

Application descriptions

Lighting

Lighting channels

Summary:

This document provides the specification of the E-Mode channels in the application domain Lighting.

Version 01.00.01 is a KNX Approved Standard.

This document is part of the KNX Specifications v2.1.

7

20

11

Document updates

Version	Date	Modifications				
v01	2007.09.27	Oocument creation.				
		S12 "Channel Codes" integrated.				
	2007.10.02	AN050 "AN to Supplement 12" integrated.				
	2007.10.18	AN087 "New Channels 2005.02" integrated.				
	2008.05.09	AN076 "Localisation Easy Actuators" integrated: insertion of LA-flag as specified in AN076.				
v1.0	2009.06.26	Update in view of publication in the KNX Specifications v2.0.				
v1.0	2009.06.26	Update in view of publication in the KNX Specifications v2.0.				
01.00.01	2013.10.29	Editorial updates for the publication of KNX Specifications 2.1.				

References

[01] Chapter 7/20/1 "Lighting Sensors"

Filename: 07_20_11 Lighting Channels v01.00.01 AS.docx

Version: 01.00.01

Status: Approved Standard

Savedate: 2013.10.29

Number of pages: 67

Contents

1	Intro	oduction	5
	1.1	Overview of the application	
	1.2	Support of scenes	5
	1.3	Channel overview	6
2	Chai	nnels Lighting	7
_	2.1	CH_PB_Toggle (Channel Code 0002h)	
	2.2	CH_PB_Timed (Channel Code 0003h)	
	2.3	CH_PB_Timed_Info (Channel Code 0004h)	
	2.4	CH_PB_Dimmer (Channel Code 0005h)	
	2.5	CH_PB_Dimmer_Toggle (Channel Code 0006h)	
	2.6	CH_PB_Scene_Numbered (Channel Code 0007h)	
	2.7	CH_PB_Scene (Channel Code 0008h)	
	2.8	CH_Switch (Channel Code 0009h)	
	2.9	CH_Switch_Info (Channel Code 000Ah)	15
	2.10	CH_Switch_Forced (Channel Code 000Bh)	
	2.11	CH_Switch_Dimmer (Channel Code 000Ch)	17
	2.12	CH_Switch_Dimmer_Info (Channel Code 000Dh)	17
	2.13	CH_Switch_Dimmer_Toggle (Channel Code 000Eh)	18
	2.14	CH_Switch_Scene_Numbered (Channel Code 000Fh)	19
		CH_Switch_Scene (Channel Code 0010h)	
	2.16	CH_Light_Setpoint_Controller (Channel Code 0011h)	22
		CH_Light_Sensor (Channel Code 0012h)	
		CH_Motion_Detector_Basic (Channel Code 0013h)	
		CH_Motion_Detector_Complex (Channel Code 0014h)	
		CH_Switch_Operation_Mode (Channel Code 001Eh)	
		CH_PushButton (Channel Code 0020h)	
		CH_PB_Dimming_Value (Channel Code 0029h)	
		CH_Push_Button_Info (Channel Code 002Ah)	
		CH_PB_Dimming_Value_Info (Channel Code 002Ch)	
		CH_Switch_Dimming_Value_Info (Channel Code 002Dh)	
		CH_Status_Info (Channel Code 0100h)	
		CH_Binary_Actuator_Basic (Channel Code 0101h)	
		CH_Light_Actuator_Complex (Channel Code 0102h)	
		CH_Light_Actuator_Scene (Channel Code 0103h)	
		CH_Light_Actuator_Controlled (Channel Code 0104h)	
		CH_Dimming_Actuator_Basic (Channel Code 0105h)	
		CH_Dimming_Actuator_Complex (Channel Code 0106h)	
		CH_Dimming_Actuator_Scene (Channel Code 0107h)	
		CH_LightSensor_Slave (Channel Code 020Ah)	
3		mples	45
	3.1	Example 1: 2 CH_PushButton connected with 2 CH_Binary_Actuator_Basic	
	3.2	Example 2: CH_PB_Toggle connected with 2 CH_Binary_Actuator_Basic	
	3.3	Example 3: CH_PB_Toggle with overlapping group	46
	3.4	Example 4: CH_PB_Toggle connected with 2 from 3	
		CH_Binary_Actuator_Basic with a central OFF (CH_PushButton with	40
		parameter to allow only OFF values)	48

	3.5	Example 4: 1 CH_Dimmer_Switch and 1 CH_Dimmer_PB, connected to 2	
		CH_Dimmer_Actuator_Basic	49
	3.6	Example 6: CH_Motion_Detector, CH_PB_TimedON, CH_PB_Forced,	
		CH_PushButton connected to a CH_Binary_Actuator_Complex	50
4	Fun	ctional Blocks	51
	4.1	Usage requirements	
	4.2	Functional Block "Room Light Setpoint"	
		4.2.1 Definitions	
		4.2.2 Functional specification	51
		4.2.3 FB description	
	4.3	Functional Block "Room Light Sensor" (RLS)	57
		4.3.1 Definitions	57
		4.3.2 Functional specification	
		4.3.3 FB description	58
	4.4	Functional Block "Room Light Controller" (RLC)	
		4.4.1 Definitions	60
		4.4.2 Functional specification	60
		4.4.3 FB description	60

1 Introduction

1.1 Overview of the application

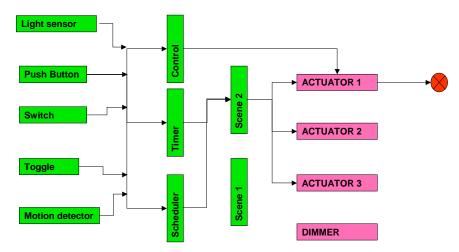


Figure 1 – The application "Lighting"

1.2 Support of scenes

For Scene Number Datapoints, it is mandatory to deal at least with numbers from 1 to 8 (coded 0 to 7). It is allowed to deal with higher values. This shall thus be as specified in Table 1.

Table 1 – Scene numbering and coding in E-Mode Channels

Scene number	Scene letter	Coding
1	A	xx0000000b
2	В	xx000001b
3	С	xx000010b
4	D	xx000011b
5	Е	xx000100b
6	F	xx000101b
7	G	xx000110b
8	Н	xx000111b

1.3 Channel overview

Channel Code	Channel Name
0002h	CH_PB_Toggle
0003h	CH_PB_Timed
0004h	CH_PB_Timed_Info
0005h	CH_PB_Dimmer
0006h	CH_PB_Dimmer_Toggle
0007h	CH_PB_Scene_Numbered
0008h	CH_PB_Scene
0009h	CH_Switch
000Ah	CH_Switch_Info
000Bh	CH_Switch_Forced
000Ch	CH_Switch_Dimmer
000Dh	CH_Switch_Dimmer_Info
000Eh	CH_Switch_Dimmer_Toggle
000Fh	CH_Switch_Scene_Numbered
0010h	CH_Switch_Scene
0011h	CH_Light_Setpoint_Controller
0012h	CH_Light_Sensor
0013h	CH_Motion_Detector_Basic
0014h	CH_Motion_Detector_Complex
001Eh	CH_Switch_Operation_Mode
0020h	CH_PushButton
0100h	CH_Status_Info
0101h	CH_Binary_Actuator_Basic
0102h	CH_Light_Actuator_Complex
0103h	CH_Light_Actuator_Scene
0104h	CH_Light_Actuator_Controlled
0105h	CH_Dimming_Actuator_Basic
0106h	CH_Dimming_Actuator_Complex
0107h	CH_Dimming_Actuator_Scene
020Ah	CH_LightSensor_Slave
020Bh	CH_Light_Setpoint_Controller_Info

Lighting

2 Channels Lighting

2.1 CH_PB_Toggle (Channel Code 0002h)

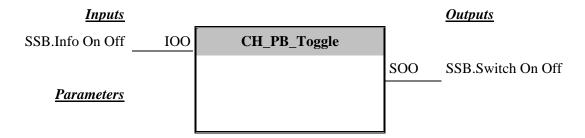
• Name: CH_PB_Toggle

<u>ID:</u> 0002h<u>Classification:</u> sensor

• Functional Block:

• 421 – FB Switching Sensor Basic (SSB)

• Graphical representation:



• Description:

See FB Switching Sensor Basic (SSB).

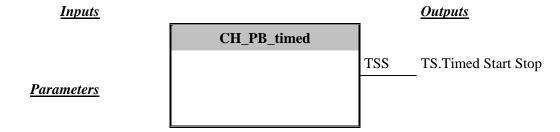
Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	421 / Info On Off	Info On Off	1	CC_Switch_OnOff_Status		I
2	421 / Switch On Off	OnOff	1	CC_Switch_OnOff	CC_Logical	OL

2.2 CH_PB_Timed (Channel Code 0003h)

• Name: CH_PB_Timed

<u>ID:</u> 0003h<u>Classification:</u> sensor

- Functional Block:
 - 406 FB Timed Sensor (TS)
- Graphical representation:



• Description:

See FB Timed Sensor.

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	406 / Timed Start Stop	Timed Start Stop	1	CC_Timed		OL

2.3 CH_PB_Timed_Info (Channel Code 0004h)

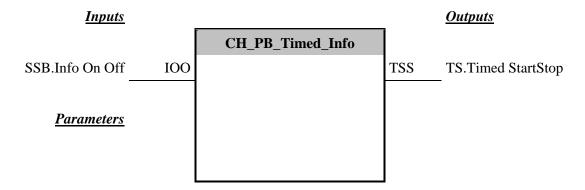
• Name: CH_PB_Timed_Info

<u>ID:</u> 0004h<u>Classification:</u> sensor

• Functional Block:

- 406 FB Timed Sensor (TS)
- 421 FB Switching Sensor Basic (SSB)

• **Graphical representation:**



• Description:

Grouping of functionality from FB Timed Sensor and FB Switching Sensor Basic. There are no relationships between the Functional Blocks.

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	421 / Info On Off	Info On Off	1	CC_Switch_OnOff_Status		I
2	406 / Timed Start Stop	Timed StartStop	1	CC_Timed		O L

2.4 CH_PB_Dimmer (Channel Code 0005h)

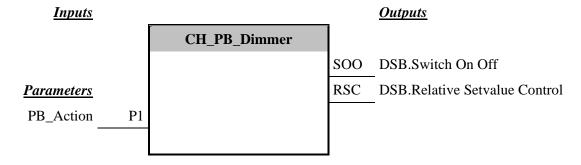
• Name: CH_PB_Dimmer

<u>ID:</u> 0005h<u>Classification:</u> sensor

• Functional Block:

• 420 – FB Dimming Sensor Basic (DSB)

• **Graphical representation:**



• Description:

See FB Dimming Sensor Basic (DSB).

• Datapoint list:

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	420 / Switch On Off	OnOff	1	CC_Switch_OnOff	CC_Logical	OL
2	420 / Relative Setvalue Control	Dimming Ctrl	1	CC_Dimming_Ctrl		О

Index	Name	Identifier	Туре	Recommended default value	Bit Offset
1	PB_Action	P1	PART_UpDown_Action	UP	7

2.5 CH_PB_Dimmer_Toggle (Channel Code 0006h)

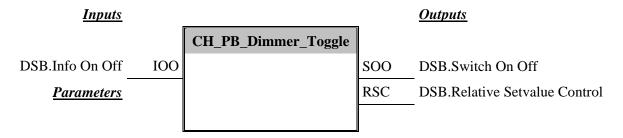
• Name: CH_PB_Dimmer_Toggle

<u>ID:</u> 0006h<u>Classification:</u> sensor

• Functional Block:

• 420 – FB Dimming Sensor Basic (DSB)

• **Graphical representation:**



• Description:

See FB Dimming Sensor Basic (DSB).

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	420 / Info On Off	Info On Off	1	CC_Switch_OnOff_Status		I
2	413 / Switch On Off	OnOff	1	CC_Switch_OnOff	CC_Logical	OL
	413 / Relative Setvalue Control	Dimming Ctrl	1	CC_Dimming_Ctrl		О

2.6 CH_PB_Scene_Numbered (Channel Code 0007h)

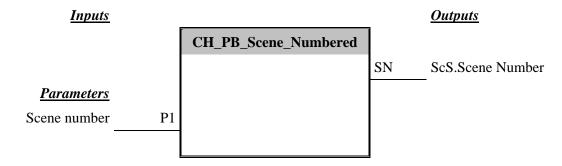
• Name: CH_PB_Scene_Numbered

<u>ID:</u> 0007h<u>Classification:</u> sensor

• Functional Block:

• 403 –FB Scene Sensor (ScS)

• **Graphical representation:**



• Description: See Functional Block FB Scene Sensor.

The range for the parameter "Scene number" is restricted frm 0 to 7 for the E-Mode Management Client.

• Datapoint list:

Index	FB/DP_Name	Name	Subun it	Main CC	Additional CCs	Flags (i/o,x,v,)
1	403 / Scene Number	Scene number	1	CC_Scene_Number		OL

Index	Identifier	Name	Туре	Recommended default value	Bit Offset
1	P1 Scene number		PART_Scene_Number	0	2

2.7 CH_PB_Scene (Channel Code 0008h)

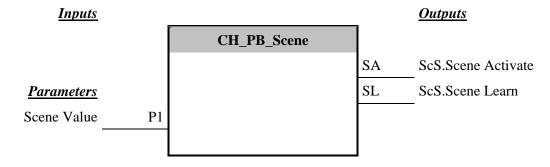
• Name: CH_PB_Scene

<u>ID:</u> 0008h<u>Classification:</u> sensor

• Functional Block:

• 403 – FB Scene Sensor (ScS)

• **Graphical representation:**



• Description:

See FB Scene Sensor (ScS).

• Datapoint list:

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	403 / Scene AB Activate	Scene Activate	1	CC_Activate	CC_Switch_OnOff	OL
2	403 / Scene AB Teach	Scene Learn	1	CC_Learn		O

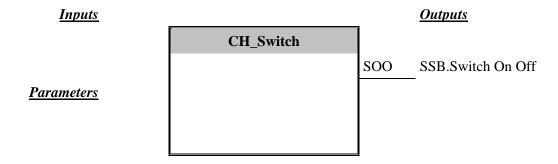
	Index	lex Identifier Name		Туре	Recommended default value	Bit Offset
]		P1	Scene Value	PART_Scene_Value	0	7

2.8 CH_Switch (Channel Code 0009h)

• Name: CH_Switch

<u>ID:</u> 0009h<u>Classification:</u> sensor

- Functional Block:
 - 421 FB Switching Sensor Basic (SSB)
- **Graphical representation:**



• Description:

See FB Switching Sensor Basic (SSB).

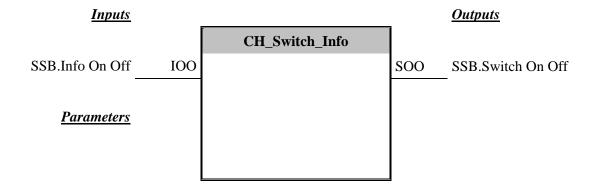
]	Index FB/DP_Name Name		Main CC	Additional CCs	Flags (i/o,x,v,)	
1		421 / Switch On Off	OnOff	CC_Switch_OnOff	CC_Logical	OL

2.9 CH_Switch_Info (Channel Code 000Ah)

• Name: CH_Switch_Info

<u>ID:</u> 000Ah<u>Classification:</u> sensor

- Functional Block:
 - 421 FB Switching Sensor Basic (SSB)
- Graphical representation:



• Description:

See FB Switching Sensor Basic (SSB).

• <u>Datapoint list:</u>

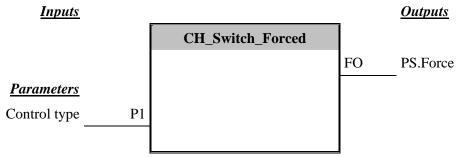
Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	421 / Info On Off	Info On Off	1	CC_Switch_OnOff_Status		I
2	421 / Switch On Off	OnOff	1	CC_Switch_OnOff	CC_Logical	OL

2.10 CH_Switch_Forced (Channel Code 000Bh)

• Name: CH_Switch_Forced

<u>ID:</u> 000Bh<u>Classification:</u> sensor

- Functional Block:
 - 405 FB Priority Sensor (PS)
- **Graphical representation:**



• Description:

See FB Priority Sensor (PS).

• Datapoint list:

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	405 / Force	Forced	1	CC_Forced		OL

Index	Identifier	Name	Туре	Recommended default value	Bit Offset
1	P1	Control type	PART_Boolean	0: Ctrl False	7

2.11 CH_Switch_Dimmer (Channel Code 000Ch)

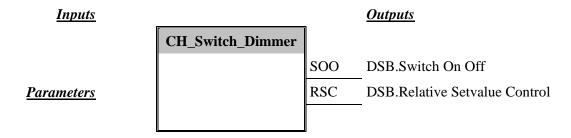
• Name: CH_Switch_Dimmer

<u>ID:</u> 000Ch<u>Classification:</u> sensor

• Functional Block:

• 420 - FB Dimming Sensor Basic (DSB)

• **Graphical representation:**



• Description:

See FB Dimming Sensor Basic (DSB).

• Datapoint list:

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	420.OnOff	OnOff	1	CC_Switch_OnOff	CC_Logical	OL
2	420.Dimming Ctrl	Dimming Ctrl	1	CC_Dimming_Ctrl		О

2.12 CH_Switch_Dimmer_Info (Channel Code 000Dh)

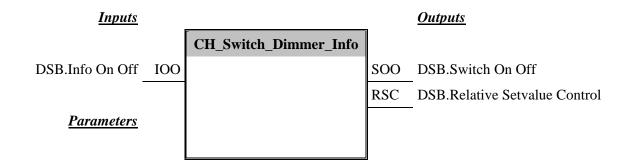
• Name: CH_Switch_Dimmer_Info

<u>ID:</u> 000Dh<u>Classification:</u> sensor

• Functional Block:

• 420 - FB Dimming Sensor Basic (DSB)

• Graphical representation:



• Description:

See FB Dimming Sensor Basic (DSB).

• Datapoint list:

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	420.Info On Off	Info On Off	1	CC_Switch_OnOff_Status		I
2	420.Switch On Off	OnOff	1	CC_Switch_OnOff	CC_Logical	OL
	420.Relative Setvalue Control	Dimmer Ctrl	1	CC_Dimming_Ctrl		О

2.13 CH_Switch_Dimmer_Toggle (Channel Code 000Eh)

• <u>Name:</u> CH_Switch_Dimmer_Toggle

<u>ID:</u> 000Eh<u>Classification:</u> sensor

• Functional Block:

• 420 – FB Dimming Sensor Basic (DSB).

• **Graphical representation:**

<u>Inputs</u>				<u>Outputs</u>
		CH_Switch_Dimmer_Toggle		
DSB.Info On Off	IOO		SOO	DSB.Switch On Off
<u>Parameters</u>			RSC	DSB.Relative Setvalue Control
				-

• Description:

See FB Dimming Sensor Basic (DSB).

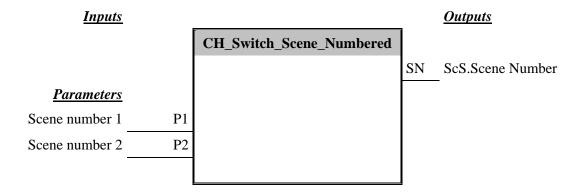
Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	420 / Info On Off	Info On Off	1	CC_Switch_OnOff_Status		I
2	420 / Switch On Off	OnOff	1	CC_Switch_OnOff	CC_Logical	OL
3	420 / Relative Setvalue Control	Dimmer Ctrl	1	CC_Dimming_Ctrl		О

2.14 CH_Switch_Scene_Numbered (Channel Code 000Fh)

• Name: CH_Switch_Scene_Numbered

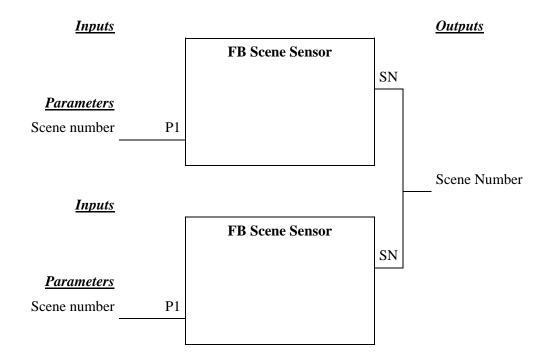
<u>ID:</u> 000Fh<u>Classification:</u> sensor

- Functional Block:
 - 2x 403 FB Scene Sensor (ScS)
- Graphical representation:



• Description:

Grouping of two FBs Scene Sensor, see equivalent descriptions. The two Functional Blocks of same type use a shared output Datapoint. The two FB themselves have moreover no interaction.



This Channel contains 4 human interaction points, two groups concerning to the FB Scene Sensor interaction points.

There are 4 possible interactions:

- 1. on interaction 1(e.g. long press on ON) send the value of parameter P1 "scene number 1" with the bit "learn" set to 1
- 2. on interaction 2(e.g. long press on OFF) send the value of parameter P2 "scene number 2" with the bit " learn " set to 1
- 3. on interaction 3(e.g. short press on ON) send the value of parameter P1 "scene number 1" with the bit " learn " set to 0
- 4. on interaction 4(e.g. short press on OFF) send the value of parameter P2 "scene number 2" with the bit " learn " set to 0

The range for the parameter "Scene number" is restricted from 0 to 7 for the E-Mode Management Client.

• Datapoint list:

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	403 / Scene Number	Scene number	1	CC_Scene_Number		OL

• Parameter table:

Index	Identifier	Name	Туре	Recommended default value	Bit Offset
1	P1	Scene number 1	PART_Scene_Number	0	2
2	P2	Scene number 2	PART_Scene_Number	0	10

2.15 CH_Switch_Scene (Channel Code 0010h)

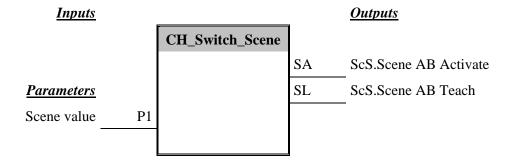
• Name: CH_Switch_Scene

<u>ID:</u> 0010hClassification: sensor

• Functional Block:

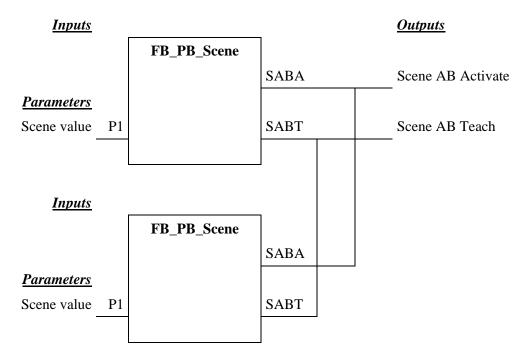
• 2x 403 - FB Scene Sensor (ScS)

• **Graphical representation:**



• <u>Description:</u>

Grouping of two FB Scene Sensor, see equivalent descriptions. The two FBs of the same type use a shared Output. The two FB themselves moreover have no interaction.



This Channel contains 4 human interaction points, two groups concerning to the FB Scene interaction points.

There are 4 possible interactions:

- 1. on interaction 1 (e.g. long press on ON) send the value Scene value via the Scene AB Teach Output
- 2. on interaction 2 (e.g. long press on OFF) send the value inverted(Scene value) via the Scene AB Teach Output
- 3. on interaction 3 (e.g. short press on ON) send the value Scene value via the Scene AB Activate Output
- 4. on interaction 4 (e.g. short press on OFF) send the value inverted(Scene value) via the Scene AB Activate Output

• Datapoint list:

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	403 / Scene AB Activate	Scene_Activate	1	CC_Activate	CC_Switch_OnOff	OL
2	403 / Scene AB Teach	Scene learn	1	CC_Learn		О

Index	Identifier	Name	Туре	Recommended default value	Bit Offset
1	P1	Scene value	PART_Scene_Value	1	7

2.16 CH_Light_Setpoint_Controller (Channel Code 0011h)

• Name: CH_Light_Setpoint_Controller

• <u>ID:</u> 0011h

• <u>Classification:</u> functional module

• Functional Block:

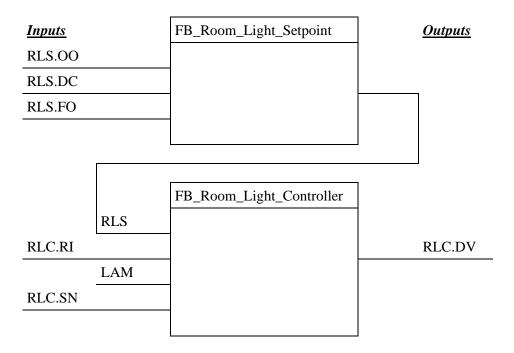
- 408 FB_Room_Light_Setpoint (see 4.2 in this document)
- 415 FB_Room_Light_Controller (see 4.4 in this document)

• **Graphical representation:**

<u>Inputs</u>				<u>Outputs</u>
		CH_Light_SetPoint_Controller		
RLS.Dimming Ctrl	DC		DV	RLC.Dimming value
RLS.OnOff	00			
RLS.Forced	FO			
RLC.Room illumination	RI			
RLC.Scene_Number	SN			
Parameters				
Light Setpoint Low	P1			
Light Setpoint High	P2			
Light Setpoint Forced	P3			

• Description:

See Functional Block FB_Room_Light_Setpoint (clause 4.2), FB_Room_Light_Controller (clause 4.4).



• Datapoint list:

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	408/Dimming CtrlC	Dimming Ctrl	1	CC_Dimming_Ctrl		I
2	408 / OnOff	OnOff	1	CC_Switch_OnOff	CC_Logical	I L
3	408 / Forced	Forced	1	CC_Forced		I
4	415 / Room Illumination	Room illumination	1	CC_Illumination		I
5	415 / Scene Numbered	Scene numbered	1	CC_Scene_Number		I
6	415 / Dimming Value	Dimming value	1	CC_Dimming_Value		O LA

Index	Identifier	Name	Туре	Recommended default value	Bit Offset
1	P1	Light Setpoint Low	PART_Light_Value	50 lux	0
2	P2	Light SetPoint High	PART_Light_Value	1000 lux	16
3	Р3	Light SetPoint_Forced	PART_Light_Value	500 lux	32

2.17 CH_Light_Sensor (Channel Code 0012h)

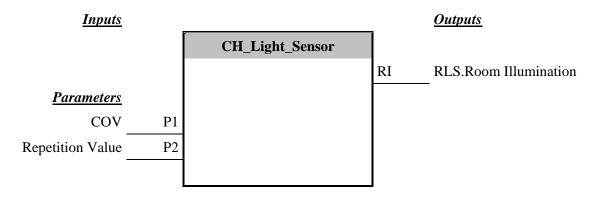
• Name: CH_Light_Sensor

<u>ID:</u> 0012h<u>Classification:</u> sensor

• Functional Block:

• 409 – FB Room Light Sensor (RLS)(see 4.3 in this document)

• **Graphical representation:**



• Description:

See FB Room Light Sensor (RLS)(see 4.3 in this document).

• Datapoint list:

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
0	409 / Room Illumination	Room illumination	1	CC_Illumination		O L

Index	Name	Identifier	Туре	Recommended default value	Bit Offset
0	Change of value in lux	P1	PART_COV_Lux	10 lux	0
1	Repetition time	P2	PART_Time_Delay	5 min	16

2.18 CH_Motion_Detector_Basic (Channel Code 0013h)

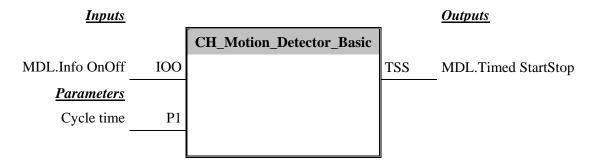
• Name: CH_Motion_Detector_Basic

<u>ID:</u> 0013h<u>Classification:</u> sensor

• Functional Block:

• 414 – FB Movement Detector for Lighting (MDL)

• **Graphical representation:**



• Description:

See FB Movement Detector for Lighting.

The parameter Cycle_time is fixed to 45 s.

The recommended value for the parameter of the timed function in the actuator linked to this channel is 1 min.

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	414 / InfoOnOff	Info On Off	1	CC_Switch_OnOff_Status		I
2	414 / Timed StartStop	Timed StartStop	1	CC_Timed		OL

2.19 CH_Motion_Detector_Complex (Channel Code 0014h)

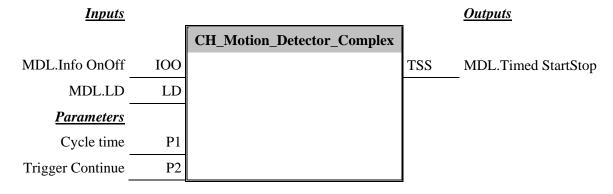
• Name: CH_Motion_Detector_Complex

<u>ID:</u> 0014h<u>Classification:</u> sensor

• Functional Block:

• 414 – FB Movement Detector for Lighting (MDL)

• **Graphical representation:**



• Description:

See FB Movement Detector for Lighting (MDL).

• Datapoint list:

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	414 / Info On Off	Info On Off	1	CC_Switch_OnOff_Status		I
2	414 / Lock Device	Enable	1	CC_Enable		I
3	414 / Timed StartStop	Timed StartStop	1	CC_Timed		OL

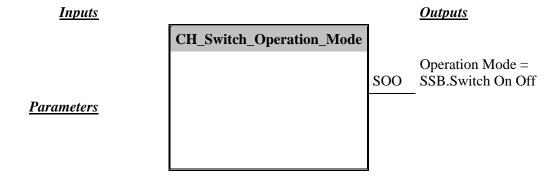
Index	Identifier	Name	Туре	Recommended default value	Bit Offset
1	P1	Cycle_time	PART_Cycle_Time	45 s	0
2	P2	Trigger_Continue	PART_Boolean	Disable = FALSE	15

2.20 CH_Switch_Operation_Mode (Channel Code 001Eh)

• Name: CH_Switch_Operation_Mode

<u>ID:</u> 001Eh<u>Classification:</u> sensor

- Functional Block:
 - 421 FB Switching Sensor Basic (SSB)
- **Graphical representation:**



• Description:

On human interaction, the state of the switch is sent. There are 2 possible interactions:

- 1. on interaction 1 send value 1 (e.g. when pressed on ON)
- 2. on interaction 2 send value 0 (e.g. when pressed on OFF)

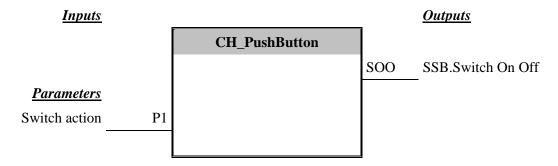
Index	FB/DP_Name	Name	Main CC	Additional CCs	Flags (i/o,x,v,)
1	421 / Switch On Off	Operation Mode	CC_Operation_Mode		OL

2.21 CH_PushButton (Channel Code 0020h)

• Name: CH_PushButton

<u>ID:</u> 0020h<u>Classification:</u> sensor

- Functional Block:
 - 421 FB Switching Sensor Basic (SSB)
- **Graphical representation:**



• Description:

See FB Switching Sensor Basic (SSB).

• Datapoint list:

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	421 / Switch On Off	OnOff	1	CC_Switch_OnOff	CC_Logical	OL

Index	Identifier	Name	Туре	Recommended default Value	Bit Offset
1	P1	Switch action	PART_OnOff_Action	11b : OnOff	6

2.22 CH_PB_Dimming_Value (Channel Code 0029h)

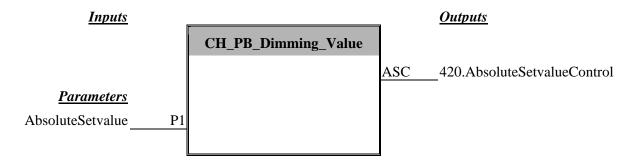
• Name: CH_PB_Dimming_Value

<u>ID:</u> 0029h<u>Classification:</u> sensor

• Functional Block:

• 420 - FB Dimming Sensor Basic (DSB) (See [01]).

• **Graphical representation:**



• Description:

Please refer to the specification of FB Dimming Sensor Basic in [01].

• Datapoint list:

Index	FB Datapoint ID	Name	Sub- unit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	420.ASC	AbsoluteSetvalueControl	1	CC_Dimming_Value		OL

Index	Identifier	Name	Type	Recommended default value	Bit Offset
1	P1	AbsoluteSetvalue	PART_Dimming_Value	255 : 100 %	0

2.23 CH_Push_Button_Info (Channel Code 002Ah)

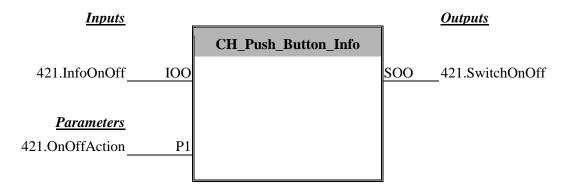
• Name: CH_Push_Button_Info

<u>ID:</u> 002Ah<u>Classification:</u> sensor

• Functional Block:

■ 421 – FB Switching Sensor Basic (SSB) (See [01]).

• Graphical representation



• Description:

Please refer to the FB specification in [01]).

• Datapoint list:

Index	FB Datapoint ID	Name	Sub- unit	Main CC	Additional CCs	Flags (i/o,x,v)
1	421.IOO	InfoOnOff	1	CC_Switch_OnOff_Status		I
2	421.SOO	SwitchOnOff	1	CC_Switch_OnOff	CC_Logical	OL

Index	Identifier	Name	Type	Recommended default value	Bit Offset
1	P1	OnOffAction	PART_Switch_Value	11b: OnOff	6

2.24 CH_PB_Dimming_Value_Info (Channel Code 002Ch)

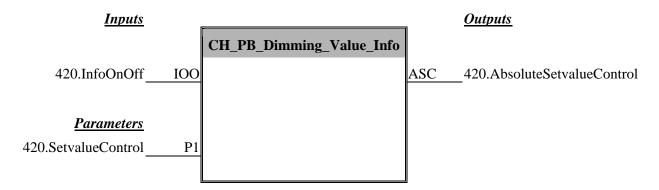
• Name: CH_PB_Dimming_Value_Info

<u>ID:</u> 002Ch<u>Classification:</u> sensor

• Functional Block:

■ 420 – FB Dimming Sensor Basic (See [01].)

• **Graphical representation:**



• Description:

Please refer to the specification of the FB Dimming Sensor Basic in [01].

• Datapoint list:

Index	FB Datapoint ID	Name	Sub- unit	Main CC	Additional CCs	Flags i/o,x,v)
1	420.IOO	InfoOnOff	1	CC_Switch_OnOff_Status		I
2	420.ASC	AbsoluteSetvalueControl	1	CC_Dimming_Value		OL

Index	Identifier	Name	Type	Recommended default value	Bit Offset
1	P1	SetvalueControl	PART_Dimming_Value	255 : 100%	0

2.25 CH_Switch_Dimming_Value_Info (Channel Code 002Dh)

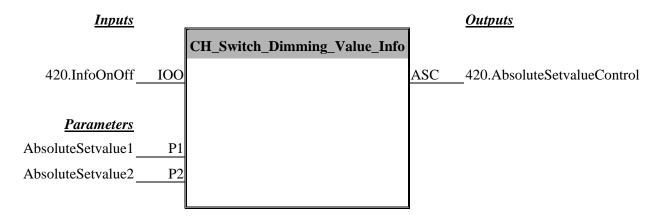
• Name: CH_Switch_Dimming_Value_Info

<u>ID:</u> 002Dh<u>Classification:</u> Sensor

• Functional Block:

■ 420 – FB Dimming Sensor Basic (See [01].)

• Graphical representation



• Description:

Please refer to the specification of FB Dimming Sensor Basic in [01].

• Datapoint list:

Index	FB Datapoint ID	Name	Sub- unit	Main CC	Additional CCs	Flags (i/o,x,v)
1	420.IOO	InfoOnOff	1	CC_Switch_OnOff_Status		I
2	420.ASC	AbsoluteSetvalueContro 1	1	CC_Dimming_Value		OL

Index	Identifier	Name	Туре	Recommended default value	Bit-Offset
1	P1	AbsoluteSetvalue1	PART_Dimming_Value	255: 100 %	0
2	P2	AbsoluteSetvalue 2	PART_Dimming_Value	0: 0%	8

2.26 CH_Status_Info (Channel Code 0100h)

• Name: CH_Status_Info

• <u>ID:</u> 0100h

• Classification: actuator

- Functional Block:
 - 421 FB Switching Sensor Basic (SSB)
- **Graphical representation:**

<u>Inputs</u>			<u>Outputs</u>
SSB.Info On Off	IOO	CH_Status_Info	
<u>Parameters</u>			

• Description:

See FB Switching Sensor Basic (SSB).

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	421 / Info On Off	Info On Off	1	CC_Switch_OnOff_Status	CC_Logical	I L

2.27 CH_Binary_Actuator_Basic (Channel Code 0101h)

• Name: CH_Binary_Actuator_Basic

<u>ID:</u> 0101h<u>Classification:</u> actuator

• Functional Block:

• 417 - FB Light Switching Actuator Basic (LSAB)

• Graphical representation:

<u>Inputs</u>			_	<u>Outputs</u>
LSAB.Switch OnOff	SOO	CH_Binary_Actuator_Basic		
			IOO	LSAB.Info On Off
<u>Parameters</u>				
			<u> </u>	

• Description:

See FB Light Switching Actuator Basic (LSAB).

Index	FB / DP_Name	Name	Sub- unit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	417 / Switch On Off	OnOff	1	CC_Switch_OnOff		IL
2	417 / Info On Off	Info On Off	1	CC_Switch_OnOff_Status	CC_Logical	O V LA

2.28 CH_Light_Actuator_Complex (Channel Code 0102h)

• Name: CH_Light_Actuator_Complex

<u>ID:</u> 0102h<u>Classification:</u> actuator

• Functional Block:

• 417 - FB Light Switching Actuator Basic (LSAB)

• Graphical representation:

<u>Inputs</u>			_	<u>Outputs</u>
LSAB.Switch On Off	SOO	CH_Light_Actuator_Complex		
LSAB.Timed StartStop	TSS			
LSAB.Forced	FO		IOO	LSAB.Info On Off
<u>Parameters</u>				
timed duration	P1			
pre-warning duration	P2			

• Description:

See FB Light Switching Actuator Basic (LSAB).

• Datapoint list:

Index	FB / DP_Name	Name	Sub unit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	417 / Switch On Off	OnOff	1	CC_Switch_OnOff		IL
2	417 / Timed StartStop	Timed StartStop	1	CC_Timed		I
3	417 / Forced	Forced	1	CC_Forced		I
4	417 / Info On Off	Info On Off	1	CC_Switch_OnOff_Status	CC_Logical	O V LA

Index	Identifier	Name	Туре	Recommended default value	Bit Offset
1	P1	Timed duration	PART_Time_Delay	1 minute	0
2	P2	Pre-warning duration	PART_Prewarning_Delay	0 : no prewarning	8

2.29 CH_Light_Actuator_Scene (Channel Code 0103h)

• Name: CH_Light_Actuator_Scene

<u>ID:</u> 0103h<u>Classification:</u> actuator

• Functional Block:

• 417 - FB Light Switching Actuator Basic (LSAB)

• **Graphical representation:**

<u>Inputs</u>	_		_	<u>Outputs</u>
LSAB.Switch OnOff	SOO	CH_Light_Actuator_Scene		
LSAB.Timed StartStop	TSS			
LSAB.Forced	FO		IOO	LSAB.Info On Off
LSAB.Scene Number	SN			
<u>Parameters</u>				
Timed duration	P1			
Pre-warning duration	P2			

• Description:

See FB Light Switching Actuator Basic.

Number of scene to be supported is 8.

• Datapoint list:

Index	FB / DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	417 / Switch On Off	OnOff	1	CC_Switch_OnOff		IL
2	417 / Timed StartStop	Timed StartStop	1	CC_Timed		I
3	417 / Forced	Forced	1	CC_Forced		I
4	417 / Scene Number	Scene Number	1	CC_Scene_Number		I
5	417 / Info On Off	Info On Off	1	CC_Switch_OnOff_St atus	CC_Logical	O V LA

Index	Identifier	Name	Туре	Recommended default value	Bit Offset
1	P1	Timed duration	PART_Time_Delay	1 minute	0
2	P2	Pre-warning duration	PART_Prewarning_Delay	0 : no prewarning	8

2.30 CH_Light_Actuator_Controlled (Channel Code 0104h)

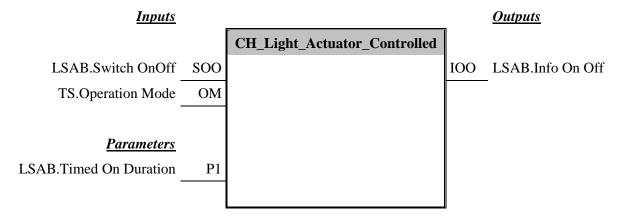
• Name: CH_Light_Actuator_Controlled

ID: 0104hClassification: actuator

• Functional Block:

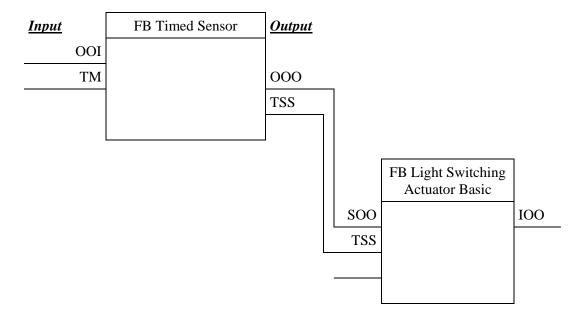
- 417 FB Light Switching Actuator Basic (LSAB)
- 406 FB Timed Sensor (TS)

• Graphical representation:



• Description:

See FB Light Switching Actuator Basic and FB Timed Sensor.



Index	FB / DP_Name	Name	Sub unit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	406 / On Off In	OnOff	1	CC_Switch_OnOff		ΙL
2	406 / TimedMode Operation Mode		1	CC_OperationMode		Ι
3	417 / Info On Off	Info On Off	1	CC_Switch_OnOff_Status	CC_Logical	O V LA

• Parameter table:

Index	Identifier	Name	Type	Recommended default value	Bit Offset
1	P1	Timed duration	PART_Time_Delay	1 minute	0

2.31 CH_Dimming_Actuator_Basic (Channel Code 0105h)

• Name: CH_Dimming_Actuator_Basic

<u>ID:</u> 0105h<u>Classification:</u> actuator

• Functional Block:

• 418 - FB Dimming Actuator Basic (DAB)

• **Graphical representation:**

On Off SOO CH_Dimming_Actuator_Basic
etvalue Control RSC IOO DAB.Info On Off
etvalue DAB.Actual Dimming IDV Value
<u>umeters</u>
Control RSC IOO etvalue Control ASC IDV

• <u>Description</u>

See FB Dimming Actuator Basic (DAB).

Index	FB / DP_Name	Name	Sub unit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	418 / OnOff	OnOff	1	CC_Switch_OnOff		I L
2	418 / Dimming Ctrl	Dimming Ctrl	1	CC_Dimming_Ctrl		I
3	418 / Dimming Value	Dimming Value	1	CC_Dimming_Value		I
4	418 / Info On Off	Info On Off	1	CC_Switch_OnOff_Status	CC_Logical	O V LA
5	418 / Info Dimming value	Info Dimming Value	1	CC_Dimming_Value_Statu		O V

2.32 CH_Dimming_Actuator_Complex (Channel Code 0106h)

• Name: CH_Dimming_Actuator_Complex

<u>ID:</u> 0106h<u>Classification:</u> actuator

• Functional Block:

• 418 - FB Dimming Actuator Basic (DAB)

• Graphical representation:

<u>Inputs</u>			_	<u>Outputs</u>
DAB.Switch On Off	SOO	CH_Dimming_Actuator_Complex		
DAB.Relative Setvalue Control	RSC			
DAB.Absolute Setvalue Control	DV		IOO	DAB.Info On Off
DAB.Timed StartStop	TSS		ADV	DAB.Actual Dimming Value
DAB.Forced	FO			
<u>Parameters</u>	D.I			
Timed duration	P1			
PreWarning Duration	P2			

• Description:

See FB Dimming Actuator Basic.

Index	FB / DP_Name	Name	Sub- unit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	418 / Switch OnOff	OnOff	1	CC_Switch_OnOff		I L
2	418 / Relative Setvalue Control	Dimming Ctrl	1	CC_Dimming_Ctrl		I
3	418 / Absolute Setvalue Control	Dimming Value	1	CC_Dimming_Value		I
4	418 / Timed StartStop	Timed StartStop	1	CC_Timed		I
5	418 / Forced	Forced	1	CC_Forced		I
6	418 / Info On Off	Info On Off	1	CC_Switch_OnOff_Status	CC_Logical	O V LA
7	418 / Actual Dimming Value	Info Dimming Value	1	CC_Dimming_Value_Stat us		O V

• Parameter table:

Index	Identifier	Name	Туре	Recommended default value	Bit Offset
1	P1	Timed duration	PART_Time_Delay	1 minute	0
2	P2	Pre-warning duration	PART_Prewarning_Delay	0 : no prewarning	8

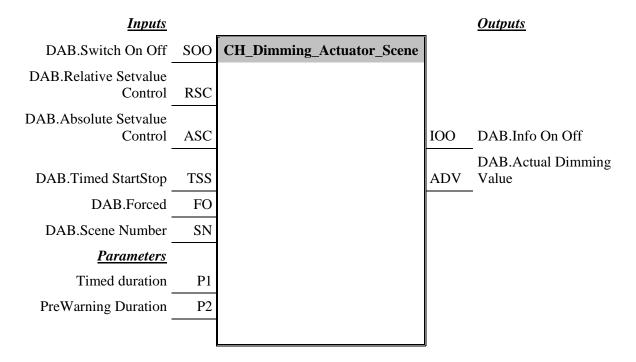
2.33 CH_Dimming_Actuator_Scene (Channel Code 0107h)

• Name: CH_Dimming_Actuator_Scene

• <u>ID:</u> 0107h

• Classification: actuator

- Functional Block:
 - 418 FB Dimming Actuator Basic (DAB)
- Graphical representation:



• <u>Description:</u>

See FB Dimming Actuator Basic.

Number of scene to be supported is 8.

Index	FB/DP_Name Name Subuni		Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
1	418 / Switch On Off	OnOff	1	CC_Switch_OnOff		IL
2	418 / Relative Setvalue Control	Dimming Ctrl	1	CC_Dimming_Ctrl		I
3	418 / Absolute Setvalue Control	Dimming Value	1	CC_Dimming_Value		I
4	418 / Timed StartStop	Timed StartStop	1	CC_Timed		I
5	418 / Forced	Forced	1	CC_Forced		I
6	418 / Scene Number	Scene Number	1	CC_Scene_Number		I
7	418 / Info On Off	Info On Off	1	CC_Switch_OnOff Status	CC_Logical	O V LA
8	418 / Actual Dimming Value	Info Dimming Value	1	CC_Dimming_Value_ Status		O V

• Parameter table

Index	Identifier	Name	Туре	Recommended default value	Bit Offset
1	P1	TimedON duration	PART_Time_Delay	1 minute	0
2	P2	Pre-warning duration	PART_Prewarning_Dela	0 : no prewarning	8
			У		

2.34 CH_LightSensor_Slave (Channel Code 020Ah)

• Name: CH_LightSensor_Slave

<u>ID:</u> 020Ah<u>Classification:</u> actuator

• Functional Block:

• 419 – FB Light Sensor Slave

• Graphical representation:

<u>Inputs</u>	ı		<u>Outputs</u>
		CH_LightSensor_Slave	
419.RoomIllumination_	RI		
Parameters			
419.CycleTime	P1		
	·		

Description

Please refer to the Functional Block specification.

The light sensor slave channel gets a room illumination measure provided by a channel light sensor.

The cycle time default value is set to 15 min.

• Datapoint list:

Index	FB Datapoint ID	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,)
0	RI	Room Illumination	1	CC_Illumination		OL

• Parameter table

Index	Identifier	Name	Type	Recommended default Value	Bit-Offset
1	P1	Cycle Time	PART_Time_Delay	15 min	0

2.35 CH_Light_Setpoint_Controller_Info (Channel Code 020Bh)

• Name: CH_Light_Setpoint_Controller_Info

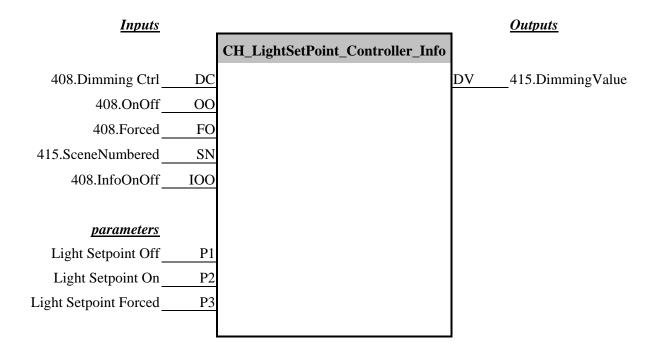
• **ID:** 020Bh

• Classification: functional module

• Functional Block:

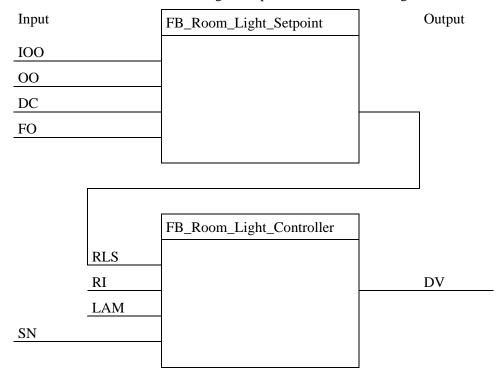
- 408 FB_Room_Light_Setpoint (see 4.2 in this document)
- 415 FB_Room_Light_Controller (see 4.4 in this document)

• Graphical representation



• Description:

See Functional Blocks FB_Room_Light_Setpoint and FB_Room_Light_Controller.



• Datapoint list:

Index	FB / DP_Name	Name	Sub- unit	Main CC	Additional CCs	Flags (i/o,x,v.)
1	408.DimmingCtrl	Dimming Ctrl	1	CC_Dimming_Ctrl		I
2	408.OnOff	OnOff	1	CC_Switch_OnOff	CC_Logical	I L
3	408.Forced	Forced	1	CC_Forced		I
4	415.SceneNumbered	Scene numbered	1	CC_Scene_Numbered		I
5	408.InfoOnOff	Info OnOff	1	CC_Switch_OnOff_Status		I
6	415.DimmingValue	Dimming value	1	CC_Dimming_Value		О

• Parameter table

Index	Identifier	Name	Туре	Recommended default value	Bit-Offset
1	P1	Light Setpoint Off	PART_Light_Value	0 lux = Off	0
2	P2	Light SetPoint On	PART_Light_Value	400 lux	16
3	P3	Light SetPoint_Forced	PART_Light_Value	800 lux	32

3 Examples

3.1 Example 1: 2 CH_PushButton connected with 2 CH_Binary_Actuator_Basic

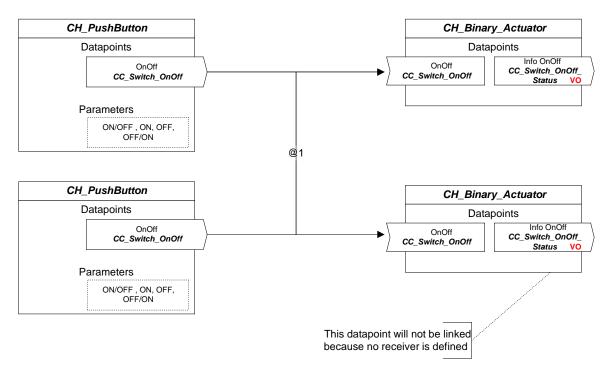


Figure 2 – Example 1

3.2 Example 2: CH_PB_Toggle connected with 2 CH_Binary_Actuator_Basic

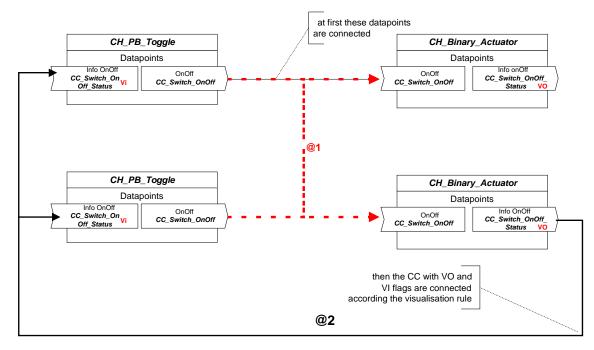


Figure 3 – Example 2: Illustration for V flag connection calculation

3.3 Example 3: CH_PB_Toggle with overlapping group

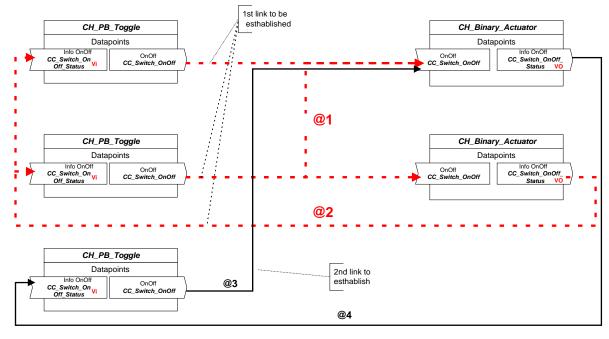


Figure 4 – Example 3, solution 1

This could also have been:

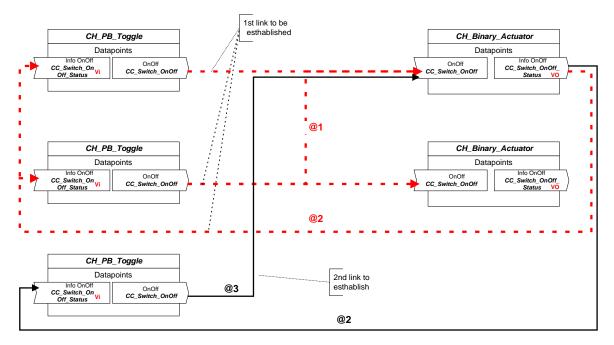


Figure 5 – Example 3, solution 2

Problem: With overlapping group, the configuration sequence influences the result.

3.4 Example 4: CH_PB_Toggle connected with 2 from 3 CH_Binary_Actuator_Basic with a central OFF (CH_PushButton with parameter to allow only OFF values)

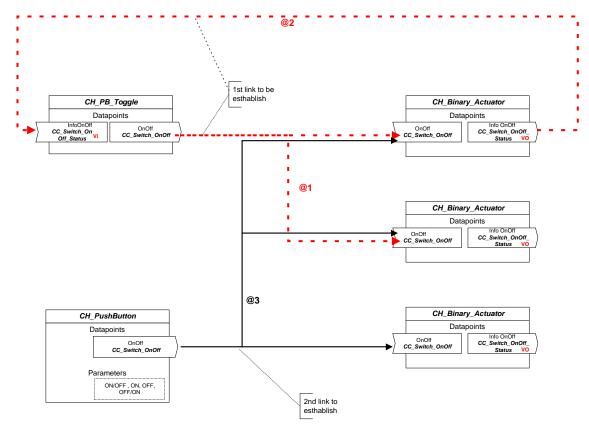


Figure 6 – Example 4

3.5 Example 4: 1 CH_Dimmer_Switch and 1 CH_Dimmer_PB, connected to 2 CH_Dimmer_Actuator_Basic

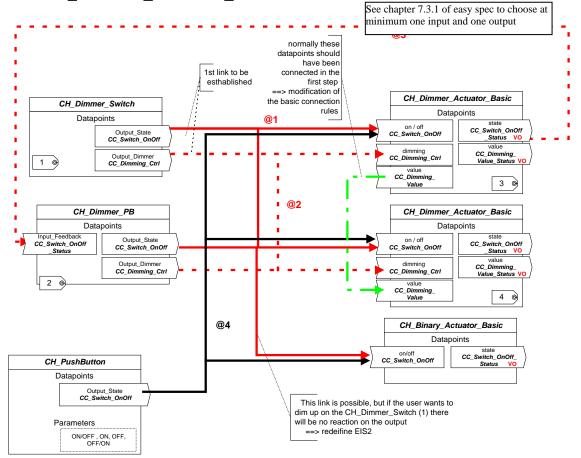


Figure 7 – Example 5

3.6 Example 6: CH_Motion_Detector, CH_PB_TimedON, CH_PB_Forced, CH_PushButton connected to a CH_Binary_Actuator_Complex

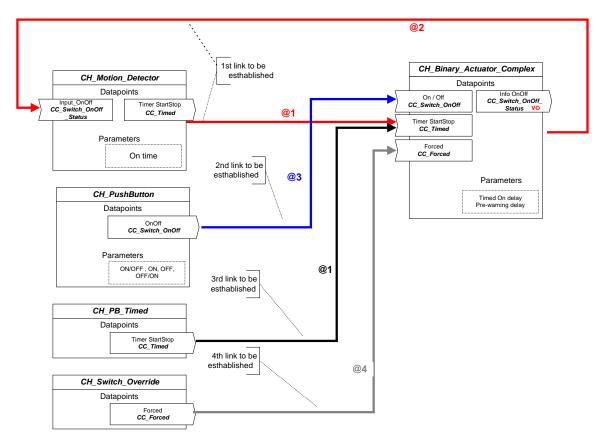


Figure 8 – Example 6

4 Functional Blocks

4.1 Usage requirements

The Functional Block specifications below only provide complementary information to the Channel Definitions specified in this doucment. They are only provided for completeness and understanding of the these channel definitions.

These Functional Blocks shall be used only for implementation of Easy Configuration mode devices.

These Functional Block specifications shall not be used for any other goal; in particular, no implementation for S-Mode devices shall be based on these specifications.

KNX Association will take care of compatibility between any currently specified Channel Definition and the final version of these Functional Blocks.

To this, the KNX Association Application Specification Groups shall take the functionality achieved by these Functional Blocks as the minimal mandatory basis for further work.

4.2 Functional Block "Room Light Setpoint"

4.2.1 Definitions

• Name: FB_Room_Light_Setpoint

• Application description Block: Light Setpoint

• Object Type: 408

4.2.2 Functional specification

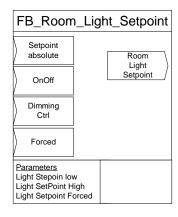
Any update of the Setpoint Absolute is sent on the room light Setpoint datapoint.

The dimming ctrl permits to increase and decrease the actual value of the room light Setpoint. The On/off permits to switch from 0 to actual value of the room light setpoint.

If "Forced" is set to control-off, the Room light Setpoint is forced to "Light Setpoint Forced". "Light Setpoint Forced" default value = 0. All commands coming from SPA, OO, DC are ignored.

On human interaction, a new value can be calculated and sent on the light Setpoint RLS..

4.2.3 FB description



4.2.3.1 Datapoints

Data Point	Abbr.	Description	Data Point Type
Outputs			
Room Light Setpoint	RLS	Value of the illumination to get	9.004 DPT_Value_Lux
Inputs			
Setpoint Absolute	SPA	To affect directly the RLS	9.004 DPT_Value_Lux
OnOff	ОО	To switch the RLS to 0 (off) or current value (on)	1.001 DPT_Switch
Dimming Ctrl	DC	To increase or decrease the RLS value	3.007 DPT_Control_Dimming
Forced	FO	To witch the RLS value to the value of LSF	2.001 DPT_Switch_Control
Parameters			
Light Setpoint Low	LSL	Light setpoint for scaling position 0	9.004 DPT_Value_Lux
Light Setpoint High	LSH	Light setpoint for scaling position 100%	9.004 DPT_Value_Lux
Light Setpoint Forced	LSF	Light setpoint for forced Setpoint (from 0 to 100%)	9.004 DPT_Value_Lux

4.2.3.1.1 Distribution Table

			STANDARD MODE	EXTE Mo	
		Basic FB	S-Mode	Standard Mode Interface	LTE-Mode
RLS	GO		-	-	-
Inputs	SPA	GO	-	-	-
	00	GO	-	-	-
	DC	(GO)	-	-	-
	FO	(GO)	-	-	-
Parameters	LSL	M	-	-	-
	LSH	О	-	-	-
	LSF	M	-	-	-

4.2.3.1.2 Output :Room Light Setpoint

	i						
DP Name:	Room light Set		Abbr.:	RLS		andatory	
FB Name:	408 FB_Room_	_Light_Setpoint			Ca	an be internal	
Description							
This datapoin	represents the	value calculated b	y this FB	accordi	ng to the input dat	tapoints receive	ed.
Datapoint Ty	pe						
DPT_Name:	DPT_Value_L	_UX					
DPT Format:	F ₁₆				DPT_ID:	9.004	
					<u> </u>		
♦ Output							
this \rightarrow M		this \rightarrow 1					
Spontaneo	ous 🛛 CO		∆-Value		Min repetitio	n period:	
•	Cyc		Period:				
Request		٠. ا					
Communicat	ion Type						
	ject Datapoint				I	Mandatory:	$\overline{}$
	oup Address:						_
	Object Property I	Datapoint			I	Mandatory:	7
Client		ype (server):			PID (property ser		
Silonic Silonic	Start inc				Nr_of_elements:	, .	
Dynamics					00.0		
Power dov	vn: Save:						
Power up:	Value:	No initialisatio	n:		Default value:		
	100000	Saved value:			Actual value (not	for input):	
	Transmit o	on bus (only for or	utput):		Read from bus (o		
Exception Ha		(5) 101 01				,	
Special Featu	ıres						
operation i date							
opoolar i out							

4.2.3.1.3 Input: OnOff

DP Name:	OnOf	f		Abbr.:	00		N	landatory		\boxtimes
FB Name:	408 F	B Room Lig	ht Setpoint				C	an be inte	ernal	
Description										
To switch the	value l	oetween 0 a	nd the actual	value of R	oom Lig	ht Setpoint				
Datapoint Ty	ре									
DPT_Name:	DP	Γ_Switch								
DPT Format:	B ₁					DP	T_ID:	1.001		
Access Type										
♦ Input										
$N \rightarrow this$			1 → this							
Spontaneo	us		Cyclic	ally:			Time-	out:		
Request			Polling	g:			Period	d:		
Communicat	ion Ty	ре								
♦ Group Ob	ject Da	atapoint						Mandato	ry: [
Default Gr	oup Ac	dress:								
♦ Interface (Object	Property Da	atapoint					Mandato	ry: [
 Server 		Object_	type:			PID:				
		Start_ir	ndex:			Nr_of_e	elemen	its:		
Dynamics										
Power dov	vn:	Save:								
Power up:	,	Value:	No initialisat	tion:		Default va	alue:			
			Saved value	e: 🔲		Actual va	lue (no	t for input): [
	-	Transmit on	bus (only for	output):		Read from	n bus (only for in	put):	
Exception Ha	ndling	9								
Special Featu	ıres									

Lighting Channels

4.2.3.1.4 Input : Dimming Control

DP Name:	Dimr	ning Cont	rol	Abbr.:	DC			Ma	ndator	у		
FB Name:	408 I	FB Room	Light Setpoint	t				Ca	n be in	terna	al	
Description												
To increase o	r decre	ease the a	actual value of	the room li	ght set	point						
Datapoint Ty	ре											
DPT_Name:	DP	T_Contro	I_Dimming									
DPT Format:	B₁l	J_3					DPT	Γ_ID:	3.00	7		
Access Type)											
♦ Input												
$N \rightarrow this$	\boxtimes		$1 \rightarrow \text{this}$									
Spontaneo	ous		Cyc	lically:				Time-o	ut:			
Request			Poll	ing:				Period:				
Communicat	ion Ty	ре										
♦ Group Ob	ject D	atapoint						N	/landate	ory:		
Default Gr	oup A	ddress:										
♦ Interface	Object	Property	Datapoint					N	/landate	ory:		
Serve	r	Obje	ct_type:				PID:					
		Start	_index:				Nr_of_e	lements	S:			
Dynamics		<u> </u>										
Power dov	wn:	Save:										
Power up:		Value:	No initialis	sation:		D	efault val	lue:				0
			Saved val	ue:		A	ctual valu	ue (not f	for inpu	ıt):		
		Transmit	on bus (only f	or output):		R	ead from	bus (o	nly for i	nput):	
Exception Ha	andlin	g										
Special Feat	ures											

.5 Inpı		rced									
me:	Force	d		Abbr.:	FO			Manda	tory		
ne:	408 F	B Room Lig	ht Setpoint					Can be	interna	ıl	
		ht setpoint b	y the value	e contained	in the p	aramete	er LSF				
		_Switch_Co	ontrol								
	B_2						DPT_ID): 2.	.001		
→ this											
	JS	\boxtimes									
			Polli	ing:			Peri	od:			
								Mand	datory:		
erface C	bject							Mand	datory:		
Server			7 1								
		Start_in	dex:			Nr	_of_eleme	ents:			
ver dow		Save:									
ver dowi ver up:		Save: /alue:	No initialis				ult value:				0
	١	/alue:	Saved val	ue:		Actu	al value (r				0
ver up:	٦	/alue: Fransmit on	Saved val	ue:		Actu					0
	٦	/alue: Fransmit on	Saved val	ue:		Actu	al value (r				0
ver up:	\ ndling	/alue: Fransmit on	Saved val	ue:		Actu	al value (r				0
ver up:	\ ndling	/alue: Fransmit on	Saved val	ue:		Actu	al value (r				0
ver up:	\ ndling	/alue: Fransmit on	Saved val	ue:		Actu	al value (r				0
ver up:	\ ndling	/alue: Fransmit on	Saved val	ue:		Actu	al value (r				0
ver up: tion Hai	ndling	/alue: Fransmit on	Saved val bus (only fo	ue:		Actu	al value (r				0
ver up: tion Hai I Featu	ndling res	/alue: Fransmit on I er: Light Setp	Saved val bus (only fo	ue: [or output):		Actu	al value (r	s (only fo	or input		
tion Hail Feature6 Parme:	ndling res	/alue: Fransmit on I er: Light Setp Setpoint Lov	Saved val bus (only for	ue: [or output): Abbr.:	LSL	Actu	al value (r	s (only fo	or input):	0
tion Hail Feature6 Parme:	ndling res	/alue: Fransmit on I er: Light Setp	Saved val bus (only for	ue: [or output): Abbr.:	LSL	Actu	al value (r	s (only fo	or input):	
tion Hail I Featur .6 Par me: me: ption	res amete	/alue: Fransmit on Fr: Light Setp Setpoint Lov FB_Room_I	Saved val bus (only for point Low v Light_Setpo	Abbr.:		Actu Read	al value (r	s (only fo	or input):	
tion Hail I Featur .6 Par me: me: ption arameter	res amete Light 3 408 -	/alue: Fransmit on I er: Light Setp Setpoint Lov	Saved val bus (only for point Low v Light_Setpo	Abbr.:		Actu Read	al value (r	s (only fo	or input):	
tion Har I Featur .6 Par me: me: ption arameter pint Typ	res amete Light: 408 -	/alue: Fransmit on	Saved val bus (only for point Low v Light_Setpon	Abbr.:		Actu Read	al value (r	s (only fo	or input):	
tion Har I Featur .6 Par me: me: ption arameter bint Typ	amete Light: 408 -	/alue: Fransmit on Fr: Light Setp Setpoint Lov FB_Room_I	Saved val bus (only for point Low v Light_Setpon	Abbr.:		Actu Read	al value (r	Manda Can be	or input):	
tion Har I Featur .6 Par me: me: ption arameter pint Typ	res amete Light: 408 -	/alue: Fransmit on	Saved val bus (only for point Low v Light_Setpon	Abbr.:	ing posi	Actu Read	al value (r	Manda Can be	or input): 	
	me: ption e the roo pint Typ lame: ormat: s Type out this ontaneou quest oup Obje ault Gro erface C Server	me: 408 F ption te the room lig pint Type lame: DPT ormat: B ₂ s Type but this Server ault Group Ad erface Object Server	me: 408 FB Room Lig ption te the room light setpoint be point Type Name: DPT_Switch_Colormat: B2 s Type out this Dontaneous Dutaneous Dutaneo	me: 408 FB Room Light Setpoint ption te the room light setpoint by the value pint Type Name: DPT_Switch_Control tormat: B₂ s Type put → this D 1 → this pontaneous D Cyc quest D Poll fault Group Address: terface Object Property Datapoint Server Object_type: Start_index:	me: 408 FB Room Light Setpoint ption te the room light setpoint by the value contained bint Type Name: DPT_Switch_Control tormat: B₂ s Type but → this	me: 408 FB Room Light Setpoint ption te the room light setpoint by the value contained in the point Type Name: DPT_Switch_Control tormat: B₂ s Type put this Depart Depar	me: 408 FB Room Light Setpoint ption the the room light setpoint by the value contained in the parameter pint Type Name: DPT_Switch_Control tormat: B₂ s Type put this	me: 408 FB Room Light Setpoint ption	me: 408 FB Room Light Setpoint ption te the room light setpoint by the value contained in the parameter LSF point Type Name: DPT_Switch_Control tormat: B2	me: 408 FB Room Light Setpoint Can be internated in the parameter LSF coint Type Name: DPT_Switch_Control DPT_ID: 2.001 S Type Dutt Ontaneous	me: 408 FB Room Light Setpoint ption te the room light setpoint by the value contained in the parameter LSF point Type Name: DPT_Switch_Control cormat: B2 DPT_ID: 2.001 s Type put this Description Cyclically: Time-out: quest Description polling: Period: punication Type oup Object Datapoint fault Group Address: erface Object Property Datapoint Server Object_type: PID: Start_index: Nr_of_elements:

Exception Handling

Special Features

4.2.3.1.7 Parameter: Light Setpoint High

DP Name:	Light :	Setpoint High	Abbr.:	LSH	1		Mand	atory		
FB Name:	408 -	FB_Room_Light_Setpoin	t				Can b	e interna	ıl	
Description										
This paramete	r is use	ed to set the value of RLS	for scalin	g pos	sition 100)%				
Datapoint Typ	ре									
DPT_Name:	DPT	_Value_Lux								•
DPT Format:	F ₁₆					DPT_ID):	9.004		•
Field		Description		9	Supp.	Range		Unit	De	fault
									ļ	
Exception Ha	ndling									
Special Featu	res									
							-			

4.2.3.1.8 Parameter: Light Setpoint Forced

DP Name:	Light \$	Setpoint Forced	Abbr.:	LSF			Manda	atory		
FB Name:	408 -	FB_Room_Light_Setpoin	t				Can b	e interna	I	
Description										
This paramete	r is use	ed to set the value of RLS	for forced	d posi	ition					
Datapoint Typ	ре									
DPT_Name:	DPT	_Value_Lux								
DPT Format:	F ₁₆					DPT_ID): 9	9.004		
Field		Description		S	Supp.	Range		Unit	De	fault
Exception Ha	ndling									
Special Featu	res									

4.3 Functional Block "Room Light Sensor" (RLS)

4.3.1 Definitions

• Name: FB_Room_Light_Sensor

• Application description Block: Light Sensor

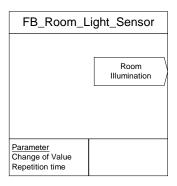
• **Object Type:** 409

4.3.2 Functional specification

Sends the value measured of the current illumination. The conversion light (in lux) into value is standardised

If the variation of illumination changes more than COV then send the new value. If the illumination doesn't change more than COV, then re-sends the value every repetition value.

4.3.3 FB description



4.3.3.1 Datapoints

Data Point	Abbr.	Description	Data Point Type
Outputs			
Room illumination	RI	Output state	9.004 DPT_Value_Lux
Parameters			
Change of Value	P1	Change of value in lux	9.004 DPT_Value_Lux
Repetition Time	P2	Repetition time value in seconds	7.005 DPT_TimePeriodSec

4.3.3.1.1 Distribution Table

			STANDARD MODE	EXTE Mo	
		Basic FB	S-Mode	Standard Mode Interface	LTE-Mode
Outputs	RI	GO	-	-	-
Parameters	P1	M1	-	-	-
	P2	M2	-	-	-

-

¹ In the channel definition this parameter is defined as PART_COV_Lux.

² In the channel definition this parameter is defined as PART_Repetition_Time.

4.3.3	.1.2 Out	tput :R	Room Light III	umination							
DP N	lame:	Room	n Illumination		Abbr.:	RI		Mandatory		\boxtimes	
FB N	ame:	409 F	B_Room_Li	ght Sensor	-1			Can be interna	al	П	
Desc	ription										
This	datapoint	repres	sents the cur	rent illuminat	ion measu	ured by th	he sensor				
	point Typ										
	Name:		T_Value_Lux	•							
	Format:	F ₁₆					DPT ID	9.004		-	
		1 10									
♦ C	Output										
	$is \rightarrow M$		th	$nis \rightarrow 1$							
	pontaneo		OV:		 ∆-Value	P1	Min repo	etition period:			
			Cyclic		Period:	P2	- 1				
R	equest		1								
	municati	on Tv	pe								
	Group Obj							Mandatory:			
	efault Gro			· -				, ,			
•	Client	Dojoot	Object_type				PID (property s				
	Oliciti		Start index				Nr_of_element				
Dyna	mics		Totalt_index	•			TVI_OI_CICITICITI				
	ower dow	n· !	Save:	$\overline{}$							
	ower up:		Value:	No initialisat	ion:	1	Default value:				
' '	ower up.		value.	Saved value		<u>.</u> 1	Actual value (r	ot for input):	╅		
		-	Transmit on I		_		Read from bus		\·		
Fyce	ption Ha			ous (only for	output).		Tread from bus	(only for input	<i>/</i> ·		
LACC	puon na	manni	9								
Snec	ial Featu	rae									
Opco	iai i cata	103									
122	1.2 Day	ramata	er: Change o	f Value							
				ı value	T	1				<u> </u>	
	lame:		ige of Value		Abbr.:	P1		Mandatory			
FB N		409 -	FB_Light_Se	ensor				Can be interna	<u>l</u>	Ш_	
	ription		<u> </u>				<u> </u>				
			minimal chan	ige of the me	asuremen	t that se	nd a new value	on the RLI data	apoint	i	
	point Typ										
	_Name:		T_Value_Lux				· -	Ta aa .			
DPT	Format:	F ₁₆					DPT_ID	9.004			

Supp.

Range

Description

In channel code PART_COV_Lux is used

Field

Exception Handling

Special Features

Default

Unit

4.3.3.1.4 Parameter: Repetition time

DP Name:	Repet	ition time	Abbr.:	P2			Mand	atory		\boxtimes
FB Name:	409 -	FB_Light_Sensor					Can b	e interna	I	
Description										
This represent	s the p	eriod of emission of RLI v	when no cl	han	ge of valu	e is detect	ed.			
Datapoint Typ	Datapoint Type									
DPT_Name:	DPT	_TimePeriodSec								
DPT Format:	U ₁₆					DPT_ID): 7	7.005		
Field		Description			Supp.	Range		Unit	De	fault
Exception Ha	ndling									
Special Featu	res									
In channel cod	e PAR	T_Cycle_Time is used	•		•		•			

4.4 Functional Block "Room Light Controller" (RLC)

4.4.1 Definitions

• Name: FB_Room_Light_Controller

• Application description Block: Light controller

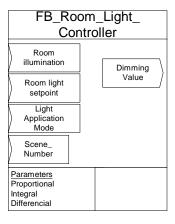
• Object Type: 415

4.4.2 Functional specification

The light controller takes into account the current value of the illumination in the room, the current value of the illumination setpoint and works out the command room light power. The calculation may be based on a PID controller

The scene datapoint can be use to activate/learn a state of the FB_Light_Controller for a certain scene_number.

4.4.3 FB description



4.4.3.1 Datapoints

Outputs			
Dimming value	DV	The value of light required (in percent)	5.001 DPT_Scaling

Inputs			
Room illumination	RI	to get the current illumination of the room where the light control is working	9.004 DPT_Value_Lux
Room light setpoint	RLS	The illumination to reach	9.004 DPT_Value_Lux
Light application mode	LAM	To set the mode of the FB	20.005 DPT_LightApplicationMode
Scene Number	SN	To activate or learn a scene	18.001 DPT_SceneControl
Parameters			
Proportional	P1	Parameter of the light regulation	7.001 DPT_Value_2_Ucount
Integral	P2	Parameter of the light regulation	7.001 DPT_Value_2_Ucount
Differential	P3	Parameter of the light regulation	7.001 DPT_Value_2_Ucount

4.4.3.1.1 Distribution Table

			STANDARD MODE	EXTE Mo	
		Basic FB	S-Mode	Standard Mode Interface	LTE-Mode
Outputs	DV	GO	-	-	-
Inputs	RI	GO	-	-	-
	RLS	GO	1	-	-
	LAM	(GO)	-	-	-
	SN	(GO)	ı	-	-
Parameters	P1	О	-	-	-
	P2	О	-	-	-
	P3	О	-	-	_

4.4.3.1.2 Output : Dimming Value

DP Name:		ming Value		Abbr.:	DV	Mar	ndatory	
FB Name:	415	- FB_Room	_Light_Contro	ller		Can	be internal	
Description								
Datapoint Ty	ре							
DPT_Name:		PT_Scaling						
DPT Format:	B₁					DPT_ID:	5.001	
♦ Output								
this \rightarrow M		<	this \rightarrow 1					
Spontaneo	ous	⊠ cov		Δ-Value:		Min repetitio	n period:	
		Cycl	lic	Period:				
Request			<u> </u>					
Communicat	ion T	уре						
♦ Group Ob						Ma	andatory:	
Default Gr						•	- 1	
		ct Property D	Datapoint			Ma	andatory:]
Client:		Object_type				PID (property serve	er):	=
	_	Start index:	, ,			Nr_of_elements:	,	
Dynamics		_						
Power dov	vn:	Save:						
Power up:		Value:	No initialisa	tion:		Default value:		
			Saved valu	e:		Actual value (not for	or input):	
		Transmit or	n bus (only for	output):		Read from bus (on	ly for input):	
Exception Ha	andlir	ng						
								·
Special Featu	ures							

4.4.3.1.3 Input :Room illumination

DP Name: Room Illumination Abbr.: RI Mandatory FB Name: 415 - FB_Room_Light_Controller Can be internal Description See functional description Datapoint Type DPT_Name: DPT_Value_Lux	
Description See functional description Datapoint Type	
See functional description Datapoint Type	
Datapoint Type	
DPT Name: DPT Value Lux	
DPT Format: F ₁₆ DPT_ID: 9.004	
Access Type	
♦ Input	
$N \rightarrow \text{this}$ \square $1 \rightarrow \text{this}$ \square	
Spontaneous Cyclically: Time-out:	
Request Polling: Period:	
Communication Type	
♦ Group Object Datapoint Mandatory:	
Default Group Address:	
♦ Interface Object Property Datapoint Mandatory:	
Server Object_type: PID:	
Start_index: Nr_of_elements:	
Dynamics	
Power down: Save:	
Power up: Value: No initialisation: Default value:	0
Saved value: Actual value (not for input):	Ī
Transmit on bus (only for output): Read from bus (only for input):	
Exception Handling	
Special Features	

4.4.3.1.4 Input :Room Light Setpoint

DP Name:	Roon	n Lig	ht Setpo	oint	Abbr.:	RLS			N	1andat	ory		
FB Name:	415 -	·FB_	_Room_I	Light_Contro	ller				C	an be	interr	nal	
Description													
See functiona		riptio	n										
Datapoint Ty	ре												
DPT_Name:	DP.	T_Va	alue_Lux	X									
DPT Format:	F ₁₆							DP.	T_ID:	9.0	004		
Access Type)												
♦ Input													
$N \rightarrow this$			1	1 → this									
Spontaneo	ous		-	Cyclic	cally:				Time-	out:			
Request				Pollin	g:				Period	<u>:</u>			
Communicat	ion Ty	ре											
♦ Group Ob	ject Da	atapo	oint							Manda	atory:		
Default Gr	oup A	ddres	ss: -										
♦ Interface	Object	Pro	perty Da	atapoint						Manda	atory:		
Serve	r		Object_	type:				PID:					
			Start in					Nr of e	lemen	its:			
Dynamics													
Power dov	wn:	Save	e:										
Power up:		Valu	ie:	No initialisa	tion:		D	efault va	lue:				0
				Saved value	e: [A	ctual val	ue (no	t for in	put):		
		Tran	smit on	bus (only for	output):		R	ead from	bus (only fo	r inpu	ıt):	
Exception Ha	andling	g											
Special Feat	ures												

4.4.3.1.5 Input :Light Application Mode

DP Name:			olication			Abbr.:	LAM				Manda	tory			
FB Name:	415	- FB	_Room_	Light_0	Contro	ller					Can be	interr	nal		
Description															
See function	al desc	criptic	on												
Datapoint T															
DPT_Name:			ightAppli	ication l	Node										
DPT Format:	N ₈								DP	T_ID	: 20	0.005			
Access Typ	е														
♦ Input															
$N \rightarrow this$			•	$1 \rightarrow \text{this}$	S										
Spontane	ous	\boxtimes			Cyclic	ally:				Time	e-out:				
Request					Pollin	g:				Perio	od:				
Communica	tion T	уре													
♦ Group O	bject D	atap	oint								Mand	datory:			
Default G	roup A	ddre	ss:												
♦ Interface	Objec	t Pro	perty Da	atapoint	ţ						Mand	latory:			
Serve	er		Object_	type:				F	PID:						
			Start_in	idex:				1	Nr_of_e	eleme	ents:				
Dynamics															
Power do	wn:	Sav	e:												
Power up	:	Valu	ıe:	No ini	tialisa	tion:		De	fault va	lue:				0	
				Saved	d value	e: [Act	tual valı	ue (n	ot for in	nput):			
		Trar	nsmit on	bus (or	nly for	output):		Re	ad from	า bus	(only fo	or inpu	ut):		
Exception H	landlir	ng													
Special Feat	tures														

Lighting Channels

4.	4.3.	.1	.6	Input :Scene	Number
----	------	----	----	--------------	--------

4.4.3.1.6 Inp	ut :Scene Mumber									
DP Name:	Scene number		Abbr.:	SN		Mandato	ory			
FB Name:	415 - FB_Room_	Light_Contro	ller			Can be	internal			
Description										
See functiona										
Datapoint Ty										
DPT_Name:	DPT_SceneCor	ntrol								
DPT Format:	B ₁ r ₁ U ₆				DPT_ID	: 18.	.001			
Access Type										
♦ Input										
$N \rightarrow this$		1 → this								
Spontaneo	us 🛛	Cyclic	ally:			e-out:				
Request		Polling	g:		Peri	od:				
Communicati						_				
	ect Datapoint					Manda	atory:			
	oup / taarooo.	·								
♦ Interface (Object Property Da	itapoint				Manda	atory:			
 Server 	Object_	type:			PID:					
	Start_in	dex:			Nr_of_eleme	ents:				
Dynamics										
Power dow	n: Save:									
Power up:	Value:	No initialisat			Default value:			\boxtimes	0	
		Saved value	e:		Actual value (n	ot for inp	out):			
		bus (only for	output):		Read from bus	(only fo	r input):			
Exception Ha	ndling									
Special Featu	ires									
4.4.3.1.7 Pa	rameter : Proportion	onal								

DP Name:	Propo	rtional	Abbr.:	P1			Manda	atory	
FB Name:	415 -	FB_Light_Controller					Can b	e interna	
Description									
Proportional pa	aramet	er for the light regulation	n						
Datapoint Typ	ре								
DPT_Name:	DPT	_Value_2_Ucount							
DPT Format:	U ₁₆					DPT_ID	: 7	'.001	
Field		Description			Supp.	Range		Unit	Default
									0
Exception Ha	ndling								
Special Featu	res								

4.4.3.1.8 Parameter : Integral

DP Name:	Integr	al	Abbr.:	P2	P2			Mandatory		
FB Name:	415 - FB_Light_Controller					Can be internal				
Description										
Integral parameter for the light regulation										
Datapoint Type										
DPT_Name:	DPT_Value_2_Ucount									
DPT Format:	U ₁₆					DPT_I) :	7.001		
Field		Description			Supp.	Range		Unit	Default	
									0	
Exception Handling										
Special Features										
					_			-		

4.4.3.1.9 Parameter : Differential

DP Name:	Differe	ential	Abbr.:	P3			Mand	atory		
FB Name:	415 - FB_Light_Controller					Can be internal				
Description										
Differential parameter for the light regulation										
Datapoint Type										
DPT_Name:	DPT_Value_2_Ucount									
DPT Format:	U ₁₆					DPT_ID): 7	7.001		
Field		Description		į	Supp.	Range		Unit	Def	ault
									()
Exception Handling										
Special Features										
				•					•	