MOTION DETECTOR

DM KNT 001   DM KNT 002   DM KNT 003

INSTRUCTIONS MANUAL

General Description

· KNX motion detectors in different mounting types:

- DM KNT 001: flush-celing mounting.

- DM KNT 002: wall mounting.

- DM KNT 003: universal-box mounting.

· It incorporates as main function the Motion Detection. In addition it is possible to enable these functions:
- Twilight switch
- Constant light control
- Signal monitoring
- Light sensor
- Temperature sensor

These additional functions are independent, and can, or not, be enabled.

Possibility of adjusting the delay time so as Lux adjustment by the ETS or via potentiometers in the device itself.

Technical Data

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Power supply	21 ~ 32V$_{DC}$ (via Bus)
Consumption	9,3mA
Coverage (max.)	DM KNT 001: 360º & ∅7m at 2,5m high DM KNT 002: 180º & 10m at 2m high DM KNT 003: 200º & 8m at 1,2-1,5m high
Commissioning	ETS3 or later
Bus connection	By the supplied KNX connecting terminal
Colour	White
Mounting	DM KNT 001: Flush-ceiling mounting DM KNT 002: Wall mounting DM KNT 003: Universal-box mounting
Ambient temperature	-5ºC ~ +45ºC
Type of protection	IP20 (EN60529)
Safety class	III
According to the Standard	EN50090-2-2, EN50428 & EN50491
Certification	EIB/KNX

Project Development and Commissioning

1 – General settings (General)

Enable the functions that are going to be used.

By default, all but the principal motion detection and remotely control are disabled.

1.1 – Parameters
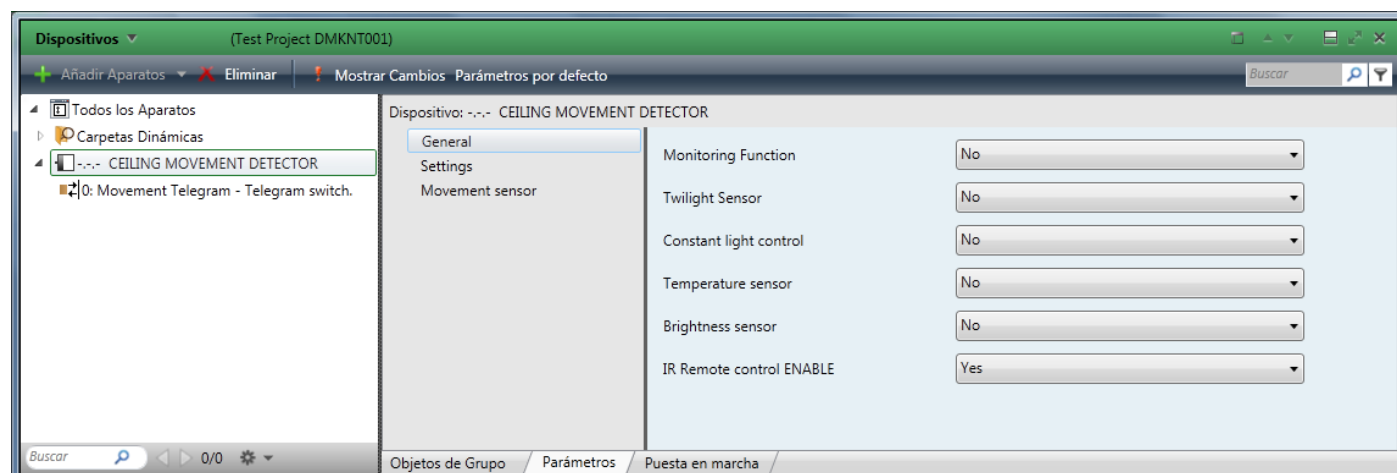
Monitoring Function

This function is similar to the main function "Motion Detection", with the addition that does not take into account the light level for triggering the detection.

Furthermore, to consider the motion detection, the signal level received by the PIR, built into in the sensor, is taken into account in short periods of time. So it detects motion detections with high energy in short periods of time or low energy detected for long periods of time.

Enabled Object: 3: Monitoring Telegram - Monitoring Telegram

Twilight Sensor

This function allows managing the activity of an object depending on the daylight. Thus is activated when daylight is below a certain level and is deactivated when the light level is above a second level.

As the levels of activation and deactivation can be different is possible to generate the necessary hysteresis to prevent cyclical turned on of the system.

Enabled Object: 5: Twilight sensor Telegram - Twilight sensor Telegram

Constant Light Control

This function allows managing the activity of an object depending on the daylight. This object marks the Lux level necessary to achieve a previously fixed threshold.

This object must work with dimming actuators which can increase or decrease its value through the object "Dimming_Value".

Enabled Object: 7: Constant light control Telegram - Regulation Telegram

Temperature Sensor

This function allows measuring the temperature at the sensor and sending this value to the bus.

Enabled Object: 13: Temperature Sensor value - Temperature Sensor value

Brightness sensor

This function allows measuring the level of light in the sensor and sending this value to the bus.

Enabled Object: 19: Brightness sensor telegram - Brightness sensor telegram
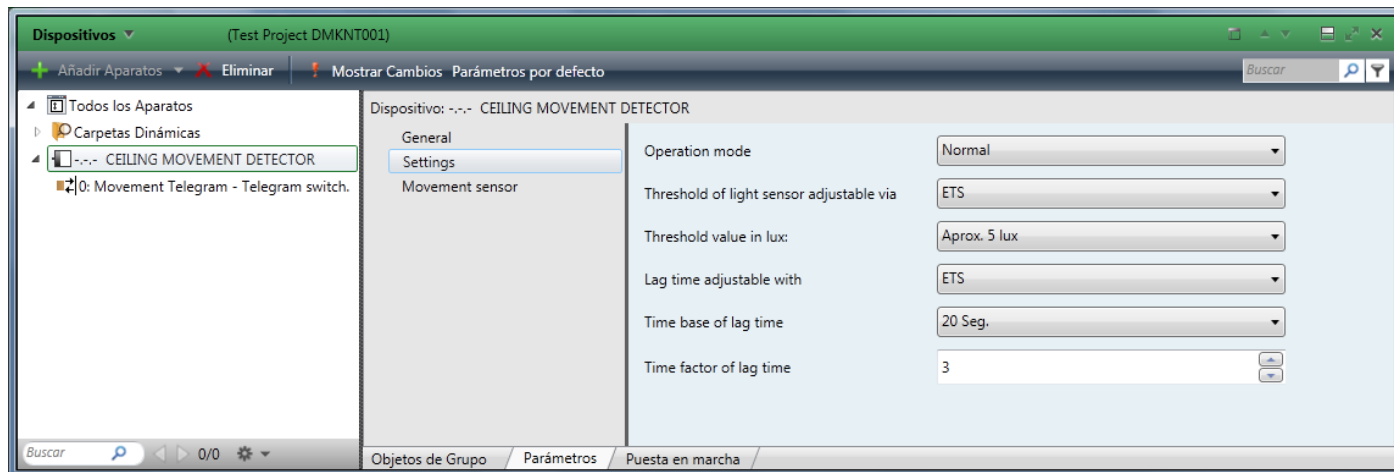
IR Remote Control Enable

Enables or not the adjustment of certain parameters (Lux and Time) from an IR remote control.

This parameter does not enable any communication object.

2 – Basic settings of the Motion Detector (Settings)

Sets the basic parameters of the motion detector.

2.1 – Parameters

Operation mode

Allows selecting the desired operating mode:

- **Normal**: either the "Lux Threshold" as the "Lag Time" is set using the ETS or the adjustment knobs of the detector.

  From the ETS can be selected:
  - Threshold of light sensor adjustable via: ETS or Potentiometer
  - Threshold value in lux: 5lux ~ 1000lux
  - Lag time adjustable with: ETS or Potentiometer
  - Lag time: Time base of lag time x Time factor of lag time

- **Standard:** either the "Lux Threshold" as the "Lag Time" is set by default values: 5lux and 3min.

3 – Movement sensor function

3.1 – Parameters
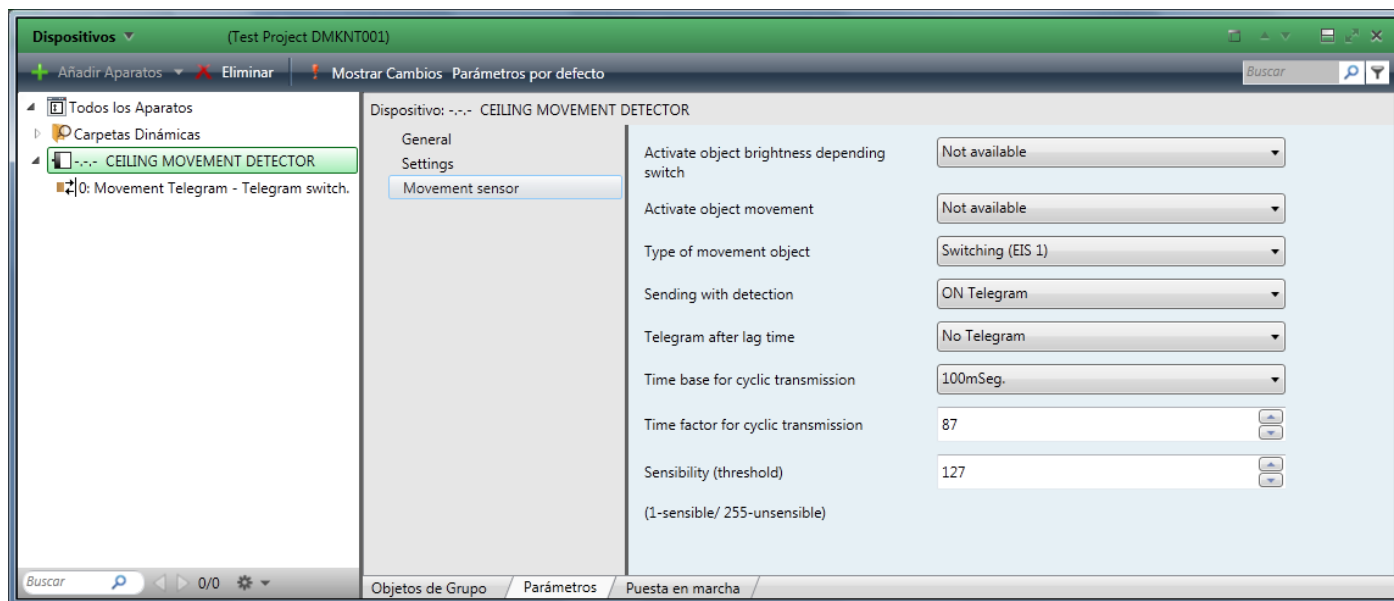
Activate object brightness depending switch

Limits the dependence of the motion detector to the light level via a switch connected externally:
- Not available.
- Available: can be connected an external switch that enables this function. If the switch sends '1' Lux threshold is enabled, while if the switch sends '0', the detector will operate all the time, regardless of the daylight level.

Enabled Object: ▪️↕️|2: Brightness dependent switching - Activation

Activate object movement

Enables or disables motion detection through a switch connected externally:
- Not available.
- Available: can be connected an external switch that enables this feature. If the switch sends '1' Lux threshold is enabled, while if the switch sends '0', the detector will work all the time.

Enabled Object: ▪️↕️|1: Movement Enable - Enable

Enabling this option is possible to select if it will be enabled at receiving a telegram of ON or OFF: 'Enabling movement with'.

Type of movement object

Defines the type of object 'Telegram switch', which will be sent at detecting motion and when the lag time elapses:
- Switching (EIS1): it sends an object of a bit (0, 1). Can be selected if in case of detection ('Sending with detection') or at the end of the detection ('Telegram after lag time') is sent::
  - ON telegram
  - OFF telegram
  - Cyclic ON telegram: ON is sent periodically. Time between two sending: 'Time Base for cyclic transmission' x 'Time Factor for cyclic transmission'.
  - Cyclic OFF telegram: OFF is sent periodically. Time between two sending: 'Time Base for cyclic transmission' x 'Time Factor for cyclic transmission'.
  - No telegram.
- Value (EIS6): it sends a value between 0 and 255. Can be selected if in case of detection ('Sending with detection') or at the end of the detection ('Telegram after lag time') is sent a value between 0% and 100%, in steps of 10%, or none telegram is sent.

Sensibility (threshold)

Allows making the sensor more or less sensitive to movements. A high sensitivity (1) makes it detects the slightest movement, while a low sensitivity (255) prevents unwanted false detections.

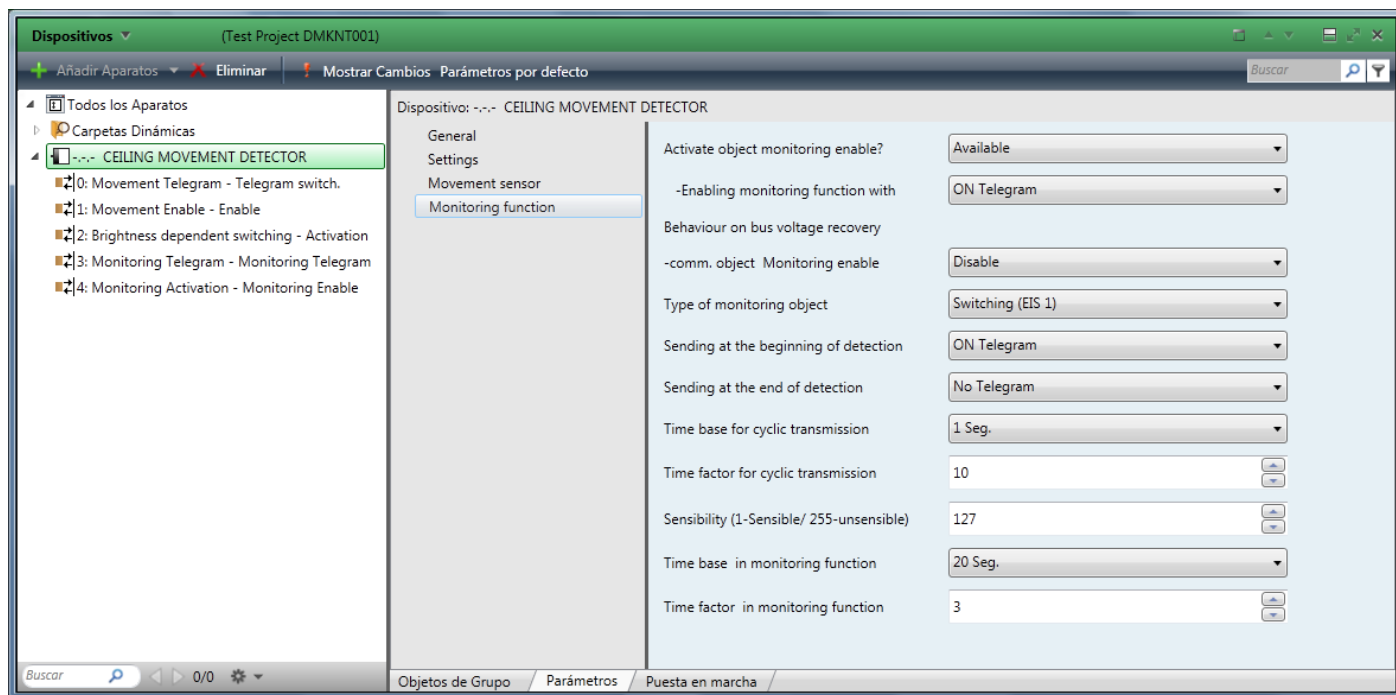Behaviour on bus voltage recovery – comm. object Brightness Switch enable

Sets the 'Brightness dependent switching' object behaviour after a power failure of the Bus.

After recovering the Bus, it can be enabled or not to consult the status of this object.

Behaviour on bus voltage recovery – comm. object Movement enable

Sets the 'Movement Enable' object behavior after a power failure of the Bus.

After recovering the Bus, it can be enabled or not to consult the status of this object.

4 – Monitoring function

4.1 – Parameters

Activate object monitoring enable

Enable or disable this feature using an external device. Its functionality is linked to higher level systems, such as a Timer, which triggers the movement monitor certain hours.

It is possible to select the trigger telegram ('Enabling monitoring function with'):
- ON Telegram
- OFF Telegram

Enabled Object: 4: Monitoring Activation - Monitoring Enable

Behaviour on bus voltage recovery – comm. object Monitoring enable

Sets the 'Monitoring Activation' object behavior after a power failure of the Bus.

After recovering the Bus, it can be enabled or not to consult the status of this object.

Type of monitoring object

Defines the 'Monitoring Telegram' object type, which will be sent both to detect motion, such as when elapses the time delay:
- Switching (EIS1): Sends an object of one bit (0, 1). Can be selected if at the beginning of the detection ('Sending at the beginning of detection') or at the end of the detection ('Sending at the end of detection') is sent:
  - ON Telegram
  - OFF Telegram
  - Cyclic ON Telegram: ON is sent periodically. The time between two sending: 'Time Base for cyclic transmission' x 'Time Factor for cyclic transmission'.

- o Cyclic OFF Telegram: OFF is sent periodically. The time between two sending: 'Time Base for cyclic transmission' x 'Time Factor for cyclic transmission'.
- o No telegram: nothing is sent.
- Value (EIS6): It sends a value between 0 and 255. Can be selected if in case of detection ('Sending at the beginning of detection') or at the end ('Sending at the end of detection') is sent a value between 0% and 100%, in steps of 10%, or not sending any telegram.

Sensibility (threshold)

Allows making more or less sensitive to movements the detector. A high sensitivity (1) makes detecting the slightest movement, while a low sensitivity (255) prevents unwanted false detections.

5 – Twilight Sensor

5.1 – Parameters
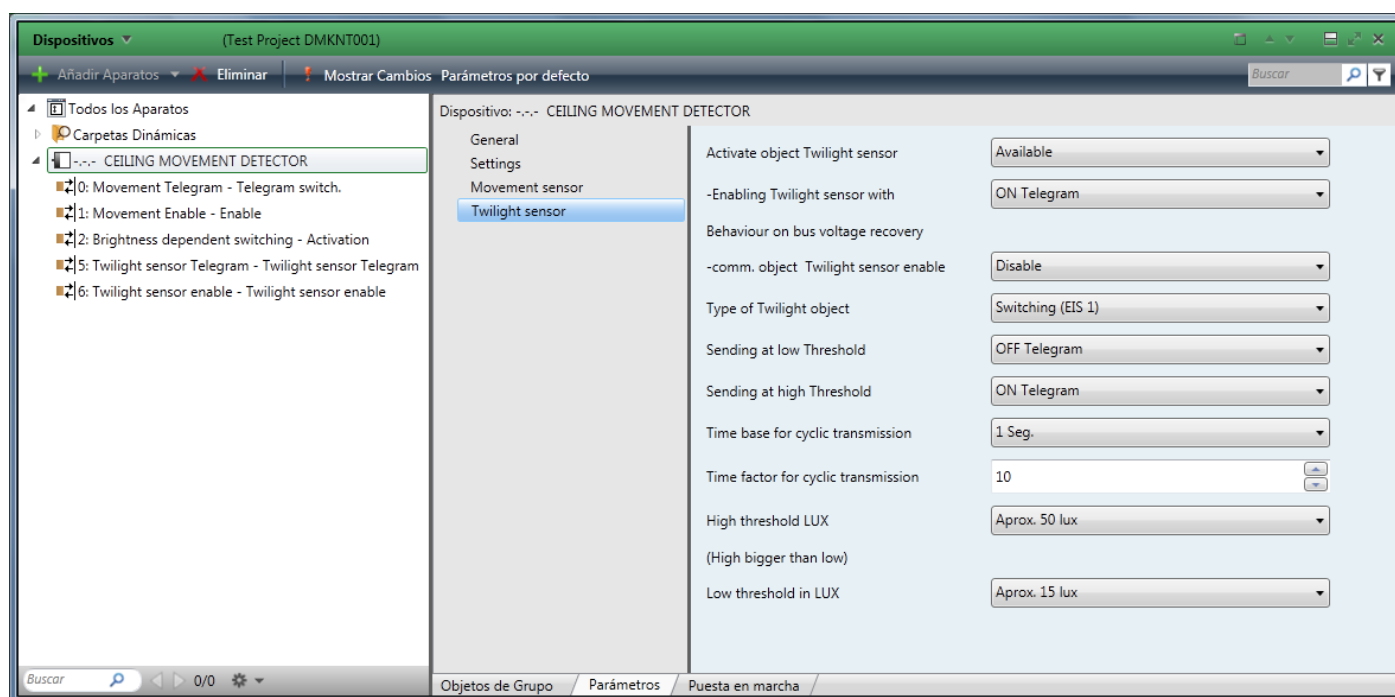
Activate object Twilight sensor

Enable or disable this feature using an external device.
Possible to select the trigger telegram ('Enabling Twilight sensor with'):
- ON Telegram
- OFF Telegram

Enabled Object: 6: Twilight sensor enable - Twilight sensor enable

Behavior on bus voltage recovery – comm. object Twilight sensor enable

Sets the 'Twilight sensor enable' object behavior after a power failure of the Bus.

After recovering the Bus can be enabled or not to consult the state of this object.

Type of Twilight object

Defines the type of object 'Twilight Telegram sensor', which will be sent reaching the maximum and minimum threshold light level:
- Switching (EIS1): sends an object of one bit (0, 1). Can be selected if in case of reaching the minimum threshold ('Sending at low Threshold') or the maximum threshold of lux ('Sending at high Threshold') is sent:
  - o ON Telegram
  - o OFF Telegram
  - o Cyclic ON Telegram: ON is sent periodically. The time between two sending: 'Time Base for cyclic transmission' x 'Time Factor for cyclic transmission'.

- o Cyclic OFF Telegram: OFF is sent periodically. The time between two sending: 'Time Base for cyclic transmission' x 'Time Factor for cyclic transmission'.
  - o No telegram: nothing is sent.
- Value (EIS6): It sends a value between 0 and 255. Can be selected if in case of detection ('Sending at the beginning of detection') or at the end ('Sending at the end of detection') is sent a value between 0% and 100%, in steps of 10%, or not sending any telegram.

High threshold LUX

Sets the maximum lux level. Can be selected values between 15lux and 1000lux.

Low threshold LUX

Sets the minimum lux level. Can be selected values between 5lux and 500lux.

6 – Constant light control

6.1 – Parameters

Activate object constant light control enable

Enable or disable this feature using an external device.
Possible to select the trigger telegram ('Enable function with'):
- ON Telegram
- OFF Telegram

Enabled Object: ⬛⇄ 8: Constant light control Enable - Enable Telegram

Behaviour on bus voltage recovery – comm. object constant light control enable

Sets the 'Constant Light Control Enable' object behavior after a power failure of the Bus.

After recovering the bus can be enabled or not to consult the state of this object.

Origin of light sensor

Is necessary to select if the light sensor is internal (built-in sensor) or external (a separate sensor):

- **External**: Enables the object 'External sensor value' in order to receive the value of an external light sensor. In addition, it must selected whether the set point is parameterized by the ETS ('Origin of Requested lux level = Via ETS parameter') or via the communication object 'Lux Level Requested' ('Origin of Requested lux level = Via communication object').

    In case of choosing the parameterization by ETS, it must entered the value of lux to keep through 'Lux Level Requested' parameter. Can be set values between 100 lux and 1200 lux, in steps of 100.

- **Built-in**: four new parameters will be enabled in Advanced Settings (*access to these settings only if really necessary*):
    - It is necessary to measure with a light meter in the sensor:
        - At night only with lamps (lux): lighting value measured in the sensor (ceiling) without daylight contribution and the lamps regulated to obtain the desired lighting in workplace.
        - At max. external light and lamps regulated to have requested level (lux): lighting value measured in the sensor (ceiling) to the maximum value of daylight and the lamps regulated to obtain the desired value of lighting in the workplace.
    - The adjustment of the lamps is:
        - At night only with lamps (%): light level at which the lamps are regulated at night with only the lamps only.
        - At max. external light and lamps regulated to have requested level (%): level at which lamps are regulated with maximum daylight and lamps to the desired level.

Constant light control

Allows conditioning the constant light control to the motion detection or to a communication object:

- Only when movement detected: The dimming will become operational only when motion is detected. If people is not present, the system will send an OFF (or whatever programmed) through the Bus after the set time delay ('Lag time').
- Always: the constant light control will operate every time, regardless of whether or not presence of people. The turning-on or turning-off of the lights can be made by a higher-level object.
- Depending object mode value: in case of selecting this option is enabled other communication object No. 10 'Permanent Constant light control', which allows to control remotely the system commissioning.

Enable Object for manual dimming

Allows enabling the dimming and manual switching from an external sensor (pushbutton, switch,...).

Enabled Object: ■⇄|11: Manual Switch function - Switch Telegram
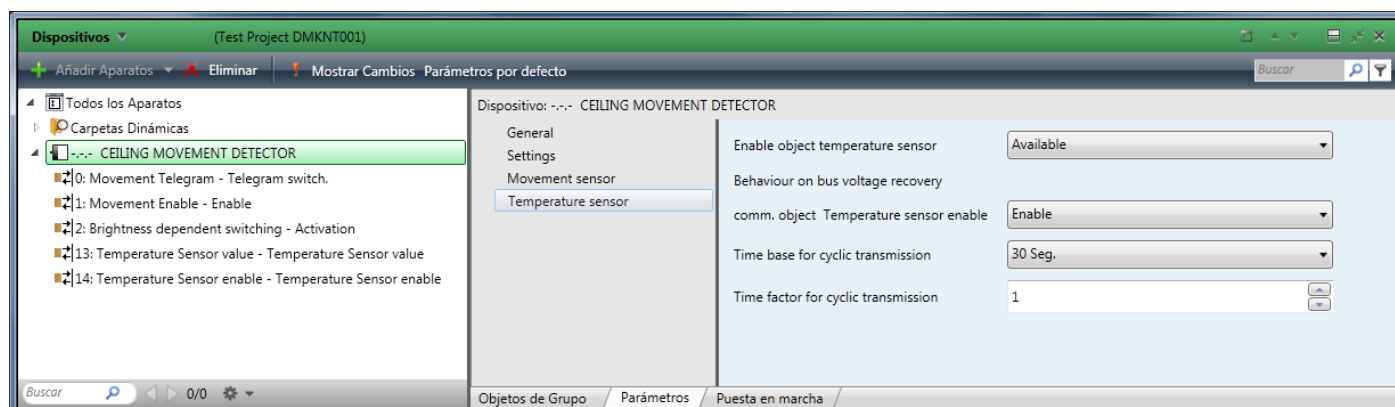   ■⇄|12: Manual Dimmer function - Dimmer Telegram

Constant light object number

Allows to control several lighting lines (up to 4) with an adjustable percentage of increase: '2nd constant light object attenuation'.

Enabled Object: ■⇄|16: 2nd Constant light telegram - 2nd Constant light telegram

7 – Temperature sensor

7.1 – Parameters

Enable object temperature sensor

Enable or disable this function using an external device.

This value will be sent from time to time established by: 'Time base for cyclic transmission' x 'Time factor for cyclic transmission'.

Enabled Object: 14: Temperature Sensor enable - Temperature Sensor enable

Behaviour on bus voltaje recovery – comm. object Temperature sensor enable

Sets the 'Temperature sensor enable' object behavior 'Temperature sensor enable' after a power failure of the Bus.

After recovering the bus can be enabled or not to consult the state of this object.

8 – Brightness sensor

8.1 – Parameters
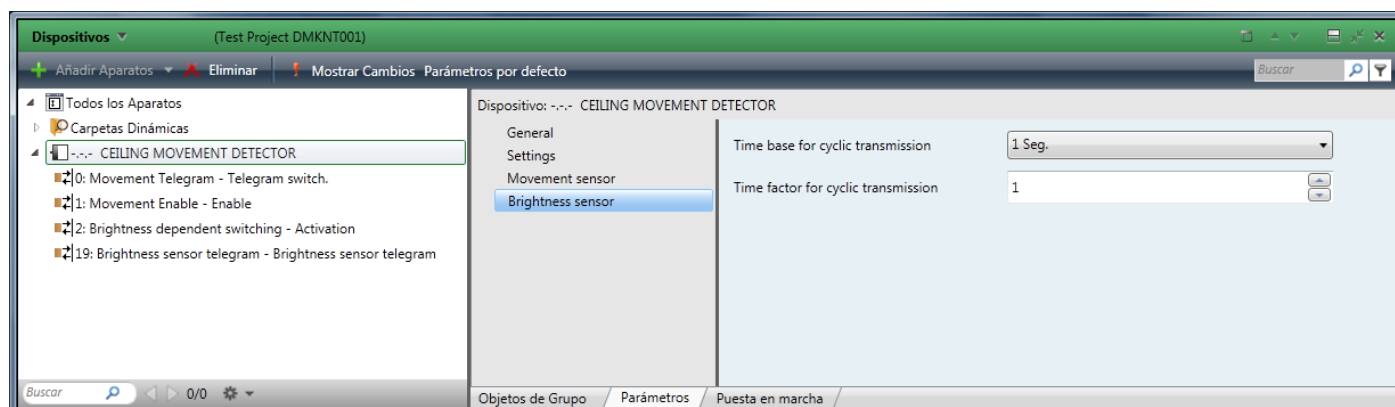
This function simply allows getting the Lux value measured by the sensor.

This value will be sent from time to time established by: 'Time base for cyclic transmission' x 'Time factor for cyclic transmission'.