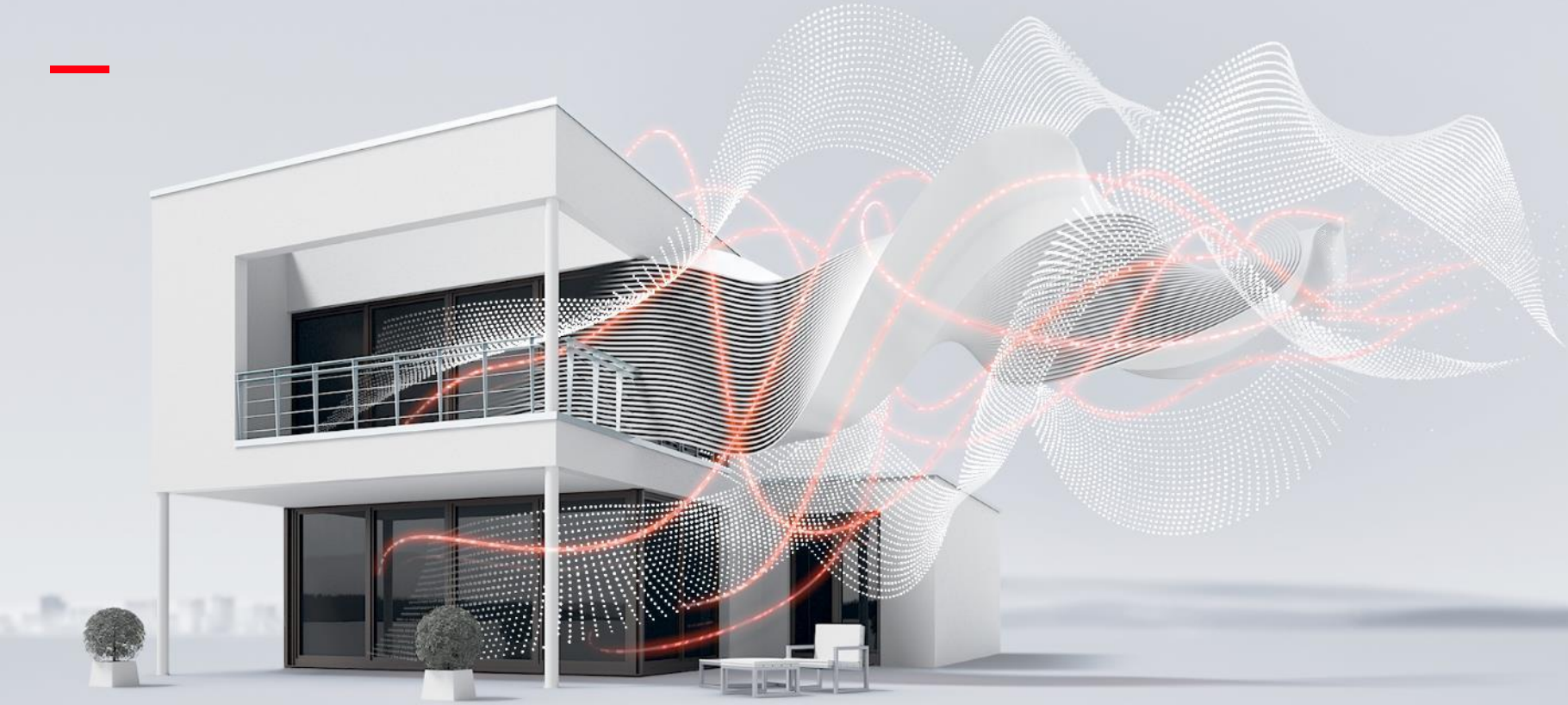


MAY 2020

ABB KNX Presence Detectors – Zones, Calibration, Constant Light Control

Online Learning Session – Competence Center Europe – Smart Buildings

Thorsten Reibel, Jürgen Schilder, Stefan Grosse, Martin Wichary & Olaf Stutzenberger

 Document ID.: Rev.:

Online Learning Session – Competence Center Europe - Smart Buildings

NEW !!!

From home office to home office

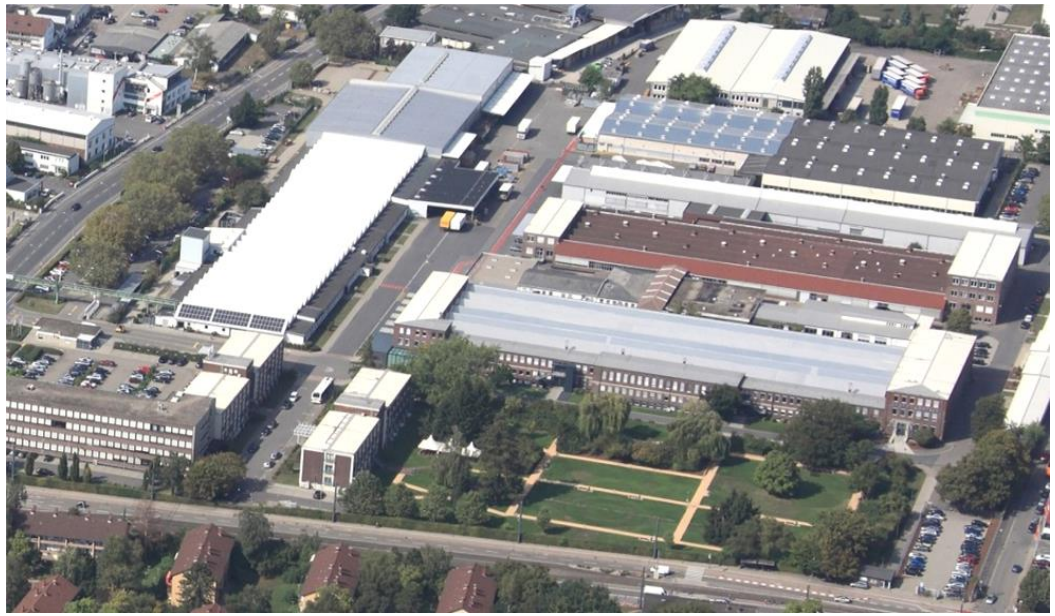
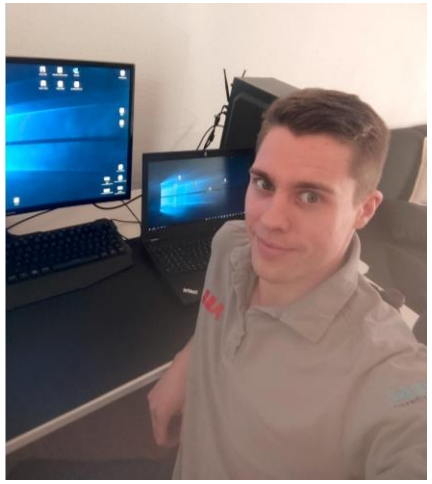


ABB STOTZ-KONTAKT GmbH
Heidelberg / Germany



Agenda

Introduction

Application: Sensor

- General Settings
- Zones
- Calibration

Application: Constant Light Switch

Application: Constant Light Controller

ABB KNX Presence Detectors – Zones, Calibration, Constant Light Control

Introduction

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Introduction

ABB KNX Presence Detectors 6131/xx(-500)

- Flat line design with the best detection quality
- New applications for cost efficiency
- Native ETS4/5 application with firmware update via bus…
- Variations and options in functions, sizes, colors and installation heights
- KNX Presence Detectors designed to meet EN15232:2012
  - A list of control, automation, and technical management functions that affect the energy performance of buildings
  - A method for defining the minimum requirements for the control, automation, and technical building management functions implemented in different types of buildings
  - Detailed procedures for quantifying the impact these functions have on the energy performance of a building

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Introduction

For each demand

The Busch-Presence detector KNX, the Busch-Presence detector mini KNX and the Busch-Presence detector Corridor KNX are available in two versions: basic and premium with extended functionality. The variety in technical functions, sizes, colors and detection ranges offers a wide field of applications. Now there is an option for every need.

Function	Mini Basic	Mini Premium	Basic	Premium	Corridor Basic	Corridor Premium	Sky
	6131/20-xxx-500	6131/21-xxx-500	6131/30-xxx-500	6131/31-xxx-500	6131/50-xxx-500	6131/51-xxx-500	6131/40-xxx-500
							
General							
Type of installation	flush-mounted/surface-mounted						
Programming button accessible from out-side	X	X	X	X	X	X	X
Number of channels							
Movement detector	2	4 in total	2	4 in total	2	4 in total	2
Constant light switch	2		2		2		2
Combination	1 x each		1 x each		1 x each		1 x each
Constant light controller	–	2	–	2	–	2	–
Heating/cooling/ ventilation systems (HVAC)	–	1	–	1	–	1	–
Infrared receiver, can be operated via IR remote control 6010-25	–	10 button pairs + 4 single buttons/ 24 single buttons	–	10 button pairs + 4 single buttons/ 24 single buttons	–	10 button pairs + 4 single buttons/ 24 single buttons	(only red for activation of the programming mode)

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Introduction

General questions

How can I set up different zones in my room?

How can I test the zones and the sensitivity?

How can I calibrate the sensor?

How can I use the Constant Light Switch?

How can I use the Constant Light Controller?

ABB KNX Presence Detectors – Zones, Calibration, Constant Light Control

Application: Sensor

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Sensor

Overview application

- Applications: Detector, Constant light switch, Constant light controller, Heating, air conditioning, ventilation, Brightness detection, Object RTC, IR functions, Logic functions
- Each channel can be adjusted individually
- Integrated RTC (cost efficient)
- 5 channels for logic functions

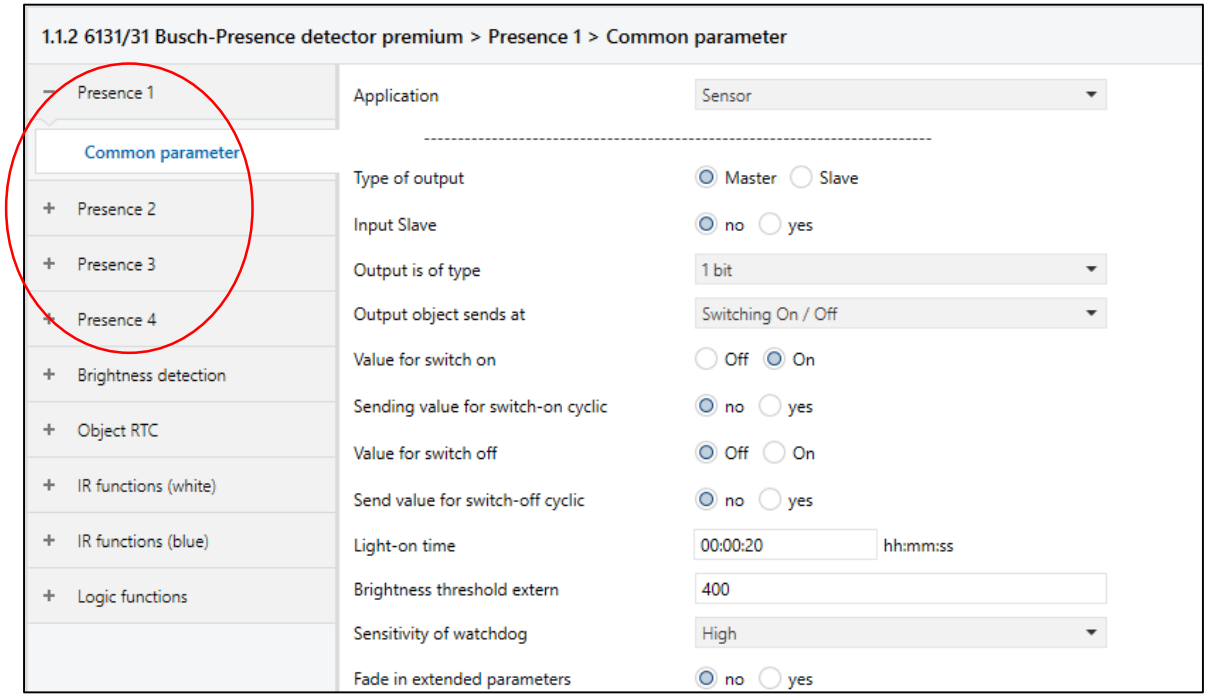


ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Sensor

General Settings: Operating mode

– Automatic: the detector switches on automatically when detecting a movement. The switch-off is effected after the set switch-off delay beginning from the most recent detection

– Automatic switch-off: the detector must be switched on manually using the "External push-button (input)" object. The switch-off is effected automatically under consideration of the switch-off delay

– Automatic switch-on: the detector switches on automatically when detecting a movement. The switch-off is effected by the receipt of an Off telegram on the "External push-button (input)" object. Note: The detector switches off automatically after 6 hours

– Survey: the detector switches on brightness-dependent if an adjustable component of movement has been recorded within the time period set. The switch-off occurs 2 seconds after switch-on and the last detection of movement

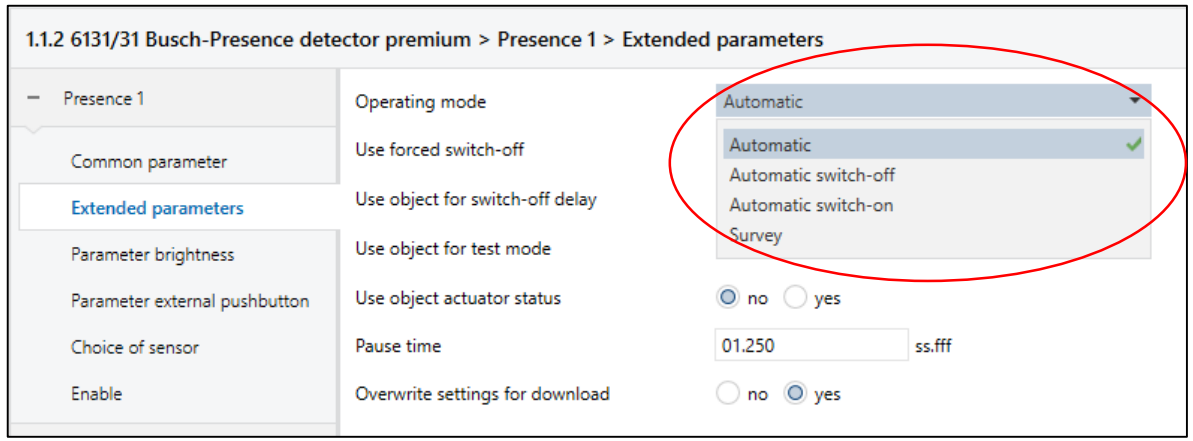


ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Sensor

Zones

- Four independent sensors can be used
- Each sensor can be switched off and on for each channel of the presence detector
- For rooms and areas with zones, which should be switched individually
- Typical applications: offices, living areas, schools

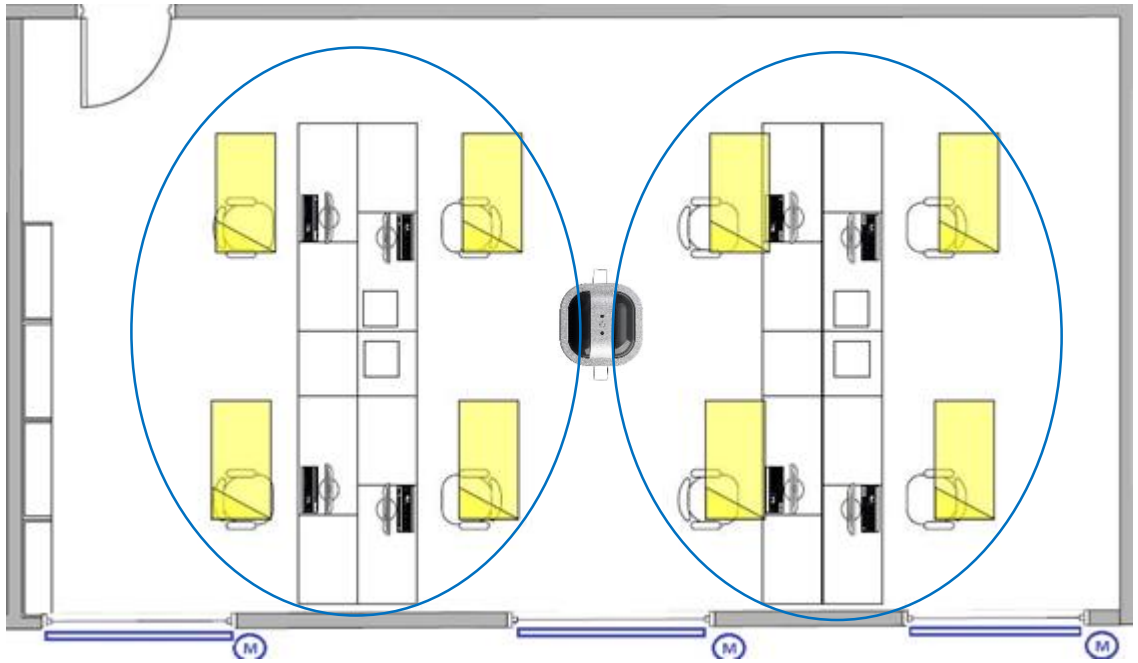
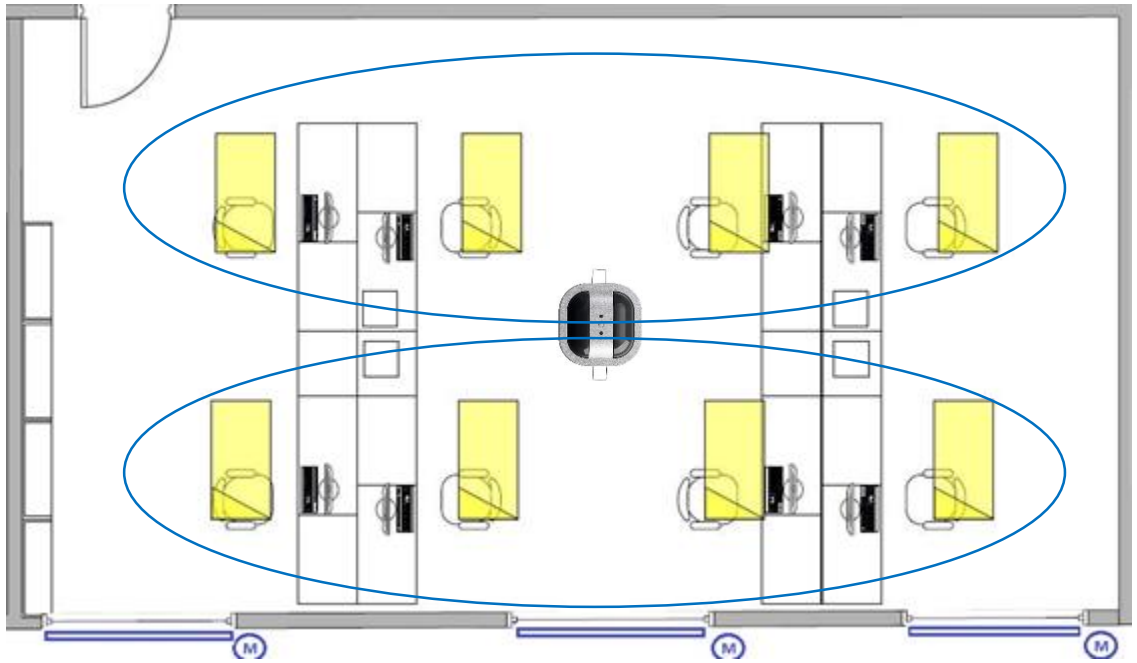


ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Sensor

Different options



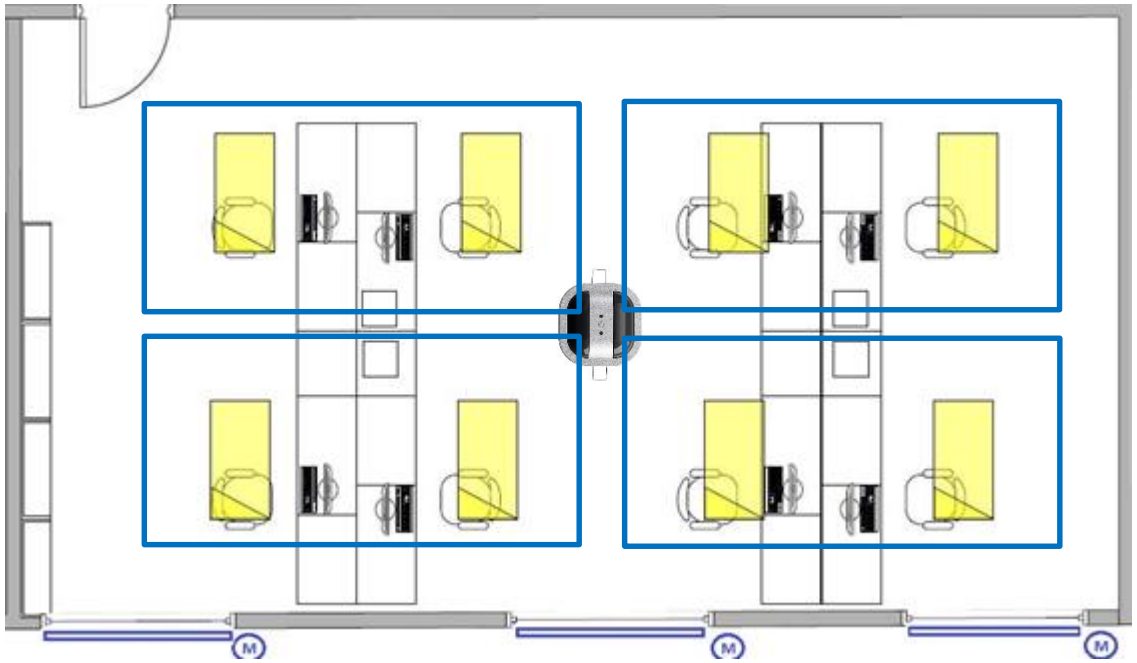


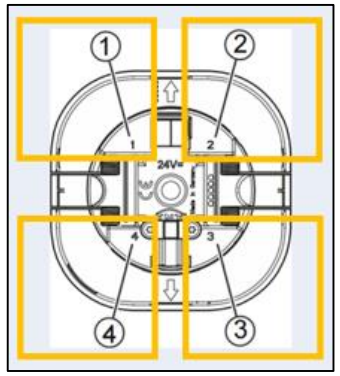
ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

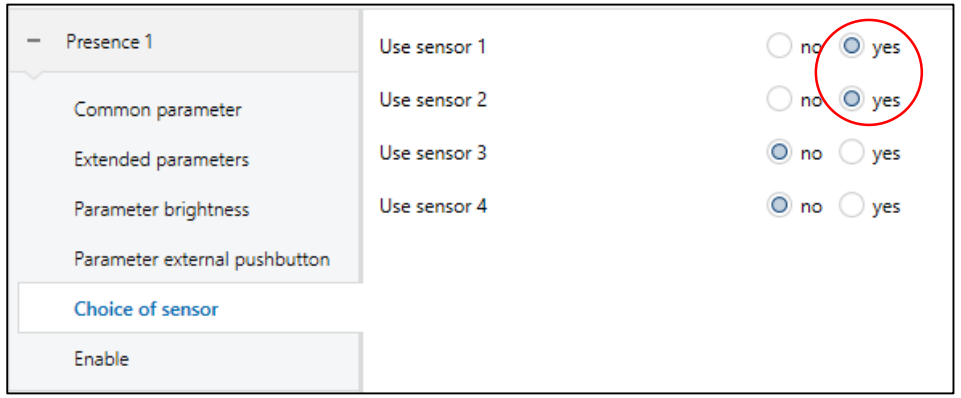
Application: Sensor

Zones

- Flexible use
- Does not apply for devices 6131/50-xxx and/or 6131/51-xxx. Here, the sensor groups 1/2 or 3/4 can be activated

Number	Name	Object Function	Description	Group Addres	Length	C	R	W	T	U	Data Type	Priority
69	BR: Brightness	Output	Brightness (Outp...	0/4/0	2 bytes	C	-	-	T	-	2-byte floa...	Low
10	P1: Movement (master)	Output	SA: Output 1	0/1/0	1 bit	C	-	-	T	-	switch	Low
28	P2: Movement (master)	Output	SA: Output 2	0/1/1	1 bit	C	-	-	T	-	switch	Low





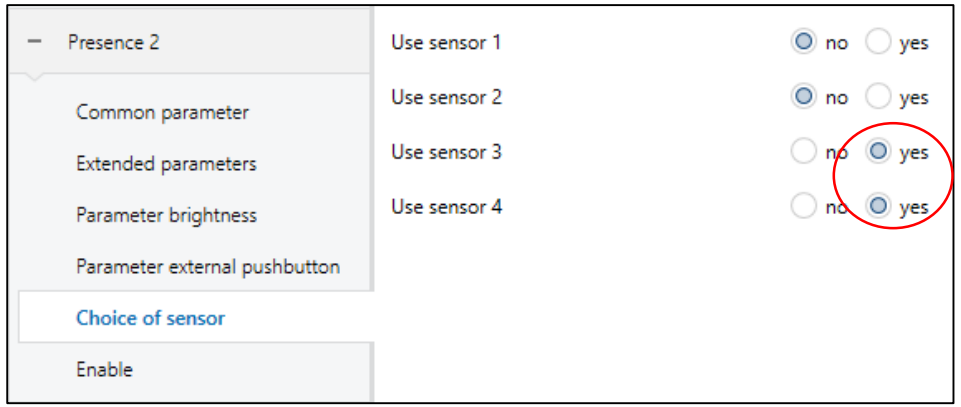


ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Sensor

Zones: Test mode

- There is a separate 1-bit “test mode activation” object (input) for activating the test mode with a 1
- The function is reset again with the receipt of a 0 on this object or automatically after 10 minutes
- During the test mode the LED functions as movement detection indicator

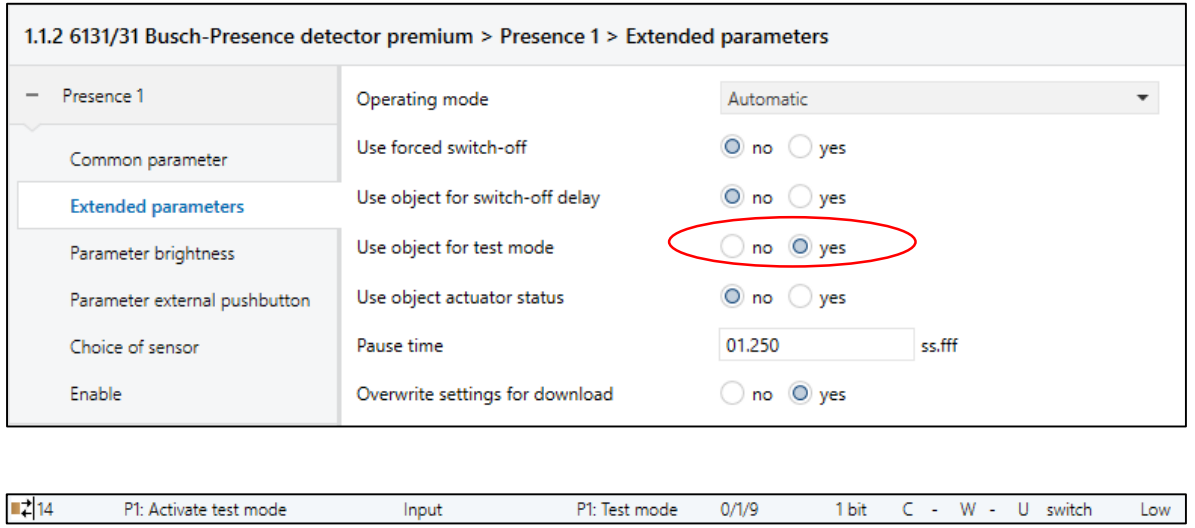


ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Sensor

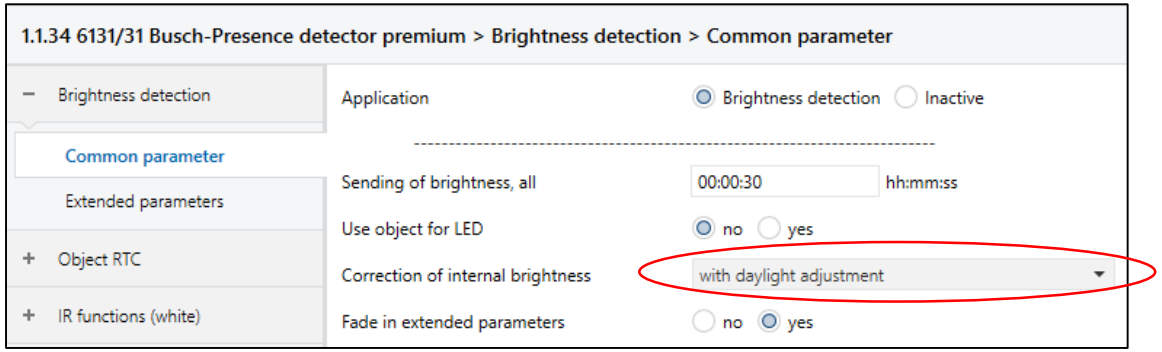
Calibration of light sensor

- Situation: the measured brightness depends on many different applications (the type of furniture, floor coverings or sources of interference in the room)
- The value to be set in a room with dark furniture will be less than in a room with a light-colored floor and light-colored furniture.
- For an optimum function a calibration of the sensor for the brightness detection is required.
- In the event that **artificial light and daylight are perceived similarly** by the sensor, or **the movement detector application is used exclusively**, only the absolute brightness value need be corrected

Daylight adjustment

1. Perform the measurement during sufficient daylight (> 1/2 * setpoint) and switch off the artificial light

2. Carry out the measurement of brightness at a defined location with a luxmeter and wait until the light is close to being constant. Send the value to the device using the brightness adjustment (daylight) object.



Number	Name	Object Function	Description	Group Addres	Length
69	BR: Brightness	Output	Brightness (Outp...	0/4/0	2 bytes
73	BR: Brightness adjustment (daylight)	Input	Brightness adjust...	0/4/1	2 bytes

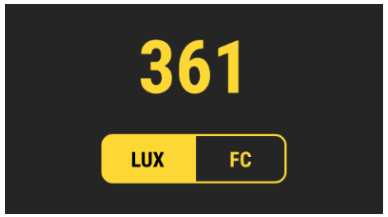
ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Sensor

Calibration: Example

– The presence detector is measuring 112 lux

– The luxmeter is measuring 361 lux



– Send the new value to the bus via group monitor

#	Time	Service	Flags	Prio	Source	Source Name	Destination	Destination Name	Rout	Type	DPT	Info
1	23.04.2020 11:12:46,278	Start										Recording was started, Host=DE-L-721...
2	23.04.2020 11:13:13,051	from bus		Low	1.1.34	6131/31 Busch-Presence detector prem...	0/4/0	Brightness (Output)	6	GroupValue...	9.* 2-byt...	1D 79 | 112,08
3	23.04.2020 11:13:17,119	to bus		Low	1.1.255	-	0/4/1	Brightness adjustment (daylight)	6	GroupValue...	9.004 lu...	2C 68 | 360.96 Lux

– Corrected values are measured by the presence detector

5	23.04.2020 11:13:43,128	from bus		Low	1.1.34	6131/31 Busch-Presence detector prem...	0/4/0	Brightness (Output)	6	GroupValue...	9.* 2-byt...	2C 62 | 359,04
6	23.04.2020 11:14:13,128	from bus		Low	1.1.34	6131/31 Busch-Presence detector prem...	0/4/0	Brightness (Output)	6	GroupValue...	9.* 2-byt...	2C 5E | 357,76

ABB KNX Presence Detectors – Zones, Calibration, Constant Light Control

Application: Constant Light Switch

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Constant Light Switch

General Information

If we use the application „Sensor“, the light will not turn off, even the brightness has raised even without artificial light above the threshold.

Solution: Constant Light Switch

Example:

The brightness at the top of the desk is to be 500 lux. The presence detector, however, measures the required brightness at the position it is mounted (e.g. on the ceiling it only measures 20 lux). This means that there is a difference between the brightness of light at the desk and the ceiling. If the object is now used for “brightness adjustment“ (daylight) or the objects “brightness adjustment (output 1 / 2)”, one can enter 500 lux here (after calibration of the brightness sensor).

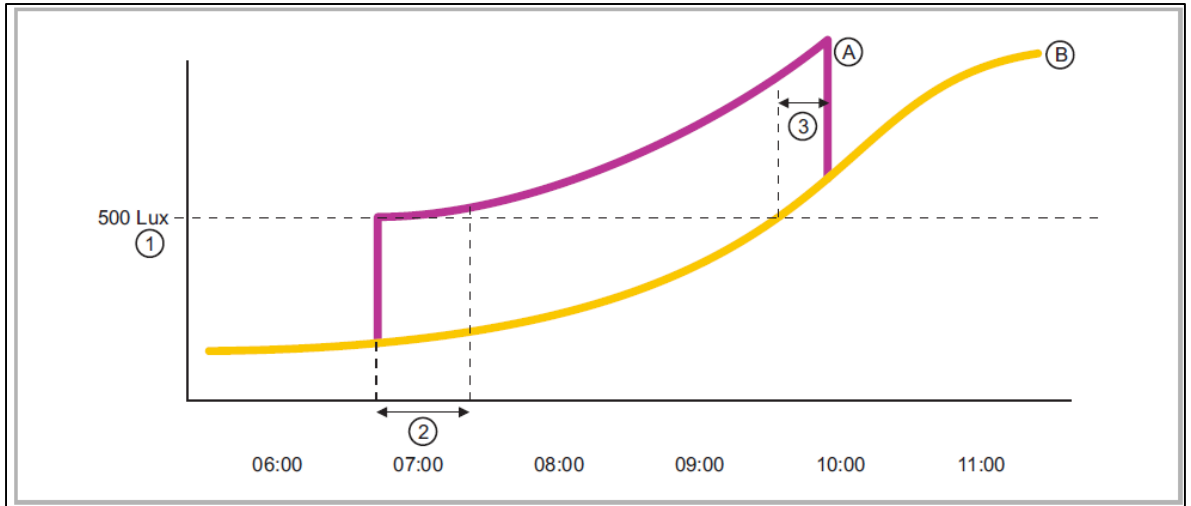


Fig. 2: Control parameters of constant light switch for one light row

[A] Artificial light curve

[B] Sunlight curve

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Sensor

Constant Light Switch with 2 outputs

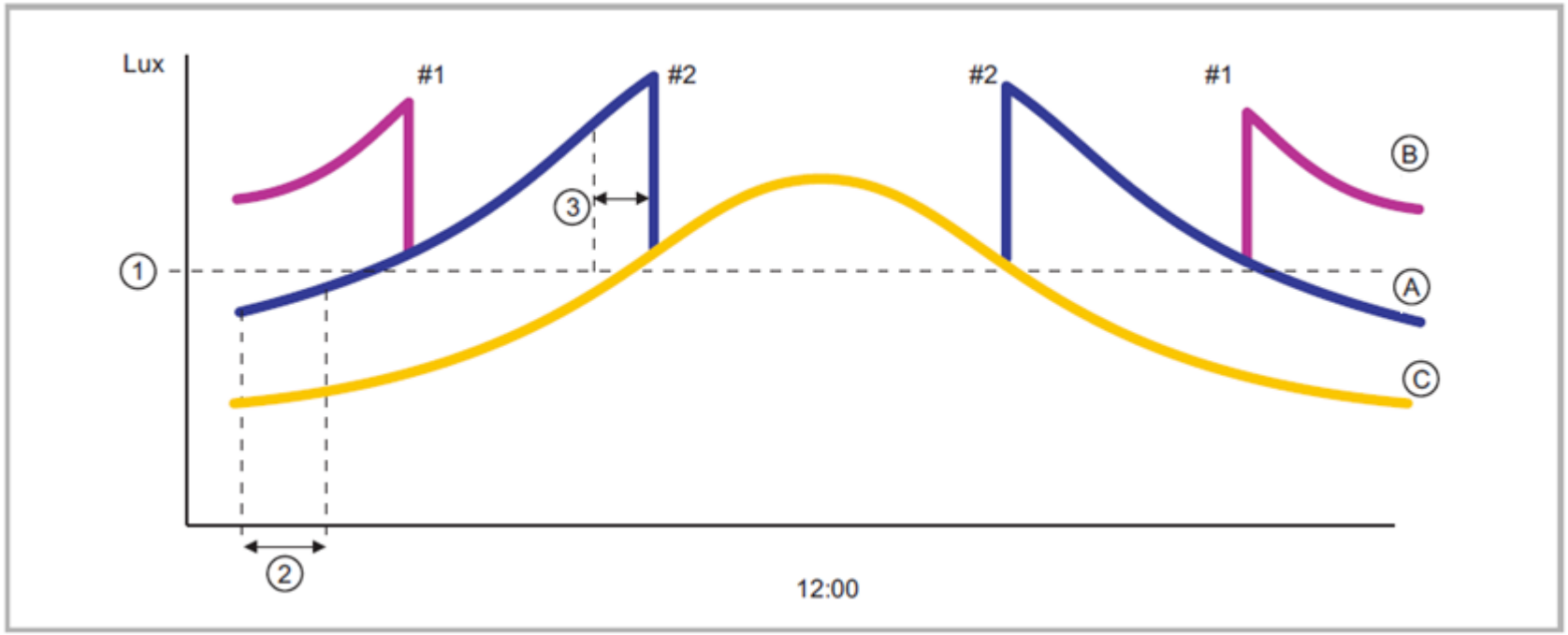


ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Sensor

Constant Light Switch with 2 outputs

Switch on A if:

Brightness-value threshold (1)

- hysteresis

> Sunlight (C)

Switch on B if:

Brightness-value threshold (1)

- hysteresis

> Sunlight (C)

+ Output A

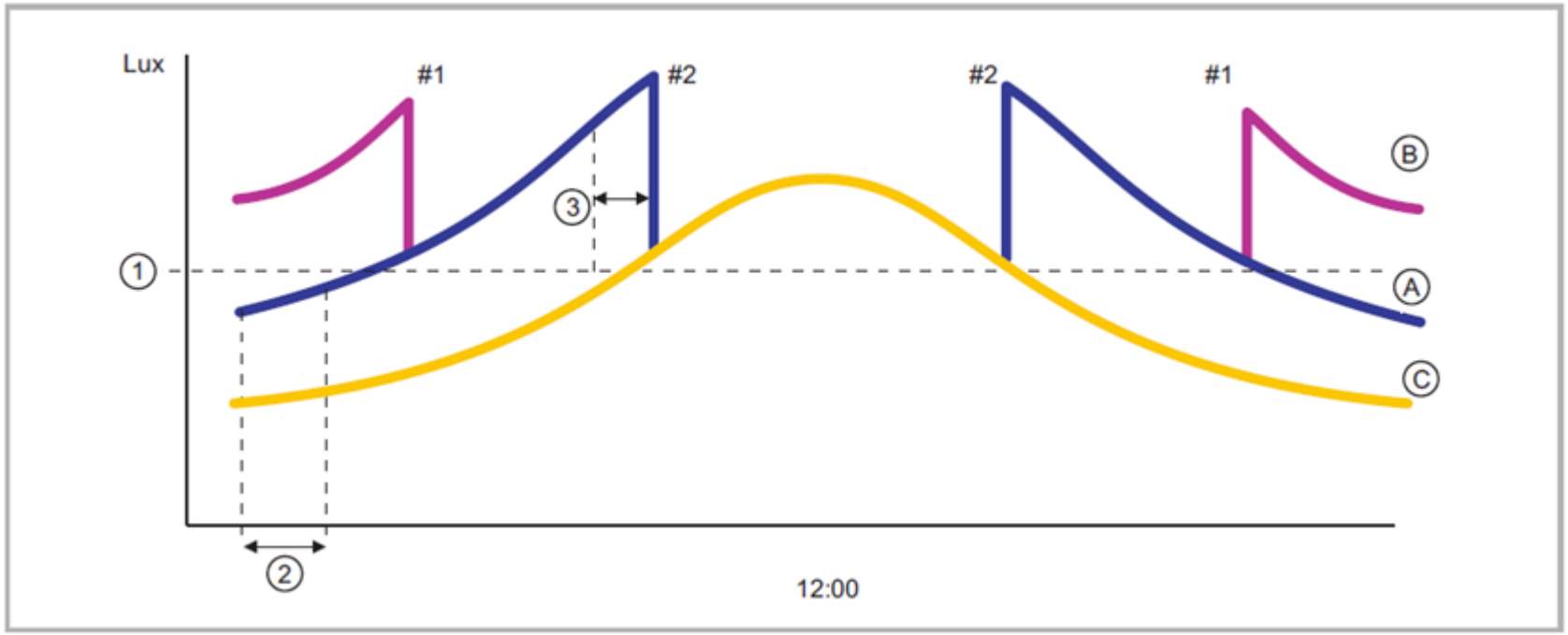


ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Sensor

Constant Light Switch with 2 outputs

Switch on A if:

Brightness-value threshold (1)

- hysteresis

> Sunlight (C)

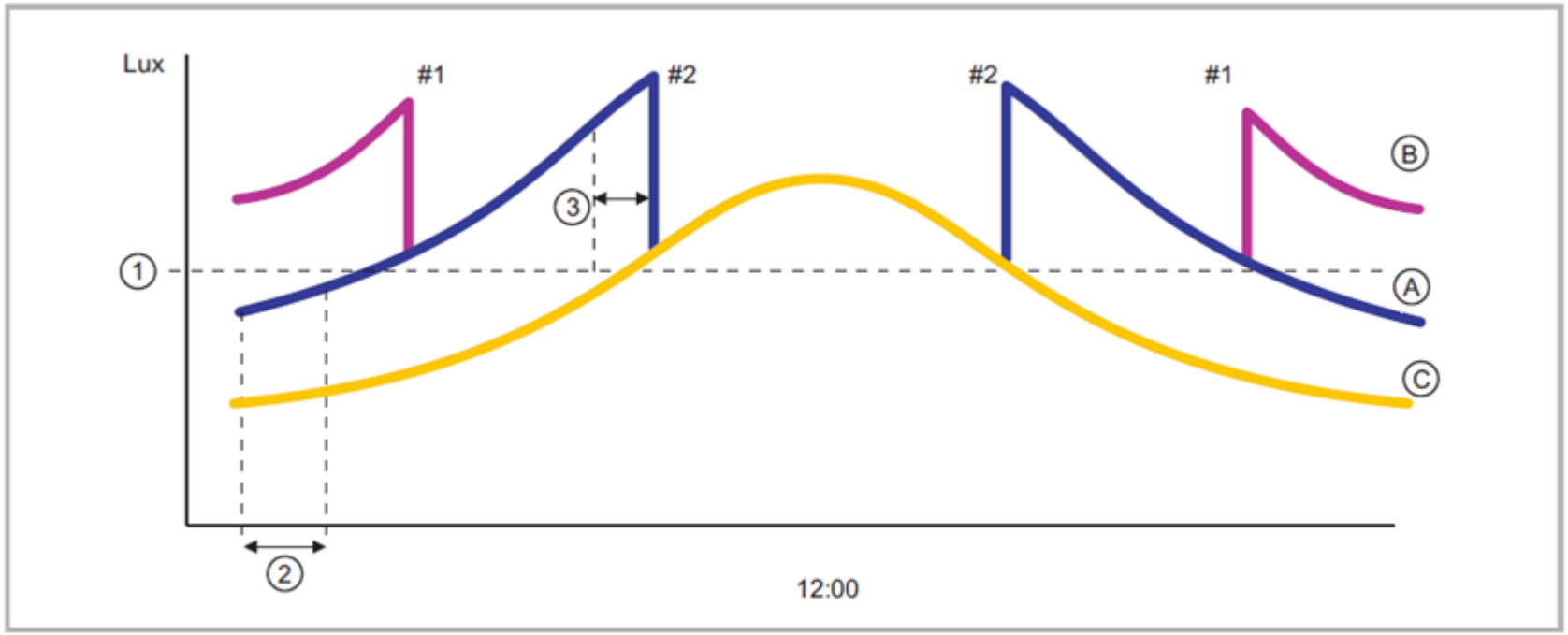
Switch on B if:

Brightness-value threshold (1)

- hysteresis

> Sunlight (C)

+ Output A



Switch off B if:

measured brightness

- artificial light component B

= brightness-value threshold

+ hysteresis.

Switch off A if:

measured brightness

- artificial light component

= brightness-value threshold

+ hysteresis.

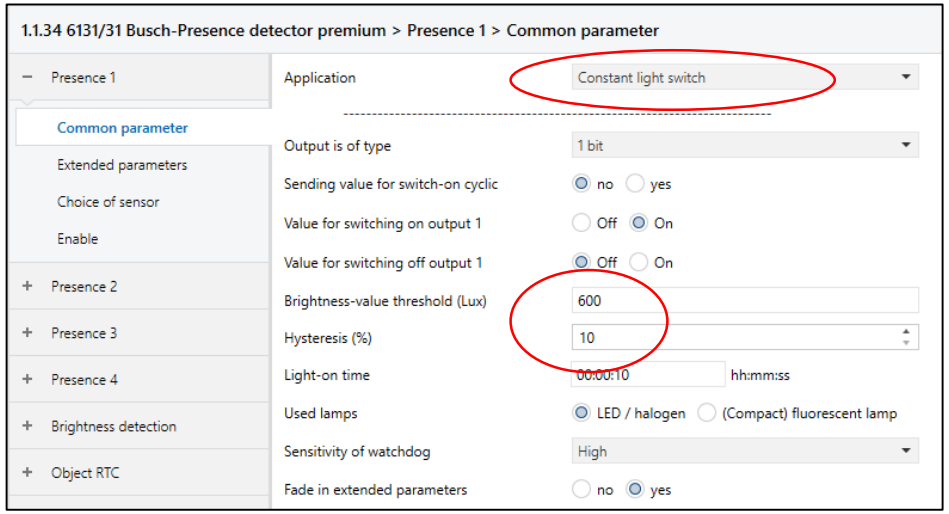
ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Constant Light Switch

General Information

Important parameter settings:

- Application “Constant light switch”
- Brightness value threshold e.g. “600”
- Hysteresis (%) e.g. “10”
  - The hysteresis prevents excessive switching when the current ambient brightness is close to the brightness threshold
  - The programmed setpoint minus hysteresis is maintained as long as people are in the detection range.
  - The application detects when the entering daylight is sufficient
- Used lamps:
  - LED = 1 minute delay
  - Fluorescent lamp = 4 minutes delay



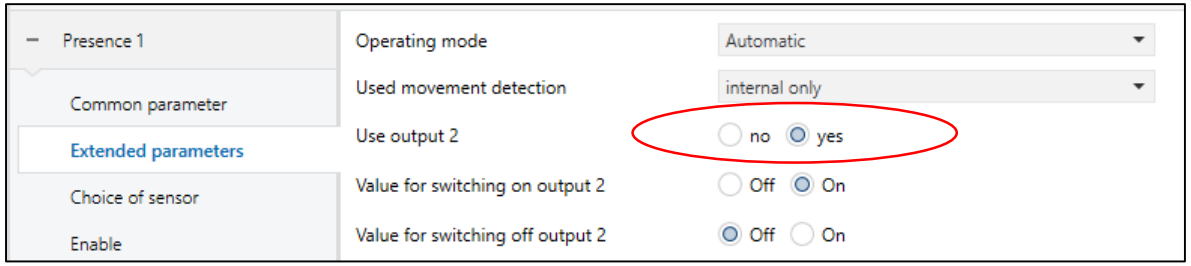


ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Constant Light Switch

Calibration of Constant Light Switching

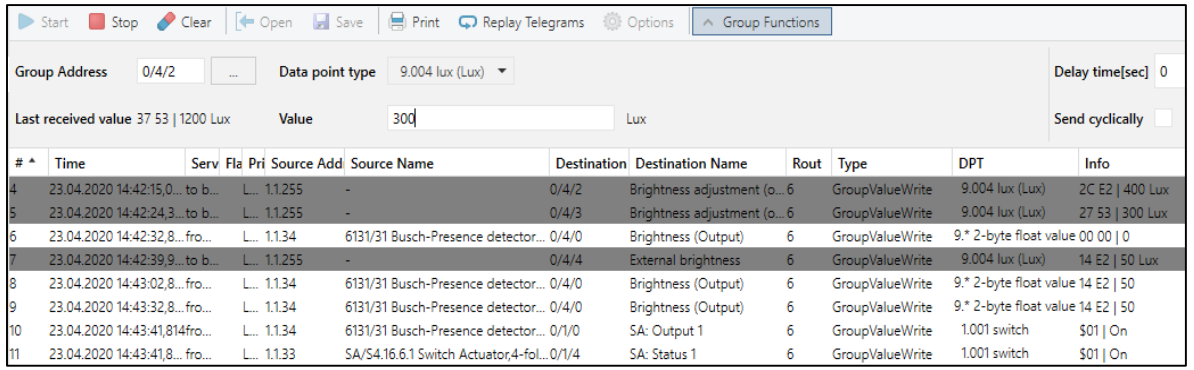
Adjustment for channel 1:

- Darken the room
- Switch on channel 1 (max. brightness) and wait until the brightness is virtually constant
- Measure the brightness with the luxmeter as previously. Send the value to the device via the "Brightness adjustment" object (output 1)

Adjustment for channel 2:

- Repeat measurement for channel 2. Switch off channel 1

Number	Name	Object Function	Description	Group Addres	Length	C	R	W	T	U	Data Type	Priority
69	BR: Brightness	Output	Brightness (Outp...	0/4/0	2 bytes	C	-	-	T	-	2-byte floa...	Low
73	BR: Brightness adjustment (daylight)	Input	Brightness adjust...	0/4/1	2 bytes	C	-	W	-	U	2-byte floa...	Low
74	BR: Brightness adjustment (output 1)	Input	Brightness adjust...	0/4/2	2 bytes	C	-	W	-	U	2-byte floa...	Low
75	BR: Brightness adjustment (output 2)	Input	Brightness adjust...	0/4/3	2 bytes	C	-	W	-	U	2-byte floa...	Low
71	BR: External brightness 1	Input	External brightness	0/4/4	2 bytes	C	-	W	-	U	2-byte floa...	Low
3	P1: Automatic / manual off	Input			1 bit	C	-	W	-	-	switch	Low
5	P1: External brightness	Input	External brightness	0/4/4	2 bytes	C	-	W	-	-	2-byte floa...	Low
1	P1: Output 1	Output	SA: Output 1	0/1/0	1 bit	C	-	W	T	U	switch	Low
2	P1: Output 2	Output	SA: Output 2	0/1/1	1 bit	C	-	W	T	U	switch	Low



#	Time	Serv	Fla	Pri	Source Add	Source Name	Destination	Destination Name	Rout	Type	DPT	Info
4	23.04.2020 14:42:15,0...	to b...		L...	1.1.255	-	0/4/2	Brightness adjustment (o...	6	GroupValueWrite	9.004 lux (Lux)	2C E2 | 400 Lux
5	23.04.2020 14:42:24,3...	to b...		L...	1.1.255	-	0/4/3	Brightness adjustment (o...	6	GroupValueWrite	9.004 lux (Lux)	27 53 | 300 Lux
6	23.04.2020 14:42:32,8...	fro...		L...	1.1.34	6131/31 Busch-Presence detector...	0/4/0	Brightness (Output)	6	GroupValueWrite	9.* 2-byte float value	00 00 | 0
7	23.04.2020 14:42:39,9...	to b...		L...	1.1.255	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lux (Lux)	14 E2 | 50 Lux
8	23.04.2020 14:43:02,8...	fro...		L...	1.1.34	6131/31 Busch-Presence detector...	0/4/0	Brightness (Output)	6	GroupValueWrite	9.* 2-byte float value	14 E2 | 50
9	23.04.2020 14:43:32,8...	fro...		L...	1.1.34	6131/31 Busch-Presence detector...	0/4/0	Brightness (Output)	6	GroupValueWrite	9.* 2-byte float value	14 E2 | 50
10	23.04.2020 14:43:41,814	fro...		L...	1.1.34	6131/31 Busch-Presence detector...	0/1/0	SA: Output 1	6	GroupValueWrite	1.001 switch	$01 | On
11	23.04.2020 14:43:41,8...	fro...		L...	1.1.33	SA/S4.16.6.1 Switch Actuator,4-fol...	0/1/4	SA: Status 1	6	GroupValueWrite	1.001 switch	$01 | On

ABB KNX Presence Detectors – Zones, Calibration, Constant Light Control

Application: Constant Light Controller

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Constant Light Controller

General Information

The constant light switch can switch lamps on and off. The constant light controller can additionally dim lights, to maintain a level that is as constant as possible. Both functions work in dependence of light conditions and movement in the detection range.

This enables a constant level to be attained due to the dimming of lights brighter and darker, always in dependence of the natural light in the room.

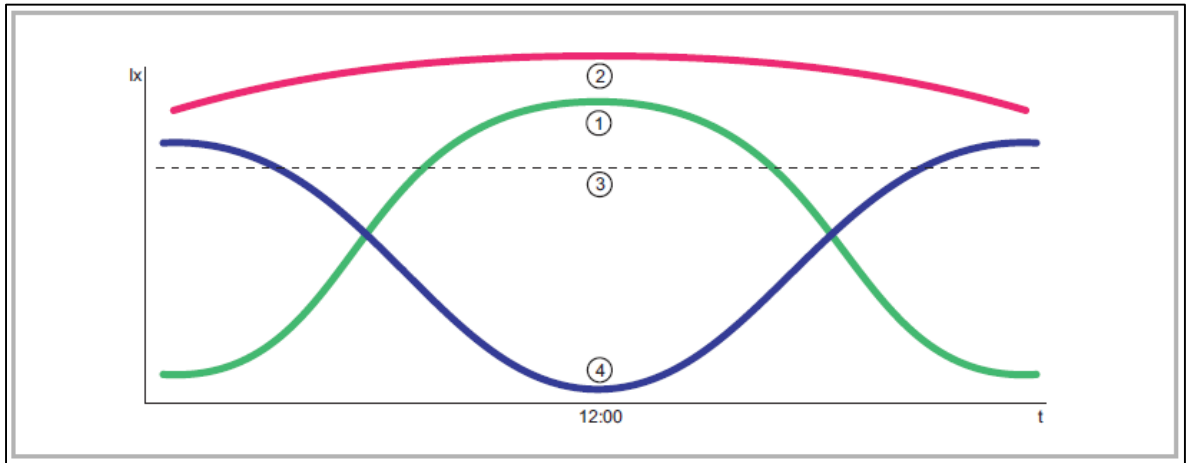


Fig. 4: Constant light controller influences

[1] Natural light
[2] Brightness in the room
[3] Parametrized brightness-value threshold
[4] Artificial light

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Constant Light Controller

Calibration of Constant Light Control – Part 1

Adjustment for channel 1:

- Darken the room
- Switch on channel 1 (max. brightness) and wait until the brightness is virtually constant
- Measure the brightness with the luxmeter as previously. Send the value to the device via the "Brightness adjustment" object (output 1)

Adjustment for channel 2 (if used):

- Repeat measurement for channel 2. Switch off channel 1

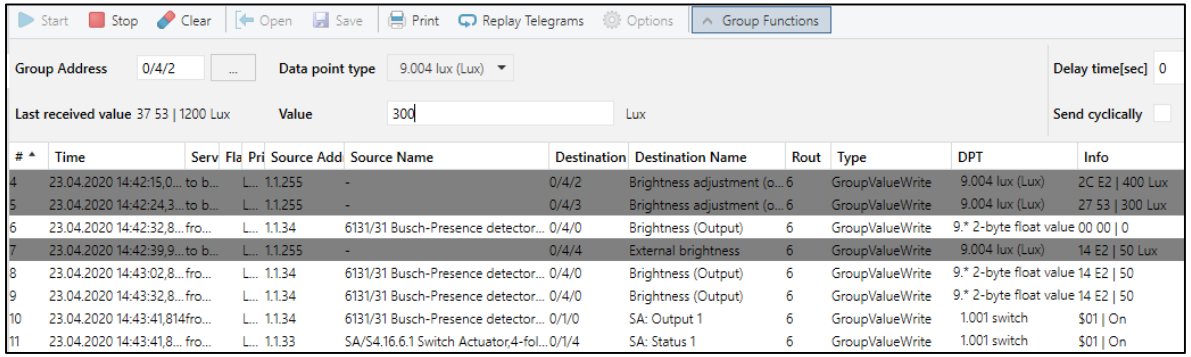


ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Constant Light Controller

Calibration of Constant Light Control – Part 2

To complete the adjustment for the constant light controller, a further step is required during which the characteristic of the connected lamp is automatically measured in dependence of the output value of the controller. To be able to carry out the brightness calibration, the device must have been already programmed in such a way that aside from the "Start brightness calibration" object, also the output object(s) is/are connected with the corresponding actuators. Also the actuators should be programmed in such a way that the values received are set immediately, to ensure that the calibration process runs properly.

Reference table:

- 100% = 1000 lux
- 90% = ?
- 80% = ?
- 70% = ?
- 60% = ?
- 50% = ?
- 40% = ?
- 30% = ?
- 20% = ?
- 10% = ?
- 0% = 0 lux

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Constant Light Controller

Calibration of Constant Light Control – Part 2

Brightness calibration:

Here too the room is to be darkened, to minimize the effect of changing daylight conditions during the measurement. If this is not possible, the adjustment should be carried out in the dark or at night. To obtain excellent results, the lamps should be turned on prior to the calibration. The calibration can start when the measured brightness is constant, i.e. the heat-up of the lamps has been completed.

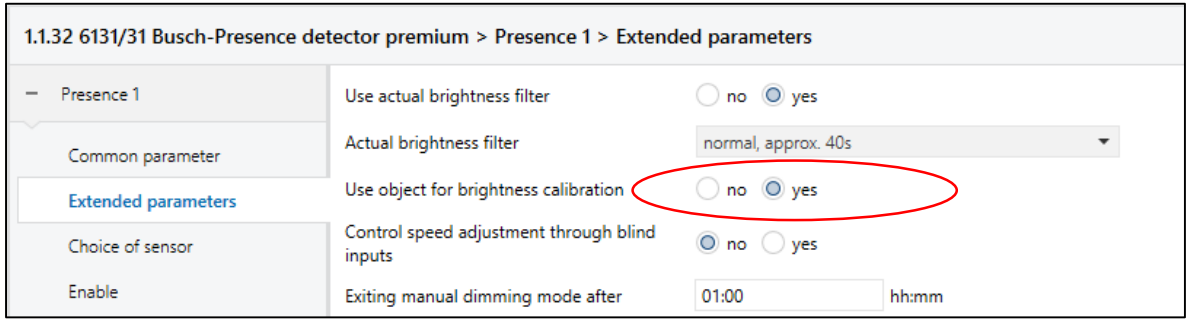
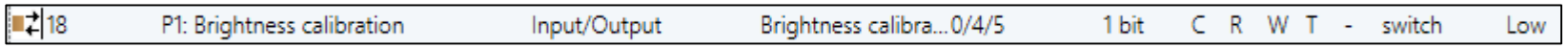


ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

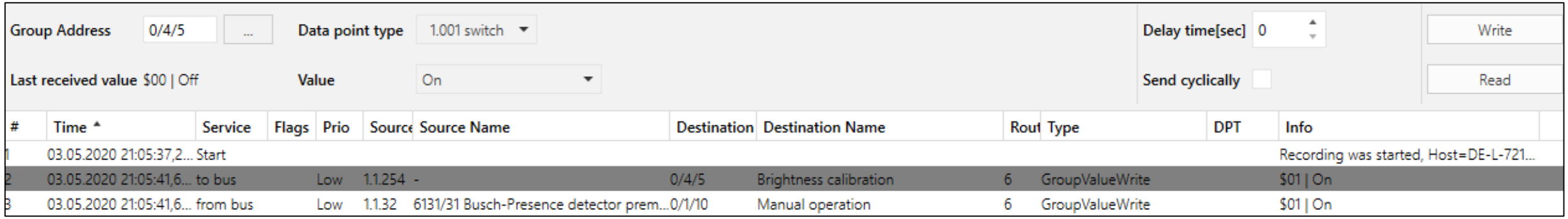
Application: Constant Light Controller

Calibration of Constant Light Control – Part 2

1. Brightness calibration is started by sending a "1" to the Brightness calibration object



18	P1: Brightness calibration	Input/Output	Brightness calibra...	0/4/5	1 bit	C	R	W	T	-	switch	Low



Group Address 0/4/5 ... Data point type 1.001 switch Delay time[sec] 0 Write

Last received value $00 | Off Value On Send cyclically Read

#	Time	Service	Flags	Prio	Source	Source Name	Destination	Destination Name	Rout	Type	DPT	Info
1	03.05.2020 21:05:37,2...	Start										Recording was started, Host=DE-L-721...
2	03.05.2020 21:05:41,6...	to bus		Low	1.1.254	-	0/4/5	Brightness calibration	6	GroupValueWrite		$01 | On
3	03.05.2020 21:05:41,6...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/1/10	Manual operation	6	GroupValueWrite		$01 | On

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Constant Light Controller

Calibration of Constant Light Control – Part 2

2. The lamps are switched on at 100%. Then comes a waiting period of 60 seconds for the lamps to warm up and reach their full brightness. Then the brightness is checked to see how much it has changed since the last measurement. If the change drops below a certain percentage in comparison to the measured value, it is assumed that the brightness is stable and the actual calibration can begin. Otherwise a new measurement is carried out after a certain time to again determine the percentage of change. This process is repeated until a stable brightness value has been reached. However, only up to a maximum of ten times.

60 sec.

#	Time	Serv	Fla	Pri	Source Add	Source Name	Destination	Destination Name	Rout	Type	DPT	Info
1	03.05.2020 19:23:03,356	to b...		L...	1.1.254	-	0/4/5	Brightness calibration	6	GroupValueWrite		$01 | On
2	03.05.2020 19:23:03,375	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$FF | 100 %
3	03.05.2020 19:23:05,081	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/4/0	Brightness (Output)	6	GroupValueWrite	9.* 2-byte float value	00 00 | 0
4	03.05.2020 19:23:21,168	to b...		L...	1.1.254	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lux (Lux)	36 1A | 999.68 Lux
5	03.05.2020 19:23:50,099	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/4/0	Brightness (Output)	6	GroupValueWrite	9.* 2-byte float value	36 1A | 999,68
6	03.05.2020 19:24:03,357	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$E6 | 90 %

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Constant Light Controller

Calibration of Constant Light Control – Part 2

Calibration started

Output A = 90%

Output A = 80%

….

Output A = 0%

Calibration finished

#	Time	Serv	Fla	Pri	Source Add	Source Name	Destination	Destination Name	Rout	Type	DPT	Info
1	03.05.2020 19:23:03,356	to b...		L...	1.1.254	-	0/4/5	Brightness calibration	6	GroupValueWrite		$01 | On
2	03.05.2020 19:23:03,375	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$FF | 100 %
3	03.05.2020 19:23:05,081	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/4/0	Brightness (Output)	6	GroupValueWrite	9.* 2-byte float value	00 00 | 0
4	03.05.2020 19:23:21,168	to b...		L...	1.1.254	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lux (Lux)	36 1A | 999.68 Lux
5	03.05.2020 19:23:50,099	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/4/0	Brightness (Output)	6	GroupValueWrite	9.* 2-byte float value	36 1A | 999,68
6	03.05.2020 19:24:03,357	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$E6 | 90 %
7	03.05.2020 19:24:05,728	to b...		L...	1.1.254	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lux (Lux)	35 7E | 899.84 Lux
8	03.05.2020 19:24:07,357	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$CD | 80 %
9	03.05.2020 19:24:11,970	to b...		L...	1.1.254	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lux (Lux)	34 E2 | 800 Lux
10	03.05.2020 19:24:13,356	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$B4 | 71 %
11	03.05.2020 19:24:18,754	to b...		L...	1.1.254	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lux (Lux)	34 46 | 700.16 Lux
12	03.05.2020 19:24:19,356	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$9B | 61 %
13	03.05.2020 19:24:23,347	to b...		L...	1.1.254	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lux (Lux)	2F 53 | 600 Lux
14	03.05.2020 19:24:25,356	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$82 | 51 %
15	03.05.2020 19:24:29,048	to b...		L...	1.1.254	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lux (Lux)	2E 1A | 499.84 Lux
16	03.05.2020 19:24:31,356	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$69 | 41 %
17	03.05.2020 19:24:35,097	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/4/0	Brightness (Output)	6	GroupValueWrite	9.* 2-byte float value	2E 1A | 499,84
18	03.05.2020 19:24:35,264	to b...		L...	1.1.254	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lux (Lux)	2C E2 | 400 Lux
19	03.05.2020 19:24:37,356	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$50 | 31 %
20	03.05.2020 19:24:42,056	to b...		L...	1.1.254	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lux (Lux)	27 53 | 300 Lux
21	03.05.2020 19:24:43,356	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$37 | 22 %
22	03.05.2020 19:24:48,488	to b...		L...	1.1.254	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lux (Lux)	24 E2 | 200 Lux
23	03.05.2020 19:24:49,356	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$1E | 12 %
24	03.05.2020 19:24:54,120	to b...		L...	1.1.254	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lux (Lux)	1C E2 | 100 Lux
25	03.05.2020 19:24:55,356	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$01 | 0 %
26	03.05.2020 19:25:01,356	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/3/0	Output 1	6	GroupValueWrite	5.001 percentage...	$00 | 0 %
27	03.05.2020 19:25:04,200	to b...		L...	1.1.254	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lux (Lux)	00 00 | 0 Lux
28	03.05.2020 19:25:07,433	fro...		L...	1.1.32	6131/31 Busch-Presence detector...	0/4/5	Brightness calibration	6	GroupValueWrite		$01 | On

3. Then the output values are reduced separately into steps of 10% and the corresponding brightness is determined for each value; and here, too, a waiting period is necessary until the brightness values have become stable:

– A1: 100% A2: 100%

– A1: 100% A2: 90%

– A1: 0% A2: 0%

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Constant Light Controller

Calibration of Constant Light Control – Part 2

4. After completion of the measurement the output characteristics are calculated and stored in the device. Then a successful measurement is confirmed in form of a "1" on the Start brightness calibration object

5. If the calibration cannot be completed within a period of 6 minutes due to unfavorable light conditions (extremely fluctuating brightness values), the measurement is interrupted and a "0" is sent via the "Start brightness calibration" object

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Constant Light Controller

Constant Light Controller

After calibration the constant light controller will be activated as soon as movement in the area is located.

#	Time	Service	Flags	Prio	Source	Source Name	Destination	Destination Name	Rout	Type	DPT	Info
1	04.05.2020 10:06:07,3...	Start										Recording was started, Host=DE-L-721...
2	04.05.2020 10:06:10,7...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/3/0	Output 1	6	GroupValueWrite	5.001 p...	$AB | 67 %
3	04.05.2020 10:06:15,3...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/3/0	Output 1	6	GroupValueWrite	5.001 p...	$AD | 68 %
4	04.05.2020 10:06:20,0...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/3/0	Output 1	6	GroupValueWrite	5.001 p...	$AF | 69 %
5	04.05.2020 10:06:24,7...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/3/0	Output 1	6	GroupValueWrite	5.001 p...	$B1 | 69 %
6	04.05.2020 10:06:29,4...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/3/0	Output 1	6	GroupValueWrite	5.001 p...	$B3 | 70 %
7	04.05.2020 10:06:34,1...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/3/0	Output 1	6	GroupValueWrite	5.001 p...	$B5 | 71 %
8	04.05.2020 10:06:38,8...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/3/0	Output 1	6	GroupValueWrite	5.001 p...	$B7 | 72 %
9	04.05.2020 10:06:42,2...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/4/0	Brightness (Output)	6	GroupValueWrite	9.* 2-byt...	00 00 | 0
10	04.05.2020 10:06:42,8...	to bus		Low	1.1.254	-	0/4/4	External brightness	6	GroupValueWrite	9.004 lu...	34 75 | 730.24 Lux
11	04.05.2020 10:06:43,5...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/3/0	Output 1	6	GroupValueWrite	5.001 p...	$B5 | 71 %
12	04.05.2020 10:06:48,2...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/3/0	Output 1	6	GroupValueWrite	5.001 p...	$B3 | 70 %
13	04.05.2020 10:06:52,9...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/3/0	Output 1	6	GroupValueWrite	5.001 p...	$B1 | 69 %
14	04.05.2020 10:06:57,6...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/3/0	Output 1	6	GroupValueWrite	5.001 p...	$AF | 69 %
15	04.05.2020 10:07:02,3...	from bus		Low	1.1.32	6131/31 Busch-Presence detector prem...	0/3/0	Output 1	6	GroupValueWrite	5.001 p...	$AD | 68 %

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Constant Light Controller

Constant Light Controller – Additional group objects

- Relative dimming: The object can be connected to a control element. This makes it possible to dim the lights brighter / darker in the room. The constant light controller is deactivated
- Value: The object can be connected to a value sender. This makes it possible to regulate the lighting in the room manually. The constant light controller is deactivated

	4	P1: Relative dimming (dimmer)	Input	4 bit
	5	P1: Value (dimmer)	Input	1 byte

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Application: Constant Light Controller

Constant Light Controller – Additional functions

- Operating Mode:
  - Automatic
  - Automatic switch-off
  - Light controller
    - The presence detector switches on and off only on the basis of brightness ± hysteresis
    - Activation / deactivation through the “automatic/manual off” object
- Control speed adjustment through blind inputs
  - If a blind moves up or down, the control speed is adjusted by the constant light controller during the travel time
- Actual brightness filter
  - The application reacts to brightness fluctuations (e.g. clouds)
  - The more inactive the filter is set, the slower the lighting will respond to such fluctuations

ABB KNX Presence Detectors – Zones, Calibration, Constant Light Control

Questions

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Online Learning Session

Homepage

www.abb.com/KNX

→ Products and Downloads
→ Lighting Control
→ Search Options DG/S

- Product Manual
- CAD Drawing
- Installation and Operating Instructions
- Specification Text
- ETS Application
- Selection Table
- CE & RoHS Declaration of Conformity
- • •

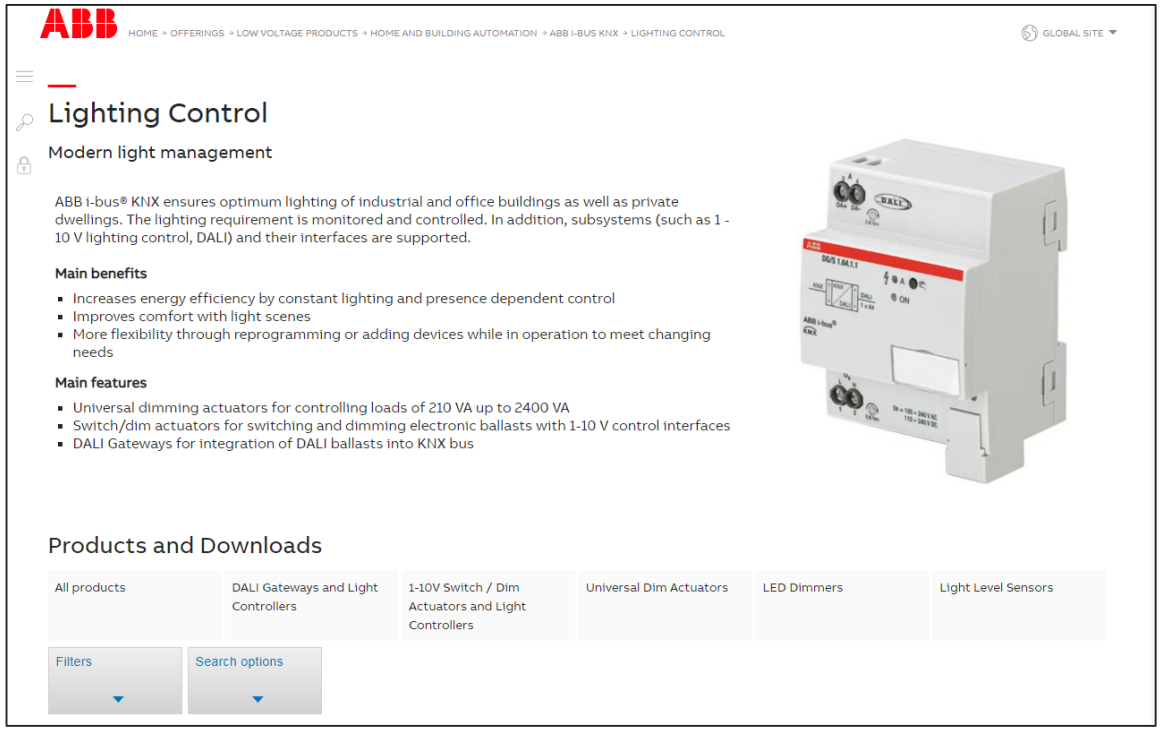


ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Online Learning Session

Further information

Training & Qualification Database

– The database includes the following types of training content:
  - Application Manuals
  - E-Learnings
  - Presentations
  - Video tutorials
  - Webinar slides and videos
  - ww.abb.com/knx or https://go.abb/ba-training

Youtube

– Channel “ABB Home and Building Automation”
  - https://www.youtube.com/user/ABBibusKNX

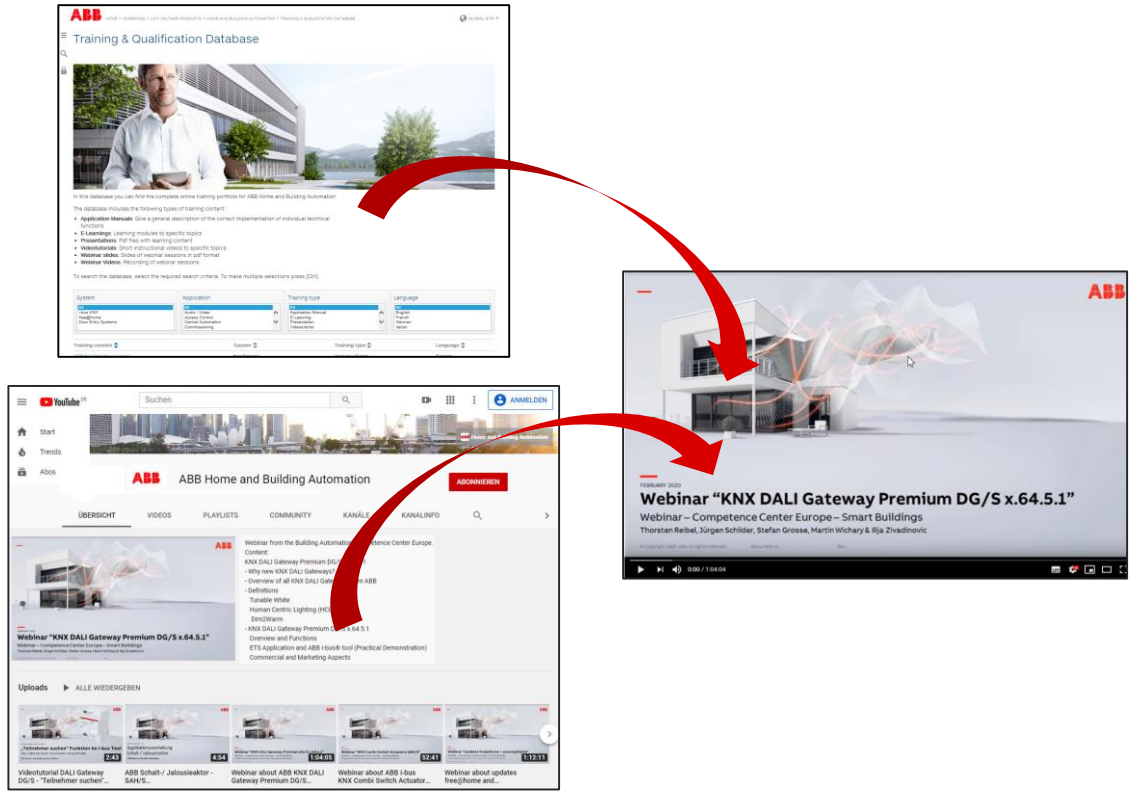


ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Online Learning Session

Training & Qualification Calendar

In addition to the online modules and the traditional training programs offered by your local ABB sales team, we offer a variety of on-site trainings conducted by our specialists at different ABB training facilities

In this Training & Qualification Calendar you can find the educational events that are taking place during 2020

If you are interested in a training please click the training und you will be forwarded to register in “ABB MyLearning”

www.abb.com/knx or https://go.abb/ba-training

→ Training and Qualification

→ Training Calendar

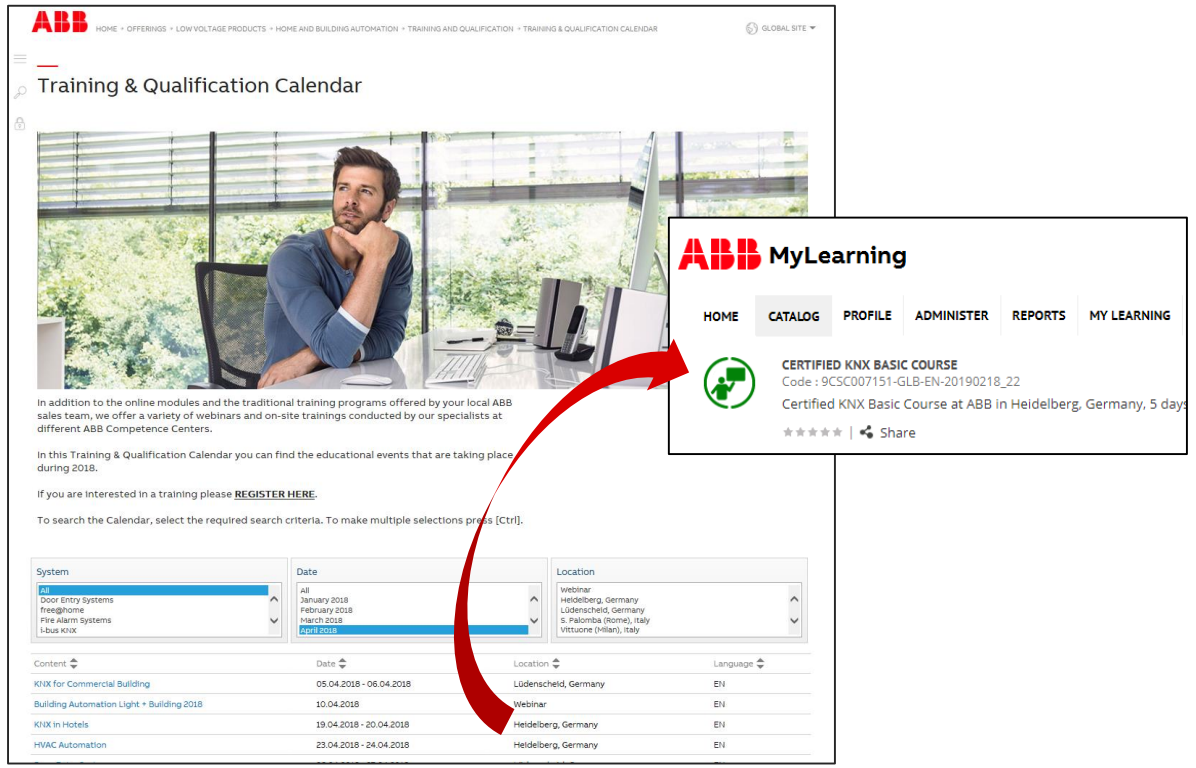


ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Online Learning Session

KNX Certified Trainings 2020

Certified KNX Courses in Heidelberg

- Advanced Course: 13th to 17th Jul.
- Tutor Course: 19th to 23rd Oct.
- Basic Course : 16th to 20th Nov.
- Followed by two day application training

Safe the date!!!

And many more training courses in the calendar
“International Training Dates 2020”

www.abb.com/knx or https://go.abb/ba-training

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Online Learning Session

Next Webinar

KNX DALI Gateway Premium DG/S x.64.5.1 – Special functions

- Human Centric Lighting (HCL) – Colour temperature curve following daylight
- Dim2Warm – Colour temperature changes proportionally to brightness with the effect like a light bulb
- Standby switch-off – Ballast voltage shutdown via additional switching actuator to save energy
- Scenes – 1 bit recall and 1 byte coded scenes
- ABB i-bus® tool – Search menu for a ballast with unknown address, operating hours, …

Wednesday 6th May 2020

- Morning 09:00 am Europe Time (Berlin, UTC + 2h)
- Afternoon 03:00 pm Europe Time (Berlin, UTC + 2h)

ABB KNX Presence Detectors – Zones, Calibration and Constant Light Control

Online Learning Session

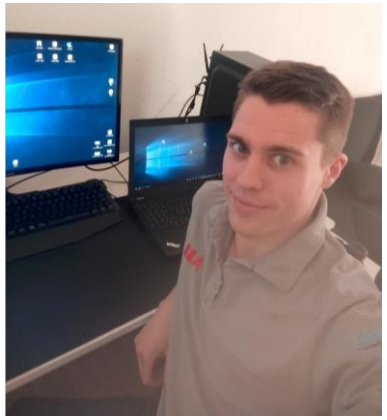
Next online learning sessions

– Thursday 7th May: Presence Detector – Master/Slave Concept + other functions

… and more will follow

NEW !!!

From home office to home office



Disclaimer

The information in this document is subject to change without notice and should not be construed as a commitment by ABB. ABB assumes no responsibility for any errors that may appear in this document.

In no event shall ABB be liable for direct, indirect, special, incidental or consequential damages of any nature or kind arising from the use of this document, nor shall ABB be liable for incidental or consequential damages arising from use of any software or hardware described in this document.


ABB