



## **Application Descriptions**

**7**

### **Functional Blocks of Common Interest**

**1**

### **Common Channels**

**11**

#### **Summary**

This document provides the specification of the E-Mode Channels that are not specific to any Application Domain.

Version 01.00.02 is a KNX Approved Standard.

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

## Document updates

Version	Date	Modifications
0.1	2007.10.01	Document creation. <ul style="list-style-type: none"><li>• <b>S12 "Channel Codes"</b> integrated.</li></ul>
	2007.10.02	• <b>AN050 "AN to Supplement 12"</b> integrated.
	2007.10.18	• <b>AN087 "New Channels 2005.02"</b> integrated.
	2008.05.09	• Moved CH_LightSensor_Slave to Chapter 7/20/11 "Lighting Channels".
	2008.08.09	<ul style="list-style-type: none"><li>• <b>AN106 "Phasing out TP0"</b> integrated.</li><li>• <b>AN107 "Phasing out LT-R"</b> integrated.</li><li>• <b>AN108 "Phasing out LT-S"</b> integrated.</li><li>• <b>AN109 "Phasing out PL132"</b> integrated.</li><li>• <b>AN110 "Phasing out A-Mode"</b> integrated.</li></ul>
1.0	2009.05.05	Preparation of the Approved Standard 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.
01.00.02	2013.12.10	Final editorial review in view of publication of the KNX Specifications v2.1.

## References

- [01] Chapter 3/7/3 "Standard Identifier Tables"
- [02] Chapter 7/1/1 "System Clock"
- [03] Chapter 7/1/2 "Common Sensors"
- [04] Chapter 7/1/3 "Common Schedulers and Controllers"
- [05] Chapter 7/1/5 "General Purpose I/O"
- [06] Chapter 7/10/1 "HVAC Sensor Functional Blocks"
- [07] Chapter 7/20/1 "Lighting Sensors"

Filename: 07\_01\_11 Common Channels v01.00.02 AS.docx  
Version: 01.00.02  
Status: Approved Standard  
Savedate: 2013.12.10  
Number of pages: 33

## Contents

<b>1</b>	<b>Introduction .....</b>	<b>4</b>
1.1	Support of scenes .....	4
1.2	E-Mode Channel overview .....	4
<b>2</b>	<b>E-Mode Channels .....</b>	<b>5</b>
2.1	CH_Logical_Sensor (Channel Code 001Fh) .....	5
2.2	CH_Battery_Status (Channel Code 0021h) .....	6
2.3	CH_Smoke_Detector_Basic (Channel Code 0022h) .....	7
2.4	CH_Window_Door_Contact_Basic (Channel Code 0023h) .....	7
2.5	CH_Forced_Info (Channel Code 002Bh) .....	8
2.6	CH_Logical_Actuator (Channel Code 010Eh) .....	9
2.7	CH_Info_Adaptable (Channel Code 0120h) .....	9
2.8	CH_Logic_AndOr (Channel Code 0200h) .....	11
2.9	CH_8_Scenes_4_Outputs_Basic (Channel Code 0201h) .....	12
2.10	CH_4_Scenes_4_Outputs_Complex (Channel Code 0202h) .....	16
2.11	CH_Scene_Converter (Channel Code 0203h) .....	20
2.12	CH_Event_Scheduler_4_Outputs (Channel Code 0204h) .....	22
2.13	CH_DateTime_Scheduler (Channel Code 0205h) .....	26
2.14	CH_System_Clock_Master (Channel Code 0206h) .....	27
2.15	CH_System_Clock_Slave (Channel Code 0209h) .....	28
<b>3</b>	<b>Functional Blocks .....</b>	<b>29</b>
3.1	Usage requirements .....	29
3.2	FB_Logic_ANDOR (FB LAO) .....	29
3.2.1	Functional description .....	29
3.2.2	FB description .....	29
3.2.3	Datapoints .....	30

# 1 Introduction

## 1.1 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	xx000000b
2	B	xx000001b
3	C	xx000010b
4	D	xx000011b
5	E	xx000100b
6	F	xx000101b
7	G	xx000110b
8	H	xx000111b

## 1.2 E-Mode Channel overview

Table 2 lists the E-Mode Channels that are specified in this document. Other E-Mode Channels are specified in other Parts of Volume 7 “Application Descriptions” of the KNX Specifications. Please refer to [01] for the complete list of E-Mode Channels.

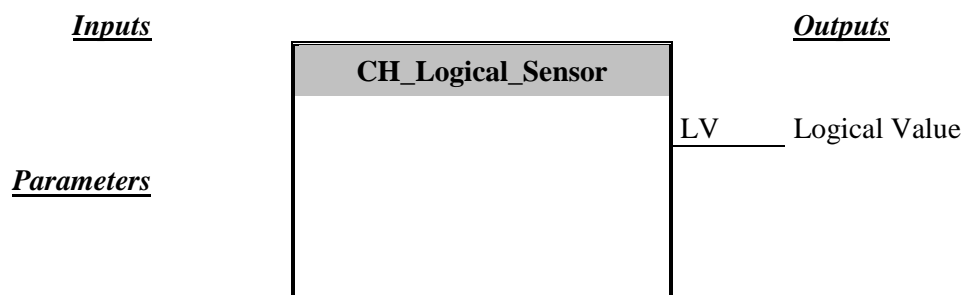
**Table 2 – E-Mode Channels specified in this document**

Channel Code	Channel Name
001Fh	CH_Logical_Sensor
0021h	CH_Battery_Status
0022h	CH_Smoke_Detector_Basic
0023h	CH_Window_Door_Contact_Basic
002Bh	CH_Forced_Info
010Eh	CH_Logical_Actuator
0120h	CH_Info_Adaptable
0200h	CH_Logic_AndOr
0201h	CH_8_Scenes_4_Outputs_Basic
0202h	CH_4_Scenes_4_Outputs_Complex
0203h	CH_Scene_Converter
0204h	CH_Event_Scheduler_4_Outputs
0205h	CH_DateTime_Scheduler
0206h	CH_System_Clock_Master
0209h	CH_System_Clock_Slave

## 2 E-Mode Channels

### 2.1 CH\_Logical\_Sensor (Channel Code 001Fh)

- **Name:** CH\_Logical\_Sensor
- **ID:** 001Fh
- **Classification:** sensor
- **Functional Block:**
  - 421 - FB Switching Sensor Basic (see [07])
- **Graphical representation:**



- **Description:**

See FB Switching Sensor Basic

OO = On means LV = True

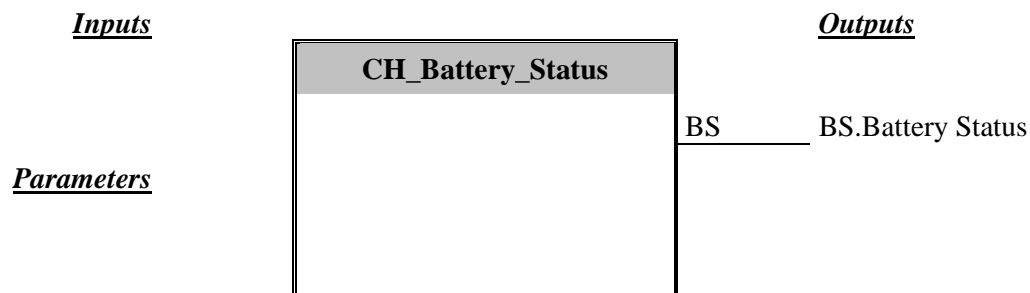
OO = Off means LV = False

- **Datapoint list:**

Index	FB/DP_Name	Name	Main CC	Additional CCs	Flags (i/o,x,v,...)
1	421/Switch On Off	Logical Value	CC_Logical		O L

## 2.2 CH\_Battery\_Status (Channel Code 0021h)

- **Name:** CH\_Battery\_Status
- **ID:** 0021h
- **Classification:** sensor
- **Functional Block:**
  - 1005 – FB Battery Status (BS)
- **Graphical representation:**



- **Description:**

The E\_Mode Channel CH\_Battery\_Status is used in battery-devices, especially in RF.

If the device is powered up (eg. new battery or battery is replaced) it sends the Battery Status with value 1 (“battery ok”).

If the battery voltage drops under a certain level (product specific) the E-Mode Channel sends the Battery Status with value 0 (“battery weak”).

Additionally (optional) the info “battery ok” and/or “battery\_weak” can be sent periodically. In this case the interval 24 hours is recommended

NOTE Reasons for necessity of an own E-Mode Channel for battery:

- E-Mode Channels are defined independently of whether they are realised as stand alone device or as part of a multichannel device. Thus, E-Mode Channels do not contain device info.
- E-Mode Channels are defined medium independent (as far as possible). So they don't contain info from RF.
- In order not to create all E-Mode Channels anew, now with an additional Battery state, this info must be an own E-Mode channel.
- A device also having other inputs may optionally send its battery status when these inputs are activated and battery status is 0 (weak).

- **Datapoint list:**

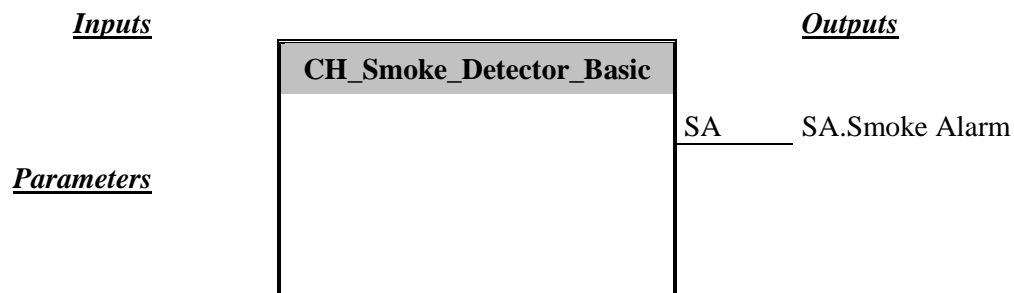
Index	FB Datapoint ID	Name	Sub-unit	Main CC	Additional CCs	Flags (i/o,x,v, ...)
1	BS	Battery Status	1	CC_Battery_Status	CC_Switch_OnOff	O L

## 2.3 CH\_Smoke\_Detector\_Basic (Channel Code 0022h)

- **Name:** CH\_Smoke\_Detector\_Basic
- **ID:** 0022h
- **Classification:** sensor
- **Functional Block:**

- 1004- FB Smoke Alarm (SA)

- **Graphical representation:**



- **Description:**

The smoke detector sends an alarm (value 1) cyclically (every minute at least), if smoke is detected. If no smoke is detected the Datapoint Smoke Alarm is sent with value 0 once a day at least.

- **Datapoint list:**

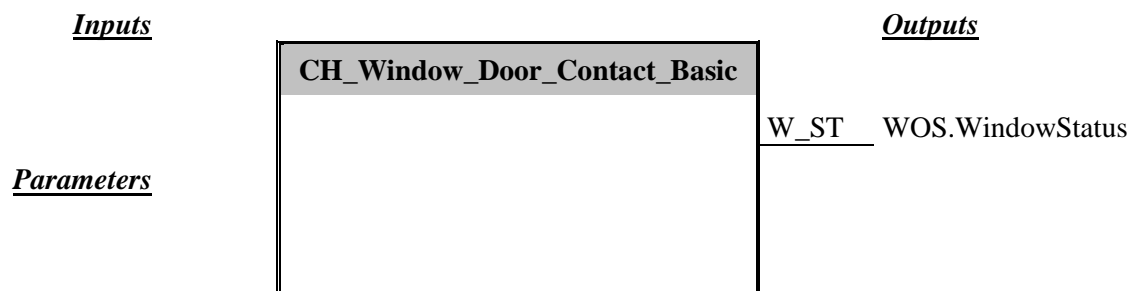
Index	FB Datapoint ID	Name	Sub unit	Main CC	Additional CCs	Flags (i/o,x,v, ...)
1	SA	Smoke Alarm	1	CC_Smoke_Alarm	CC_Switch_OnOff	O L

## 2.4 CH\_Window\_Door\_Contact\_Basic (Channel Code 0023h)

- **Name:** CH\_Window\_Door\_Contact\_Basic
- **ID:** 0023h
- **Classification:** sensor
- **Functional Block:**

- 343 – FB Window Switch (WOS) (See [06])

- **Graphical representation:**



- **Description:**

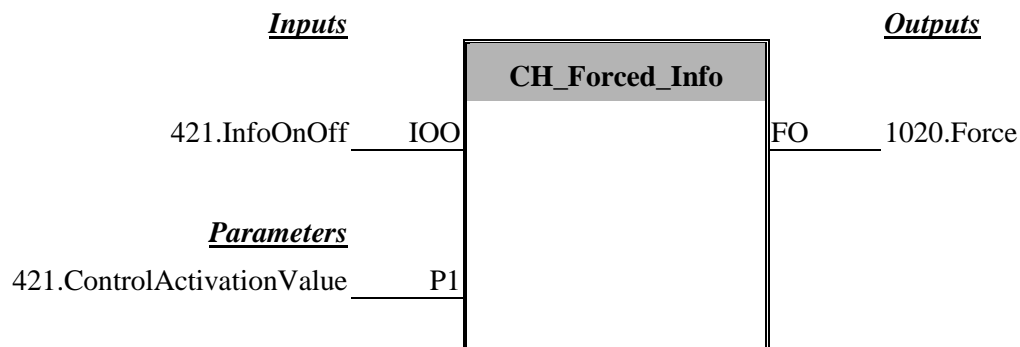
The Window-/door contact sends the status when the window (door) is opened or closed.

- **Datapoint list:**

Index	FB Datapoint ID	Name	Sub-unit	Main CC	Additional CCs	Flags (i/o,x,v, ...)
1	W_ST	WindowStatus	1	CC_Window_Status	CC_Switch_OnOff	O L

## 2.5 CH\_Forced\_Info (Channel Code 002Bh)

- **Name:** CH\_Forced\_Info
- **ID:** 002Bh
- **Classification:** sensor
- **Functional Block:**
  - 1020 – FB Priority Sensor (See [03].)
  - 421 – FB Switching Sensor Basic (See [07].)
- **Graphical representation:**



- **Description:**

This E-Mode Channel groups functionality from FB Priority Sensor and FB Switching Sensor Basic. There are no relationships between the Functional Blocks.

- **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	1020.FO	Force	1	CC_Forced		O L

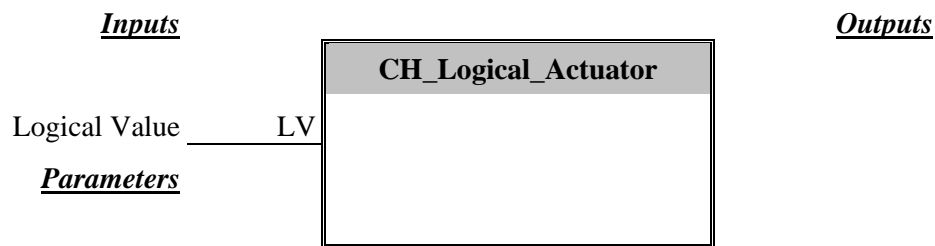
- **Parameter table:**

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



## 2.6 CH\_Logical\_Actuator (Channel Code 010Eh)

- **Name:** CH\_Logical\_Actuator
- **ID:** 010Eh
- **Classification:** actuator
- **Functional Block:**
  - 1018 – FB General Purpose Digital Output (GPDU) (See [05])
- **Graphical representation:**



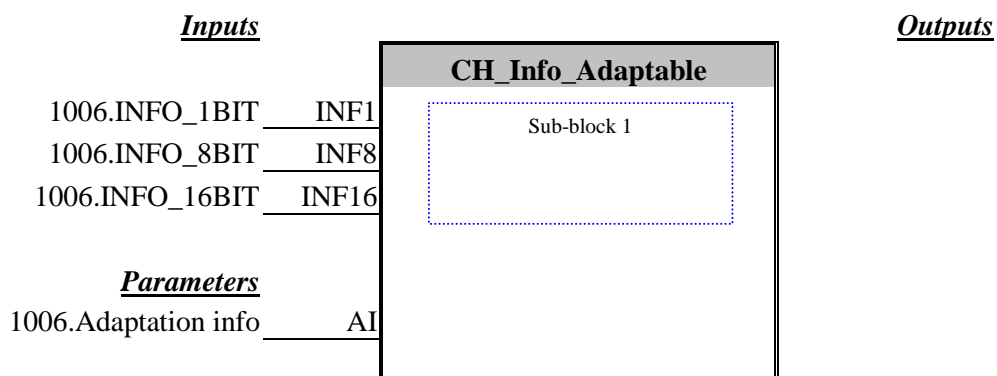
- **Description:**  
See FB General Purpose Digital Output (GPDU).

- **Datapoint list:**

Index	FB / DP_Name	Name	Main CC	Additional CCs	Flags (i/o,x,v,...)
1	1009/LV	Logical Value	CC_Logical		I L

## 2.7 CH\_Info\_Adaptable (Channel Code 0120h)

- **Name:** CH\_Info\_Adaptable
- **ID:** 0120h
- **Classification:** actuator
- **Functional Block:**
  - 1006 – FB Display
- **Graphical representation:**



- **Description:**

This E-Mode Channel shall display information according the value received on the Datapoint. A parameter AI shall indicate the format and the interpretation of the received value.

This E-Mode Channel shall allow connecting only one Datapoint as an Input (the Datapoints are adaptable). The parameter describes which of the three Datapoints is connected. Three formats of data are possible: 1 bit, 1 octet or 2 octets; it allows connecting almost all the data from the KNX bus (pressure, temperature, light on/off, scene number ...).

- **Datapoint list:**

Index	FB Datapoint ID	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v, ...)
1	1006.INF0_1BIT	INF1	1	CC_ADAPT_1BIT		I T
2	1006.INF0_8BIT	INF8	1	CC_ADAPT_8BIT		I T
3	1006.INF0_16BIT	INF16	1	CC_ADAPT_16BIT		I T

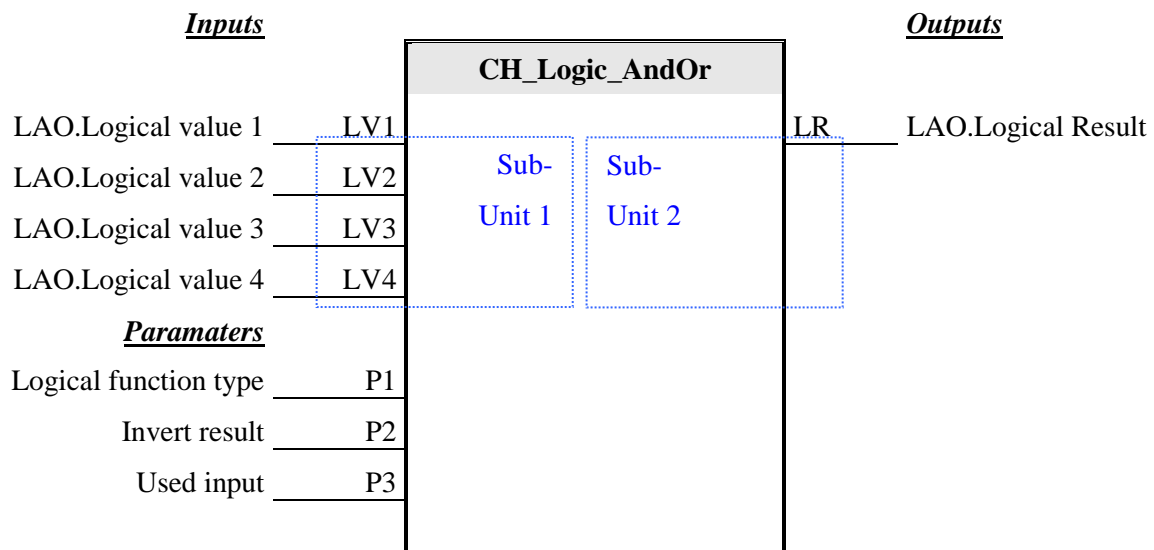
- **Parameter table:**

Index	FB Parameter ID	Name	Recommended default value	Bit-Offset
1	Adaptation info	AI		0

Subblock index	Connection Code	Corresponding Parameter index	Adapting Parameter value	Input Datapoint	Output Datapoint
1	CC_Move UpDown_Info	1	1.1	1	-
1	CC_Dimming_Value_Status	1	2.8	2	-
1	CC_Swith_OnOff_Status	1	8.1	1	-
1	CC_Temperature	1	1.16	3	-
1	CC_HVAC_mode_Status	1	3.8	2	-
1	CC_Illumination	1	2.16	3	-
1	CC_Logical	1	2.1	1	-
1	CC_WindSpeed	1	3.16	3	-

## 2.8 CH\_Logic\_AndOr (Channel Code 0200h)

- **Name:** CH\_Logic\_AndOr
- **ID:** 0200h
- **Classification:** functional module
- **Functional Block:**
  - 1007 FB\_Logic\_AndOr (LAO) (See 3.2 in this document).
- **Graphical representation:**



- **Description:**  
See Functional Block FB\_Logical\_AndOr

- **Datapoint list:**

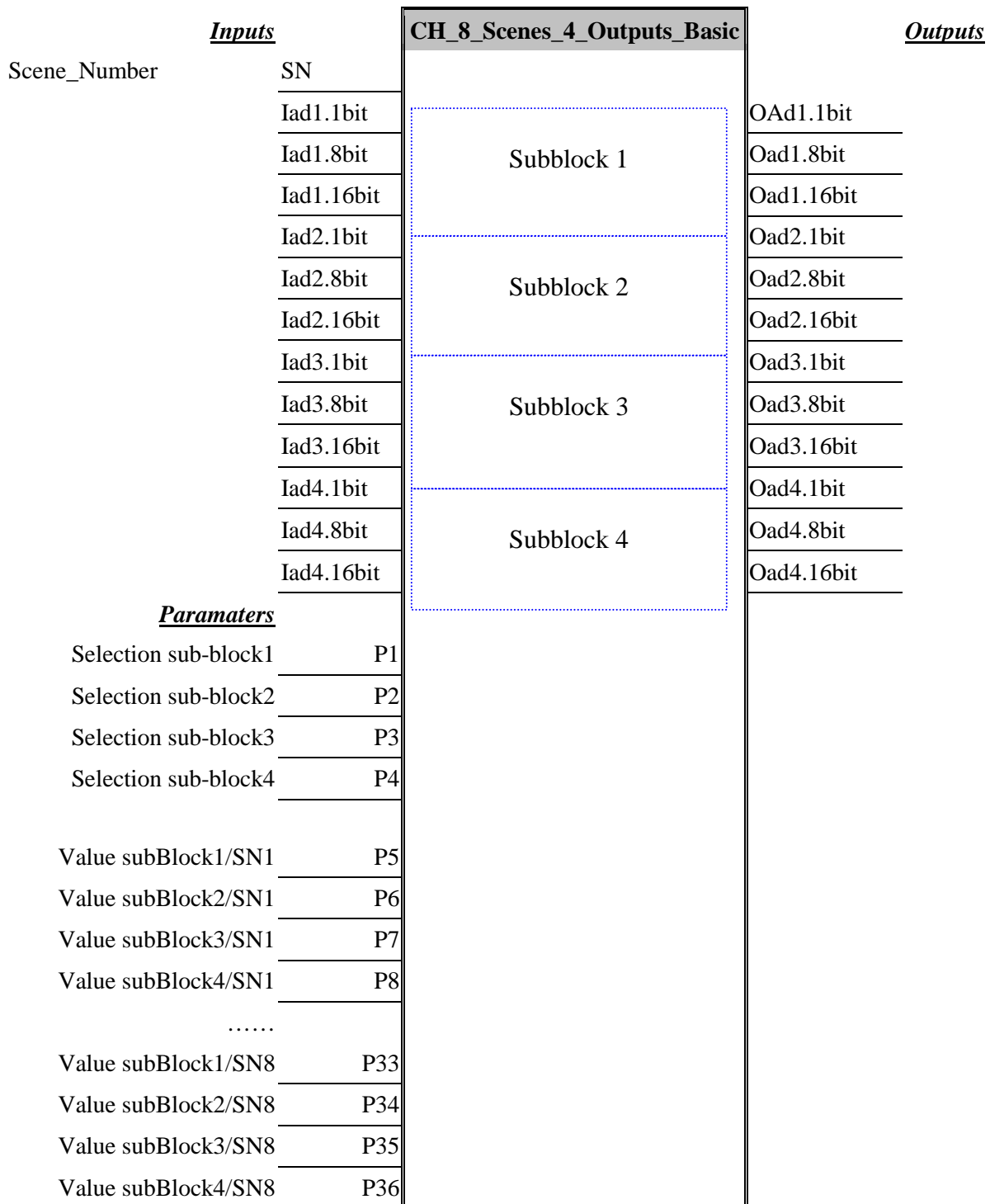
Index	FB Datapoint ID	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,...)
1	1007/LV1	Logical value 1	1	CC_Logical		I X C
2	1007/LV2	Logical value 2	1	CC_Logical		I X C
3	1007/LV3	Logical value 3	1	CC_Logical		I X C
4	1007/LV4	Logical value 4	1	CC_Logical		I X C
5	1007/LR	Logical result	2	CC_Logical	CC_switch_OnOff	O L

- **Parameter table:**

Index	Identifier	Name	Type	Recommended default value	Bit Offset
1	P1	Logical function type	PART_Logical	OR (=0)	0
2	P2	Invert result	PART_Invert	0	1
3	P3	Used input Bit stream	PART_Input_Connecte d	0b0000	4

## 2.9 CH\_8\_Scenes\_4\_Outputs\_Basic (Channel Code 0201h)

- **Name:** CH\_8\_Scenes\_4\_Outputs\_Basic
- **ID:** 0201h
- **Classification:** functional module
- **Functional Block:**
  - 1010 FB Scene Controller (SC)
- **Graphical representation:**



- **Description:**

See FB Scene Controller.

There are 12 output Datapoints and 12 input Datapoints.

They are grouped in 4 blocks (adaptive channels).

The parameter blocks consist of:

Adaptive set 1 selection	Adaptive set 2 selection	Move Up/Down value set 1 scene 1	Move Up/Down value set 1 scene 2	Move Up/Down value set 2 scene 1	Move Up/Down value set 2 scene 2
.....	.....				

The length of the parameter is related to the selection coded in the lower part.

- high part (Bit 7...3) = priority for adaptation
- lower part (Bit 2, 1, 0) = size of Datapoint
- When activated, the values contained in the parameter blocks corresponding to the Scene A or B (or scene number) are copied in the Datapoint, respecting the size and the Datapoint index. The size is coded in the lower part of the adaptive value.
- When learning, the values are copied from the Datapoint in the parameter blocks corresponding to the Scene A or B (or scene number) respecting the size and the Datapoint index.
- The number of scene that shall be supported is 8.

- **Datapoint list:**

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,...)
1	1010/Scene_Numbered		1	CC_Scene_Number		I
2	lad1.1bit		1	CC_ADAPT_1BIT		I T
3	lad1.8bit		1	CC_ADAPT_8BIT		IT
4	lad1.16bit		1	CC_ADAPT_16BIT		IT
5	lad2.1bit		1	CC_ADAPT_1BIT		IT
6	lad2.8bit		1	CC_ADAPT_8BIT		IT
7	lad2.16bit		1	CC_ADAPT_16BIT		IT
8	lad31bit		1	CC_ADAPT_1BIT		IT
9	lad38bit		1	CC_ADAPT_8BIT		IT
10	lad316bit		1	CC_ADAPT_16BIT		IT
11	lad41bit		1	CC_ADAPT_1BIT		IT
12	lad48bit		1	CC_ADAPT_8BIT		IT
13	lad416bit		1	CC_ADAPT_16BIT		IT
14	Oad1.1bit		1	CC_ADAPT_1BIT		O T L
15	Oad1.8bit		1	CC_ADAPT_8BIT		OT L
16	Oad1.16bit		1	CC_ADAPT_16BIT		OT L
17	Oad2.1bit		1	CC_ADAPT_1BIT		OT
18	Oad2.8bit		1	CC_ADAPT_8BIT		OT
19	Oad2.16bit		1	CC_ADAPT_16BIT		OT
20	Oad3.1bit		1	CC_ADAPT_1BIT		OT

Index	FB/DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v,...)
21	Oad3.8bit		1	CC_ADAPT_8BIT		OT
22	Oad3.16bit		1	CC_ADAPT_16BIT		OT
23	Oad4.1bit		1	CC_ADAPT_1BIT		OT
24	Oad4.8bit		1	CC_ADAPT_8BIT		OT
25	Oad4.16bit		1	CC_ADAPT_16BIT		OT

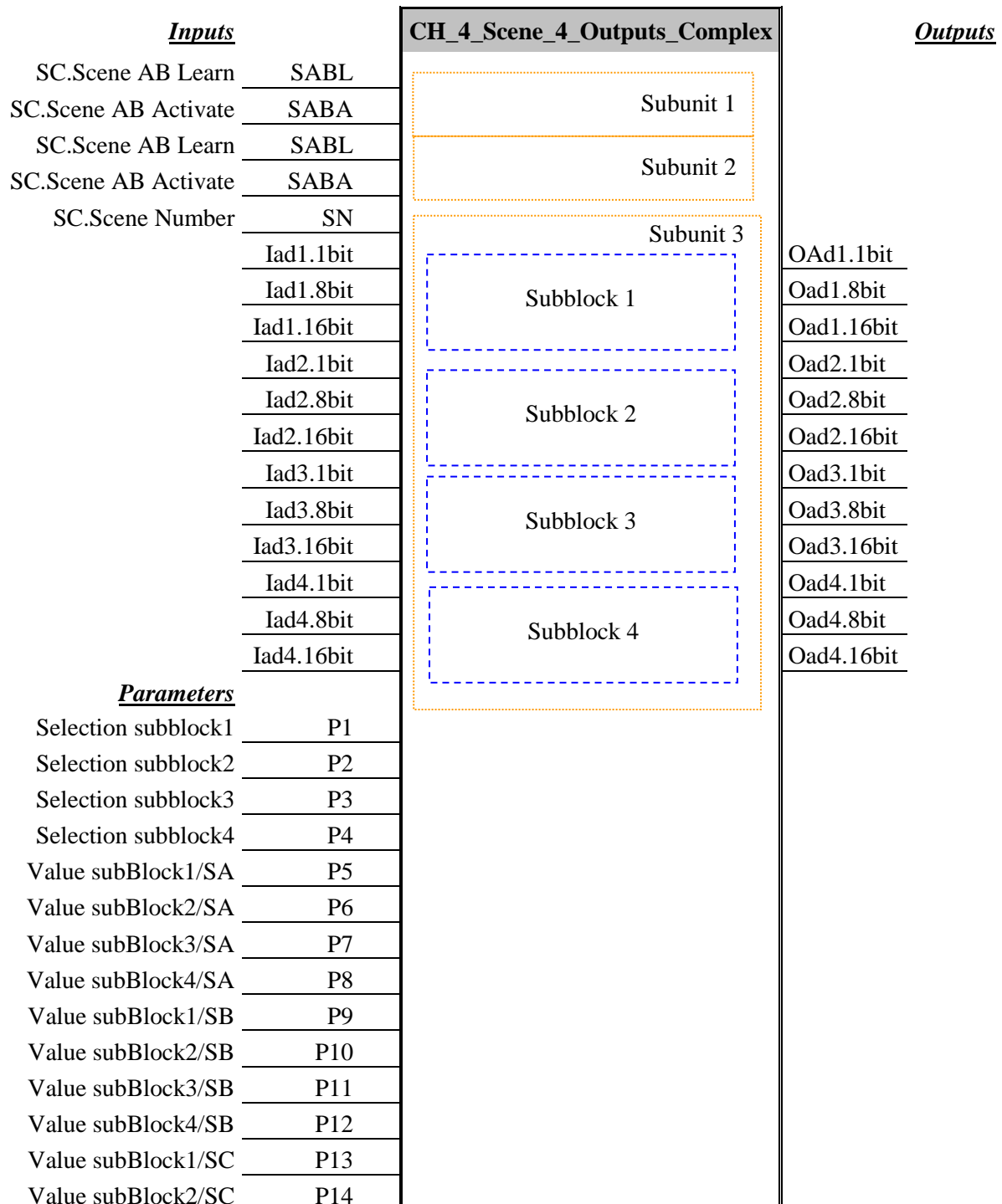
• **Parameter table:**

Index	FB Parameter ID	Name	Type	Recommended default value	Bit Offset
1	Selection SubBlock1	P1	PART_Adaptative_Selection		0
2	Selection SubBlock2	P2	PART_Adaptative_Selection		8
3	Selection SubBlock3	P3	PART_Adaptative_Selection		16
4	Selection SubBlock4	P4	PART_Adaptative_Selection		24
5	ValueSubBlock1/SN1	P5	PART_Render_Value		32
6	ValueSubBlock1/SN2	P9	PART_Render_Value		48
7	ValueSubBlock1/SN3	P13	PART_Render_Value		64
8	ValueSubBlock1/SN4	P17	PART_Render_Value		80
9	ValueSubBlock1/SN5	P21	PART_Render_Value		96
10	ValueSubBlock1/SN6	P25	PART_Render_Value		112
11	ValueSubBlock1/SN7	P29	PART_Render_Value		128
12	ValueSubBlock1/SN8	P33	PART_Render_Value		144
...	....	....	PART_Render_Value	....	...
29	ValueSubBlock4/SN1	P8	PART_Render_Value		416
30	ValueSubBlock4/SN2	P12	PART_Render_Value		432
31	ValueSubBlock4/SN3	P16	PART_Render_Value		448
32	ValueSubBlock4/SN4	P20	PART_Render_Value		464
33	ValueSubBlock4/SN5	P24	PART_Render_Value		480
34	ValueSubBlock4/SN6	P28	PART_Render_Value		496
35	ValueSubBlock4/SN7	P32	PART_Render_Value		512
36	ValueSubBlock4/SN8	P36	PART_Render_Value		528

Subblock index	Connection Code	Corresponding Parameter index	Adapting Parameter value	Input Datapoint	Output Datapoint
1	CC_Move_UpDown	1	1.1	-	14
1	CC_Move_UpDown_Status	1	1.1	2	-
1	CC_Dimming_Value	1	2.8	-	15
1	CC_Dimming_Value_Status	1	2.8	3	-
1	CC_Switch_OnOff	1	8.1	-	14
1	CC_Switch_OnOff_Status	1	8.1	2	-
2	CC_Move_UpDown	2	1.1	-	17
2	CC_Move_UpDown_Info	2	1.1	5	-
2	CC_Dimming_Value	2	2.8	-	18
2	CC_Dimming_Value_Status	2	2.8	6	-
2	CC_Switch_OnOff	2	8.1	-	17
2	CC_Switch_OnOff_Status	2	8.1	5	-
3	CC_Move_UpDown	3	1.1	-	20
3	CC_Move_UpDown_Info	3	1.1	8	-
3	CC_Dimming_Value	3	2.8	-	21
3	CC_Dimming_Value_Status	3	2.8	9	-
3	CC_Switch_OnOff	3	8.1	-	20
3	CC_Switch_OnOff_Status	3	8.1	8	-
4	CC_Move_UpDown	4	1.1	-	23
4	CC_Move_UpDown_Info	4	1.1	11	-
4	CC_Dimming_Value	4	2.8	-	24
4	CC_Dimming_Value_Status	4	2.8	12	-
4	CC_Switch_OnOff	4	8.1	-	23
4	CC_Switch_OnOff_Status	4	8.1	11	-

## 2.10 CH\_4\_Scenes\_4\_Outputs\_Complex (Channel Code 0202h)

- **Name:** CH\_4\_Scenes\_4\_Outputs\_Complex
- **ID:** 0202h
- **Classification:** functional module
- **Functional Block:**
  - 1010 FB Scene Controller (SC)
- **Graphical representation:**





Value subBlock3/SC	P15
Value subBlock4/SC	P16
Value subBlock1/SD	P17
Value subBlock2/SD	P18
Value subBlock3/SD	P19
Value subBlock4/SD	P20

- **Description:**

See Functional Block Scene Controller.

- There are 12 output Datapoints and 12 input Datapoints.
- They are grouped in 4 blocks (adaptive channels).
- The parameter blocks consist of:

Adaptive set 1 selection	Adaptive set 2 selection	Move Up/Down value set 1 scene 1	Move Up/Down value set 1 scene 2	Move Up/Down value set 2 scene 1	Move Up/Down value set 2 scene 2
1 1 1 1 1 1	1 1 1 1 1 1				

- The length of the parameter is related to the selection coded in the lower part:
  - high part (Bit 7...3) = priority for adaptation
  - lower part (Bit 2, 1, 0) = size of Datapoint
- When activate, the values contained in the parameter blocks corresponding to the Scene A or B (or scene number) are copied in the Datapoint, respecting the size and the Datapoint index. The size is coded in the lower part of the adaptive value.
- When learning, the values are copied from the Datapoint in the parameter blocks corresponding to the Scene A or B (or scene number), respecting the size and the Datapoint index.
- The number of scenes to be supported shall be 4.

- **Datapoint list:**

Index	FB / DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v, l...)
1	1004/Activate A/B		1	CC_Activate		I
2	1004/Learn A/B		1	CC_Learn		I
3	1004/Activate C/D		2	CC_Activate		I
4	1004/Learn C/D		2	CC_Learn		I
5	1004/Scene_Numbered		3	CC_Scene_Number		I
6	lad1.1bit / GI1		3	CC_ADAPT_1BIT		I T
7	lad1.8bit / GI1		3	CC_ADAPT_8BIT		IT
8	lad1.16bit / GI1		3	CC_ADAPT_16BIT		IT
9	lad2.1bit / GI2		3	CC_ADAPT_1BIT		IT
10	lad2.8bit / GI2		3	CC_ADAPT_8BIT		IT
11	lad2.16bit / GI2		3	CC_ADAPT_16BIT		IT
12	lad3.1bit / GI3		3	CC_ADAPT_1BIT		IT

Index	FB / DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v, l...)
13	lad3.8bit / GI3		3	CC_ADAPT_8BIT		IT
14	lad3.16bit / GI3		3	CC_ADAPT_16BIT		IT
15	lad4.1bit / GI4		3	CC_ADAPT_1BIT		IT
16	lad4.8bit / GI4		3	CC_ADAPT_8BIT		IT
17	lad4.16bit / GI4		3	CC_ADAPT_16BIT		IT
18	Oad1.1bit / GO1		3	CC_ADAPT_1BIT		O T L
19	Oad1.8bit / GO1		3	CC_ADAPT_8BIT		O T L
20	Oad1.16bit / GO1		3	CC_ADAPT_16BIT		O T L
21	Oad2.1bit / GO2		3	CC_ADAPT_1BIT		OT
22	Oad2.8bit / GO2		3	CC_ADAPT_8BIT		OT
23	Oad2.16bit / GO2		3	CC_ADAPT_16BIT		OT
24	Oad3.1bit / GO3		3	CC_ADAPT_1BIT		OT
25	Oad3.8bit / GO3		3	CC_ADAPT_8BIT		OT
26	Oad3.16bit / GO3		3	CC_ADAPT_16BIT		OT
27	Oad4.1bit / GO4		3	CC_ADAPT_1BIT		OT
28	Oad4.8bit / GO4		3	CC_ADAPT_8BIT		OT
29	Oad4.16bit / GO4		3	CC_ADAPT_16BIT		OT

• **Parameter table:**

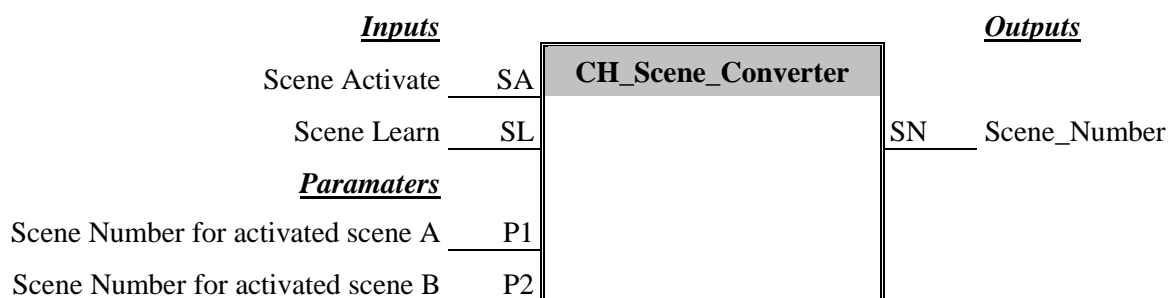
Index	FB Parameter ID	Name	Type	Recommended default value	Bit Offset
1		Selection SubBlock1	PART_Adaptive_Selection		0
2		Selection SubBlock2	PART_Adaptive_Selection		8
3		Selection SubBlock3	PART_Adaptive_Selection		16
4		Selection SubBlock4	PART_Adaptive_Selection		24
5	P"1 with P1=0, P'1=1	ValueSubBlock1/SA	PART_Render_Value		32
6	P"2 with P2=1, P'2=1	ValueSubBlock1/SB	PART_Render_Value		48
7	P"3 with P3=2, P'3=1	ValueSubBlock1/SC	PART_Render_Value		64
8	P"4 with P4=3, P'4=1	ValueSubBlock1/SD	PART_Render_Value		80
9	P"5 with P5=0, P'5=2	ValueSubBlock2/SA	PART_Render_Value		96
10	P"6 with P6=1, P'6=2	ValueSubBlock2/SB	PART_Render_Value		112
11	P"7 with P7=2, P'7=2	ValueSubBlock2/SC	PART_Render_Value		128
12	P"8 with P8=3, P'8=2	ValueSubBlock2/SD	PART_Render_Value		144
13	P"9 with P9=0, P'9=3	ValueSubBlock3/SA	PART_Render_Value		160
14	P"10 with P10=1, P'10=3	ValueSubBlock3/SB	PART_Render_Value		176
15	P"11 with P11=2, P'11=3	ValueSubBlock3/SC	PART_Render_Value		192
16	P"12 with P12=3, P'12=3	ValueSubBlock3/SD	PART_Render_Value		208
17	P"13 with P13=0, P'13=4	ValueSubBlock4/SA	PART_Render_Value		224
18	P"14 with P14=1, P'14=4	ValueSubBlock4/SB	PART_Render_Value		240
19	P"15 with P15=2, P'15=4	ValueSubBlock4/SC	PART_Render_Value		256
20	P"16 with P16=3, P'16=4	ValueSubBlock4/SD	PART_Render_Value		272

Subblock index	Connection Code	Corresponding Parameter index	Adapting Parameter value	Input Datapoint	Output Datapoint
1	CC_Move UpDown	1	1.1	-	18
1	CC_Move_UpDown_Status	1	1.1	6	-
1	CC_Dimming_Value	1	2.8	-	19
1	CC_Dimming_Value_Status	1	2.8	7	-
1	CC_Switch_OnOff	1	8.1	-	18
1	CC_Switch_OnOff_Status	1	8.1	6	-
2	CC_Move UpDown	2	1.1	-	21
2	CC_Move_UpDown_Status	2	1.1	9	-
2	CC_Dimming_Value	2	2.8	-	22
2	CC_Dimming_Value_Status	2	2.8	10	-
2	CC_Switch_OnOff	2	8.1	-	21

Subblock index	Connection Code	Corresponding Parameter index	Adapting Parameter value	Input Datapoint	Output Datapoint
2	CC_Switch_OnOff_Status	2	8.1	9	-
3	CC_Move UpDown	3	1.1	-	24
3	CC_Move_UpDown_Status	3	1.1	12	-
3	CC_Dimming_Value	3	2.8	-	25
3	CC_Dimming_Value_Status	3	2.8	13	-
3	CC_Switch_OnOff	3	8.1	-	24
3	CC_Switch_OnOff_Status	3	8.1	12	-
4	CC_Move UpDown	4	1.1	-	27
4	CC_Move_UpDown_Status	4	1.1	15	-
4	CC_Dimming_Value	4	2.8	-	28
4	CC_Dimming_Value_Status	4	2.8	16	-
4	CC_Switch_OnOff	4	8.1	-	27
4	CC_Switch_OnOff_Status	4	8.1	15	-

## 2.11 CH\_Scene\_Converter (Channel Code 0203h)

- **Name:** CH\_Scene\_Converter
- **ID:** 0203h
- **Classification:** Functional Module
- **Functional Block:**
  - 1012 - FB Scheduler (See [04])
- **Graphical representation:**



- **Description:**

The functionality of this E-Mode Channel can be solved by appropriate configuration of a FB Scheduler: one Input (DPT\_Scene\_AB) can cause the transmission of one Output with DPT\_Scene\_Control; learning/calling scene can be differentiated through parameterisation.

- **Datapoint list:**

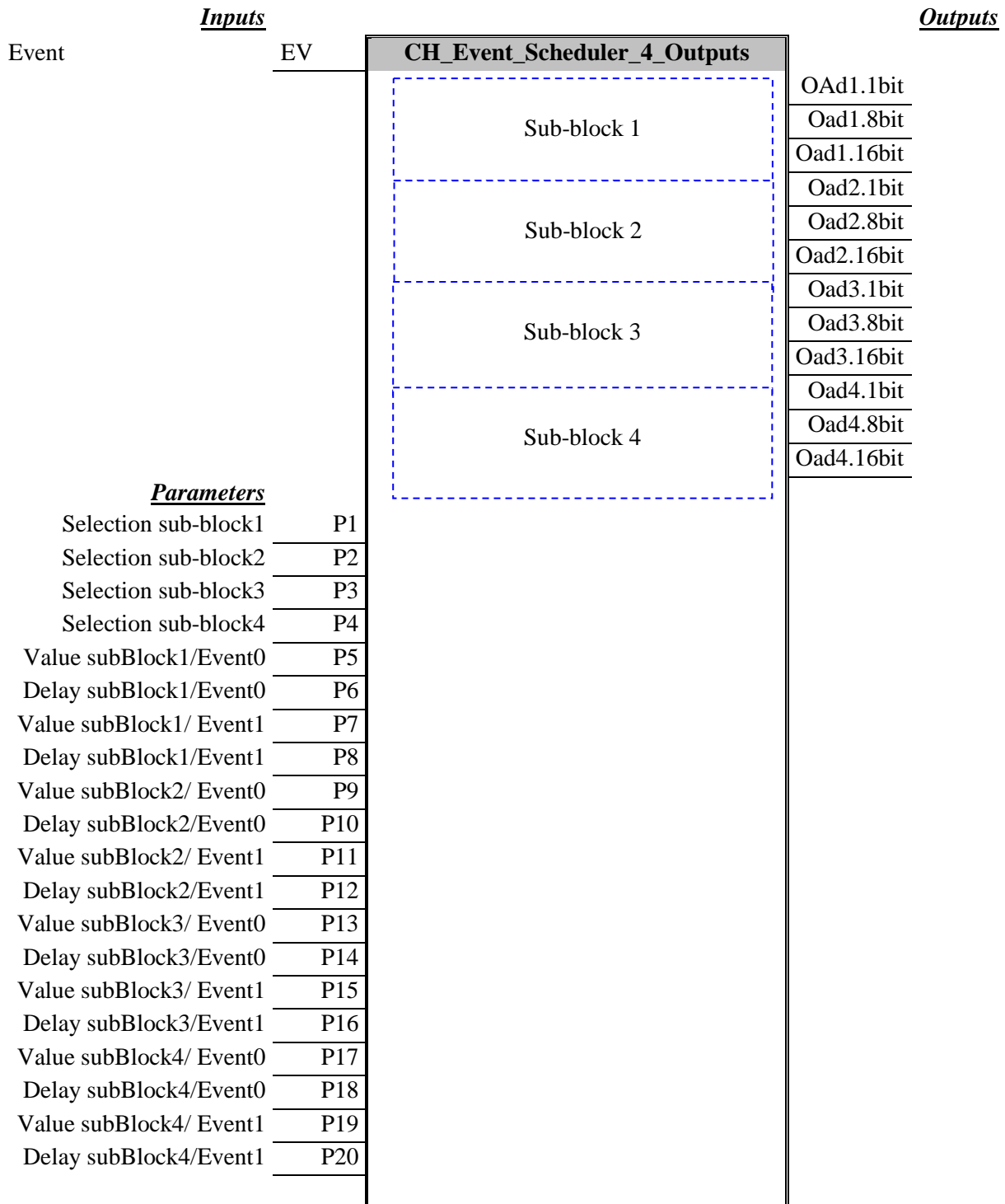
Index	FB / DP_Name	Name	Sub unit	Main CC	Additional CCs	Flags (i/o,x,v,...)
1	1010/Scene Activate	Scene Activate	1	CC_Activate	CC_Switch_OnOff	I
2	1010/Scene learn	Scene learn	1	CC_Learn		I
3	1010/Scene Number	Scene Number	1	CC_Scene_Number		OL

- **Parameter table:**

Index	Identifier	Name	Type	Recommended default value	Bit Offset
1	P1	Scene Number for activated scene A	PART_Scene_Number	0	2
2	P2	Scene Number for activated scene B	PART_Scene_Number	1	10

## 2.12 CH\_Event\_Scheduler\_4\_Outputs (Channel Code 0204h)

- **Name:** CH\_Event\_Scheduler\_4\_Outputs
- **ID:** 0204h
- **Classification:** Functional module
- **Functional Block:**
  - 1012 - FB Scheduler (See [04])
- **Graphical representation:**



- **Description:**

See Functional Block Scene Controller

- There are 12 output Datapoints and 12 input Datapoints.
- They are grouped in 4 blocks (adaptive E-Mode Channels).
- The parameter blocks consist of:

Adaptive set 1 selection	Adaptive set 2 selection	Move Up/Down value set 1 scene 1	Move Up/Down value set 1 scene 2	Move Up/Down value set 2 scene 1	Move Up/Down value set 2 scene 2
, , , , , , , ,	, , , , , , , ,				

- The length of the parameter is related to the selection coded in the lower part:
  - high part (bit 7...3) = priority for adaptation
  - lower part (bit 2, 1, 0) = size of Datapoint
- When activate, the values contained in the parameter blocks corresponding to the Scene A or B (or scene number) are copied in the Datapoint, respecting the size and the Datapoint index. The size is coded in the lower part of the adaptive value.
- When learning, the values are copied from the Datapoint in the parameter blocks corresponding to the Scene A or B (or scene number), respecting the size and the Datapoint index.

- **Datapoint list:**

Index	FB/DP_Name	Name	Sub-unit	Main CC	Additional CCs	Flags (b,x,v,l,...)
1	1006/Event		1	CC_Switch_OnOff		I
2	Oad1.1bit		1	CC_ADAPT_1BIT		OTL
3	Oad1.8bit		1	CC_ADAPT_8BIT		OTL
4	Oad1.16bit		1	CC_ADAPT_16BIT		OTL
5	Oad2.1bit		1	CC_ADAPT_1BIT		OT
6	Oad2.8bit		1	CC_ADAPT_8BIT		OT
7	Oad2.16bit		1	CC_ADAPT_16BIT		OT
8	Oad3.1bit		1	CC_ADAPT_1BIT		OT
9	Oad3.8bit		1	CC_ADAPT_8BIT		OT
10	Oad3.16bit		1	CC_ADAPT_16BIT		OT
11	Oad4.1bit		1	CC_ADAPT_1BIT		OT
12	Oad4.8bit		1	CC_ADAPT_8BIT		OT
13	Oad4.16bit		1	CC_ADAPT_16BIT		OT

---

- **Parameter table:**

Index	FB Parameter ID	Name	Type	Recommended default value	Bit Offset
1	Selection SubBlock1		PART_Adaptative_Selection		0
2	Selection SubBlock2		PART_Adaptative_Selection		8
3	Selection SubBlock3		PART_Adaptative_Selection		16
4	Selection SubBlock4		PART_Adaptative_Selection		24
5	ValueSubBlock1/Event0		PART_Render_Value		32
6	Delay for SubBlock 1/Event 0		PART_Time_Delay		48
7	ValueSubBlock1/Event1		PART_Render_Value		56
8	Delay for SubBlock 1/Event 1		PART_Time_Delay		72
9	ValueSubBlock2/Event0		PART_Render_Value		80
10	Delay for SubBlock 2/Event 0		PART_Time_Delay		96
11	ValueSubBlock2/Event1		PART_Render_Value		104
12	Delay for SubBlock 2/Event 1		PART_Time_Delay		120
13	ValueSubBlock3/event0		PART_Render_Value		128
14	Delay for SubBlock 3/ Event 0		PART_Time_Delay		144
15	ValueSubBlock3/Event1		PART_Render_Value		152
16	Delay for SubBlock 3/ Event 1		PART_Time_Delay		168
17	ValueSubBlock4/event0		PART_Render_Value		176
18	Delay for SubBlock 4/Event 0		PART_Time_Delay		192
19	ValueSubBlock4/Event1		PART_Render_Value		200
20	Delay for SubBlock 4/Event 1		PART_Time_Delay		216

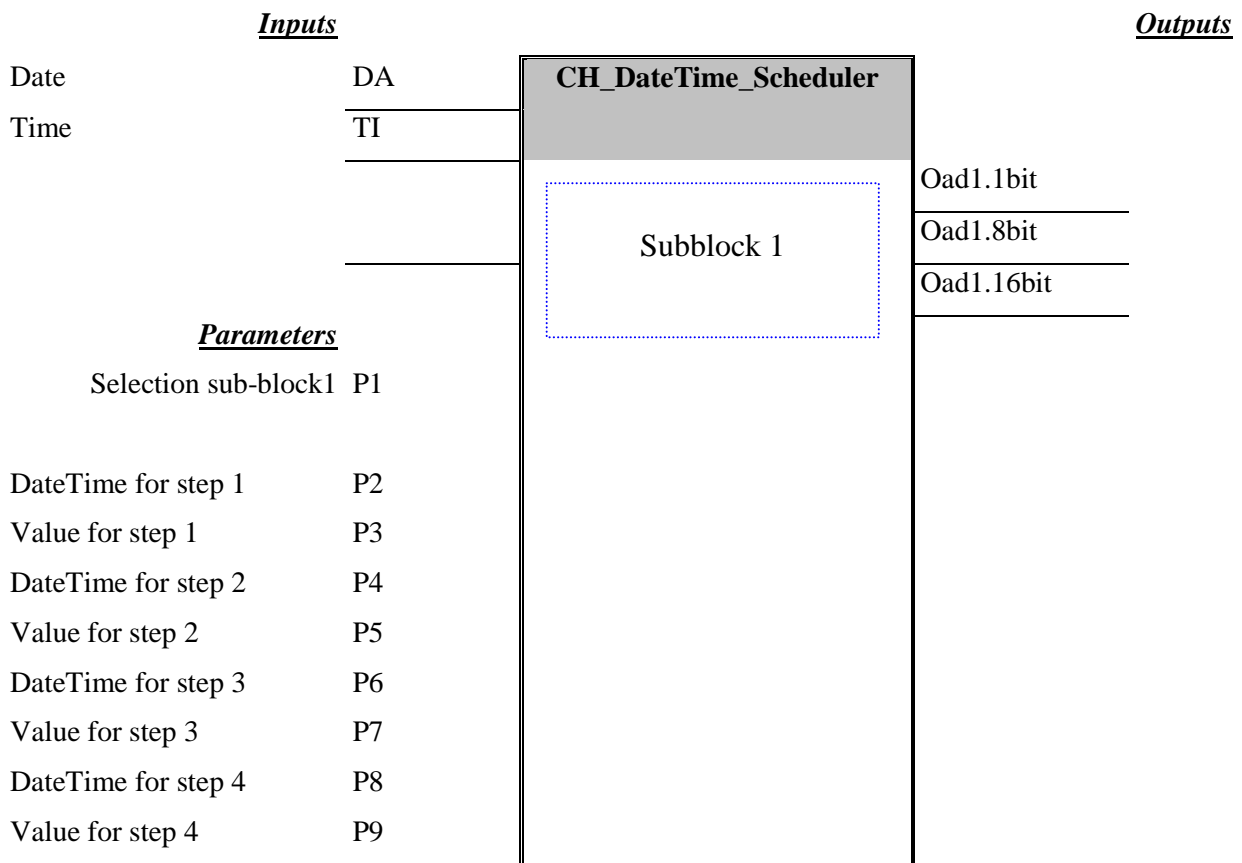


Subblock index	Connection Code	Corresponding Parameter index	Adapting Parameter value	Input Datapoint	Output Datapoint
1	CC_Move_UpDown	1	1.1	-	2
1	CC_Dimming_Value	1	2.8	-	3
1	CC_Operation_Mode	1	6.1	-	2
1	CC_Enable	1	7.1	-	2
1	CC_Switch_OnOff	1	8.1	-	2
2	CC_Move_UpDown	2	1.1	-	5
2	CC_Dimming_Value	2	2.8	-	6
2	CC_Operation_Mode	2	6.1	-	5
2	CC_Enable	2	7.1	-	5
2	CC_Switch_OnOff	2	8.1	-	5
3	CC_Move_UpDown	3	1.1	-	8
3	CC_Dimming_Value	3	2.8	-	9
3	CC_Operation_Mode	3	6.1	-	8
3	CC_Enable	3	7.1	-	8
3	CC_Switch_OnOff	3	8.1	-	8
4	CC_Move_UpDown	4	1.1	-	11
4	CC_Dimming_Value	4	2.8	-	12
4	CC_Operation_Mode	4	6.1	-	11
4	CC_Enable	4	7.1	-	11
4	CC_Switch_OnOff	4	8.1	-	11

## 2.13 CH\_DateTime\_Scheduler (Channel Code 0205h)

- **Name:** CH\_DateTime\_Scheduler
- **ID:** 0205h
- **Classification:** Functional Module
- **Functional Block:**
  - 1001 – FB System Clock (See [02])
  - 1012 – FB Scheduler (See [04])

- **Graphical representation:**



- **Description:**

See Functional Block Scheduler.

- **Datapoint list:**

Index	FB / DP_Name	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v, l...)
1	1005/Date		1	CC_Date		I
2	1005/Time		1	CC_Time		I
3	Oad1.1bit		1	CC_ADAPT_1BIT		O T L
4	Oad1.8bit		1	CC_ADAPT_8BIT		O T L
5	Oad1.16bit		1	CC_ADAPT_16BIT		O T L

- **Parameter table:**

Index	FB Parameter ID	Name	Recommended default value	Bit Offset
1	Selection SubBlock1		PART_Adaptative_Selection	0
2	Date for step 1		PART_Date_Time	8 (8 octets)
3	Value for step 1		PART_Render_Value	72 (1 octet)
4	Date for step 2		PART_Date_Time	88
5	Value for step 2		PART_Render_Value	152
6	Date for step 3		PART_Date_Time	168
7	Value for step 3		PART_Render_Value	232
8	Date for step 4		PART_Date_Time	248
9	Value for step 4		PART_Render_Value	312

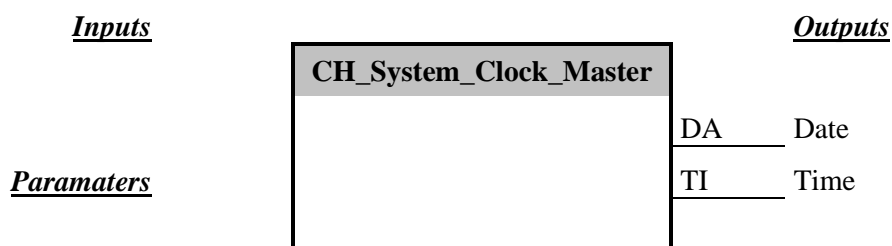
The usage of format Date&Time with the validity of fields, enables to have some calendar events like the first Monday of every week, the 3<sup>rd</sup> of each month ...

Note - Don't care about the field "seconds".

Subblock index	Connection Code	Corresponding Parameter index	Adapting Parameter value	Input Datapoint	Output Datapoint
1	CC_Move UpDown	1	1.1		3
1	CC_Dimming_Value	1	2.8		4
1	CC_Operation_Mode	1	6.1	-	3
1	CC_Enable	1	7.1		3
1	CC_Switch_OnOff	1	8.1		3

## 2.14 CH\_System\_Clock\_Master (Channel Code 0206h)

- **Name:** CH\_System\_Clock\_Master
- **ID:** 0206h
- **Classification:** sensor
- **Functional Block:**
  - 1001 - FB System Clock
- **Graphical representation:**



- **Description:**

See FB System Clock (see [02]).

With Parameter SCLO mode is set to master (=2).

- **Datapoint list:**

Index	FB / DP_Name	Name	Sub-Unit	Main CC	Additional CCs	Flags (i/o,x,v,...)
1	1001/Date	Date	1	CC_Date		O
2	1001/Time	Time	1	CC_Time		O L

## 2.15 CH\_System\_Clock\_Slave (Channel Code 0209h)

- **Name:** CH\_System\_Clock\_Slave

- **ID:** 0209h

- **Classification:** actuator

- **Functional Block:**

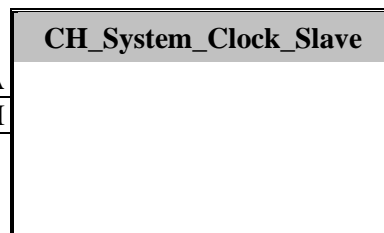
- 1001 - FB System Clock (See [02].)

- **Graphical representation:**

**Inputs**

1001.Date      DA  
1001.Time      TI

**Parameters**



**Outputs**

- **Description:**

Please refer to the specifications of FB System Clock in [02]. The Parameter SCLOMode of this FB shall be set to “Slave” (value = 1).

- **Datapoint list**

Index	FB Datapoint ID	Name	Subunit	Main CC	Additional CCs	Flags (i/o,x,v, ...)
1	1001.Date	Date	1	CC_Date		I
2	1001.Time	Time	1	CC_Time		IL

## 3 Functional Blocks

### 3.1 Usage requirements

The Functional Block specifications below only provide complementary information to the Channel Definitions specified in this document. 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.

### 3.2 FB\_Logic\_ANDOR (FB LAO)

- **Name:** FB\_Logic\_ANDOR
- **Object type:** 1007

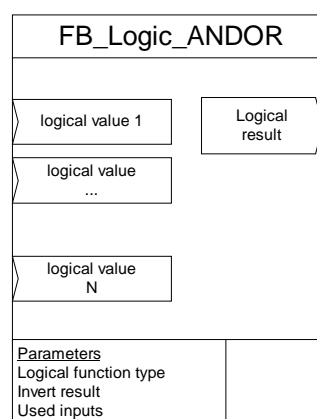
#### 3.2.1 Functional description

When a value on one of the input Datapoints is received the logical function AND or OR (according to parameterisation) shall be carried out for all connected input Datapoints. The result shall be sent on the output Datapoint. According to the parameter “invert result” the result can be inverted to allow more logical calculation.

Default value for OR is 0, for AND shall be 1.

The parameter *Used input* shall be used to indicate to the application which Datapoints are connected. This permits an immediate distribution of the result after restart.

#### 3.2.2 FB description



### 3.2.3 Datapoints

Datapoint	Abbr.	Description	Datapoint Type
<b>Inputs</b>			
Logical value 1	LV1	Input for logical function	1.002 DPT_Bool
...			
Logical value N	LVN	Input for logical function	1.002 DPT_Bool
<b>Outputs</b>			
Logical Result	LR	Datapoint 1 to be connected and to be mastered by the scene manager	1.002 DPT_Bool
<b>Parameters</b>			
Logical function type	P1	To set the function AND or OR of the FB	1.021 DPT_LogicalFunction
Invert result	P2	To invert the result	1.012 DPT_Invert
Used Inputs	P3	To indicate which inputs are connected	1)

#### 3.2.3.1 Distribution table

		Basic FB	STANDARD MODE	EXTENDED MODE	
			S-Mode	Standard Mode Interface	LTE-HEE
Inputs	LV1	GO <sub>b</sub>	-	-	-
	LV2	GO <sub>b</sub>	-	-	-
	LVn	(GO) <sub>b</sub>	-	-	-
Outputs	LR	GO <sub>b</sub>	-	-	-
Parameters	P1	M	-	-	-
	P2	O	-	-	-
	P3	O	-	-	-

1) According to the implementation and the number of inputs Logical value, this parameter is a bit field.  
Bit 0 = LV1, bit 1=LV2...

**3.2.3.2 Input:Logical value**

DP Name:	Logical value X	Abbr.:	LVx	Mandatory	<input checked="" type="checkbox"/>
FB Name:	1007 FB Logic AND/OR			Can be internal	<input type="checkbox"/>
<b>Description</b>					
Input value for the logic calculation					
<b>Datapoint Type</b>					
DPT_Name:	DPT_Bool				
DPT Format:	B <sub>1</sub>	DPT_ID:	1.002		
<b>Access Type</b>					
◆ Input					
N → this	<input type="checkbox"/>	1 → this	<input checked="" type="checkbox"/>		
Spontaneous	<input checked="" type="checkbox"/>	Cyclically:	<input type="checkbox"/>	Time-out:	
Request	<input type="checkbox"/>	Polling:	<input type="checkbox"/>	Period:	
<b>Communication Type</b>					
◆ Group Object Datapoint				Mandatory:	<input type="checkbox"/>
Default Group Address:		---			
◆ Interface Object Property Datapoint				Mandatory:	<input type="checkbox"/>
• Server	Object_type:		PID:		
	Start_index:		Nr_of_elements:		
<b>Dynamics</b>					
Power down:	Save:				
Power up:	Value:	No initialisation:	<input type="checkbox"/>	Default value:	<input checked="" type="checkbox"/> 0
		Saved value:	<input type="checkbox"/>	Actual value (not for input):	<input type="checkbox"/>
	Transmit on bus (only for output):		<input type="checkbox"/>	Read from bus (only for input):	
<b>Exception Handling</b>					
<b>Special Features</b>					

**3.2.3.3 Output: Logical result**

DP Name:	Logical result	Abbr.:	LR	Mandatory	<input checked="" type="checkbox"/>
FB Name:	1007 FB Logic And/Or			Can be internal	<input type="checkbox"/>
<b>Description</b>					
This Datapoint is the result of the logic calculation					
<b>Datapoint Type</b>					
DPT_Name:	DPT_Bool				
DPT Format:	B <sub>1</sub>	DPT_ID:	1.002		
<b>◆ Output</b>					
this → M	<input checked="" type="checkbox"/>	this → 1	<input type="checkbox"/>		
Spontaneous	<input checked="" type="checkbox"/>	COV:	<input type="checkbox"/>	Δ-Value:	Min repetition period:
		Cyclic	<input type="checkbox"/>	Period:	
Request	<input type="checkbox"/>				
<b>Communication Type</b>					
◆ Group Object Datapoint				Mandatory:	<input type="checkbox"/>
Default Group Address:		---			
◆ Interface Object Property Datapoint				Mandatory:	<input type="checkbox"/>
• Client	Object_type (server):		PID (property server):		
	Start_index:		Nr_of_elements:		
<b>Dynamics</b>					
Power down:	Save:	<input type="checkbox"/>			
Power up:	Value:	No initialisation:	<input type="checkbox"/>	Default value:	<input type="checkbox"/>
		Saved value:	<input type="checkbox"/>	Actual value (not for input):	<input type="checkbox"/>
	Transmit on bus (only for output):		<input type="checkbox"/>	Read from bus (only for input):	<input type="checkbox"/>
<b>Exception Handling</b>					
---					
<b>Special Features</b>					

**3.2.3.4 Parameter: Logical Function type**

DP Name:	Logical function type	Abbr.:	P1	Mandatory	<input checked="" type="checkbox"/>
FB Name:	1007 - FB_Logical_And/Or			Can be internal	<input type="checkbox"/>
<b>Description</b>					
<b>Datapoint Type</b>					
DPT_Name:	DPT_LogicalFunction				
DPT Format:	B <sub>1</sub>	DPT_ID:	1.021		
Field	Description	Supp.	Range	Unit	Default
B <sub>1</sub>	0 = logical function OR 1 = logical function AND				0
<b>Exception Handling</b>					
---					
<b>Special Features</b>					
None.					



**3.2.3.5 Parameter: Invert result**

DP Name:	Invert result	Abbr.:	P2	Mandatory	<input type="checkbox"/>	
FB Name:	1007 - FB_Logical_And/Or			Can be internal	<input type="checkbox"/>	
Description						
Datapoint Type						
DPT_Name:	DPT_Invert					
DPT Format:	B <sub>1</sub>			DPT_ID:	1.012	
Field	Description		Supp.	Range	Unit	Default
B <sub>1</sub>	0 = result not inverted 1 = result inverted					0
Exception Handling						
---						
Special Features						
None.						