

Physical Sensors

Brightness Detector

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	Ref.-No.
KNX brightness sensor with 3 barriers	
brightness sensor	2160 REG
ETS-product family:	Physical sensors
Product type:	Brightness
Series embodiment (SE)-device (2 units)	

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This 3 barrier brightness sensor controls switching and dimming actuators depending on the ambient brightness. The level of brightness is recorded by a light sensor which is fitted externally and connected via a cable with the brightness sensor. The device is very suitable for applications where a comfortable brightness-dependent lighting control has to be implemented. Up to four different brightness areas can be surveyed with the device. The device offers two applications:

- brightness sensor with 3 barriers
- brightness sensor with 4 scenes

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Technical data

Supply	
Voltage:	24 V DC (+6 V / -4 V)
Power consumption:	max. 150 mW
Connection:	KNX connection block
Input	
Number:	1 light sensor
Connection:	external, length max. 100 m
Protection:	IP 20 (control unit), IP 54 (light sensor)
Operation temperature:	-5°C ... +45°C (control unit)
Storage temperature:	-40°C ... +70°C (light sensor)
Mounting:	onto DIN rail 35 x 7,5

5 Description of application

1. Brightness sensor with 3 barriers

With this application the brightness sensor takes over the function of a 3-barrier limit value switch with a range of adjustment from 1 to 10 000 Lux. Each limit value can be adjusted separately. The transmission behaviour of each channel can be parameterized when it is below or above a barrier. Via a 1 Byte object any combination of channels can be deactivated or activated temporarily.

Objects

Number of addresses: 5
 Number of assignments: 5
 Communication objects: 4

Object	Name	Function	Type	Flag
0	Channel 1	Switching at barrier ch. 1	1 Bit	R, T
1	Channel 2	Switching at barrier ch. 2	1 Bit	R, T
2	Channel 3	Switching at barrier ch. 3	1 Bit	R, T
3	Stop	Reception message stop	1 Byte	W, T

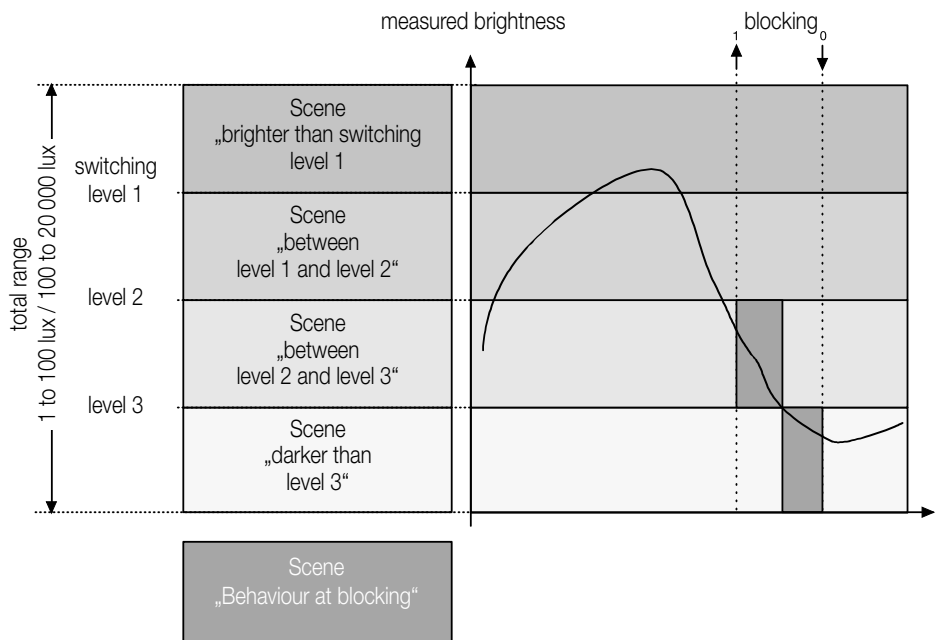
Table for object 3 stop (blocking):

value of the blocking object (type 1 Byte)		transmitting behaviour of the channels A = active G = blocked (i.e. any transmitting on the corresponding channel object is suppressed)		
decimal	binary	channel 1 (object 0)	channel 2 (object 1)	channel 3 (object 2)
0	00000000			
1	00000001	A	A	A
2	00000010	G	A	A
3	00000011	A	G	A
4	00000100	G	G	A
5	00000101	A	A	G
6	00000110	G	A	G
7	00000111	A	G	G
255	11111111	G	G	G
	Bit 3 to 7 have no function	G	G	G

Description of application

2. Brightness sensor with 4 scenes

With this application the device takes over the function of a brightness controlled scene component with a range of adjustment from 100 to 20 000 Lux. Four brightness areas can be defined by three different switching levels. Thereby a light scene, consisting of three switching and a value object, is assigned to each brightness area. If the measured brightness value for an adjustable delay time is in an area, the parameterised switching and value messages are transmitted on the bus. Additionally, each scene object can be force-controlled over a so-called blocking object. If a value is transmitted to this object, objects 0 to 3 send their actual values. The behaviour of blocking can be parameterised.



5 Objects

Number of addresses: 5
 Number of assignments: 5
 Communication objects: 5

Object	Name	Function	Type	Flag
0	Value object	Send telegram value	1 Byte	R, T
1	Switch object 1	Send telegram switch	1 Bit	R, T
2	Switch object 2	Send telegram switch	1 Bit	R, T
3	Switch object 3	Send telegram switch	1 Bit	R, T
4	Block	Reception teleg. block	1 Byte	W, T

Table for object 4 blocking:

value of the blocking object (object 4 / type 1 Byte)		transmitting behaviour of the channels A = active (0) G = blocked (i.e. transmitting object adopts the status which is adjusted on the parameter page "behaviour when blocking" after reception of the corresponding blocking bit) (1)			
decimal	binary	object 3	object 2	object 1	object 0
0	00000000	A	A	A	A
1	00000001	A	A	A	G
2	00000010	A	A	G	A
3	00000011	A	A	G	G
4	00000100	A	G	A	A
5	00000101	A	G	A	G
6	00000110	A	G	G	A
7	00000111	A	G	G	G
8	00001000	G	A	A	A
9	00001001	G	A	A	G
10	00001010	G	A	G	A
11	00001011	G	A	G	G
12	00001100	G	G	A	A
13	00001101	G	G	A	G
14	00001110	G	G	G	A
15	00001111	G	G	G	G
16 to 255	Bit 4 to 7 have no function	A	A	A	A