# SICK

## SENSICK WLL190T-2

Carefully read and understand the safety precautions before operation The important information is provided to protect your health and property Do not apply any other installing or operating procedure other than that described in

#### Safety Precautions

- CAUTION It is dangerous to wire or attach/remove the connector with the power on Math area in the connector with the power on. Make sure to turn off the power before operation.
  - · Make sure to use the product with the protective cover attached and closed. · Installing in the following places may result in
  - malfunction: 1. A dusty or steamy place
  - 2. A place generating corrosive gas

  - A place generating corresponding construction
     A place directly receiving scattering water or oil.
     A place suffered from heavy vibration or impact.
  - · The product is not designed for outdoor use.
  - Do not use the sensor in transient state after power on (approx. 100 ms).
  - Do not wire with the high voltage cable or the power line.
    Failure to do this will cause malfunction by induction or damage.
  - · The sensor performance or digital display values may depend on the individual units or the condition of detected product.
  - · This product is not an explosion-proof construction. Do not use the product under flammable, explosive gas or liquid environment.
  - Do not use the product in water.Do not disassemble, repair, or convert the product. Failure to do this may cause failure, fire, or electric
  - shock. Operate within the rated range.
  - This product cannot be used as a safety device to

#### Input/Output Schematic

#### Brown 12~24V DC Black @ Control output 1 Gray @ Control output 2 /External input NPN Sircuit Blue ③ OV

protect human body.



4 Control output 1

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Pressing the UP/DOWN button in the RUN mode flashes the threshold. It indicates that adjustment is possible. Adjust to any value using the UP/DOWN button.

aching, the threshold of upper/lower limit can be set individually ② When using zone teaching Setting Lower Limit (Far) Setting Setting Upper Limit (Near) ৰদ্দচ



\$\$12 100 30 100 150 ically re the normal display ÷ conds after completion of Automatically returns to the normal display 5 seconds after completion of

the setting (no operation). the setting (no operation).









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Model		Standard type	Color mark type
	Cable type	WLL190T-2P/N432	WLL190T-2P/N492
	M8 3pin	WLL190T-2P/N333	WLL190T-2P/N393
	M8 4pin	WLL190T-2P/N434	WLL190T-2P/N494
Power source, voltage		12-24V DC ±10% including a ripple	
Consumption current		≤ 45 mA / 24 V	
Response time		60µs/250µs/2ms (Fast/Standard/Long)	
Control output		NPN / PNP Open collector 100 mA / ≤ 30V	
		Load current : ≤ 100 mA Residual voltage : ≤ 1.8 V	
Output method		Light on / Dark on Switching type in the function	
Short-circuit protection		Incorporated	
Light source		Red LED	Green LED
Indicator light /		Output Indicator light :Orange(output 1/output 2) /	
Display		7 segment 8 digit display	
Sensitivity setting		Teaching / Manual adjustment	
Timer function		OFF, On delay timer, Off delay timer,	
		One-shot timer	
Timer time		1ms-9s	
Setting input/output		External input setting	
		(Teaching/counter reset)	
		(Output 2 or Alarm output)	
		-25 ~ ±55°C /35 ~ 85% RH	
temperature/humidity		(No freezing and No condensation)	
Store temperature/		$-40 \sim +70^{\circ}C/35 \sim 85\%$ RH	
humidity		(No freezing and No condensation)	
Shock resistance		$10 \sim 55$ Hz Amplitude 1.5mm 2 hours for each direction of X,Y and Z	
Protective category		IP66	
Material		PPE : Case PC : Cover	
Weight		Cable type : 65g (Including codes) M8 Connector type : 18g	





Setting Amplifier

### Attaching and Removing to/from DIN rail

 Attachment of sensor unit: Hook the claw on the connecting side of fiber cable to the DIN rail. Then press down the hook until it locks.

· Removal of sensor unit: Pushing the unit to the direction of  $\mathbb{D}$ , hold up the connecting side of fiber cable and remove the unit.







With Coaxial reflection fiber, set single core fiber or white-lined fiber to the emitter Then set Multi wick fiber to the receiver.

Fine fiber

5176

TOP

1) Turn adapter cap anticlockwise completely, then appropriately insert the fiber. Be locked by turning adapter cap clockwise. 2 Cut the excess fiber with fiber cutter





u P c

Count upward

### Adjustment

Setting Maximum Sensitivity Switch to SET RUN Select th 🗆 P the teaching bu

eshold flashes and the

One Point Teaching

Switch to SET.

RUN

1 P t \_\_\_\_\_

1Pt good

RUN

display returns to normal

Switch to RUN

The threshold flashes and the

Two Points Teaching

display returns to norma

SET RUN

SET





ugh beam type:Perform adjustment when there is an object













2nd poin eaching button 2Pt 2Pt Ļ



shold flashes and th

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TOP

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5.9 Floodlight power setting

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5.10 End of Detail Setting (Expert mode)

Precautions for Function Setting

<sup>1)</sup> means factory default setting
Unavailable settings are not indicated autom These are not any troubles and failures.

Three categories can be set separately with  $Q_1$  and  $Q_2$ Other categories are not available for individual setting

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Returns to the TOP of Detail Setting (Expert mode).

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Elt



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loodlight can be chosen from the three level

Choose with COCE , then fix with Return to the top of Floodlight power setting

Set on standard

Set in the middle po

Set in the low power

TIP

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rm adjustment

RUN 1

#### Auto Teaching Switch to SET.



End: Press the teaching button Auto StoP

Auto good Switch to RUN.

eshold flashes and the display returns to normal.

Zon E

ZonE

Set RUN

old flashes and the

DP

1







stment with background

ough beam type/Reflection typ t and End :Perform adjustmer the object is passi

----- Upper limi 10% detection range ) to ± 105

\*In case of no object, adjust in a similar way t

Execute teach-in without object Use reflector.

Reflector VA2

#### Teaching Transparent Object

Switch to SET RUN g L A S 1

1 gLAS good

Switch to RUN SET Set the threshold at the cente n the 1st and 2nd poi

hreshold is set at 90% of eturned light level.

eam type : Execute teach-in with S

Dimensional drawing

old flashes and the

#### •WLL190T-2P/N4-2 (Unit: mm) 388888888 7.8 Maximun aperture 180 N I 0-ΉĦ 18.8



#### Options End Unit $\sim$



How to use Fine fiber

d n c Count downward Returning to Normal Display with One Button of count setting 0 - 9999 ■ is for count change, □ is for digit change, and ⓒ is to fix. The screen returns to the Timer Setting TOP. E000 0020 Choose the way of Input/Output of 1CH · 2CH Choose with Choose and fix by . Return to the top of Input/Output setting. 0 n - n  $Q_1 + Q_2$ : Control output n ---- I Q<sub>1</sub>: Control output, Q<sub>2</sub>: External input n --- A Q<sub>1</sub>: Control output, Q<sub>2</sub>: Alarm output Select an assignment of external input. Select by using and fix by a fix by and fix by an and fix by an and fix by a fix by an and fix by a fix by a fix by a fix by an and fix by a 6 t c h Sets to the external teaching input. c r S t Sets to the counter value reset input. Set up APC (Auto-power control). Choose with CDCDE, then fix with (). Return to the top of APC setting. Monitor the power of floodlight, then set the best condition. (1) ō • F F Non-use of APC Set up ASC (Auto sensitivity control). Choose with CDCD, then fix with (). Return to the top of ASC setting. F F Non-use of ASC <sup>1)</sup> Automatically adjust threshold ō o n Automatically adjust uncertoing along with the surrondings Available only on Transparent teaching. TIP Automatically set threshold even after sensors and cleaned.

Pressing the D button for 2 seconds or more in setting each function enables to return to the normal display (RUN mode) without using Eit (Exit).

▶ 2000 2200

Hold down the operation button for approx. 0.3 seconds if not especially specified.
 The sub monitor starts flashing when each setting selection becomes available.
 The monitor in use of the counter function displays "U" when the up-counter is selected, and displays "d" when the down-counter is selected.

\* Invalid while setting the timer time, number of count, or span slant.

① Threshold ② Operation setting ③ Timer setting and Timer time

Press 🔘 on Run mode, target channel blinks and switch to it.

сН2

#### Kev Lock

Switching Channel

Locks all buttons. Useful to prevent accidental operation.

Hold down the HUN mode. Operate in the same way to cancel as well.



#### Change threshold of Alarm output

With Alarm setting (Alarm output need to be fixed at 5.5 Input/Output setting), threshold (Output timing)can be changed. \*Changes are available on Transparent teaching, ASC setting On

On RUN mode, change to CH2 by pressing and holding D. After CH 2 blinks, screen will be changed. Setting changes are available with GPTE

#### ব্রাগচ



Output when the amount of light received of standard background which set by ASC setting is below threshold. \*when 5.2 indication setting is fixed with %, the amount of light received and threshold will be shown in %.

#### SAM Circuit (ASC = Automatic Sensitivity Control)

Threshold value will be automatically reset as the sensor continuously monitors returned light. Sudden change of returned light, like cleaning of lens, will trigger reset of the best threshold computed in the circuit (SAM circuit).

This function is valid when Transparent Teaching Mode.

#### APC (Auto Power Control)

Emission LED power is continuously kept at same level compensating damping of LED in the long run of working time. For this function detection level is kept same as preset level.



BF-EB01-W190

- Specifications and equipment are subject to change without any obligations on the part of manufacture
- For further information regarding configuration menue and teaching function please take note of the application manual.