

VIMAR 20850 Passive Infrared Motion Detector Owner's Manual

Contents

- [1 VIMAR 20850 Passive Infrared Motion Detector](#)
- [2 Product Information](#)
- [3 Functionality](#)
- [4 Behaviour after Bus On/Off](#)
- [5 Behaviour after Reset](#)
- [6 Product Usage Instructions](#)
- [7 Functionality](#)
- [8 Communication objects](#)
- [9 Motion detector: FAQs](#)
- [10 ETS reference parameters](#)
- [11 Documents / Resources](#)



VIMAR

VIMAR 20850 Passive Infrared Motion Detector



Product Information

The motion detector is a device with the model numbers 20850, 19850, 16850, and 14850. It is designed to detect motion within its range of action. When motion is detected and validated by an internal filter, a presence message is sent over the KNX bus and the green LED lights up. The device also includes a twilight sensor that can control the lights based on daylight brightness levels.

Functionality

- The motion detector detects motion within its range of action.
- A presence message is sent over the KNX bus and the green LED lights up when the movement is validated by an internal filter and meets the set brightness threshold.
- The green LED does not light up for every detected movement, but only when a presence message is sent.
- The device can activate a movement event from an external source or any KNX device.
- The twilight sensor can turn the lights on or off based on daylight brightness levels.
- Two types of brightness thresholds (upper and lower) can be set, and various operations can be performed according to the current level.
- Individual or cyclical On/Off messages can be sent, and message sending can be postponed to validate the effective level of the light sensor.

Behaviour after Bus On/Off

When the bus is off, data is not saved. When the bus is on, motion detection is enabled after 30 seconds, allowing the IR sensor to stabilize.

Behaviour after Reset

After a reset, the device behaves the same as when the bus is turned on.

Product Usage Instructions

To use the motion detector:

1. Install the motion detector in the desired location within its range of action.
2. Connect the motion detector to the KNX bus.
3. Ensure that the device is powered on and connected properly.
4. Adjust the brightness thresholds for the green LED and the twilight sensor according to your preferences.
5. Configure any external triggers or KNX devices that should activate the motion event.
6. Test the motion detection by moving within the sensor's range of action and observing the green LED lighting up.
7. If desired, adjust the twilight sensor settings to control the lights based on daylight brightness levels.

Note: Refer to the product manual for more detailed instructions on advanced features such as MASTERSLAVE operation with multiple motion detectors.

Functionality

- This device detects motion within the sensor's range of action. When the movement has been validated by an internal filter, a "presence message" is sent over the KNX bus and the green LED lights up. This is done according to the set brightness threshold. Note that the green LED does not light up every time a movement is detected, but only when a "presence message" is sent.
- The device is capable of activating a movement event from an external source or from any KNX device.
- A twilight sensor is also present which causes the lights to be turned on or off according to daylight brightness

levels. It is possible to set two types of threshold (upper and lower) and to perform various operations according to the current level. These actions allow individual or cyclical On/Off messages to be sent. It is also possible to postpone message sending to validate the effective level of the light sensor. For MASTER-SLAVE operation with multiple motion detectors, refer to the explanation of KNX object no. 2 “External trigger”.

Behaviour after bus on/off






- Bus off: data are not saved.
- Bus on: motion detection is enabled after 30 seconds, the time necessary for the IR sensor to stabilise.

Behaviour after reset

As for bus on.

Communication objects

List of existing communication objects

Numero	Nome	Funzione oggetto	Descrizione	Indirizzi di gruppo	Lung...	C	R	W	T	U	Tipo dati
 0	Rivelatore di movimento	Comando su movimento			1 bit	C	R	-	T	-	1 bit D...
 1	Rivelatore di movimento	Disattivazione forzata			1 bit	C	-	W	-	-	1 bit D...
 2	Rivelatore di movimento	Trigger esterno			1 bit	C	-	W	-	-	1 bit D...
 4	Crepuscolare	Commutatore			1 bit	C	-	-	T	-	1 bit D...
 5	Crepuscolare	Disattivazione forzata			1 bit	C	-	W	-	-	1 bit D...

KNX objects: motion detector in detail.

Motion detector communication objects

Number	ETS name	Function	Description	Length	Flag 1				
					C	R	W	T	U
0	Motion detector	Movement switch	(if the “Motion Detector” parameter is enabled) – a bit that goes to “1” if a movement is detected	1 bit	X			X	
1	Motion detector	Forced Disabled	(if the “Motion Detector” parameter is enabled) to deactivate the motion detector via the bus so that the device does NOT send multiple messages on detecting a moving body	1 bit	X		X		
2	Motion detector	External trigger	(if the “Motion Detector” parameter is enabled) if there are multiple PIRs set as “Motion detector” controlling the same light, choose one as MASTER and associate its “Command on movement” object with the “Trigger” objects of the other SLAVE PIRs in the same group as the relay to be controlled (so for the SLAVE PIRs the “Command on movement” object will be unused). This way each SLAVE PIR will be able to reset the time count of the MASTER PIR, which via the “Command on movement” object effectively activates/deactivates the light relay of the same group. For example, in a long corridor this ensures that the light does not go out during the time it takes to walk from the detection zone of one PIR to that of another	1 bit	X		X		
4	Twilight	Switch	if the “Twilight” parameter is enabled: the light turns on/off according to daylight brightness levels	1 bit	X			X	
5	Twilight	Forced Disabled	(if the “Twilight” parameter is enabled) to deactivate the twilight sensor via the bus so that the device does not send multiple messages on reaching the set daylight brightness threshold	1 bit	X		X		

Twilight function

“Twilight function” parameters

For automatic power on/off according to daylight brightness levels.

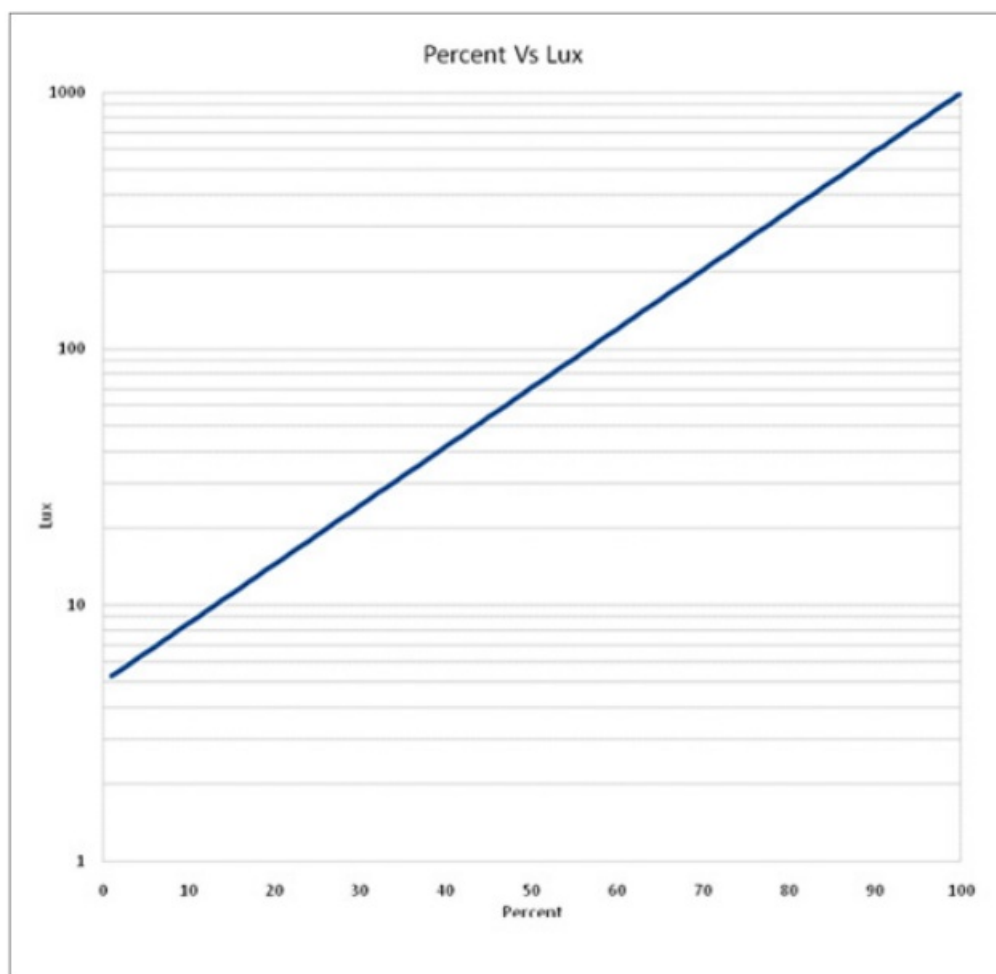
ETS text	Available values	Comment
	[Default value]	
Action at lower threshold	Nothing	The PIR operates with a lower and upper threshold; this parameter defines the behaviour below the lower threshold
	Off message	
	On cyclic message	
	Off cyclic message	
	[On message]	
Action at upper threshold	Nothing	The PIR operates with a lower and upper threshold; this parameter defines the behaviour above the upper threshold
	On message	
	On cyclic message	
	Off cyclic message	
	[Off message]	
Cyclic period	1 s...1 h	If a cyclic action is selected, otherwise it is ignored
	[1 m]	
Object "Forced disable"	Disable	To disable twilight sensor via the bus
	Enable	
	[Disable]	
Disable twilight function with	On message	If "forced disable" object is enabled. The message can be set to force deactivation of the sensor
	Off message	
	[On message]	
Lower threshold	10%...100%	Lower threshold value
	[20%]	
Upper threshold	10%...100%	Upper threshold value
	[90%]	
Confirmation time	1 s...5 min.	Time delay for action when the daylight brightness value exceeds the threshold value
	[10 s]	

Note.

MASTER-SLAVE operation: if you want the light to be turned on by the SLAVE PIRs and turned off by a PIR defined as MASTER, in the relay group you must associate the "Command on movement" object of the MASTER PIR and the "Trigger" objects of the SLAVE PIRs (in which the "command on movement" object will remain unused).

Azione su soglia inferiore	Messaggio ON
Azione su soglia superiore	Messaggio OFF
Periodo ciclico	1 min
Oggetto "disattivazione forzata"	Abilita
Disabilita funzione crepuscolare con	Messaggio ON
Soglia inferiore	20%
Soglia superiore	90%
Tempo di convalida	11 s

"Twilight function" parameters



Detection performance: the data are approximate (the device is not a LUX measuring instrument)

Motion detector: FAQs

(20850, 19850, 16850, 14850)

1. The sensor has turned the light on but it does not detect me if I walk in front of it and after a while the light goes off.

You need to set a lower value for the “Movement timeout” parameter, which is the delay time before further ON commands are sent if the sensor continues to detect movement

2. Once the sensor has turned OFF the light, it does not turn it on even when someone walks directly in front of it.

You need to set a lower value for the “Minimum wait before sending new message” parameter, which is the delay time before further ON commands are sent if the sensor continues to detect movement.

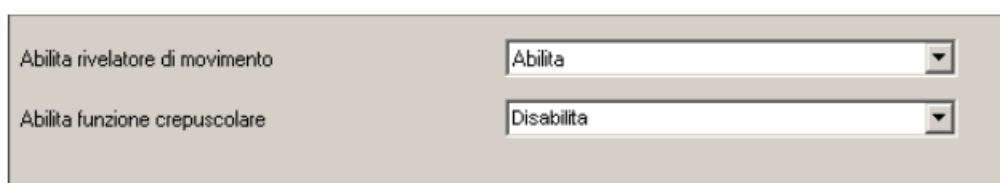
ETS reference parameters

General

You can choose to enable a different device function. The two functions (Motion detector and Twilight sensor) must not be enabled together.

General parameters

ETS text	Available values	Comment
	[Default value]	
Enable motion detector	[Enable]	To turn on a light when motion is detected
	Disable	
Enable twilight function	Enable	To turn on a light when day- light brightness falls below a certain value
	[Disable]	



Abilita rivelatore di movimento Abilita

Abilita funzione crepuscolare Disabilita

General settings

Motion detector

“Motion detector” parameters

To turn on the light when a moving person is detected.

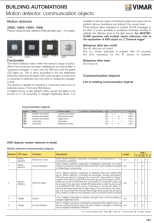
ETS text	Available values	Comment
	[Default value]	
Motion detector independent from light	Yes – No	If “Yes” the daylight brightness threshold is ignored (see “Brightness threshold”)
	[No]	
Motion detector below brightness threshold	10%...100%	If the motion detector depends on the light: defines the threshold below which motion is to be detected (0%= operates only in the dark)
	[50%]	
Send message	on movement	How to send a presence message
	cyclically	
	[in the case of movement]	
Minimum wait before sending new message	1s...1 h	If send message “on movement” is selected, this is the delay time before sending the “On” message on detecting movement after the sensor has sent a movement end “Off” message
	[5 s]	
Cyclic period	1s...1 h	If send message “cyclically” is selected
	[1 m]	
Movement timeout	1s...1 h	Time for which the sensor must not detect any type of movement if one has just been detected
	[30 s]	
Wait after movement finish	Disable	Sensor off time
	Enable	
	[Disable]	
Time wait after movement finish	1s...5 m	If “Wait after movement finish” is enabled, this is the time the device waits after detecting the end of movement and before sending an “Off” (if the corresponding parameter is enabled)
	[10 s]	

Send OFF message on movement finish	Yes	
	No	
	[Yes]	
Object "forced disable"	Disable	To bring up an object to be used for disabling the motion detector via the bus
	Enable	
	[Disable]	
Disable motion detector with	Off message	If the "forced disable" object is enabled. It is possible to set the message to force sensor deactivation
	On message	
	[On message]	

Indipendenza dalla luminosità	No
Soglia luminosità	50%
Invia messaggio	su movimento
Attesa minima tra due messaggi	5 s
Timeout movimento	5 min
Attesa dopo la fine del movimento	Abilita
Attesa dopo la fine del movimento	10 s
Invia OFF alla fine del movimento	Si
Oggetto "disattivazione forzata"	Abilita
Disabilita rivelatore di movimento con	Messaggio ON

"Motion detector" parameters

Documents / Resources



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20850, 19850, 16850, 14850, 20850 Passive Infrared Motion Detector, Passive Infrared Motion Detector, Infrared Motion Detector, Motion Detector, Detector