

# FR1012 Obstruction Light Controller



Control cabinet



Accessory: photocell box ( optional)

## Products description and applicaiton

Mainly applied to aviation obstruction light's fault alarm monitoring, ON/OFF switch and control function including flash rate adjustable for tower(transmission, telecom,microwaveetc.),chimney(power plant, coking plant, chemistry plant etc.), tall buildings, large bridges, large port machinery, large engineering machinery and wind turbine etc.

## Features

- AWL's flash synchronously
- Fault alarm indicators on the panel and alarm signal output
- Alarm signal with dry contactpassive output.
- Auto-Manual switchable, if don't need photocell automatically switch function, it could be switched to manual control.
- Photocell switch PJ003 for photocell function ( optional)
- Optional fault switch function: when the main light fails, will switches to the standby light automatically.
- Optional GPS synchronization function

## General Specifications

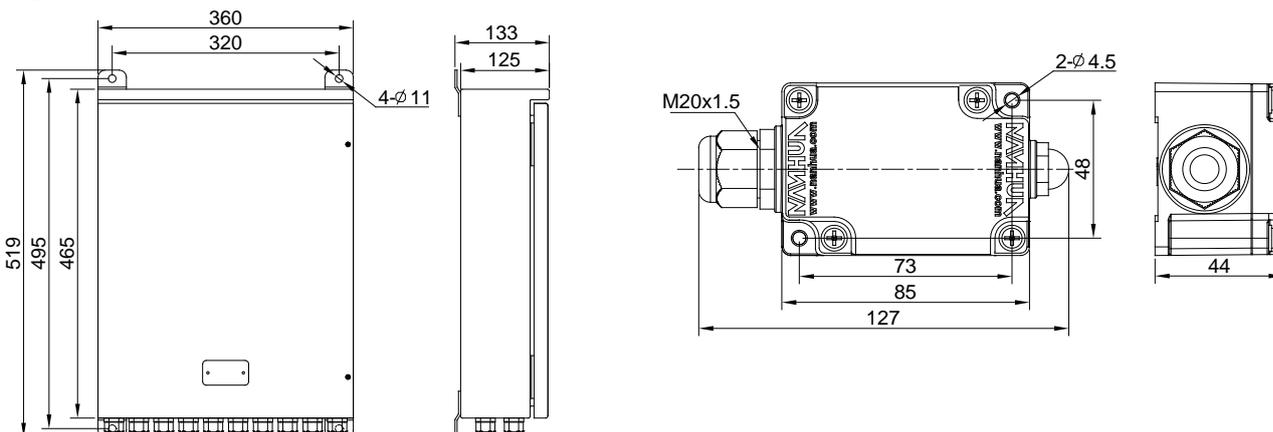
Electric parameter		Mechanical parameter	
Input Voltage	AC100-240V <sup>1</sup>	Cabinet Material	Cold rolled plate with powder spray(RAL7038) <sup>3</sup>
Output Voltage	DC48V	Weight	13.5 kg(AC) , 10 kg(DC)
Frequency	50Hz/60Hz	Storage Temperature	Ta-40 ° C~+70 ° C
Power Loaded	60W-720W	Operating Temperature	Ta-40 ° C~+55 ° C
SurgeLightning Protection	IEC61000-4-5 L- L 3kV IEC61000-4-5 L-G 6kV	Ambient Humidity	10% ~ 95% (no coagulation)
Electrostatic Discharge	IEC61000-4-2 Contact discharge8kV	IP Rate	IP65
		Color	Grey (RAL7038)

Functional parameter	
Control Light Branch	12-way <sup>2</sup>
Control Mode	Steady burning/Flashing
Flash Rate	20FPM, 30FPM, 40FPM and 60FPM
Alarm Output	Dry contact (Relay) output

- 1.The specific operating voltage is referenced to the order number AC100~240V/DC48V;
- 2.When the working mode is including the main-standby lights, the number of control circuits is shown in the wiring diagram;
- 3.ainless steel 304 with spray-paint (RAL7038) or stainless steel 316 spray-paint (RAL7038) can be customized.

## Mounting dimensions

Units: mm



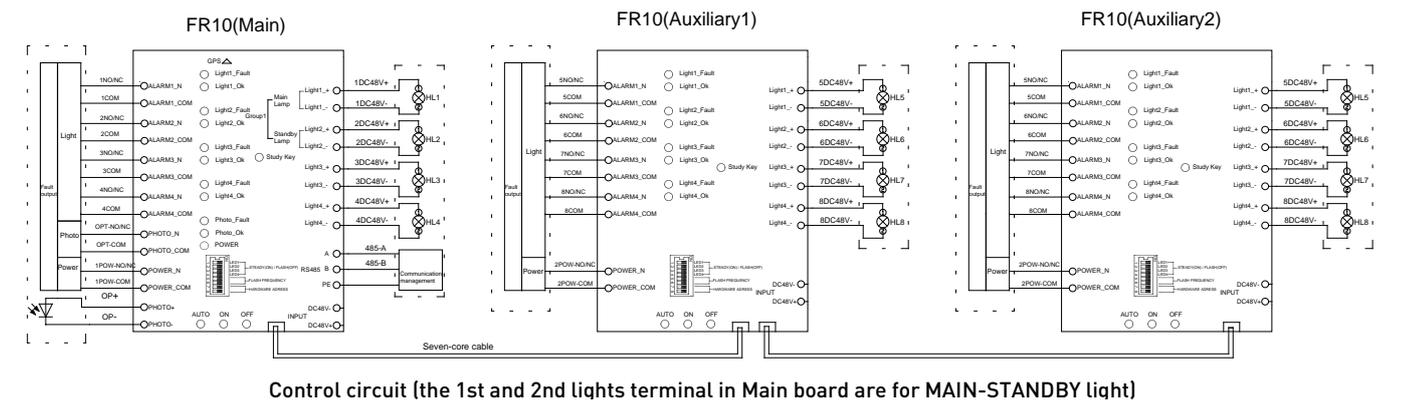
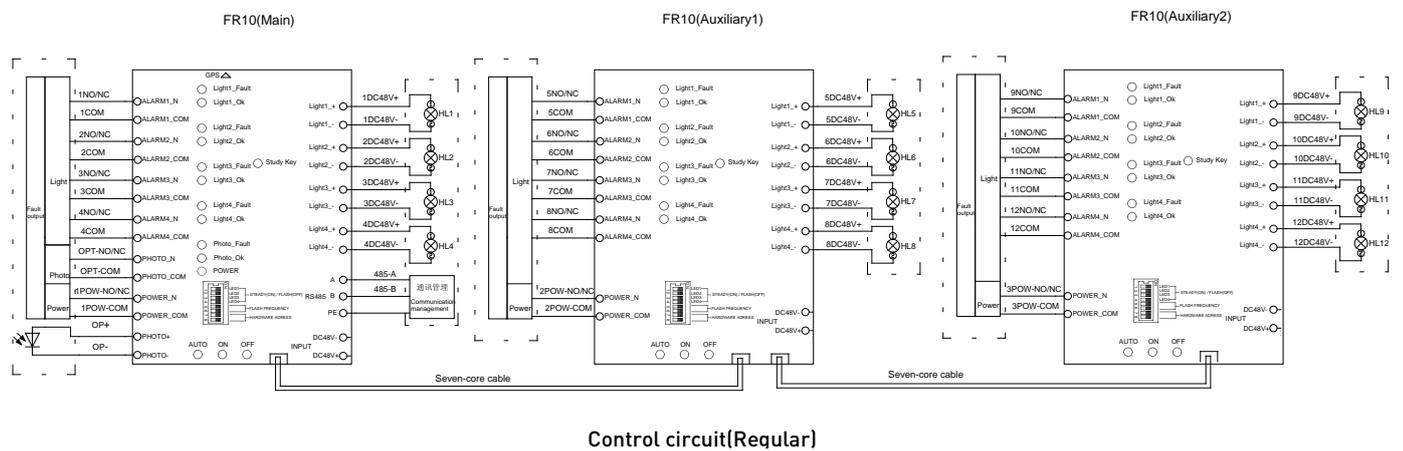
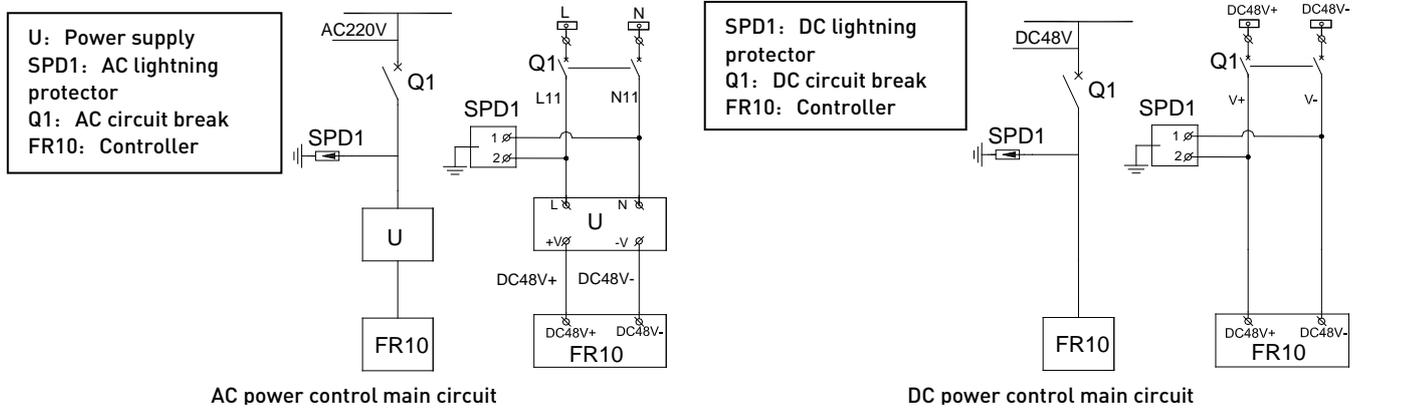
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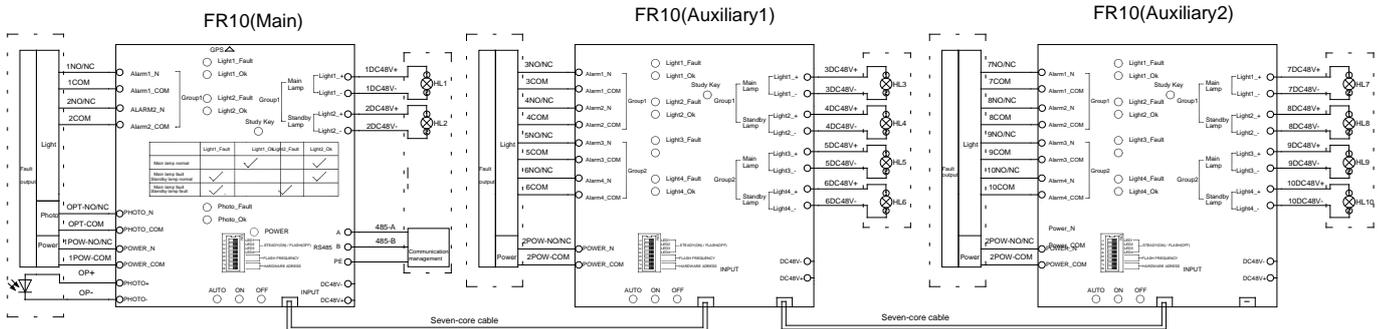
## Installation method of use

- Please make sure that the mounting surface or mounting bracket is strength enough, the installation location should have enough space, and could open the controller door regularly.
- Using 4 sets bolt(M10 bolt, plain washers, spring washer, M10 nut) to fix the controller on the mounting surface or bracket;Notes: Please use stainless steel bolt, ensure the fixation strength.
- Use 2 sets M4 bolt to fasten the photocell box to a outdoor mounting surface or bracket, make sure there aren't any light toward to the photosensor and without any shade. Recommend to use the stainless steel bolt to make sure the fasten strength.
- Put the power cable through the waterproof cable glandfrom the cabinet bottom side, use a smaller size screwdriver, press the spring to connect the wire into terminals, should make sure to screw down the cable gland after wiring to be waterproof, please connect according to the marking inside the cabinet.
- Cable gland inner diameter  $\phi 6-\phi 12.5\text{mm}$ .
- Make sure the input voltage is corresponds to the controller operating voltage.
- If there is GPS function with GPS antenna should make sure install the antenna into wide open space without any shade. The GPS synchronization maybe need 30mins.
- Don't open any parts of the controller when it is working to avoid any anger!
- Must be power off before wire connection to avoid any danger!

## Wiring diagram



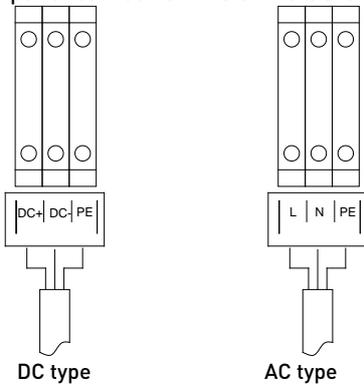
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Control circuit [All for MAIN-STANDBY lights]

## Terminal wiring

- With power connect terminals. There are two types: DC and AC type, please see following diagram:



- Branch output terminals as follows:

LightX<sub>-</sub>  
LightX<sub>+</sub>

"LightX<sub>-</sub>" connect to negative pole, "LightX<sub>+</sub>" connect to positive pole.

- Alarm output terminal as follows:

LEDX<sub>N</sub>  
LEDX<sub>COM</sub>

Light alarm: When light work normal LEDX<sub>N</sub> will be Open, if light fault LEDX<sub>N</sub> will be Closed, LEDX<sub>COM</sub> is common terminal.

Photocell alarm: When photocell work normal PHOTO<sub>N</sub> will be Open, if photocell fault PHOTO<sub>N</sub> will be closed, PHOTO<sub>COM</sub> is common terminal.

Power alarm: If power off or fault POWERX<sub>N</sub> will be Open, and when power work normal POWER X<sub>N</sub> will be Closed, Power<sub>COM</sub> is common terminal.

When light and photocell work normal, the alarm terminal with normal closed, if fault will be opened. And power work normal with Normal open if fault will be closed.

Note: If photocell detected no any change more than 24hrs system will read as it's fault.

LEDX<sub>N</sub> is the relay NO or NC point(can be customized if there are opposite points requirement).

Note: System will regard as normal if detected the photocell aren't any changes in 24hrs.

## Operation Instruction

- Manual/Auto switch.

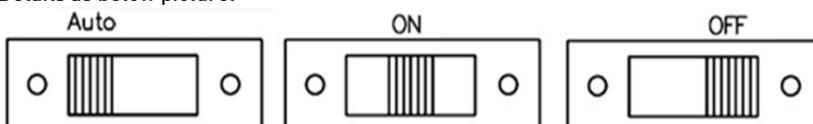
Use the black Dial switch to adjust AUTO, ON & OFF three status.

Toggle the switch to the AUTO position, the controller works in a auto status, it will turn off the light in the daytime and turn on the light at the night time.

Toggle the switch to the ON position, the controller works in a manual on status, it turns on the light.

Toggle the switch to the OFF position, the controller works in a manual off status, it turns off the light.

Details as below picture:



Note: Factory setting as Auto

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- Steady burning/Flashing switch

Dial switch 1-4, it separately controls the 4 circuit branch lights working status (steady burning/flashing). Toggle the switch to ON, all the circuit branch will be steady burning; Toggle the switch to OFF, all the circuit branch will be flashing.

Picture								
Working mode	Light1 steady burning	Light1 flashing	Light2 steady burning	Light 2 flashing	Light 3 steady burning	Light 3 flashing	Light 4 steady burning	Light 4 flashing

**Note:** Factory setting branch way from 1 to 4 as flash

- Flashing rate settings

Dial switch 5 & 6, it could set the circuit branch light's flashing rate.

Picture				
Flashing rate	20FPM	30FPM	40FPM	60FPM

**Note:** Factory setting as 40FPM

- Hardware address setting

Dial switch 7,8, it could set the controller hardware address. "0" is the host address, the others are slave address.

Motherboard and expansion board address toggle selection (The motherboard dial code is "0", auxiliary board 1 must be non-"0")

Picture				
Address	0	1	2	3

**Note:** Factory setting as main board address is "0", auxiliary board 1 is "1" and auxiliary board 2 is "2".

- Fault indicator

LightX\_Fault: when the circuit branch light fails, LightX\_Fault indicator light turns on.

The main light fault start time is related to the frequency set, as below:

60FPM, light failure start time is 90S

40FPM, light failure start time is 135S

30FPM, light failure start time is 108S

20FPM, light failure start time is 270S

LightX\_OK: when the circuit branch light works in normal, LightX\_OK indicator light turns on.

**Note:** If there is Main-standby light, Light 1\_Fault red indicator for main light's fault, then will auto switch to the standby light, and indicator Light2\_Ok with green light for standby light work normal.

- Initial data calibration

When the lamp is turned on for the first time (initial installation or replacement of the lamp), you must press the "Study" button for system learning itself.

Turn on the power and press the "Study" button after the lamp has been working properly, if the beeper tweets like "di", it means it begins calibrate, it is forbidden to cut off the circuit branch circuit and change the load voltage, current and other parameter when calibrating. After calibrated, if the beeper tweets "di" for two times, it means the calibration is successful. If the beeper tweets five times, it means the calibration fails, should check the external wiring loop, after no problem please do the calibration as the same procedure again.

**NOTES:** All the three control panel in the lights controller should be set according to the above specification.

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## Order number

Product No.	Application	Input Voltage	power loaded	Work Mode	Photocell	GPS Synchronization	Fault Alarm <sup>1</sup>	SPD	BREAKER
1000316-001	Outdoor(Cold rolled steel box)	DC48V	60W-720W	12-Way	YES	YES	NO	YES	YES
1000316-002	Outdoor(Cold rolled steel box)	AC100-240V	60W-720W	12-Way	YES	YES	NO	YES	YES
1000316-003	Outdoor(Cold rolled steel box)	DC48V	60W-720W	1-Way Main & Standby lights' terminal	YES	No	NO	YES	YES
1000316-004	Outdoor(Cold rolled steel box)	AC100-240V	40W-480W	5-Way Main & Standby lights' terminal	YES	No	NO	YES	YES

**1.NO:** Means when light and photocell work normal, alarm terminal with Normal open, if fault will colsed, and power work normal with Normal closed if fault will open.

**NC:** Means when light and photocell work normal, alarm terminal with Normal closed, if fault will open, and power work normal with Normal open if fault will closed.

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