the set value,the looser the detection,and the smaller the value,the stricter the detection.

Matching mode (for SISCO-CS-207 only)

- Set sensitivity

2 A single spot is detected when the consistency exceeds the set value*1

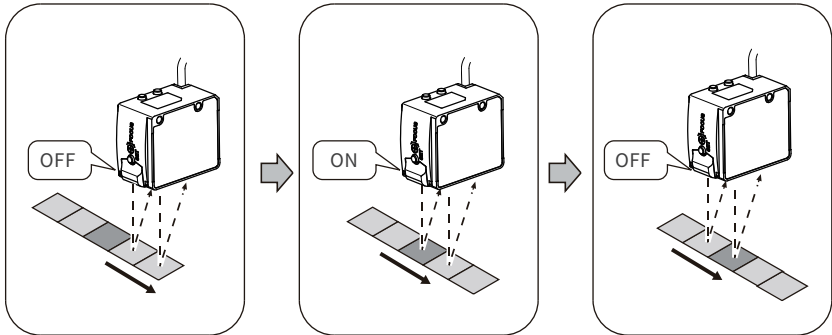
Registration should be used as a benchmark color combination and detection*2



※1When confirming or manually fine-tuning the set value,refer to the above operation confirmation and adjustment of the set value".
※When the amount of light is saturated or insufficient,it may

sometimes display "uuu" perhaps "nnn" But if the above registration is implemented,it may also implement bright control and can be detected.

<Example of action>



<Precautions when tuning the standard sample>

- Continue until the green light indicating additional benchmarks is no longer lit.
- If the standard sample tuning is performed again after the standard sample tuning,the setting content at the earliest time of the standard sample tuning is overwritten.
- If the allowable range is added after the standard sample is tuned,please carry out the additional tuning of the standard sample.
- When the set state is saturated,itdisplays- nnn-. When additional allowable range is added,reduce the standard tuning setting value and reperform the standard tuning.
- After the standard tuning is adjusted,even if the standard tuning setting value is changed,the setting value will not take effect.

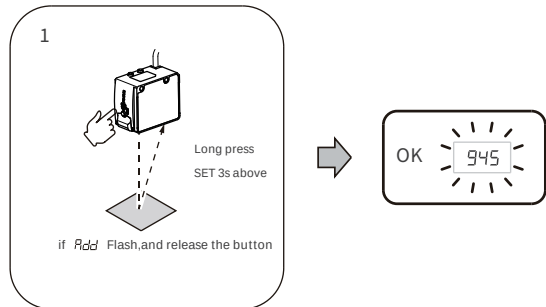
Allow deviation between individual workpieces

- Additional tuning of the standard sample (when additional workpieces are allowed)

To set the "color" set by other tuning methods and the detection target to be judged as the same "color",long press the [SET] button+[] button.

If the additional setting is successful,the"setting value"will flash three times and return to the normal screen (at this time,the setting value does not change).

The"color"between the originally set"color"and the added"color"is also supplemented.

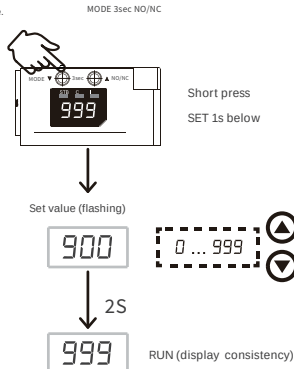


<Precautions when adding tuning to the standard sample>

- When the standard sample is cleared and additional tuning is added,perform other tuning.
- When the setting fails or the setting status is saturated,it displays "....".

Confirm and adjust the set value

The larger the value of the set value,the more strict the detection,and the smaller the value,the more loose.



Super I mode

About display values

- Light exposure

Displays the current amount of light received.Display range: 0 to 999(the higher the amount of light received,the higher the value)

- set value

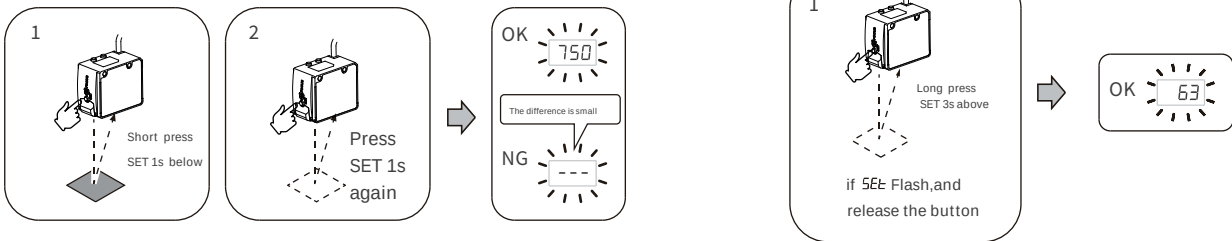
The amount of light received is determined as a detection target to a certain extent,which is shown as the threshold.When confirming or manually fine-tuning the value,please refer to the tutorial for confirming and adjusting the set value.

*The value that flashes after tuning is the set value.

Set sensitivity(choose one of the following three methods)

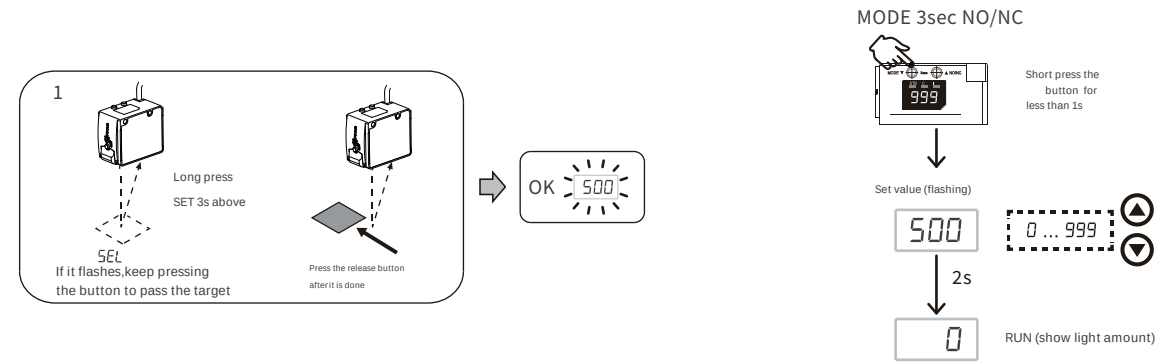
Maximum sensitivity tuning (to tune the sensitivity to maximum)

- 2-point tuning (basic)



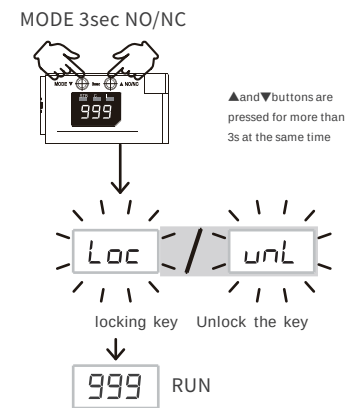
Automatic tuning (when the moving target cannot be stopped)

Confirm and adjust the set value

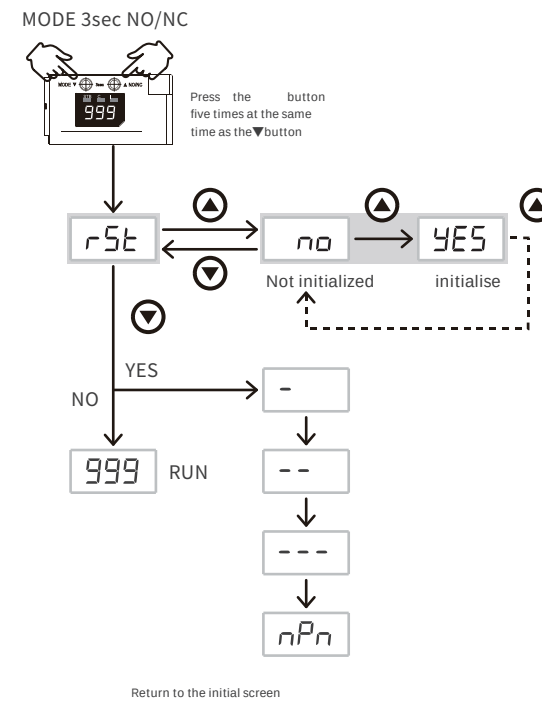


Convenient features

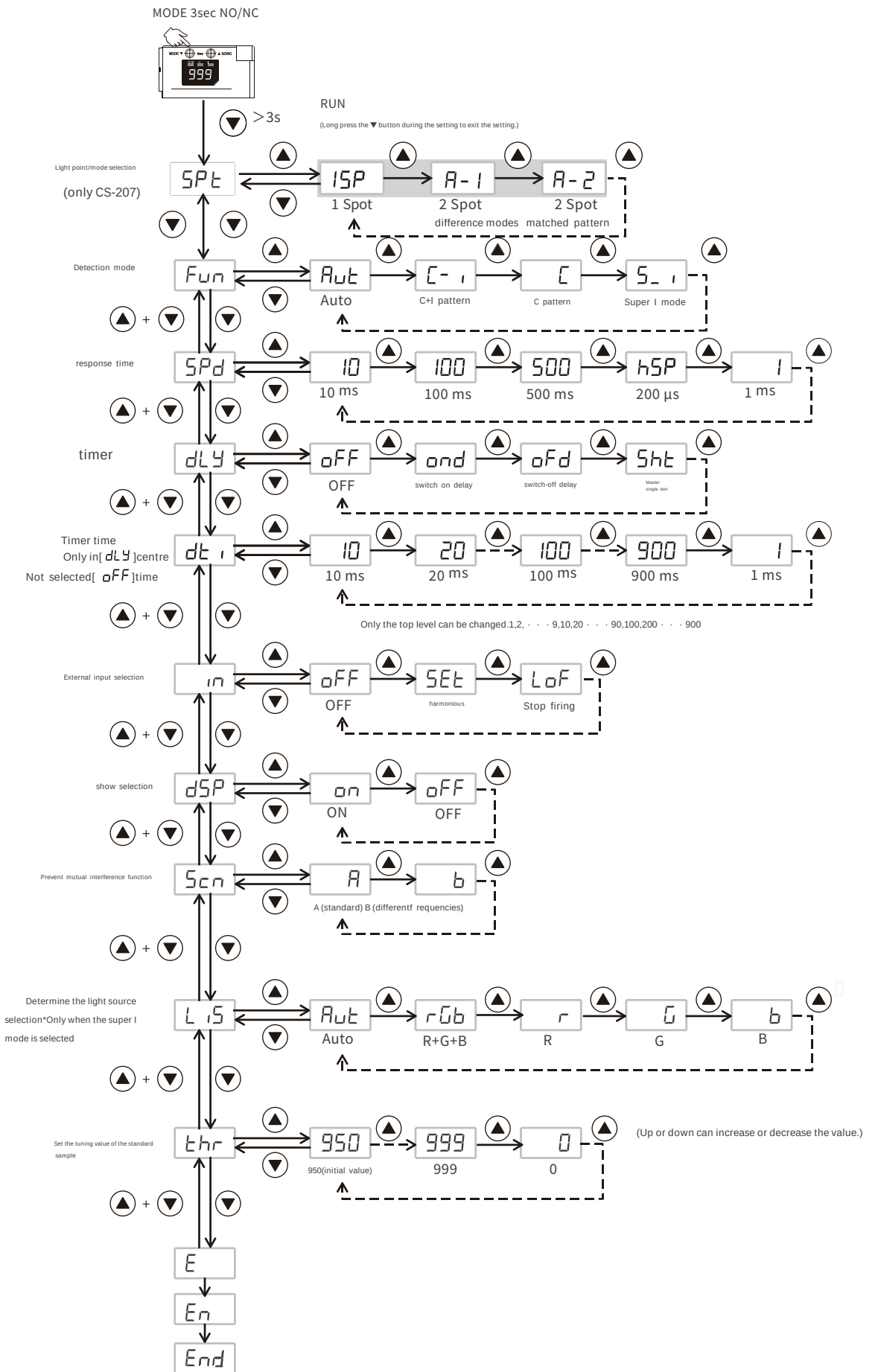
locking key



initialise



Detailed Settings





Convenient feat-

Detection mode

Select the detection mode.

response time

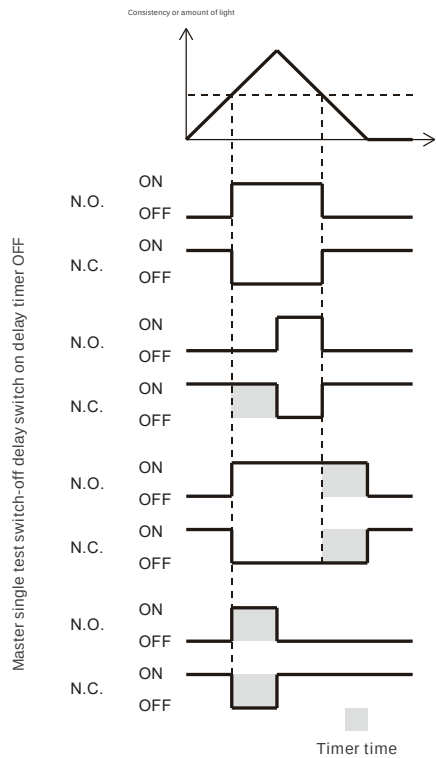
The longer the response time is set,the higher and more accurate the detection accuracy is.

When the detection target is moving at high speed and the detection is unstable,the response time should be set to a short one.

timer

Through this function,the output switching of the sensor can be delayed.

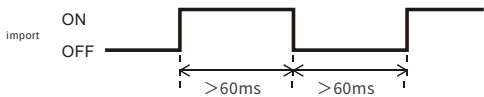
- On delay[ONd]
- Disconnect delay[OFd]
- Master single test[SEt]



External input selection

Harmonious[SEt]

Executes the same function as the [SET] button.



show selection

select[OFF]The display can be extinguished.

Prevent mutual interference function

This product can reduce the interference by changing the luminescence cycle. When using multiple CS-2 series products in close proximity, set different luminescence cycles.

Determine the light source selection

When super I mode is selected, the light source of the RGB is determined to be used. When [Auto] is selected, the sensor automatically selects the most suitable one when setting the sensitivity. [R+G+B], [R], [G], and [B] can be fixed by selecting them.

Set the tuning value of the standard sample

When using [Auto/C+I/C mode], the value set during calibration of the standard sample becomes a fixed value. This value can be changed in the detailed Settings.

The larger the value, the stricter the detection will be. However, when setting the standard sample tuning, it is easy to display "----". When displaying "----", please reduce this value and re-tune the standard sample.

other

Non-numeric output

Show	Content	Confirm matters and countermeasures
ErE	1)The number of times it has been rewritten is over a million 2)Memory exception	1)The memory life has come to an end 2)If the power is not reconnected and reset, there is a fault
uuu	In the Auto/C+I/C mode, when the amount of reflected light is too much, it displays as action 0 consistency	Please adjust the sensor setting Angle to avoid direct reflection of light into the sensor
nnn	In the Auto/C+I/C mode, when the amount of reflected light is insufficient, it displays as action 0 consistency	Please confirm whether the detection distance is within the specification range
Loc	The lock key function is enabled	Please unlock the key
-	The display selection is OFF	Please set the display selection to ON

Non-numeric display output

Show	ON/OFF output		Pilot lamp	
	N.O.	N.C.	N.O.	N.C.
ErE	As usual		Red flashing	
uuu	OFF	ON	Extinct	Citrus sinensis
nnn	OFF	ON	Extinct	Citrus sinensis
Loc	As usual		As usual	
-	As usual		As usual	

Stop firing[LoF]

Stop LED emission.

