





HUNAN MACSENSOR COMPANY LIMITED



## User Manual for MGZ10 Light Intensity Transmitter (Analog Type)

### **Product Profile**

MGZ10 Light Intensity transmitter is a light-precision photosensitive transmitter and adopts Lux as the output value measurement unit.

It uses a wall-mounted waterproof shell and various analog output signals, 4-20mA/0-10V/0-5V are optional and 10-30V wide voltage power supply is adopted. It's common in agricultural greenhouses, flower cultivation greenhouses, agricultural fields, electronic equipment production lines and other places where require illumination monitoring.



### Features

- wide voltage power supply 10-30V DC;
- Wide measuring range 0-60,000 Lux, 0-200,000 Lux optional;
- Wall-mounted waterproof shell;
- High IP rating for outdoor or harsh on-site environment.

### **Main Technical Specifications**

DC power supply (default)	10-30VDC (0~10V products can be supplied with DC 24V only)			
	Current output	1.2W		
Max power consumption	Voltage output	1.2W		
Accuracy	Light intensity	±7%(25°C)		
Light intensity range	0~200000 Lux (0~65535 lux by default)			
Working environment	-40°C~+60°C,0%RH~80%RH			
Long-term stability	Light intensity	≤5%/y		
Response time	Light intensity	0.1s		
	Current output	4mA~20mA		
Output signal	Voltage output	0~5V/0~10V		
	Voltage output	Output resistance≤250Ω		
Load capacity	Current output	<u>≤600Ω</u>		

## **Product Model**

MGZ10				Light intensity transmitter, sensor	
	I20			4~20mA current output	
	V05			0~5V voltage output	
	V10			0~10V voltage output	
				Wall-mounted shell with a Chinese Character WANG	
		-2		Shape	
			-1	Range 0-65535	
			-2	Range 0-20W	

Dimensions



110×85×44mm

# Wiring

	Wire Color	Description
Power supply	Brown	Positive (10~30V DC)
	Black	Negative
Output	Blue	Light signal (+)
	Green	Light signal (-)



V+ GND Collector output power

Correspond to the wire of the same color

**Diagram of Three-wire Connection** 

## **Equipment Installation Instruction**



#### **Calculation Method**

### 1. Current Type Output Signal Conversion Calculation

For example, the range is 0~200,000LUX, 4~20mA output, when the output signal is 12mA, calculate the current light intensity value. The span of this light intensity range is 200,000LUX. Expressing by a 16mA current signal, 200,000LUX/16mA=12,500LUX/mA, that is, the current 1mA represents the light intensity change of 125,00LUX, and the measured value is 12mA-4mA=8mA.8mA\*12500LUX/mA=100,000LUX, so the current light intensity is 100,000 LUX.

### 2. Voltage Type Output Signal Conversion Calculation

0-65535LUX, 0-10V output, when the output signal is 5V, calculate the current light intensity value. The span of the light intensity range is 0-65535LUX. Expressing by a 10V voltage signal, 65535LUX/10V=6553.5LUX/V, that is, voltage 1V represents the light intensity change 6553.5LUX, the measured value 5V-0V=5V, 5V\*6553.5LUX/V = 32767.5LUX, the current light intensity is 32767.5LUX.

### **Common Problems and Solutions**

#### Fault: no output or output error

Possible reasons:

- 1. The PLC calculation occurs error caused by the corresponding error of the range.
- 2. The wiring method or the wiring sequence is wrong.
- 3. The power supply voltage is incorrect (All 24V power supply for 0-10V).
- 4. Distance between the transmitter and the collector is too far, causing signal disturbance.
- 5. The PLC acquisition port is damaged.
- 6. The equipment is damaged.