Electricals
SEAWIN

Small Infrared Motion Sensor

Manual-Ver2.1

SNR0101

Catalog

1   Overview

This manual provides users with detailed technical information of the small infrared motion sensor, including installation and programming details, and explains how to use the illuminance infrared motion sensor based on actual examples. The illuminance infrared motion sensor is mainly installed on the ceiling.

The small infrared motion sensor is mainly used in situations where monitoring is needed, that is, monitoring whether someone is moving and then performing actions;

Installed as a system with other devices via EIB / KNX bus.

Use engineering design tool software ETS to set up and operate the entire system.

2   Product and function overview

The small infrared motion sensor is mainly installed on the ceiling. It is a kind of device that can sense external signals and physical conditions (such as movement) and transfer the sensed information to other device (such as dimmers and relays) and realize its function. Connect to the EIB / KNX system through the EIB bus terminal, use the engineering design tool software ETS software (version ETS4.0 or above) to perform physical address allocation and parameter。
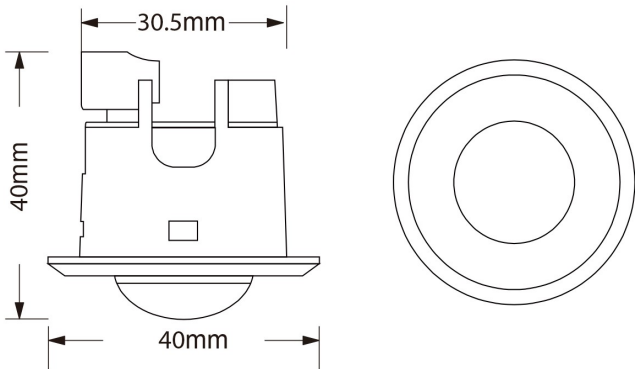
Functions：

  (1) Infrared motion trigger control function

  (2) Infrared motion Master-Slave function

  (3) Enable or disable the infrared channel control output function through the object

3   Detailed parameters

Bus input	21-30V DC via knx
Bus current	≤12mA
Power	< 360mW
Sensing distance	Installation height 2.5m~3m, radiation range 5m~7m
Shell material	ABS
Dimension (H x W x D)	Height H=40.1mm, diameter =39.8mm
Hole Size	Φ31mm≤d≤Φ35mm
Installation method	Embedded installation (Hole Size: diameter: 31mm)
Weight (approx.)	0.05KG
Operating temperature	-5°C- 45°C
Storage temperature	- 20°C- 55°C
Transport temperature	- 25°C- 70°C
Relative humidity	max 90%

4 Dimensional drawing, wiring diagrams and induction diagram

Dimensional drawing

安装开孔尺寸：Φ31

Wiring diagram

KNX总线输入

Induction diagram

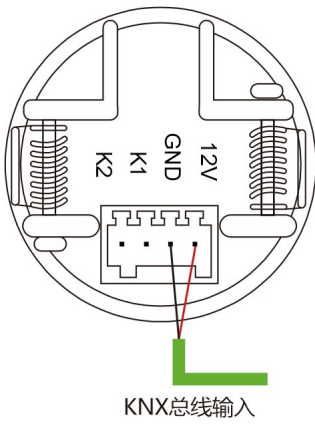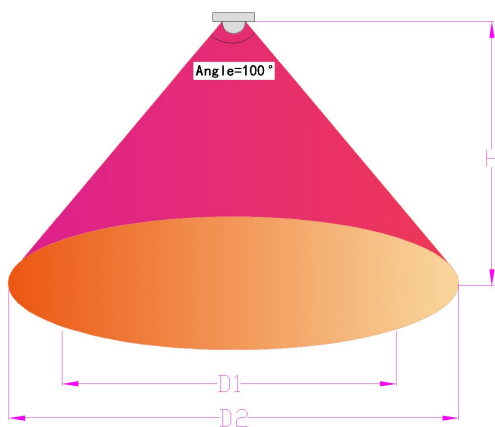
Angle=100°
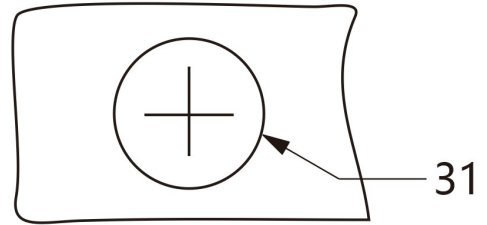
H：range：2.5m~3m，recommended value：2.7m

D1: range：4m~5m，high sensitivity range
D2: range：5m~7m，maximum sensing range

5　　Parameter setting and communication object description

5.1 Application Function Overview

5.1.1 Move function

The move function mainly implements the action when the sensor senses the movement of a person, and ends the action when the person is not sensed for a period of time. For example, on the public aisle, you can set the sensor to automatically turn on the lights when it senses that someone is coming, and turn off the lights automatically after a delay after a person has passed, so as to achieve the maximum energy saving effect. Can also be used in other occasions, such as elevator halls, underground garages, etc.

5.1.2 Master-Slave function

The sensor's master-slave function is generally used in situations where multiple sensors control one or a class of device at the same time. When the main sensor receives the specified information from the sensor, it outputs the start value. After a delay, if the information from the sensor is not received during this period of time, then output the end value. If the specified value is received again during this time, the delay restarts. For example, several sensors control a light at the same time. One of the slave sensors senses that someone has moved, at this time, the slave sensor sends a message. After receiving the specified information, the master sensor outputs a message and turns on the lamp. If the main sensor didn't receive the specified message for a while, it outputs a message again, turn off the light.

5.1.3 Prohibition of move function

This function is convenient for certain situations where the move function needs to be disabled. When the move function of a certain sensor is disabled, the move function will no longer affect this sensor。

5.2 Setting of function parameters

The following uses ETS5 as an example to set parameters in ETS5.
1) Open the parameter setting interface of the illuminance infrared motion sensor in ETS5, as shown in Figure 6.1.1. The "General" parameter setting interface can set whether to disable / enable the functions such as illumination detector, motion detector and device status feedback.
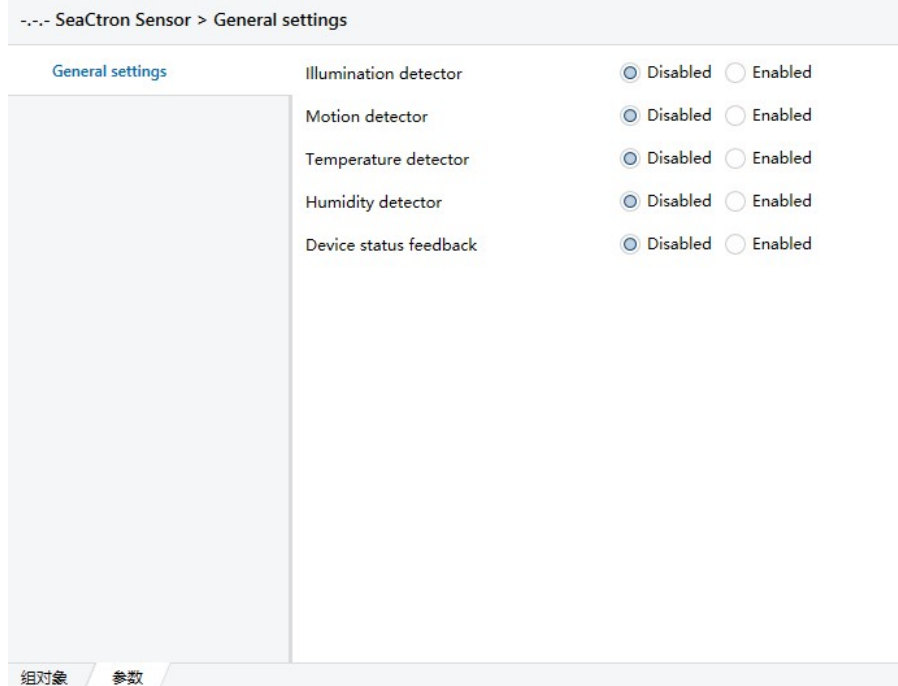
Figure 6.1.1

Parameter	Description
Illumination detector	(This parameter is reserved)
Motion detector	Motion detector（options：disable, enable)
Temperature detector	(This parameter is reserved)
Humidity detector	(This parameter is reserved)
Device status feedback	Device status feedback（options：disable, enable)

2）Motion detector

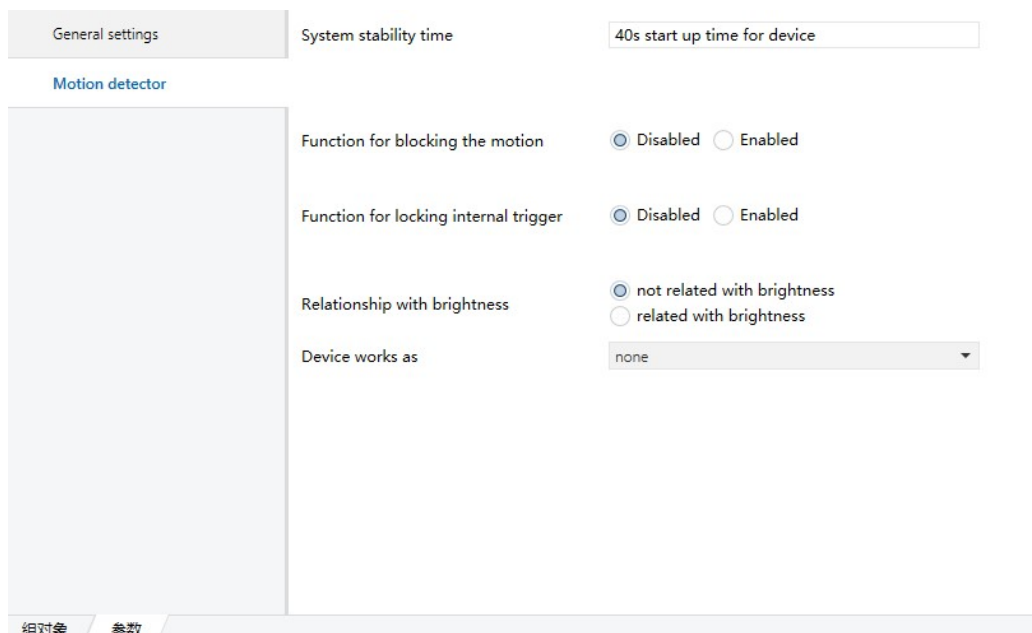 "Motion detector" parameter setting interface is shown in Figure 6.1.2

Figure 6.1.2

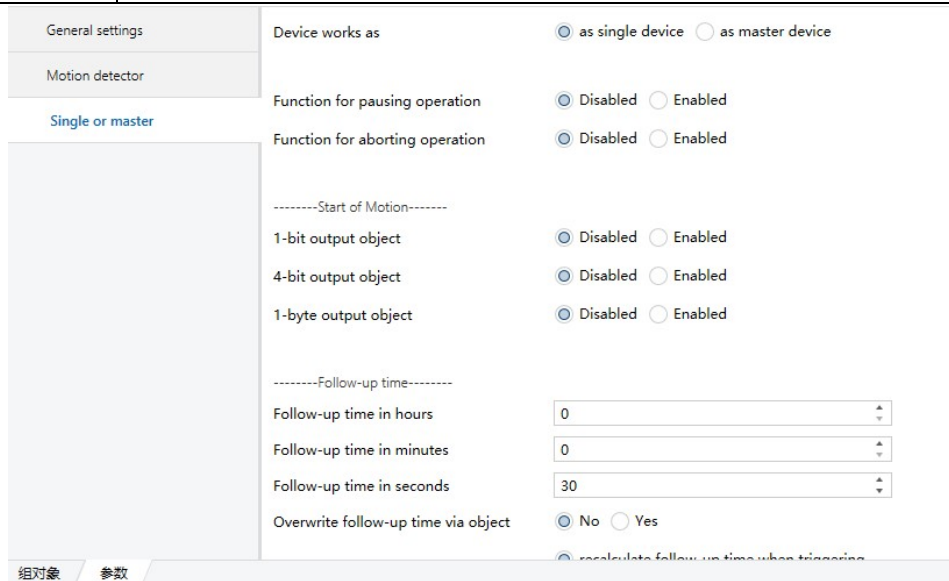| Parameter	Description
System stability time：40s start up time for device	40s start up time for device
Function for blocking the motion	Function for blocking the motion，options: enable, disable. When "enable" is selected，parameter "blocking value" will appear, options："blocking=1，unblocking=0"，"blocking=0，unblocking=1"，blocking value after voltage recovery(blocking status after voltage recovery)，options："blocking"，"unblocking"，"as before voltage failure".
Function for locking internal trigger	Function for locking internal trigger，options: "enable"，"disable". When "enable" is selected，parameter "locking value" will appear，options："locking=1, unlocking=0"、"locking=0, unlocking=1"; locking value after voltage recovery (locking status after voltage recovery)，options：blocking"、"unblocking"、"as before voltage failure"
Relationship with brightness	(This parameter is reserved)
Device works as	This parameter indicates the device working mode，options："none"、"single or master mode"，"slave mode". When "single or master mode" is selected，the interface appears as shown in Figure 6.1.3；when "slave mode" is selected，the interface appears as shown in Figure 6.1.4

Figure 6.1.3

Parameter		Description
Device works as		Device function mode，options："as single device"，"as master device". When "as master device" is selected，parameter "input value as master" will appear（value that triggers motion sensing when acting as master），options "on"，"off".
Function for pausing operation		Function for pausing operation，options: enable, disable. When enable is selected，parameter "for current operation" will appear，options："pause=0，continue=1"，"pause=1，continue=0"
Function for aborting operation		This parameter is used to perform a forced clear operation by motion detector, options："enable"，"disable". When "enable" is selected，parameter "for current operation" will appear，options："abort when receiving 0"，"abort when receiving 1".
Start of motion （This parameter	1-bit output object	This parameter is used to output 1bit data, options："enable"，"disable". When "enable" is selected, parameter "1-bit value" will appear，options："on"，"off".
parameter	4-bit	This parameter is used to output 4 bit data，options: enable, disable. When enable is

|		
is used to start sending data to the bus when the sensor detects someone)	output object	selected，parameter "4-bit value" will appear，options："Decrease, Break"，"Decrease 1%" …… "Decrease 100%"，" Increase, Break"，"Increase 1%" …… "Increase 100%"
	1-byte output object	This parameter is used to output 1byte data，options：enable, disable. When enable is selected, parameter "1-byte type" will appear, options：scene number (1……64),percentage (0%……100%)，unsigned value(0……255)；When "scene number (1……64) is selected，parameter "scene number" will appear，can fill 1~64; when "percentage (0%……100%)" is selected，parameter "percentage" will appear，options 0%~100%；when "unsigned value(0……255)" is selected，parameter "unsigned value" will appear，can fill 0~255.
Follow-up time（This parameter is used to send data when the sensor detects someone, and to set the time for sending additional data when the sensor senses that no one is there after the person walks by）	Follow-up time in hours	Follow-up time in hours，you can fill in 0-23
	Follow-up time in minutes	Follow-up time in minutes，you can fill in 0-59
	Follow-up time in seconds	Follow-up time in seconds，you can fill in 0-59
	Overwrite follow-up time via object	Overwrite follow-up time via object，options："yes"，"no"。
	Motion trigger during follow-up time	This parameter is used to set whether to recalculate the duration when the motion detector is re-triggered.，options："recalculate follow-up time when trigger"，"not recalculate follow-up time when trigger".
End of motion （This parameter is used for the sensor to sense that no one is there for a period of time and send data to the bus）	1-bit output object	This parameter is used to output 1bit data, options："enable"，"disable". When "enable" is selected, parameter "1-bit value" will appear，options："on"，"off".
	4-bit output object	This parameter is used to output 4 bit data，options：enable, disable. When enable is selected，parameter "4-bit value" will appear，options："Decrease, Break"，"Decrease 1%" …… "Decrease 100%"，" Increase, Break"，"Increase 1%" …… "Increase 100%"
	1-byte output object	This parameter is used to output 1byte data，options：enable, disable. When enable is selected, parameter "1-byte type" will appear, options：scene number (1……64),percentage (0%……100%)，unsigned value(0……255)；When "scene number (1……64) is selected，parameter "scene number" will appear，can fill 1~64; when "percentage (0%……100%)" is selected，parameter "percentage" will appear，options 0%~100%；when "unsigned value(0……255)" is selected，parameter "unsigned value" will appear，can fill 0~255.
Dead time after end of motion(s)		This parameter is used for the sensor to sense that no one is there for a period of time. After sending an execution action to the bus, the sensor does not perform any operation after a certain period of time. You can fill in "0-255"。
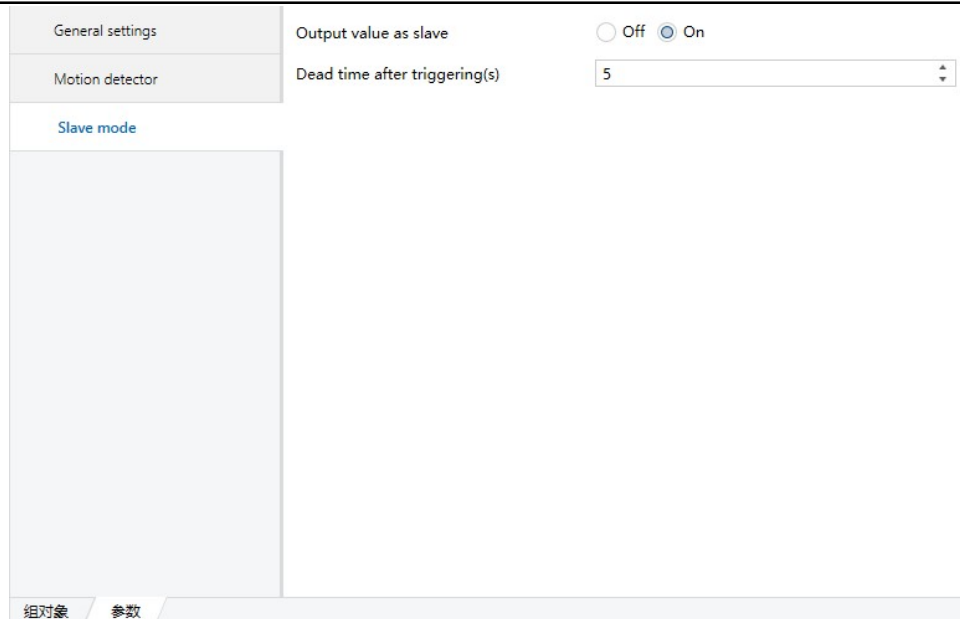
Figure 6.1.4

Parameter	Description
Output value as slave	Output value as slave（options："on"，"off"）
Dead time after triggering（s）	This parameter is used to perform no operation for a certain period of time after the slave sensor is triggered. (can fill in 0-255)

3）Device status feedback

This parameter is used for device status feedback，options："enable"，"disable"；When "enable" is selected, parameter "cycle time for feedback" will appear，options："1 second"，"2 seconds"……"120 minutes"．

5.3 Communication object description

The communication object is the medium through which the device communicates with other devices on the bus, that is, only the communication object can perform bus communication. under

Note: "C" in the table below indicates that the communication function of the communication object is enabled, "W" indicates that the value of the communication object can be rewritten through the bus, and "R" indicates that the value of the communication object can be read through the bus. "T" indicates that the communication object has the transmission function, and "U" indicates that the value of the communication object can be updated.

5.3.1 Communication object of motion sensing function

Number	Name	Communication object function	Data type	Attribute
14	Motion control block	Block/unblock	1bit	C,R,W,T
The communication object is enabled when the parameter "function for blocking the motion" selects enabled, sending "0" / "1" instructions through this communication object can block or unblock any operation of the channel from motion detector.				
15	Motion sensor trigger lock	lock/unlock	1bit	C,R,W,T
This communication object is enabled when "Enable" is selected in the parameter "function for locking internal trigger". Sending a "0" / "1" instruction through this communication object can block or unblock the internal trigger function of motion detector.				
16	Motion，Overwrite light threshold	Value in lux	2byte	C,R,W,T
This communication object is enabled when "Yes" is selected in the parameter " overwrite threshold value via object ", through this communication object, a 2-byte instruction can be sent to rewrite the light threshold of the corresponding channel.				
17	Motion，External brightness value（input)	Value in lux	2byte	C,R,W,T
This communication object is enabled when " external value " is selected in the parameter " source for brightness value ", this communication object can receive the 2-byte brightness value input from other devices.				
18	Motion，Master input	On/Off	1bit	C,R,W,T
This communication object is enabled when the parameter "device work as" in "single or master" selects "as master device". Through this object the data input from the slave device can be received.				
19，23	Start/End of motion，1-bit output	On/Off	1 bit	C,R,W,T
This communication object is enabled when the parameter "1-bit output object" of "start / end of motion" in "single or master" selects "enable". A 1-bit instruction can be sent through this communication object to control the on/off of other devices.				
20,24	Start/End of motion，4-bit output	4-bit value	4bit	C,R,W,T
This communication object is enabled when the parameter "4-bit output object" of "start / end of motion" in "single or master" selects "enable", send a 4-bit instruction through this communication object to control the increase or decrease of dimming.				
21,25	Start/End of motion，1-byte output	1-byte value	1byte	C,R,W,T
This communication object is enabled when the parameter "1-byte output object" of "start / end of motion" in "single or master" selects "enable", send a 1-byte instruction through this communication object to control the scene, output percentage, etc.				
22	Motion,Overwrite	In seconds	2byte	C,R,W,T

	follow-up time			
This communication object is enabled when the parameter "Overwrite follow-up time via object" of "follow-up time" in "single or master" is selected as "yes", sending a 2-byte instruction through this communication object can overwrite the follow-up time.				
26	Motion control pause	Pause/continue	1bit	C,R,W,T
The communication object is enabled when the parameter "function for pausing operation" in "single or master" selects enabled. Sending the value "0" / "1" through this communication object can pause/continue the normal operation of the sensor.				
27	Motion control abort	On/Off	1bit	C,R,W,T
The communication object is enabled when the parameter "function for aborting operation" in "single or master" selects enabled, send the value "0" / "1" through this communication object to clear the status of the sensor.				
28	Motion, slave output	On/Off	1bit	C,R,W,T
The communication object is enabled when " slave mode " is selected in the parameter " device work as ", the communication object outputs "0" / "1" to the host device.				

5.3.2 Device status feedback

Number	Name	Communication object function	Data type	Attribute
57	Device status	1-byte value	1byte	C,R,W,T
This communication object is enabled when "enabled" is selected in the parameter "device status feedback". This communication object can directly indicate the current status of the device.				

6   Safe use and maintenance

(1) Read all instructions carefully before use

(2) Keep away from places with sensitive air temperature changes such as air conditioners, refrigerators and stoves；

(3) Under a certain temperature, the effect of wind speed on the sensor is not great；

(4) When the ambient temperature is close to the temperature of the human body, the sensor response is not very sensitive and may even fail；

(5) Do not separate furniture, large bonsai, glass, curtains and other objects between the sensor and the detected human body；

(6) The sensor should not be directly facing doors and windows and places with direct sunlight (illumination and movement), otherwise the hot air flow outside the window and people walking will cause the sensor to report falsely, and the drastic changes in light will also cause the sensor to report

(7) To establish a good ventilation environment

(8) During use, pay attention to moisture, shock and dust

(9) Do not expose to rain or other liquids or corrosive gases

(10) If it is wet or attacked by liquid, it should be dried in time

(11) When the machine fails, please contact professional maintenance personnel or our company

7   Contact

Address:9th Floor, Building 5, Aotelang Science and Technology Park, No. 68, Nanxiang 1st Road, Huangpu District, Guangzhou City, Guangdong Province.China

Tel: +86-20-82189121

Fax: +86-20-82189121

Website: http://www.seawin-knx.com