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Summary

This document specifies standard solutions for KNX/DALI-interfaces for runtime communication, scenes and DALI diagnostics.

Version 01.01.02 is a KNX Approved Standard.

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

Document updates

Version	Date	Modifications
1.0.00	2011.05.2	• Rearrangement of PID-values. • Preparation of the Draft for Voting.
1.0.05	2011.10.27	• Preparation of the Draft for Voting.
1.0.06	2012.03.13	• Publication of the Approved Standard
01.01.01	2013.09.06	• **AN150 "FB Profiles for existing FBs"** integrated.
01.01.02	2013.10.29	Editorial updates for the publication of KNX Specifications 2.1.

References

[01] Chapter 3/7/2 "Datapoint Types"
[02] Chapter 6/30/1 "Runtime Profiles"
[03] IEC 62386-102 Ed.1, *Digital addressable lighting interface* – Part 102, *General requirements – Control gear*
[04] IEC 62386-202 Ed.1, *Digital addressable lighting interface* – Part 202, *Particular requirements for control-gears – Self-contained emergency lighting* (device type 1)

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Abbreviations

Datapoints

ADV	Actual Dimming Value (≡ IDV “Info Dimming Value”; Naming in channel Code Document)
ASC	Absolute Setvalue Control (≡ DV “Dimming Value”; Naming in channel Code Document)
CAS01	Channel Activation and Setvalue for DALI-Channel 01
to CAS64	to Channel Activation and Setvalue for DALI-Channel 64
CIOO1	Combined Info On Off 1
CIOO2	Combined Info On Off 2
CIOO3	Combined Info On Off 3
CIOO4	Combined Info On Off 4
CIOO5	Combined Info On Off 5
DPSF	DALI PSU Failure
DSC	DALI Short Circuit
DCF	DALI-channel Failure
DCGF	DALI Control Gear Information
DDS	DALI Diagnostics
FO	Forced
IOO	Info OnOff
LD	Lock Device
RSC	Relative Setvalue Control (≡ DC “Dimming Control”; Naming in channel Code Document)
SC	Scene Control
SCDC	Scene Configuration DALI-Channel
SN	Scene Number
SGDC	Status Control Gear DALI-channel
SLDC	Status Lamp DALI-channel
SOO	Switch On Off
TSS	Timed StartStop
CDES	Combined DALI Error Status

Parameters

BL	Brightness at Locking
BPD	Behaviour Bus Power Down
BPU	Behaviour Bus Power Up
BSN	Brightness for Scene Number
BUL	Brightness at Unlocking
DFT	DALI Fade Time
DFT_OSV	DALI Fade Time On Set Value
DFT_OFF	DALI Fade Time Off
DSFTL[]	DALI Scene Fade Time List[]
DDV	Delta Dimming Value
DMS	Dimming Mode Selection
DS	Dimming Speed
DS_OFF	Dimming Speed for switch off
DS_OSV	Dimming Speed for Switch On Set Value
ILD	Invert Lock Device
IOS	Invert Output State
KFT	KNX Fade Time
KFT_OSV	KNX Fade Time On Set Value
KFT_OFF	KNX Fade Time Off
KSFTL[]	KNX Scene Fade Time List[]
KSNL[]	KNX Scene Number List[]
LS	Lock State
LSV	Lock Set Value
MAXSV	Maximum Set Value
MF	Memory Function
MINSV	Minimum Set Value
MOE	Manual Off Enable
OFFD	Off Delay

Parameters

OND	On Delay
OSV	Switch On Set Value
PDS	Bus Power Down State
PDSV	Bus Power Down Set Value
PUMD	Bus Power Up Message Delay
PUS	Bus Power Up State
PUSV	Bus Power Up Set Value
PWD	Prewarning Duration
ROE	Relative Off Enable
SFSN	Storage Function for Scene Number
SLME	Scene Learning Mode Enable
SOB	Switch Off Brightness
SOBDT	Switch Off Brightness Delay Time
SSN	State for Scene Number
TCT	Transmission Cycle Time
TOD	Timed On Duration
TRF	Timed On Retrigger Function
ULS	Unlock State
USV	Unlock Set Value

Internal

AV	Actual Value
cs	Company Specific
DP	Datapoint
LSAB	Light Switching Actuator Basic
SV	Set Value
V_R	Value Reached
V_R_ZERO	Value Zero Reached

1 General Information

1.1 Aims and objectives

The Functional Block "DALI Proxy Basic" shall support transparently the mapping of KNX Datapoints to the DALI-system.

For the runtime communication, it is specified how “commands” from KNX shall be handled in the KNX/DALI-gateway.

Further interfaces are foreseen to allow for the parameterisation of DALI devices from the KNX side and to receive status and error information from DALI on KNX. This is sketched in Figure 1. It is the purpose of this document to define this communication and to specify the rules.

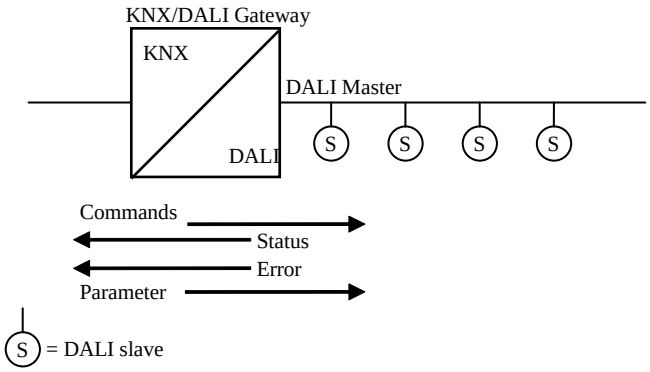


Figure 1 – Communication between KNX and DALI

Practically a KNX/DALI-Gateway typically consists of more than one Functional Block like the one shown. Three different types of Functional Blocks can be part of this device.

a) FB DALI Proxy Basic Light Application (FB DPBLA)
Describes the handling for switching- and dimming control of the DALI-Slaves related to one DALI-channel.

DALI-channel:
Is defined as a logical group of one or more (up to 64) DALI slaves, which will be controlled in parallel by one FB.
On the DALI side the mapping can be done by:
- single addressing (“DALI Short Address”)
- group addressing (“DALI Group”)
- central addressing (“DALI Broadcast”)

of the DALI slaves.

There is however in no way any prescribed relationship between an instance of this FB DPBLA and the DALI addressing mode or a combination thereof used by that FB instance. Any FB instance can use any combination of DALI addressing modes. See also constraint 2.

There is in no way any prescribed relation between the sorting of these FBs in function of their DALI addressing modes.

Figure 2 below counts 81 possible instances of this FB type. This is the maximal number of different ways how to address 64 DALI control gears in a DALI line:

- each DALI control gear can be controlled separately and thus each DALI channel consists of one DALI control gear ⇒ 64 FBs
- additionally the maximal number of 16 possible DALI group addresses is used ⇒ 16 FBs
- additionally the DALI central addressing is used ⇒ 1 FB

In a practical situation, more efficient use of the DALI addressing will be possible and the implementation will limit the addressing possibilities.

b) FB DALI Proxy Basic Scene Application
Describes the handling for scene control of DALI-Slaves

c) FB DALI Proxy Basic Device Specific
Describes the handling for DALI specific features. Only the parts with important features for the application lighting are standardized. Other system parts remain implementation specific.

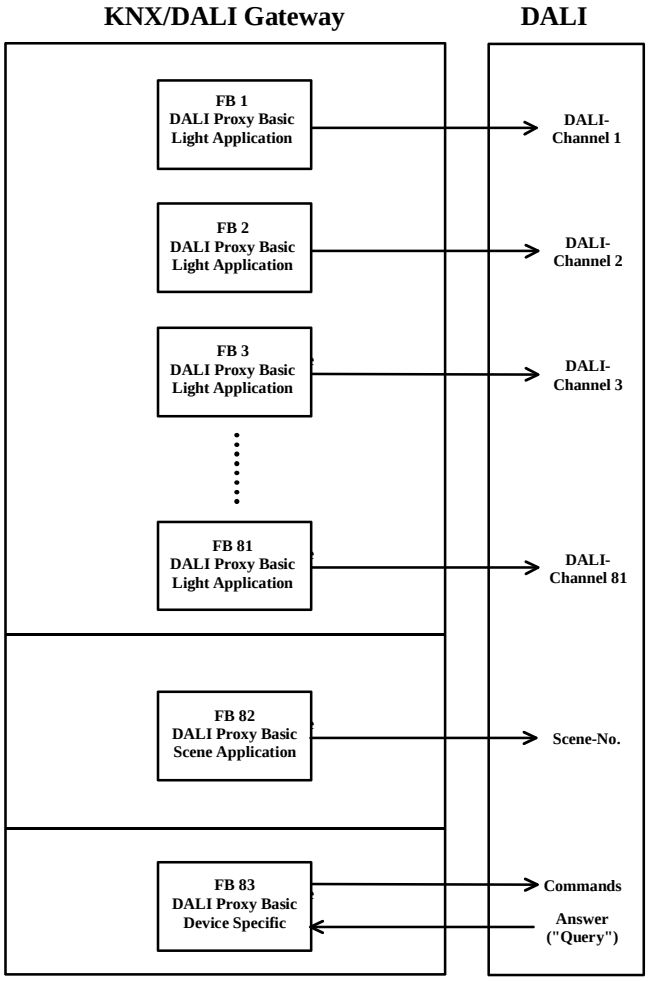


Figure 2 - Integration of multiple Functional Blocks in a device 'KNX/DALI-Gateway'

A KNX/DALI-Gateway may consists off up to 83 FBs with the following parts

- Up to 81 different ways to address to address on DALI up to 64 DALI control gears ⇒ up to 81 FBs
- Up to 64 Scenes ⇒ up to 1 FB
- Visualisation of DALI-system Features ⇒ up to 1 FB

The number of each type of these FBs, their ordering sequence and the DALI-addressing mode used for each FB is manufacturer specific.

1.2 Motivation

This standardisation activity should do away with the many different accepted non-standard DPTs related to KNX/DALI-gateways.

1.3 Scope

This document models in a general and abstract way a standard KNX/DALI-gateway connecting a single DALI-system.

Other communication, e.g. *between* multiple DALI-systems, is not explicitly modelled. This can e.g. be done by re-using the same Group Addresses in ETS for two or more DALI-systems.

The modelling only supports the communication with DALI control gears (DALI actuators) and not with DALI Control Devices (DALI sensors), as the communication of Sensors in a DALI-system is not yet standardized at IEC-Level [1)].

1.4 Constraints

1.

This document doesn't specify the direct mapping of KNX Datapoints into DALI commands, as there are various commands and possibilities to do this. Especially the mapping of brightness values from KNX to DALI is not standardized.

2.

The DALI-system addressing modes:

- single addressing ("DALI Short Address")
- group addressing ("DALI Group")
- central addressing ("DALI Broadcast")

and their mapping to KNX Group Addresses a implementation specific and not specified in this document.

3.

The FB specification does not cover any functionality of DALI Sensors (for the moment there is no IEC interworking standard for this kind of devices).

4.

The behaviour of the DALI commissioning is implementation specific. In practice this is done via non-standardized Interface Objects in the devices, which are accessed by stand alone tools from the KNX side or with ETS plug-ins.

5.

The light intensity between KNX and DALI will be not mapped. This means that the KNX value (e.g. 10 % - KNX DPT_ID 5.001) does not necessary lead to the same DALI arc power command (e.g. 10 %).

[1] Situation in 2010

2 FB DALI Proxy Basic Light Application

2.1 Overview

At runtime, communication with DALI devices logically combined in a DALI-channel shall basically be identical to the communication to a standard KNX FB Dimming Actuator Basic.

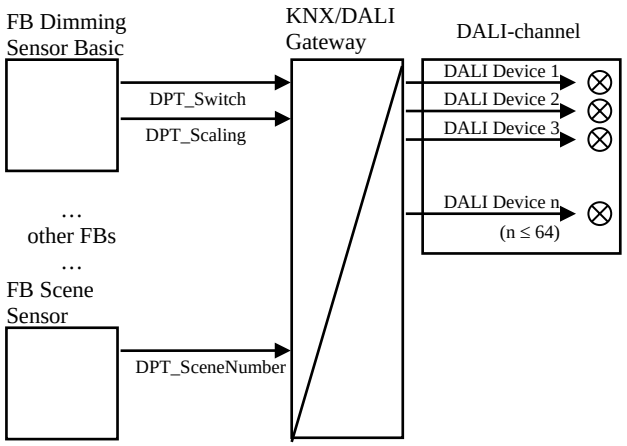


Figure 3 – Transparent runtime communication from KNX to DALI

The Functional Block DALI Proxy Light Application shall support continuous setting of light brightness of the DALI-channel. Input Datapoints shall be processed in order to generate a set value that in turn shall lead to the actual value. The actual value shall be provided to the DALI-system.

The Output Datapoints shall provide information on the state of the DALI-channel. This information may also be used by other actuators in the Application Domain. In this way, the Functional Block can be linked to actuator Functional Blocks, which only support binary information.

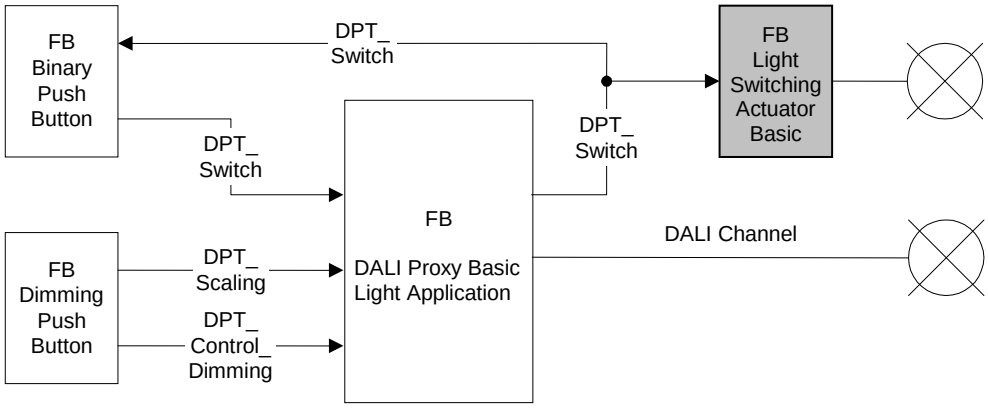


Figure 4 - FB DALI Proxy Light Application in Application Domain Lighting

Simple Lighting controller functions shall also be supported according to these FB specifications.

The Functional Block DALI Proxy Light Application shall contain the mandatory input Datapoints per DALI-channel:

- Switch On Off (SOO) shall support the binary switching of the DALI-channel
- Absolute Setvalue Control (ASC) shall directly affect the set value (absolute dimming) switch off (value = 0); switch on (value ≠ 0)
- Relative Setvalue Control (RSC) shall increase or decrease the set value in respect to the previous set value (relative dimming) and shall stop the dimming process

The rules how the set value is determined dependant on these inputs, as laid down in a state machine, are also mandatory. The behaviour of the Functional Block shall be mainly characterised by the states

- OFF DALI-channel is switched off ; actual value =0
- ON DALI-channel switched on ; actual value = constant ≠ 0
- DIMMING DALI-channel switched on; actual value is lead in direction of the set value (≠ constant) by an internal timing function.

The dimming speed may be adjusted by the parameter “Dimming Speed”. If this optional parameter is not implemented, a sweep over the whole range in about four seconds shall be possible.

The state DIMMING shall be entered after an access to the input Datapoint “Relative Setvalue Control” (RSC).

However, when the input Datapoints “Absolute Setvalue Control” (ASC) or “Switch On Off” (SOO) are accessed, the actual value shall jump to the set value. Due to internal delays it may be possible that the DALI-channel does not directly follow the set value. The default behaviour may be changed by adjustment of optional parameters.

2.1.1 Feedback

The mandatory behaviour also includes binary and 8 bit feedback per FB, this per DALI-channel.

For the **binary feedback**, the output DP “Info On Off” (IOO) shall be used.

Alternatively, the binary feedback of a FB DALI Proxy Basic Light Application may be reported as one bit with specified number together with the binary feedback of other instances of this FB in up to five instances of “Combined Info On Off 1” (CIOO1) to “Combined Info On Off 5” (CIOO5) in the FB “DALI Proxy Device Specific” – see 4. The usage of CIOO1 to CIOO5 reduces the number of DPs in the device in case this FB DALI Proxy Basic Light Application is implemented many times. Please refer to the detailed specification of the Output CIOO1 to CIOO5 for detailed requirements.

Transmission: IOO and CIOO1 up to CIOO5 shall actively transmit the state of the DALI-channel.

For the **8 bit feedback**, the output “Actual Dimming Value” (ADV) is foreseen.

Transmission: ADV shall reflect the actual value provided to the DALI-channel (mainly intended for read access).

It is recommended to implement the output DP ADV. If the output DP ADV is not implemented, then the mandatory input DP ASC shall be implemented bidirectional.

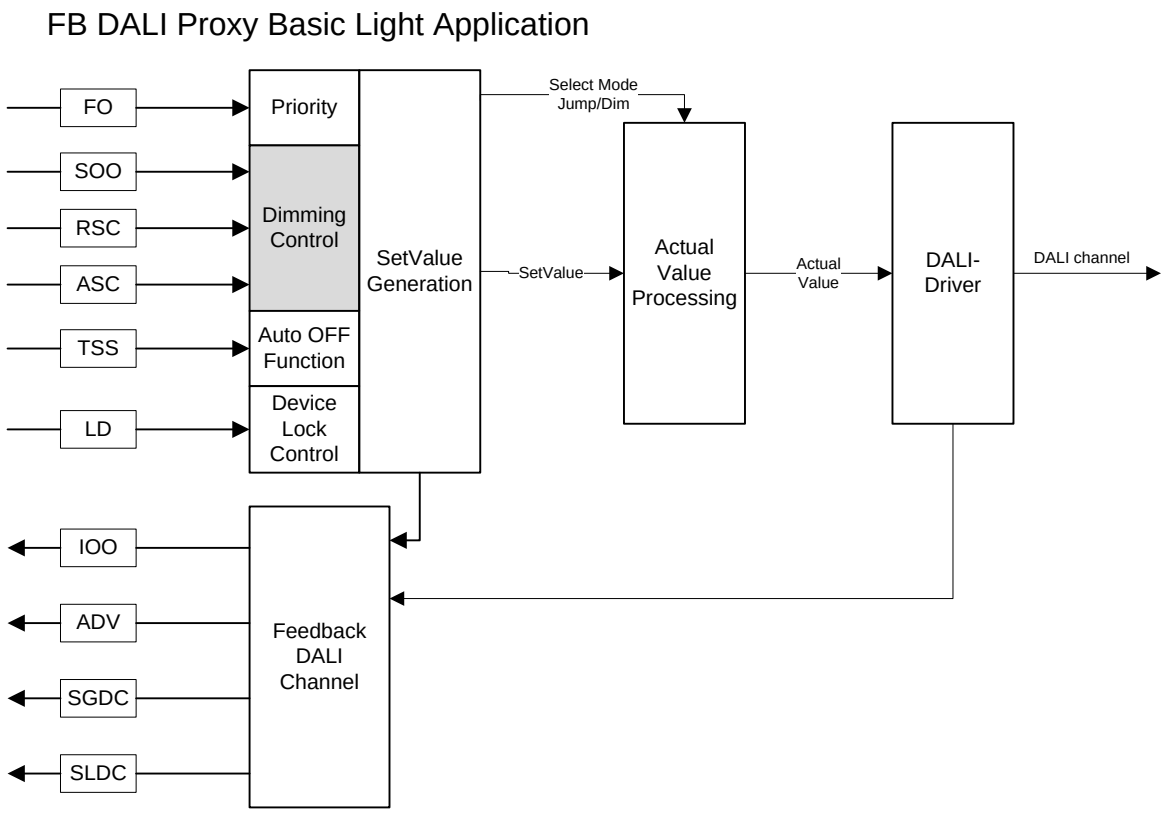


Figure 5 – Input and output Datapoints of FB DALI Proxy Basic Light Application

2.1.2 Optional Inputs

The optional input Datapoint ”Timed StartStop“ (TSS) shall be used to switch the DALI-channel in the On-State for the time specified by the parameter “Timed On Duration” (TOD). Alternatively this behaviour shall also be achievable without TSS, if using the mandatory DP “Switch On Off” (SOO) in combination with the parameter TOD. Before this time elapses a manufacturer specific action may be performed. This time shall be specified by the parameter “Prewarning Duration” (PWD).

Furthermore switching on and off shall also be delayed by the setting of the optional parameters:

- “On Delay” (OND),
- “Off Delay” (OFFD),
- Dimming Speed for switching on SetValue/off (DS_OSV / DS_OFF)
- Fade Time (DF_OSV / DF_OFF)

The optional input Datapoint ”Forced“ (FO) shall be used to set the DALI-channel in a high priority state. Whether the ON- or the OFF-state is the high priority state shall be determined by the value of the Datapoint. The input Datapoint “Lock Device” (LD) shall be used to freeze the value provided to the DALI-channel. This shall also be achievable with the additional parameters:

- “Behaviour at Locking” (BL); “Lock Setvalue” (LSV), and
- “Behaviour at Unlocking” (BUL); “Unlock Setvalue” (USV).

In accordance with these parameters, the desired brightness at the start and the end of the DALI-channel’s lock state shall be set. With the parameter “Invert Lock Device” (ILD) it shall be possible to invert the polarity of the Datapoint “Lock Device” (LD). The priority of the various input Datapoints is manufacturer specific.

2.1.3 Behaviour concerning mandatory Datapoints

Events shall be generated when the input Datapoints SOO, RSC and ASC are accessed and when the internal actual value reaches the set value (V_R). The last access to a Datapoint shall be executed. The state-transitions resulting from these events are depicted in Figure 6.

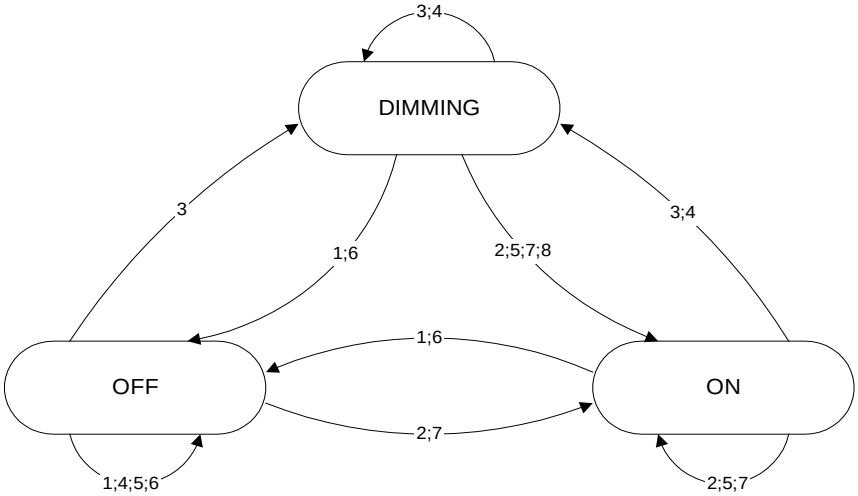


Figure 6 - State transition diagram

Table 1 – list of events

Event	Explanation	Nr in Diagram
SOO = 0	switch off	1
SOO = 1	switch on	2
RSC = up dX	increase dimming set-value by dX	3
RSC = down dX	decrease dimming set-value by dX	4
RSC = stop	stop dimming	5
ASC = 0	dimming value = off	6
ASC = X	dimming value = x % (not zero)	7
V_R	actual value reached set value	8

The size dX, by which an internal value shall be recalculated after an access to the input Datapoint RSC, shall be determined by the 3 bit step-field s (range 001b – 111b) in the following way:

new_value = old_value +/- dX

dX = FFh / step_size

$step\_size = 2^{s-1}$

The behaviour is defined in more detail by the following State-Transition-Tables (Table 2 to Figure 5). If the optional parameters “Minimum Set Value” (MINSV) and “Maximum Set Value” (MAXSV) mentioned in the table are not implemented, the default values 01h and FFh shall be used.

Table 2 - state transition table – initial state OFF

State : OFF		
Event	**Action**	**Following state**
SOO = 0	send-request IOO = 0;	OFF
SOO = 1	switch on; send-request IOO = 1; set value = MAXSV; actual value = set value ; ADV = actual value	ON

RSC = up dX	switch on; send-request IOO = 1;
	actual value = MINSV ; ADV = actual value;
	set value = min(actual value + dX, MAXSV)
		DIMMING

RSC = down dX	None	OFF
RSC = stop	None	OFF
ASC = 0	None	OFF

ASC = X	switch on; send-request IOO = 1;
	X < MINSV: set value = MINSV;
	X > MAXSV: set value = MAXSV;
	MINSV ≤ X ≤ MAXSV: set value = X;
	actual value = set value ; ADV = actual value;
		ON

V_R	not possible	OFF

Table 3 - state transition table – initial state ON

State : ON		
Event	**Action**	**Following state**

SOO = 0	switch off; send-request IOO = 0;
	set value = 0; actual value = set value;
	ADV = actual value;
		OFF

SOO = 1	send-request IOO = 1;
	set value = MAXSV; actual value = set value;
	ADV = actual value;
		ON

RSC = up dX	set value = min(actual value + dX, MAXSV)	DIMMING
RSC = down dX	set value = max(actual value - dX, MINSV)	DIMMING
RSC = stop	set value = actual value; ADV = actual value;	ON
ASC = 0	switch off; send-request IOO = 0; set value = 0 ;actual value = set value ; ADV = actual value;	OFF
ASC = X	X < MINSV: set value = MINSV; X > MAXSV: set value = MAXSV; MINSV ≤ X ≤ MAXSV: set value = X actual value = set value ; ADV = actual value;	ON
V_R	not possible	ON

Table 4 - state transition table – initial state DIMMING

State : DIMMING		
Event	**Action**	**Following state**

SOO = 0	switch off; send-request IOO = 0;
	set value = 0; actual value = set value;
	ADV = actual value;
		OFF

SOO = 1	send-request IOO = 1; set value = MAXSV ;actual value = set value ; ADV = actual value;	ON
RSC = up dX	set value = min(set value + dX, MAXSV)	DIMMING
RSC = down dX	set value = max(set value - dX, MINSV)	DIMMING
RSC = stop	set value = actual value	ON

ASC = 0	switch off; send-request IOO = 0;
	set value = 0; actual value = set value;
	ADV = actual value;
		OFF

ASC = X	X < MINSV: set value = MINSV; X > MAXSV: set value = MAXSV; MINSV ≤ X ≤ MAXSV: set value = X actual value = set value ; ADV = actual value;	ON
V_R	ADV = actual value;	ON

2.1.4 Optional Parameters and default behaviour

2.1.4.1 Parameters relating to input Datapoints

By the parameter “Memory Function” (MF) it shall be possible to activate the Memory-Function of the DALI-channel. The set value shall be set to the last actual value in the ON-State instead of the maximum set value MAXSV, when the input Datapoint SOO is accessed with value 1.

The Parameter “Switch On Set Value” (OSV) shall define the target value when the input Datapoint SOO is accessed with value 1 (mutual exclusion).

The parameter “Relative Off Enable” (ROE) shall be related to the input Datapoint RSC. By activating the parameter, one is shall be able to switch the dimming actuator off via RSC, when the new calculated value is below the “Minimum Set Value”.

The Parameter “Dimming Mode Selection” (DMS) shall be related to the input Datapoint ASC. If this parameter is set to “Dimming”, the state DIMMING shall be entered, when ASC is accessed. Default setting of this parameter is “Jumping”.

The state-transitions with the different parameter settings are shown in Figure 7.

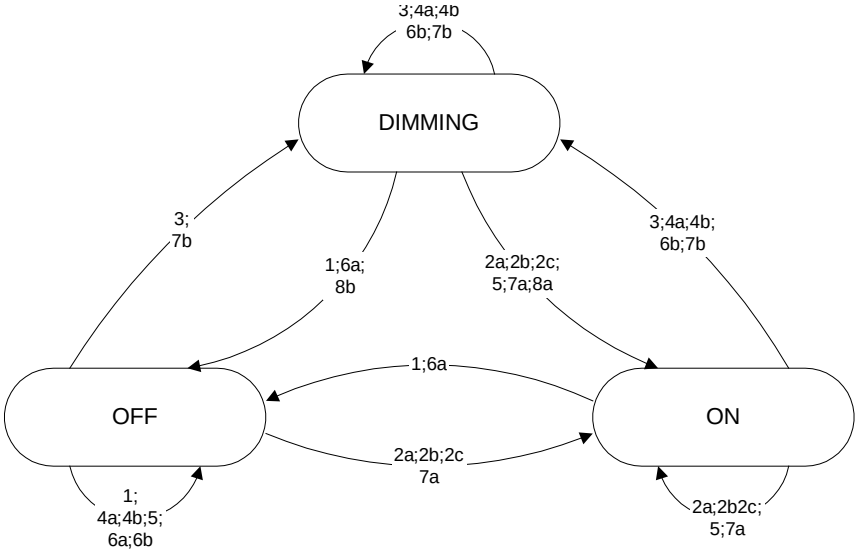


Figure 7 - State transition diagram with parameters MF/OSV ROE, DMS

Table 5 - List of Events with Parameters MF/OSV,ROE, DMS

Event	Explanation	Nr in Diagram
SOO = 0	switch off	1
SOO = 1; OSV not implemented	switch on Set Value = Maximum Set Value	2a
SOO = 1; OSV ≠ 0	switch on Set Value = OSV	2b
SOO = 1; MF enabled	switch on Set Value = last Actual Value in State ON/DIMMING	2c
RSC = up dX	increase dimming set-value by dX	3
RSC = down dX ROE: disabled	decrease dimming set-value by dX Set Value = 0 not possible	4a
RSC = down dX ROE: enabled	decrease dimming set-value by dX Set Value = 0 possible	4b
RSC = stop	stop dimming	5
ASC = 0 DMS: Jumping	dimming value = off	6a
ASC = 0 DMS: Dimming	dimming value = off	6b
ASC = X DMS: Jumping	dimming value = x % (not zero)	7a
ASC = X DMS: Dimming	dimming value = x % (not zero)	7b
V_R	actual value reaches set value (not zero)	8a
V_R_ZERO	actual value reaches MINSV, Set Value = 0	8b

The behaviour is defined in detail by the following state transition tables (Table 6 to Table 7). The transition from DIMMING to OFF shall be performed when the actual value reaches MINSV and the setvalue was set to zero. As shown in the tables, the parameter DMS shall only be related to input Datapoint ASC (not to input Datapoint SOO): after an access to the input SOO, the DALI-channel always jumps (never dims) to the value.

“mutual exclusion of Parameter OSV and MF”

Table 6 – State transition table with parameters MF, OSV, ROE – initial state OFF

OFF		
Event	**Action**	**Following state**
SOO = 0	send-request IOO = 0;	OFF

SOO = 1;
OSV not implemented
	switch on: send-request IOO = 1;
	set value = MAXSV; actual value = set value;
	ADV = Actual Value
		ON

SOO = 1; OSV ≠ 0	switch on: send-request IOO = 1; set value = OSV; actual value = set value ; ADV = actual value	ON
SOO = 1; MF enabled	switch on: send-request IOO = 1; set value = last on value; actual value = set value ; ADV = actual value	ON

RSC = up dX	switch on: send-request IOO = 1;
	actual value = MINSV ; ADV = actual value;
	set value = min(actual value + dX, MAXSV)
		DIMMING

RSC = down dX ROE: disabled	None	OFF
RSC = down dX ROE: enabled	None	OFF
RSC = stop	None	OFF
ASC = 0 DMS: Jumping	None	OFF
ASC = 0 DMS: Dimming	None	OFF

ASC = X
DMS: Jumping
	switch on: send-request IOO = 1;
	X < MINSV: set value = MINSV;
	X > MAXSV: set value = MAXSV;
	MINSV ≤ X ≤ MAXSV: set value = X;
	actual value = set value ; ADV = actual value;
		ON

ASC = X
DMS: Dimming
	switch on: send-request IOO = 1;
	X < MINSV: set value = MINSV;
	X > MAXSV: set value = MAXSV;
	MINSV ≤ X ≤ MAXSV: set value = X;
	actual value = MINSV ; ADV = actual value;
		DIMMING

V_R	not possible	OFF
V_R_ZERO	not possible	OFF

Table 7 – State transition table with parameters MF, OSV, ROE – initial state ON

ON		
Event	**Action**	**Following state**

SOO = 0	switch off; send-request IOO = 0;
	set value = 0; actual value = set value;
	ADV = actual value;
		OFF

SOO = 1; OSV not implemented	send-request IOO = 1; set value = MAXSV; actual value = set value ; ADV = actual value;	ON
SOO = 1; OSV ≠ 0	send-request IOO = 1; set value = OSV; actual value = set value ; ADV = actual value;	ON
SOO = 1; MF enabled	send-request IOO = 1;	ON
RSC = up dX	set value = min(actual value + dX, MAXSV)	DIMMING
RSC = down dX ROE: disabled	set value = max(actual value - dX, MINSV)	DIMMING

ON		
Event	**Action**	**Following state**
RSC = down dX ROE: enabled	actual value – dX < MINSV: set value = 0 actual value – dX ≥ MINSV: set value = actual value – dX	DIMMING
RSC = stop	set value = actual value;	ON
ASC = 0 DMS: Jumping	switch off ; send-request IOO = 0; set value = 0; actual value = set value ; ADV = actual value;	OFF
ASC = 0 DMS: Dimming	set value = 0;	DIMMING
ASC = X DMS: Jumping	X < MINSV: set value = MINSV; X > MAXSV: set value = MAXSV; MINSV ≤ X ≤ MAXSV: set value = X; actual value = set value ; ADV = actual value;	ON
ASC = X DMS: Dimming	X < MINSV: set value = MINSV; X > MAXSV: set value = MAXSV; MINSV ≤ X ≤ MAXSV: set value = X;	DIMMING
V_R	not possible	OFF
V_R_ZERO	not possible	OFF

Table 8 – State transition table with parameters MF, OSV, ROE – initial state DIMMING

DIMMING		
Event	**Action**	**Following state**

SOO = 0	switch off : send-request IOO = 0;
	set value = 0; actual value = set value;
	ADV = actual value;
		OFF

SOO = 1; OSV not implemented	send-request IOO = 1; set value = MAXSV; actual value = set value ; ADV = actual value;	ON
SOO = 1; OSV ≠ 0	send-request IOO = 1; set value = OSV; actual value = set value ; ADV = actual value;	ON
SOO = 1; MF enabled	send-request IOO = 1; set value = last on value; actual value = set value ; ADV = actual value;	ON
RSC = up dX	set value = min(set value + dX, MAXSV)	DIMMING
RSC = down dX ROE: disabled	set value = max(set value - dX, MINSV)	DIMMING
RSC = down dX ROE: enabled	set value – dX < MINSV: set value = 0 set value – dX ≥ MINSV: set value = set value – dX	DIMMING
RSC = stop	ADV = actual value;	ON
ASC = 0 DMS: Jumping	switch off ; send-request IOO = 0; set value = 0; actual value = set value ; ADV = actual value;	OFF
ASC = 0 DMS: Dimming	set value = 0;	DIMMING
ASC = X DMS: Jumping	X < MINSV: set value = MINSV; X > MAXSV: set value = MAXSV; MINSV ≤ X ≤ MAXSV: set value = X; actual value = set value ;	ON

DIMMING		
Event	**Action**	**Following state**
ASC = X DMS: Dimming	X < MINSV: set value = MINSV; X > MAXSV: set value = MAXSV; MINSV ≤ X ≤ MAXSV: set value = X;	DIMMING
V_R	ADV = actual value;	ON
V_R_ZERO	switch off ; send-request IOO = 0; actual value = 0; ADV = actual value;	OFF

2.1.4.2 Parameters relating to timing

2.1.4.2.1 Timing function for dimming

The Timing function for dimming shall be determined by the optional parameter “Dimming Speed” (DS). It is defined as array that shall divide the entire dimming range in subranges. The elements shall be structured datatypes, consisting of the limit of the dimming subrange (thereby taking into account the limit of the previous subrange) and the time that shall be taken for dimming through the subrange. The array shall be implemented in ascending order as regards the various subranges. In other words, the first subrange shall lie between MINSV and $Limit_0$. The limit for the last subrange shall represent MAXSV. The array may consist of one element ($Limit_0$ = $Limit_{Last}$ = MAXSV). In this case, the timing functions for dimming shall have no effect on the dimming speed anywhere in the dimming range.

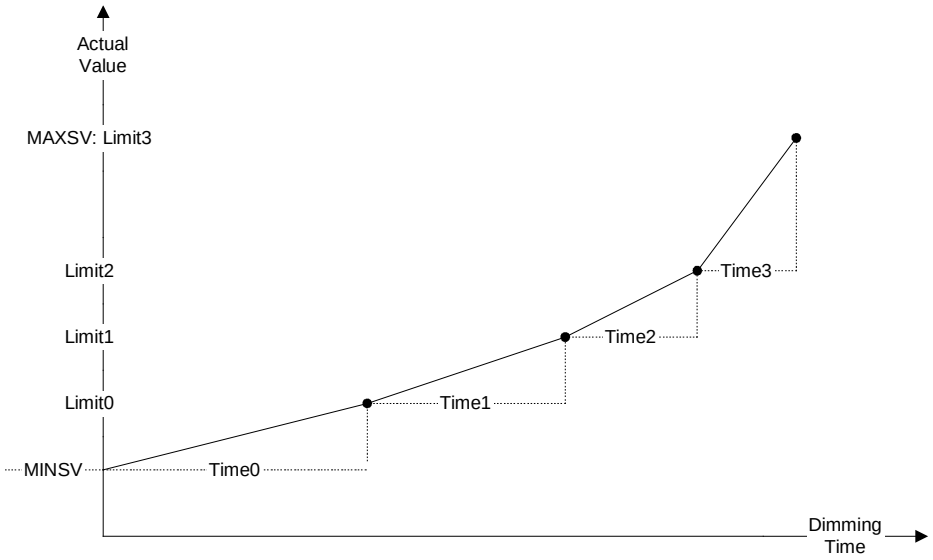


Figure 8 - example of different dimming speeds in subranges

The dimming speed in a subrange R shall be given as:

$$(Limit_R - Limit_{R-1}) / Time_R$$

DPT_Scaling	$Limit_0$	$Limit_1$		...	...		$Limit_{Last}$
DPT_TimePeriod100MSec	$Time_0$	$Time_1$		...	...		$Time_{Last}$

Figure 9 - Structure of Datapoint Type 225.001 for dimming speed parameter

The dimming speed can be separately configured for the dimming direction up (from ‘OFF’ to ‘MAXSV’) and dimming direction down (from ‘MAXSV’ to ‘MINSV’).

In order to continuously update the actual value, the DALI proxy basic light application shall calculate the time needed for one incremental step.

As an alternative (not simultaneously active) parameter to the dimming speed the parameter ‘KNX Fade Time (KFT)’ may be implemented. KFT shall only effect the absolute setvalue control, not the relative setvalue control. The difference to the Dimming Speed lies in the fact that the KNX Fade Time represents a fixed total time: After its expiration the new set value shall be reached. In case of implementing as Group Object, the KNX Fade Time shall mandatorily be coded as DPT_TimePeriod 100MSec (DPT_ID 7.004).

By using the parameter ‘KNX Fade Time (KFT)’ the value from KNX can be mapped to the discrete elements of the DALI Standard Value ‘FADE TIME’.

In addition to the parameter ‘KNX Fade Time (KFT)’ the parameter ‘DALI Fade Time (DFT)’, encoded as an enumeration (DPT_DALI_Fade_Time, DPT_ID 20.602) may be implemented both as a property or a Group Object.

2.1.4.2.2 Delay Time

The transition from state OFF to ON or DIMMING and from state ON or DIMMING to OFF shall be delayed by the following optional parameters.

- “On Delay” (OND): shall delay transition from OFF to ON or from OFF to DIMMING by the specified time (Figure 10 shows transition from OFF to ON).
- “Dimming Speed for switching on set value” (DS_OSV): shall determine the time that shall be taken for a sweep between the state OFF to ON by dimming to the on set value (see Figure 11).
- “Off Delay” (OFFD): shall delay transition from ON to OFF or from ON to DIMMING by the specified time.
- “Dimming Speed for switching off” (DS_OFF): shall determine the time that shall be taken for a sweep between the state ON to OFF by dimming to the off value.
- KNX Fade Time On Set Value (KF_OSV) for switching on set value: shall specify the total time from OFF or ON to reach the on set value (OSV)
- DALI Fade Time On Set Value (DF_OSV) for switching on set value: shall specify the total time from OFF or ON to reach the on set value (OSV)
- KNX Fade Time Off (KF_OFF) for switching off: shall specify the total time from ON to OFF
- DALI Fade Time Off (DF_OFF) for switching off: shall specify the total time from ON to OFF

The parameters DS_OSV and DS_OFF on the one hand and the parameters KF_OSV, DF_OSV, KF_OFF and DS_OFF shall be of the same structure as the parameters in clause 2.1.4.2.1 “Timing function for dimming”.

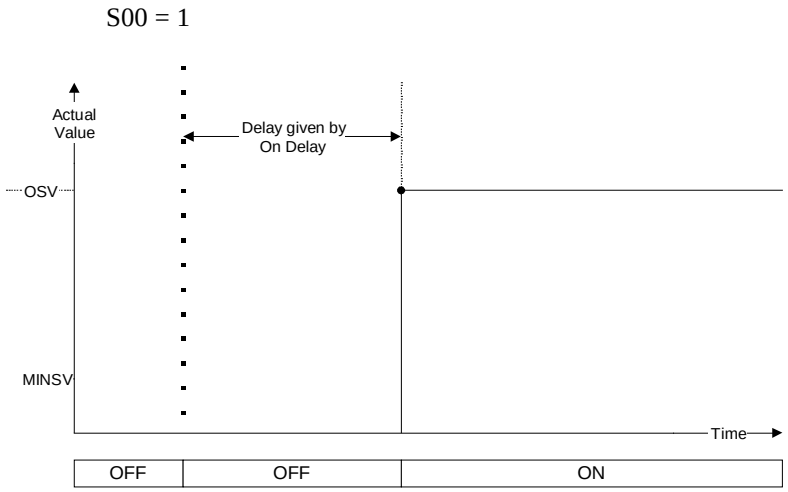


Figure 10 - Timing with parameter OND

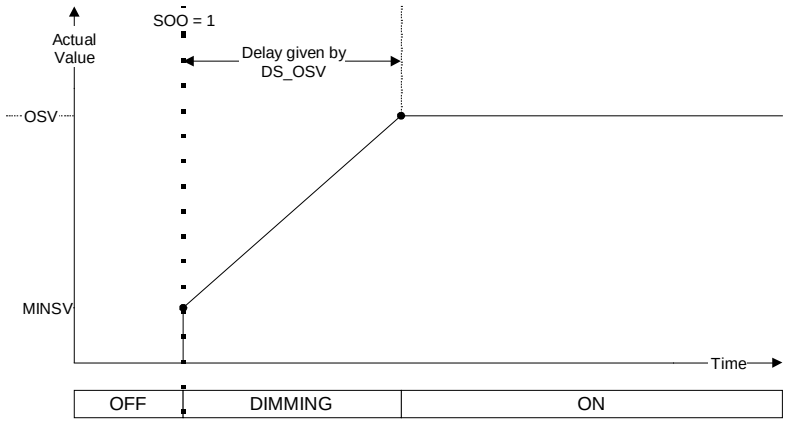


Figure 11 - Timing with parameter DS_OSV

The following Figure 12 shows an example for the parameter DALI Fade Time off (DF_OFF). Independent of the Actual Value 1 or 2 the State 'OFF' will be reached in both cases at the same time.

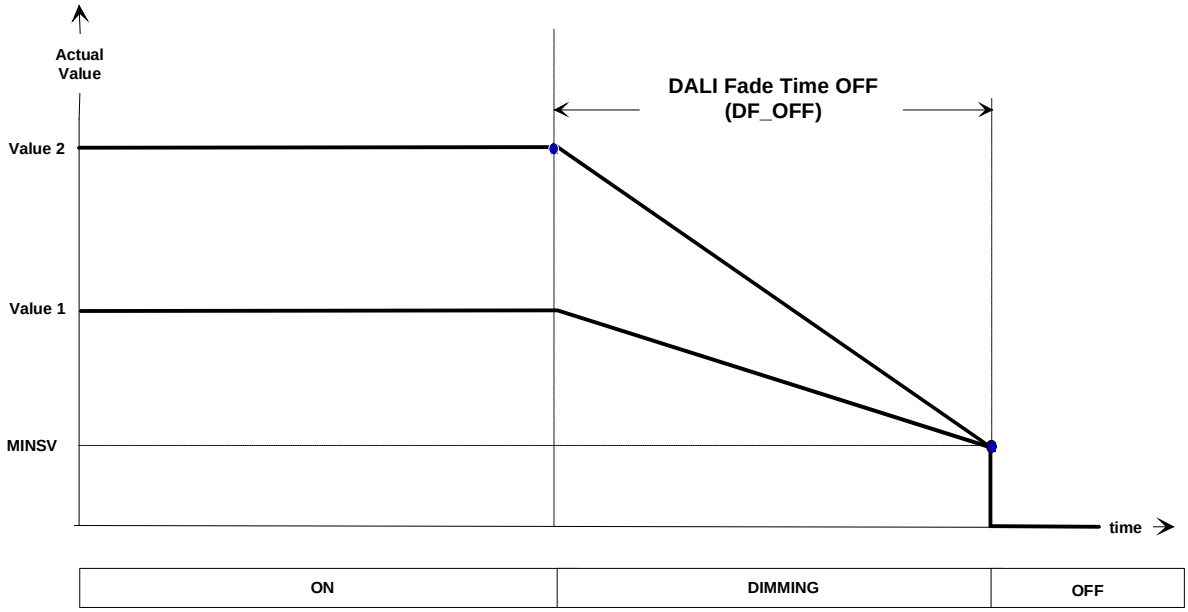


Figure 12 – Timing (Actual Value 1 and Actual Value 2) with parameter DF_OFF

What input Datapoints are affected by the delay mechanism is manufacturer specific. It is recommended that the Delay-Time is not retriggered by an additional and identical access to the relevant input Datapoints. It is furthermore recommended that a started Delay-Time is reset by an additional but inverted access to the relevant input Datapoints.

2.1.4.2.3 Autonomous Switching Off

Autonomous Switching Off shall signify that the DALI-channel shall switch off without a relevant access to any input Datapoint. For this, the Parameter "Timed On Duration" (TOD) shall be used. The selection of the input Datapoints that cause the autonomous switching off is manufacturer specific. For example an actuator may enter in this mode after an access to SOO or RSC, but an access to ASC with value ≠ 0 leads to the "normal" ON-State. If the input Datapoint "Timed StartStop" (TSS) is implemented, the autonomous Switching Off-Function shall be linked to this Datapoint. An access to another Datapoint that causes switching on, shall overwrite the autonomously switching off.

Before the actuator autonomously switches off, a manufacturer specific action may be executed. The parameter “Prewarning Duration” (PWD) shall define the duration between the start of this action and the time when the switching off is actually executed. Figure 13 shows an example of the behaviour of an actuator with an Autonomous Switch Off-Function.

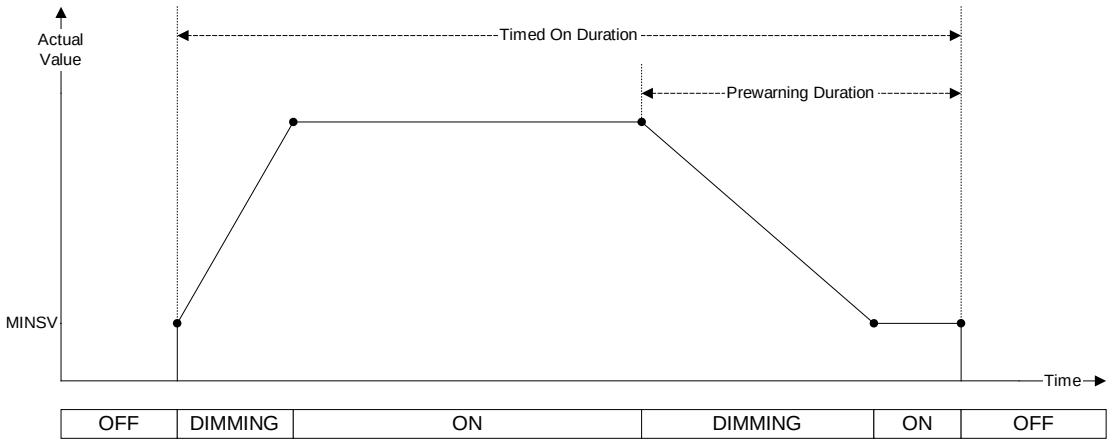


Figure 13 - Example of an Autonomous Switch Off-Function

It is manufacturer specific whether the two time periods “Timed On Duration” and “Prewarning Duration” run in parallel (as depicted in Figure 13) or one after the other (in consecutive order, i.e. first “Timed On Duration” and then “Prewarning Duration”).

Moreover, the “Prewarning Duration” may be implemented by using the parameter “Dimming Speed for Switch Off” (DS_OFF) (as depicted in Figure 14) or with “DALI Fade Time Off” (DF_OFF) (as depicted in Figure 15). The autonomous switching off with a time-period may be combined with an On-Delay, for example realised by using the parameter “Dimming Speed for Switching On Set Value” (DS_OSV) (as also depicted in Figure 14) or with “DALI Fade Time On Set Value (DF_OSV)” (as depicted in Figure 15).

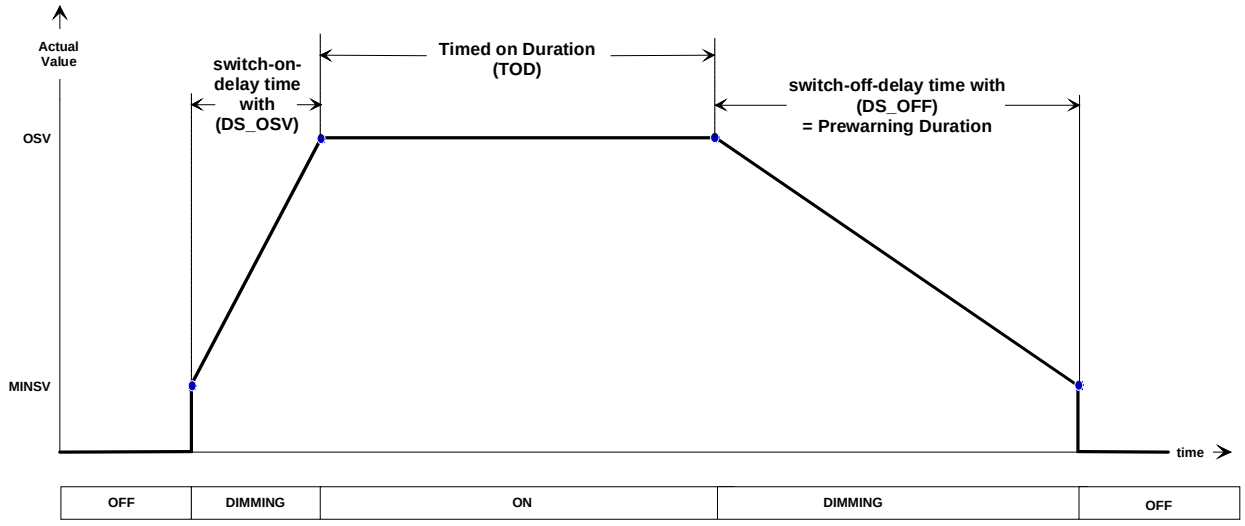


Figure 14 - Example of combining an Autonomous Switch Off-Function with Parameter DS_OSV, DS_OFF

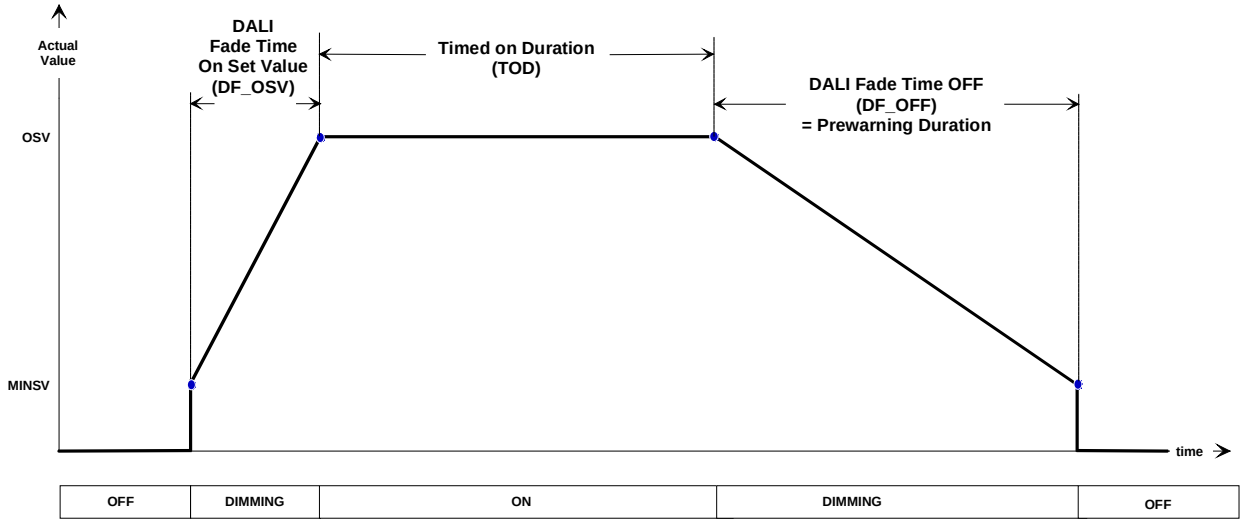


Figure 15 - Example of combining an Autonomous Switch Off-Function with Parameter DF_OSV, DF_OFF

Slight adjustments of the autonomous switching off behaviour can be realised by means of the parameters “Timed On Retrigger Function” (TRF) and “Manual Off Enable” (MOE).

The parameter TRF shall allow enabling the retriggering of the ON-Duration timer. In case where the parameter is not implemented, the behaviour shall be identical to the behaviour when the parameter is set to enable.

The parameter MOE shall allow to enable/disable the switching off before the timer elapses by accessing the relevant input Datapoints. If the parameter is not implemented, the behaviour shall be identical to the behaviour when the parameter is set to enabled.

Next to the Timed On Duration-Mechanism, another algorithm for the autonomous switching off may be implemented. The switching off in this case shall not be time-dependent, but depending on the actual value of the DALI-channel. By setting the optional parameter “Switch Off Brightness” (SOB), the DALI-channel shall switch off after the actual value of the device reaches or falls below the parameterised brightness value and the state machine shall transit from DIMMING to ON. Optionally the DALI-channel may delay switching off for the time given by parameter “Switch Off Brightness Delay Time” (SOBDT).

NOTE 1 It is manufacturer specific whether the time SOBDT starts at t_1 where the brightness falls at first below the value SOB, or only at t_2 where the dimming value becomes constant.

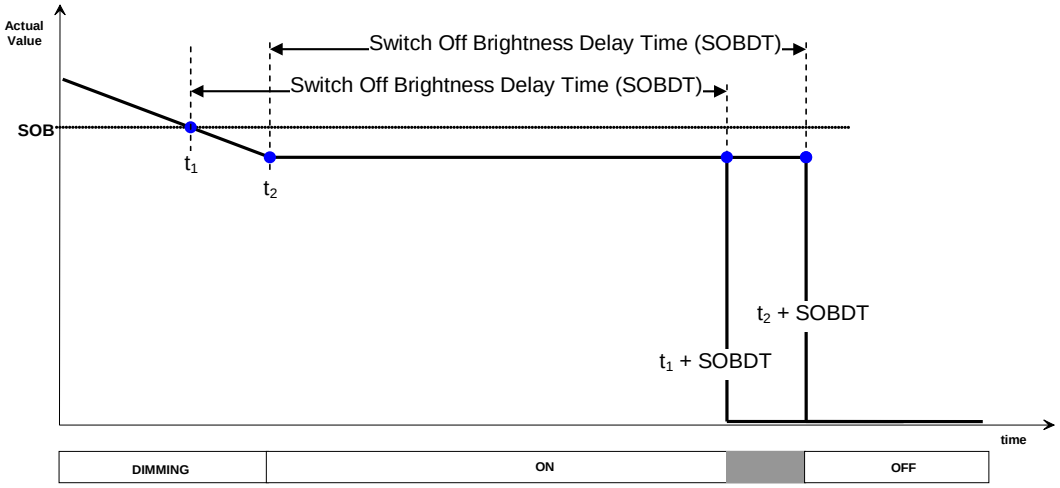


Figure 16 - Switching off according parameter SOB and SOBDT

It is manufacturer specific to retrigger the “Switch Off Brightness Delay Time (SOBDT) if during the delay time the actual brightness value only briefly (i.e. shorter than the delay time) rises above the parameterised switch off brightness value.

2.1.5 Optional input Datapoints and default behaviour

Input Datapoints may be classified according to priorities. When using priorities the following rule shall apply.

- A higher priority input (respectively group of Inputs) shall inhibit all lower priority inputs, when it goes in its high priority state, so that only one source is active for generating the set value.
- Implementation of dedicated output Datapoints IOO and ADV becomes mandatory if any optional input Datapoint is implemented (due to the higher priority of input Datapoints it may become impossible for SOO and ASC to reflect the real state and value of the DALI-channel). (See also 2.3 “FB Profiles”.)

It is recommended that the state transition from OFF to ON respectively from ON/DIMMING to OFF after an access to a high priority input Datapoint is executed without delay. However, when the delay function is implemented to prevent load-peaks (“*microscopic”* delay-times) by means of a manufacturer specific parameter, switching On/Off may be delayed according this parameter setting.

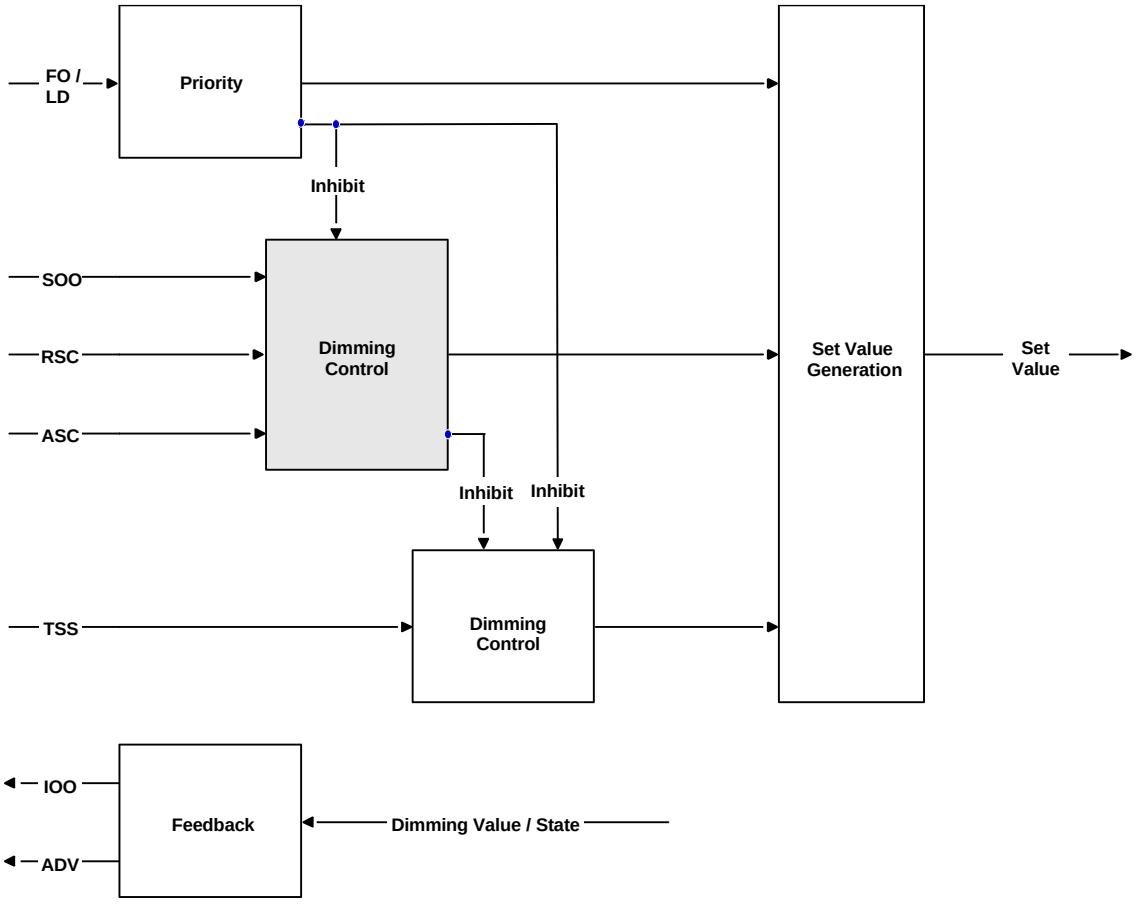


Figure 17 - Example of an implementation of a priority scheme

Groups of input Datapoints with the same priority shall be processed independently from each other: the last access to an input Datapoint shall be executed. For example, while dimming up after an access to RSC an access to ASC = 01h may cause dimming down.

2.1.5.1 Priority input Datapoints

The 2 bit input Datapoint ”Forced“ shall be used to set the DALI-channel in a high priority ON-State or OFF-State depending on the received value. Table 9 shows the behaviour after an access to FO.

Table 9 - Behaviour after access to FO

Value FO	Required behaviour
00b, 01b	lower priority input Datapoints shall be active. In the case that the high priority state becomes inactive, the behaviour of the DALI-channel is manufacturer-specific.
11b	high priority ON-State: set value == MAXSV; actual value = set value (jumping)
10b	high priority OFF-State: set value == 00h; actual value = set value (jumping)

If the 1 bit input Datapoint “Lock Device” (LD) is implemented, by means of the Parameter “Invert Lock Device” (ILD) it shall be possible to select the polarity for the lock-state of the DALI-channel. The behaviour at transition from/to the high priority state shall be determined by the parameter “Behaviour At Locking” (BL)/ “Behaviour At Unlocking” (BUL). The parameters “Lock Set Value” (LSV) / “Unlock Set Value” (USV) shall specify the set value for the case that “Value according additional Parameter” is selected in the above parameters. Table 10 shows the behaviour after an access to LD.

Table 10 - Behaviour after access to LD

Value LD	Parameter ILD	Required behaviour	
1	“no inversion”	high priority Lock-State active: behaviour according BL	
		Off:	set value = 00h; actual value = set value (jumping)
		On:	set value = MAXSV; actual value = set value (jumping)
		No Change:	actual value is frozen
		Memory Function Value:	set value = Last On Value; actual value = set value (jumping)
		Value according additional Parameter:	set value = LSV; actual value = set value (jumping)
0	“no inversion”	lower priority input Datapoints active ;behaviour according BUL	
		Off:	set value = 00h; actual value = set value (jumping)
		On:	set value = MAXSV; actual value = set value (jumping)
		Updated value:	set value = unchanged actual value = set value (jumping) (*During* the lock state, the set value shall be changed as normal, according to the value of the inputs; actual value shall however only be set to set value when the lock state becomes inactive.)
		No Change:	no action
		Memory Function Value:	set value = Last On Value; actual value = set value (jumping)
		Value according additional Parameter:	set value = LSV; actual value = set value (jumping)
		Value before locking	set value = value before locking; actual value = set value (jumping)
1	“inversion”	see LD = 0; “no inversion”	
0	“inversion”	see LD = 1; “no inversion”	

It is also possible to implement the locking mechanism without parameters. In this case, the value “1” on input Datapoint “Lock Device” (LD) shall lock the DALI-channel on its actual value. Value “0” shall unlock the DALI-channel: The behaviour of the DALI-channel when unlocking is manufacturer-specific.

2.1.6 Optional Output Datapoints

2.1.6.1 Status and default behaviour

If the optional output Datapoints “Info OnOff” (IOO) and “Actual Dimming Value” (ADV) are implemented, their behaviour shall comply with the output characteristics as laid down in clause 2.1.3 and 2.1.4. If an optional input Datapoint, a Delay- or an Autonomous Switch-Off-Function is implemented, the implementation of IOO and ADV becomes mandatory. If the optional output Datapoints “Info OnOff” (IOO) and “Actual Dimming Value” (ADV) are not implemented, the input Datapoints “Switch OnOff” (SOO) and “Absolute Setvalue Control” (ASC) shall be implemented bidirectional.

In the normal state of the DALI-channel (no high priority input active, no delay) the transmission conditions for IOO shall be the same as for SOO. However, when the DALI-channel is in a high priority state or a delay time is running, a send request for IOO shall only be given, when the DALI-channel actually switches off or on. IOO shall reflect the real binary state of the DALI-channel. Consequently a (e.g.) binary actuator linked to IOO of the DALI-channel will show the same behaviour concerning priorities and timing.

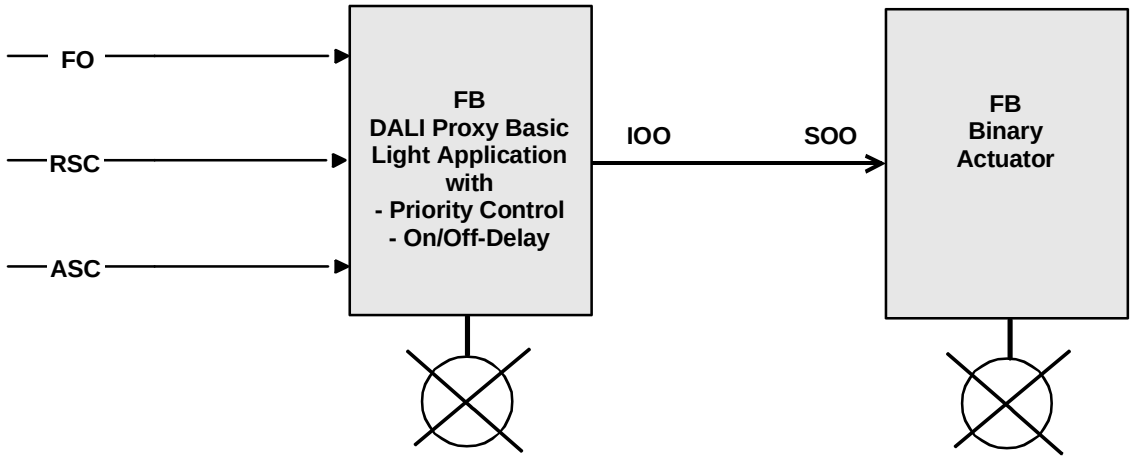


Figure 18 - Example for shifting functionality by linking to IOO

It is also allowed to extend the normal behaviour of ADV to actively transmitting its current value (instead of normally only providing its value via read request). By means of the parameter “Transmission Cycle Time” (TCT), the transmission cycle of this value shall be started when the DALI-channel reaches its ON or OFF state. By means of the parameter “Delta Dimming Value” (DDV), the change-on-value condition shall be given for a transmission of the value during dimming. Other transmission conditions when the state ON/OFF/DIMMING changes may also be implemented.

2.1.6.2 Diagnostic Data of Control Gear and Lamp

The underneath standardized diagnostic data is derived from [03] command 144 (“Query Status”: Bit 0&1). It is implementation specific to add further diagnostic data.
With the optional output “Status Control Gear DALI-channel” the Error-Status of the DALI Control Gears as part of the DALI-channel can be visualized.
In case a DALI-channel consists of more than one DALI device the “Status Control Gear DALI-channel” reports the OR-Function of all DALI devices.
With the optional output “Status Lamp DALI-channel” the Error-Status of the Lamps of the DALI Control Gears as part of the DALI-channel can be visualized.
In case a DALI-channel consists of more than one DALI device the “Status Lamp DALI-channel” reports the OR-Function of all lamp status.
It is implementation specific to combine both Error Status ‘Status Control Gear DALI-channel” and “Status Lamp DALI-channel” in one Datapoint reporting the OR-Function of these errors. This single (implementation specific) 1 bit Datapoint may additionally also be used to reports further errors in the DALI-channel, - control gears or – lamps.

2.1.7 Behaviour at Bus Power Down and Bus Power Up

With the optional parameter “Behaviour KNX Bus Power Up” (KBPU) and “Behaviour KNX Bus Power Down” (KBPD) the actions to be performed after Bus-Power Up and during Bus-Power Down on the KNX side shall be determined. If one of this parameter is not implemented, the default behaviour shall be switching off during Bus-Power Down and after Bus-Power Up. If “LAST” (or “NO CHANGE”) is selected in BPU, the relevant value shall be stored during or before Bus-Power Down in non-volatile memory.

Usually the parameter BPU also defines the behaviour after initialisation by the Tool. It is recommended to directly set via memory mapped parameter the memory that is foreseen to store the value at Bus-Power Down (to OFF). For the case that the Tool does not set this memory, the behaviour after initialisation will be hazardous, if “LAST” (or “NO CHANGE”) is selected in BPU.

If the optional parameter “Power Up Message Delay” (PUMD) is implemented, an initialisation message from IOO or optionally ADV shall be generated. Different settings in PUMD shall avoid a bulk of messages after Power Up. If PUMD is not implemented, no initialization-message from IOO or optional ADV shall be generated before changing the state caused by an access to an input Datapoint.

The behaviour after DALI Bus Power Up and DALI Bus Power Down are implementation specific. It shall avoided that DALI Bus Power Up results in a bulk of messages on KNX.

2.1.8 Behaviour at mains power down and mains power up

The behaviour of the device after mains Power down/up is implementation specific.

2.2 Functional Block diagram

DALI Proxy Basic Light Application (FB DPBLA) 440

Inputs	Outputs
Switch OnOff	Info On Off
Relativ Setvalue Control	Actual Dimming Value
Absolute Setvalue Control	Status Control Gear DALI-channel
Timed Start Stop	Status Lamp DALI-channel
Forced	
Lock Device	

additional I/Os		Parameters
DALI	MIN_SV	Minimum Set Value
	MAX_SV	Maximum Set Value
	OSV	Switch On Set Value
	DMS	Dimm Mode Selection
	ROE	Relativ Off Enable
	MF	Memory Function
	DS	Dimming Speed
	KFT	KNX Fade Time
	DFT	DALI Fade Time
	OND	On Delay
	OFFD	Off Delay
	DS_OSV	Dimming Speed for Switch On Set value
	DS_OFF	Dimming Speed for Switch Off
	KFT_OSV	KNX Fade Time for Switch On Set Value
	DFT_OSV	DALI Fade Time for Switch On Set value
	KFT_OFF	KNX Fade Time for Switch Off
	DFT_OFF	DALI Fade Time for Switch Off
	TOD	Timed On Duration
	PWD	Prewarning Duration
	TRF	Timed On Retrigger Function
	MOE	Manual Off Enable
	SOB	Switch Off Brightness
	SOBDT	Switch Off Brightness Delay Time
	ILD	Invert Lock Device
	BL	Behaviour at Locking
	BUL	Behaviour at Unlocking
	LSV	Lock Setvalue
	USV	Unlock Setvalue
	TCT	Transmission Cycle Time
	DDV	Delta Dimming Value
	KPUMD	Bus Power Up Message Delay
	KBPU	Behaviour Bus Power Up
	KPUSV	Bus Power Up Set Value
	KBPD	Behaviour Bus Power Down
	KPDSV	Bus Power Down Set Value

mandatory optional

2.3 FB Profiles [2)]

Features and options	Basic FB	Standard Mode	
		FB Profile 1	Profile 2 (recommended) Standard Mode Interface
// Inputs			
Input SOO	M	GO	GO
Input RSC	M	GO	GO
Input ASC	M	GO	GO
State machine + mandatory behaviour	M	M	M
// Minimal Setvalue			
select 1 of 2 {			
P MINSV is implemented	M	M	M
the minimal setvalue shall be 01h	M	M	
}			
// Maximal Setvalue			
select 1 of 2 {			
P MAXSV is implemented	O	M	M
the maximal setvalue shall be FFh			
}			
}			
Dimming speed full range {	M	M	M
select 1 of 2 {			
P DS	M	M	M
P DS not implemented: fixed duration ≤ 4 s	M	M	M
}			
}			
// Binary output state			
SOO is used bidirectional	X	X	X
select 1 of 2 {			
IOO is implemented	M	M	M
Report via a dedicated bit in CIOO1 up to CIOO5 as appropriate	M	M	X
}			
// Absolute output state			
select 1 of 2 {			
ADV is implemented; ASC is not bidirectional	M [3)]	M	M
ADV is not implemented; ASC shall be used bidirectional	M	M	X
}			

[2)] Please refer to [02] for the definition of the syntax and symbols used in this FB Profile definition.

[3)] This is the recommended solution: implement ADV and do not use ASC bidirectional.

Features and options	Basic FB	Standard Mode	
		FB Profile 1	Profile 2 (recommended) Standard Mode Interface
Functionality “Autonomous Switching Off” {	O	O	O
Parameter “Timed On Duration”	M	M	M
Link to SOO	O	O	O
Link to TSS (if implemented)	M	M	M
Functionality Retrigger	O	O	O
select 1 of 2 {			
retriggering shall be enabled	M	M	M
P TRF shall be implemented	M	M	M
}			
Functionality Manual off	O	O	O
select 1 of 2 {			
manual off shall be enabled	M	M	M
P MOE shall be implemented	M	M	M
}			
}			
Functionality “Priority of Inputs”	O	O	O
Functionality “Priority rules”	M	M	M
Functionality “Lock Device” {	O	O	O
Input “Lock device”	M	M	M
Parameter ILD shall be implemented	M	M	M
Value 0 shall unlock; value 1 shall lock	M	M	M
}			
While priority is active or during a delay send IOO only when actually switching	M	M	M
// Optional Output Datapoints			
If IOO or ADV is implemented {			
behaviour according clauses 2.1.3 and 2.1.4	M	M	M
}			

2.4 Datapoint Description

Datapoint	Description/Remarks	Datapoint Type
Inputs		
Switch On Off	Binary control of the set value	1.001 DPT_Switch
Relativ Setvalue Control	Relative control of the set value	3.007 DPT_Control_Dimming
Absolut Setvalue Control	Absolut control of the set value	5.001 DPT_Scaling
Timed StartStop	Activation of an autonomous switch off function	1.010 DPT_Start
Lock Device	Setting of a parameterized value in a lock state of the device	1.003 DPT_Enable
Forced	Forces value dependent high priority on or off state	2.001 DPT_Switch_Control

Datapoint	Description/Remarks	Datapoint Type
Outputs		
Info OnOff	reflects the binary state of the DALI-channel	1.001 DPT_Switch
Actual Dimming Value	reflects the binary state of the DALI-channel	5.001 DPT_Scaling
Status Control Gear DALI-channel	Indicates the Status of the DALI Gears in the DALI-channel	1.005 DPT_Alarm
Status Lamp DALI-channel	Indicates the Status of the Lamps of the DALI-channel	1.005 DPT_Alarm

Datapoint	Description/Remarks	Datapoint Type
Parameters		
Minimum Set Value	Lowest possible Setvalue	5.001 DPT_Scaling
Maximum Set Value	Highest possible Setvalue	5.001 DPT_Scaling
Switch On Set Value	Setvalue after reception of Switch On Off = On	5.001 DPT_Scaling
Dimm Mode Selection	Selects behaviour dimming/jumping after reception of Absolut Setvalue Control	1.004 DPT_Ramp (no ramp == jumping)
Relativ Off Enable	switch off by Relativ Setvalue Control enabled	1.003 DPT_Enable
Memory Function	Enable the behaviour: Reception of SOO=On ⇒ set value = actual value last on-state	1.003 DPT_Enable
Dimming Speed	specifies dimming speed in in specified dimming ranges	225.001 DPT_ScalingSpeed
KNX Fade Time	Specifies the dimming speed as fixed total time after which the new set value shall be reached.	7.004 DPT_TimePeriod_100MSec
DALI Fade Time	Specifies the dimming speed as fixed total time after which the new set value shall be reached.	20.602 DPT_DALI_Fade_Time
On Delay	Delay before leaving OFF-State	7.003 DPT_TimePeriod_10MSec
Off Delay	Delay before enter in OFF-State	7.003 DPT_TimePeriod_10MSec
Dimming Speed for Switch On Set Value	Specifies dimming speed for switch on with a delay	225.001 DPT_ScalingSpeed
Dimming Speed for Switch Off	Specifies dimming speed for switch off with a delay	225.001 DPT_ScalingSpeed
KNX Fade Time for Switch On	Specifies dimming speed as fixed total time after which the On Set value shall be reached.	7.004 DPT_TimePeriod_100MSec
DALI Fade Time for Switch On Set Value	Specifies dimming speed as fixed total time after which the On Set Value shall be reached.	20.602 DPT_DALI_Fade_Time
KNX Fade Time for Switch Off	Specifies the dimming speed as fixed total time after which the Switch Off Value shall be reached.	7.004 DPT_TimePeriod_100MSec
DALI Fade Time for Switch Off	Specifies dimming speed as fixed total time after which the Switch Off Value shall be reached.	20.602 DPT_DALI_Fade_Time
Switch Off Brightness	Barrier of Brightness for an automatically switching off	5.001 DPT_Scaling
Switch Off Brightness Delay	Delay Time for an automatically switching off after reaching the switch off brightness	7.005 DPT_TimePeriodSec

Datapoint	Description/Remarks	Datapoint Type
Parameters		
Timed On Duration	DALI-channel Switch On Time before automatically switch off	7.005. DPT_TimePeriodSec
Prewarning Duration	DALI-channel Time in state dimming before automatically switch off	7.005. DPT_TimePeriodSec
Timed On Retrigger Function	Enables the retrigger function of On Duration Timer	1.003 DPT_Enable
Manual Off Enable	Enables switching off before On Duration Timer ellapses	1.003 DPT_Enable
Invert Lock Device	Inversion of the polarity of the Datapoint 'lock device'	1.012 DPT_Invert
Behaviour at Locking	Behaviour when lock state becomes actif	20.600 DPT_Behaviour_Lock_Unlock
Behaviour at Unlocking	Behaviour when lock state becomes inactif	20.600 DPT_Behaviour_Lock_Unlock
Lock Setvalue	Actual Value at the beginning of the lock state	5.001 DPT_Scaling
Unlock Setvalue	Actual Value at the end of the lock state of the DALI-channel	5.001 DPT_Scaling
Transmission Cycle Time	Cycle Time for sending the actual dimming value on the bus with the optional Datapoint "Actual Dimming Value (ADV)"	7.005 DPT_Timeout_Sec
Delta Dimming Value	Minimal Changing of the actual dimming value in the state 'dimming' to send on the bus with the optional Datapoint "Actual Dimming Value (ADV)"	5.001 DPT_Scaling
KNX Power Up Message Delay	The delay time after KNX bus power up for sending a telegram on the bus	7.003 DPT_Timeout_10Msec
Behaviour KNX Bus Power Up	Behaviour of the device after KNX bus power up	20.601 DPT_Behaviour_Bus_Power_Up_Down
KNX Bus Power Up Set Value	Value of the device after KNX bus power up	5.001 DPT_Scaling
Behaviour KNX Bus Power Down	Behaviour of the device after KNX bus power down	20.601 DPT_Behaviour_Bus_Power_Up_Down
KNX Bus Power Down Set Value	Value of the device after KNX bus power up	5.001 DPT_Scaling

Parameters and Diagnostic Data can in principle be implemented as memory mapped Datapoints or Group Objects or Properties of an Interface Object using Individual Address.

In case of memory mapped Datapoints the DPT may be manufacturer specific.

2.5 Detailed specification of Datapoints

2.5.1 Input Switch On Off

DP Name:	Switch On Off	Abbr.:	SOO	Mandatory	☒
FB Name:	DALI Proxy Basic Light Application			Can be internal	☐

Description

Binary Control of the set value.
An access with the value “1” causes switching on. Optional parameters as MAXSV, OSV, MF define the set value in the ON-state. If no parameters are implemented the set-value is set to FFh.
An access with the value “0” causes switching off (set value = 0).
For the case that no delay mechanism is implemented, the DALI-channel jumps to the set value.

Datapoint Type

DPT_Name:	DPT_Switch				
DPT Format:	B_1	DPT_ID:	1.001		
Field	Description	Supp.	Range	Unit	Default
			V={0,1}		

Access Type

Input

	N → this	☒	1 → this	☐

	Spontaneous	☒	Cyclically:	☐	Time-out:	NO
	Request	☐	Polling:	☐	Period:	

Communication Type

Group Object Datapoint		Mandatory:	☒
	Default Group Address:	---	

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for in input):	☐
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

For the case that the output Datapoint “Info On OFF” is not implemented, the output characteristics concerning spontaneous- and COV transmission shall be implemented in this Datapoint.

Special Features

In a group of DALI-channels only one of them may send back its status on the same Group Address.

2.5.2 Input Relative Setvalue Control

DP Name:	Relative Setvalue Control	Abbr.:	RSC	Mandatory	☒
FB Name:	DALI Proxy Basic Light Application			Can be internal	☐

Description

Relative Control of the set value.
This Datapoint causes the transition from a stable state of the DALI-channel to the state DIMMING, when the step-field of the Datapoint is set to a value ≠ 0. If set to 1, the direction-field of the Datapoint causes dimming up; if set to 0, it causes dimming down. After an access, the new set-value is calculated in respect to the last set-value (therefore Relative Control)
An access with the step-field set to zero stops the dimming process at its current value, independently from the value of the direction-field.

Datapoint Type

DPT_Name:	DPT_Control_Dimming				
DPT Format:	B_1U_3	DPT_ID:	3.007		
Field	Description	Supp.	Range	Unit	Default
			B : {0,1} U : {000b to 111b}	-	-

Access Type

Input

	N → this	☒	1 → this	☐		
	Spontaneous	☒	Cyclically:	☐	Time-out:	NO
	Request	☐	Polling:	☐	Period:	

Communication Type

Group Object Datapoint		Mandatory:	☒
	Default Group Address:	---	

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☐
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

Special Features

Without any additional parameters (e.g. ROE), it is not possible to switch off the DALI-channel by an access to this Datapoint.

2.5.3 Input Absolute Setvalue Control

DP Name:	Absolute Setvalue Control	Abbr.:	ASC	Mandatory	☒
FB Name:	DALI Proxy Basic Light Application			Can be internal	☐

Description

Absolute Control of the set value
An access to this Datapoint directly sets the set-value. Without any optional parameter, the actual value jumps to this set-value. If parameter DMS is set to “ramp”, the DALI-channel enters in the state DIMMING.

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0 % to 100 %	%	-

Access Type

Input

	N → this	☒	1 → this	☐			
	Spontaneous	☒	Cyclically:	☐	Time-out:	NO	
	Request	☐	Polling:	☐	Period:		

Communication Type

Group Object Datapoint		Mandatory:	☒
	Default Group Address:	---	

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☐
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

For the case that the output Datapoint “Actual Dimming Value” is not implemented, this Datapoint shall provide the actual value for read access. Output characteristics concerning cyclic- and COV-transmission shall not be implemented in this Datapoint.

Special Features

2.5.4 Input Timed StartStop

DP Name:	Timed StartStop			Abbr.:	TSS			Mandatory	☐		
FB Name:	DALI Proxy Basic Light Application							Can be internal	☐		
Description											
Activation of an autonomous switch off function with value “1”.											
Datapoint Type											
DPT_Name:	DPT_Start										
DPT Format:	B_1					DPT_ID:	1.010				
Field	Description					Supp.	Range		Unit		Default
							V: {0,1}		-		-
Access Type											
Input											
	N → this	☒		1 → this	☐						
	Spontaneous	☒		Cyclically:	☐		Time-out:		none		
	Request	☐		Polling:	☐		Period:				
Communication Type											
Group Object Datapoint								Mandatory:	☒		
	Default Group Address:	---									
Dynamics											
	Power down:	Save:	☐								
	Power up:	Value:	No initialisation:	☐		Default value:			☐		
			Saved value:	☐		Current value (not for input):			☐		
		Transmit on bus (only for output):		☐		Read from bus (only for input):			☐		
Exception Handling											
Special Features											

2.5.5 Input Forced

DP Name:	Forced	Abbr.:	FO	Mandatory	☐
FB Name:	DALI Proxy Basic Light Application			Can be internal	☐

Description

Shall forces value dependent high priority on or off state.
The behaviour when entering the high priority state is given in clause 2.1.5.1 “Priority input Datapoints”.
The behaviour when leaving the high priority state is manufacturer specific.

Datapoint Type

DPT_Name:	DPT_Switch_Control				
DPT Format:	C_1V_1	DPT_ID:	2.001		
Field	Description	Supp.	Range	Unit	Default
c	Prioriy control	M	{0,1}	none	none
v	Priority value	M	{0,1}	none	none

Access Type

Input

	N → this	☒	1 → this	☐		
	Spontaneous	☒	Cyclically:	☐	Time-out:	none
	Request	☐	Polling:	☐	Period:	

Communication Type

Group Object Datapoint		Mandatory:	☒
	Default Group Address:	---	

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☐
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

Special Features

2.5.6 Input Lock Device

DP Name:	Lock Device	Abbr.:	LD	Mandatory	☐
FB Name:	DALI Proxy Basic Light Application			Can be internal	☐

Description

Setting of a parameterised set value in a lock state of the DALI-channel. If no parameter for the locking mechanism are implemented, the value “1” shall lock the DALI-channel on its current value. Value “0” shall unlock the DALI-channel: the behaviour of the DALI-channel when unlocking it is then manufacturer-specific.

Datapoint Type

DPT_Name:	DPT_Enable				
DPT Format:	B_1	DPT_ID:	1.003		
Field	Description	Supp.	Range	Unit	Default
b	Shall specify whether the lock state is enabled or not.	M	{0,1}	none	0

Access Type

Input

	N → this	☒	1 → this	☐		
	Spontaneous	☒	Cyclically:	☐	Time-out:	none
	Request	☐	Polling:	☐	Period:	

Communication Type

Group Object Datapoint		Mandatory:	☒
	Default Group Address:	---	

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
		See [a)]	Saved value:	☐	Current value (not for input):	☐
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

Special Features

[a)] Usually after Power Up the default value is set to “0”. If parameter ILD is set to “inversion” it is manufacturer specific, to enter the lock-state after power up or not.

2.5.7 Output Info OnOff

DP Name:	Info OnOff	Abbr.:	IOO	Mandatory	☐
FB Name:	DALI Proxy Basic Light Application			Can be internal	☐

Description

Reflects the binary state of the DALI-channel. The behaviour shall at least include the output characteristics as laid down in Functional Specification, clauses 2.1.6.1 and 2.1.4.
If an optional input Datapoint, a Delay- or an Autonomous Switch-Off-Function is implemented, the implementation of this Datapoint becomes mandatory.

Datapoint Type

DPT_Name:	DPT_Switch				
DPT Format:	B_1	DPT_ID:	1.001		
Field	Description	Supp.	Range	Unit	Default
b	State of the actuator.	M	{0,1}	none	none

Access Type

Output

	this → M	☒	this → 1	☐			
	Spontaneous	☒	COV:	☒	Δ-Value:		Min repetition time:	none
			Cyclic	☐	Period:	According Parameter TCT.		
	Request	☒						

Communication Type

Group Object Datapoint		Mandatory:	☒
	Default Group Address:	---	

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☐
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

1) **To dynamics** If parameter “Behaviour KNX Bus Power Up” is adjusted to “last” the actual value of the DALI-channel has to be stored in non-volatile memory before KNX Bus Power Down.
After Power Up IOO is initialised according parameter “Behaviour KNX Bus Power Up”. Parameter “Behaviour KNX Bus Power Up Message Delay” gives the conditions for transmitting the value on bus. If this parameter is not implemented, the value shall not be transmitted after KNX Power Up

Special Features

The transmission conditions may be expanded to cyclic transmission. Parameter TCT gives the period for transmission.

2.5.8 Output Actual Dimming Value

DP Name:	Actual Dimming Value	Abbr.:	ADV	Mandatory	☐
FB Name:	DALI Proxy Basic Light Application			Can be internal	☐

Description

Reflects the actual value of the DALI-channel.
If an optional input Datapoint, a Delay- or an Autonomous Switch-Off-Function is implemented, the implementation of ADV becomes mandatory. The behaviour shall at least include reflecting the actual value for read access.
The conditions for active transmission are given by the parameters TCT and DDV. If these parameters not are implemented, the value may be sent after the state ON/OFF/DIMMING changes.

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0 % … 100 %	%	-

Access Type

Output

	this → M	☒	this → 1	☐				
	Spontaneous	☒	COV:	☒	Δ-Value:	given by parameter DDV	Min repetition time:	5 s [a]
			Cyclic	☒	Period:	given by parameter TCT		
	Request	☒						

Communication Type

Group Object Datapoint		Mandatory:	☒
	Default Group Address:	---	

Dynamics [2)]

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐ [b)]	Default value:	☐
			Saved value:	☐	Current value (not for input):	☐
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

[a)] In the state DIMMING the minimum repetition time may be violated due to settings in parameter DDV.

[b)] If parameter “Behaviour KNX Bus Power Up” is adjusted to “last” the actual value of the DALI-channel has to be stored in non-volatile memory before KNX power down.
After power up ADV is initialised according parameter “Behaviour KNX Bus Power Up”. Parameter “KNX Bus Power Up Message Delay” gives the conditions for transmitting the value on bus. If this parameter is not implemented, the value shall not be transmitted after power up.

Special Features

2.5.9 Status Control Gear DALI-channel

DP Name:	Status Control Gear DALI-channel	Abbr.:	SGDC	Mandatory	☐
FB Name:	DALI Proxy Basic Light Application			Can be internal	☐

Description

Indicates an error of one or more devices of the relevant DALI-channel

Datapoint Type

DPT_Name:	DPT_Alarm				
DPT Format:	B_1	DPT_ID:	1.005		
Field	Description	Supp.	Range	Unit	Default
			V : {0,1}	-	-

Access Type

Output

	this → M	☒	this → 1	☐			
	Spontaneous	☒	COV:	☒	Δ-Value:		Min repetition time:
			Cyclic	☐	Period:	none	
	Request	☒					

Communication Type

Group Object Datapoint		Mandatory:	☒
	Default Group Address:	---	

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (nor for input):	☐
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

Special Features

2.5.10 Status Lamp DALI-channel

DP Name:	Status Lamp DALI-channel	Abbr.:	SLDC	Mandatory	☐
FB Name:	DALI Proxy Basic Light Application			Can be internal	☐

Description

Indicates an error of one or more lamps of the relevant DALI-channel.

Datapoint Type

DPT_Name:	DPT_Alarm				
DPT Format:	B_1	DPT_ID:	1.005		
Field	Description	Supp.	Range	Unit	Default
			V : {0,1}	-	-

Access Type

Output

	this → M	☒	this → 1	☐			
	Spontaneous	☒	COV:	☒	Δ-Value:		Min repetition time:
			Cyclic	☐	Period:	none	
	Request	☒					

Communication Type

Group Object Datapoint				Mandatory:	☒
	Default Group Address:	---			

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☐
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

Special Features

2.5.11 Parameter Minimum Set Value (PID: 110)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Minimum Set Value (MINSV)	Mandatory ☐ Optional ☒

Description:

Lowest possible set value

DPT:	Name:	DPT_Scaling	DPT ID	5.001	Datatype format	U_8

Field	Description	Sup.	Range	Unit	Default
			cs	%	cs

Communication:

DP Address: (in the server)	object_type:	440	PID:	110
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-

Exception Handling: Value after Power-up: Stored Value ☒ Act Value ☐ Default Value ☐

When this optional parameter not is implemented, the value 01h shall be taken into account

Special Features:

2.5.12 Parameter Maximum Set Value (PID: 111)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Maximum Set Value (MAXSV)	Mandatory ☐ Optional ☒

Description:
Highest possible set value

DPT:	Name	DPT_Scaling	DPT ID	5.001	Datatype format	U_8

Field	Description	Sup.	Range	Unit	Default
			cs	%	cs

Communication:				
DP Address: (in the server)	object_type:	440	PID:	111
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐
When this optional parameter not is implemented, the value FFh shall be taken into account				
Special Features:				

2.5.13 Parameter Switch On Set Value (PID: 112)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Switch On Set Value (OSV)	Mandatory ☐ Optional ☒

Description:
SetValue after reception of value = 1 for Datapoint “Switch On Off” (SOO)

DPT:	Name	DPT_Scaling	DPT ID	5.001	Datatype format	U_8

Field	Description	Sup.	Range	Unit	Default
			01h % … FFh %	%	cs

Communication:				
DP Address: (in the server)	object_type:	440	PID:	112
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐
When this parameter is set lower than MINSV or higher than MAXSV the relevant minimal and maximal parameter values shall be taken into account.				
Special Features:				

2.5.14 Parameter Dimm Mode Selection (PID: 113)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Dimm Mode Selection (DMS)	Mandatory ☐ Optional ☒

Description:

Selects behaviour dimming/jumping after reception on input “Absolute Setvalue Control”. Then this parameter is set to “no ramp”, after reception on ASC the DALI-channel jumps to the new Set-Value. In the other case the DALI-channel enters in the state DIMMING.

DPT:	Name	DPT_Ramp	DPT ID	1.004	Datatype format	B_1

Field	Description	Sup.	Range	Unit	Default
			V : {0,1}	-	No ramp

Communication:

DP Address: (in the server)	object_type:	440	PID:	113
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.15 Parameter Relative Off Enable (PID: 114)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Relativ Off Enable (ROE)	Mandatory ☐ Optional ☒

Description:

If this parameter is set to enabled, switching off after reception on input “Relative Setvalue Control” is possible.
If the newly calculated set value after “RSC = down DX” is below MINSV, the set value shall be set to zero. In this case the DALI-channel switches off if its actual value reaches MINSV.

DPT:	Name	DPT_Enable	DPT ID	1.003	Datatype format	B_1

Field	Description	Sup.	Range	Unit	Default
			V : {0,1}		disable

Communication:

DP Address: (in the server)	object_type:	440	PID:	114
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.16 Parameter Memory Function (PID: 115)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	(MF)	Mandatory ☐ Optional ☒

Description:

If this parameter is set to enabled, then at reception of SOO = On, the new set value is set to the actual value in last ON-State.
If this parameter is set to disabled, then at reception of SOO = On, the new set value is given by parameter OSV.

DPT:	Name	DPT_Enable	DPT ID	1.003	Datatype format	B_1

Field	Description	Sup.	Range	Unit	Default
			V : {0,1}		disable

Communication:

DP Address: (in the server)	object_type:	440	PID:	115
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-

Exception Handling: Value after Power-up: Stored Value ☒ Act Value ☐ Default Value ☐

After initialisation, the actual value in last ON-State may be not known. After reception of SOO = On with unknown last value, it is manufacturer specific to select the switch on set-value between MINSV and MAXSV.

Special Features:

2.5.17 Parameter Dimming Speed (PID: 116)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Dimming Speed (DS)	Mandatory ☐ Optional ☒

Description:

Specifies the dimming speed:
This parameter is defined as array of max. 8 elements that divide the entire dimming range in subranges. The elements are structured datatypes, consisting of the limit of the dimming subrange (thereby taking into account the limit of the previous subrange) and the time needed for dimming through the subrange. The array shall be implemented in ascending order as regards the various subranges. In other words, the first subrange lies between MINSV and $Limit_0$. The limit for last subrange represents MAXSV.
The array may consist of only one element ($Limit_0$ = $Limit_{Last}$ = MAXSV). In this case the dimming speed is constant over the whole dimming range.

DPT:	Name	DPT_ScalingSpeed[]	DPT ID	225.001	Datatype format	$U_{16}U_8$

Field	Description	Sup.	Range	Unit	Default
			cs	10 %/s	cs

Communication:

DP Address: (in the server)	object_type:	440	PID:	116
	start_index:	1	nr_of_elem:	8
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-

Exception Handling: Value after Power-up: Stored Value ☒ Act Value ☐ Default Value ☐

If this parameter is not implemented, a sweep from MINSV to MAXSV in a time of 4 s shall be possible

Special Features:

2.5.18 Parameter KNX Fade Time (PID: 117)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	KNX Fade Time (KFT)	Mandatory ☐ Optional ☒

Description:
The DALI Fade Time for Switch On Set Value implies a fixed total time after there expiration the new On Set Value will be reached.

DPT:	Name	DPT_TimePeriod100MSec	DPT ID	7.004	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default
			cs	100ms	cs

Communication Type					
Group Object Datapoint				Mandatory:	☐
Default Group Address:	---				
Property				Mandatory:	☐
DP Address: (in the server)	object_type:	440	PID:	117	
	start_index:	1	nr_of_elem:	8	
Property access:	Read only ☐	Read/Write ☒			
Protection	Read level	-	Write level	-	
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐	

Special Features:

2.5.19 Parameter DALI Fade Time (PID: 118)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	DALI Fade Time (DFT)	Mandatory ☐ Optional ☒

Description:
The DALI Fade Time for Switch On Set Value implies a fixed total time after there expiration the new On Set Value will be reached.

DPT:	Name	DPT_DALI_Fade_Time	DPT ID	20.602	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default
			cs	100ms	cs

Communication Type					
Group Object Datapoint				Mandatory:	☐
Default Group Address:	---				
Property				Mandatory:	☐
DP Address: (in the server)	object_type:	440	PID:	118	
	start_index:	1	nr_of_elem:	8	
Property access:	Read only ☐	Read/Write ☒			
Protection	Read level	-	Write level	-	
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐	

Special Features:

2.5.20 Parameter On Delay (PID: 119)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	On Delay (OND)	Mandatory ☐ Optional ☒

Description:

Specifies the delay-time from
- state OFF to ON (usually after access to Input SOO and ASC), and
- state OFF to DIMMING (usually after access to Input RSC).

The selection of input Datapoints that are affected by the delay mechanism is manufacturer specific.

DPT:	Name	DPT_TimePeriod_10MSec	DPT ID	7.003	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default
			cs	10 ms	cs

Communication:

DP Address: (in the server)	object_type:	440	PID:	119
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.21 Parameter Off Delay (PID: 120)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Off Delay (OFFD)	Mandatory ☐ Optional ☒

Description:

Specifies the delay-time from
- state ON to OFF (usually after access to Input SOO and ASC), and
- state DIMMING to OFF (usually after access to Input RSC).

The selection of input Datapoints that are affected by the delay mechanism is manufacturer specific.

DPT:	Name	DPT_TimePeriod_10MSec	DPT ID	7.003	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default
			cs	10 ms	cs

Communication:

DP Address: (in the server)	object_type:	440	PID:	120
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.22 Parameter Dimming Speed for Switch On Set Value (PID: 121)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Dimming Speed for Switch on Set Value (DS_OSV)	Mandatory ☐ Optional ☒

Description:
see Functional Specification

DPT:	Name	DPT_ScalingSpeed[]	DPT ID	225.001	Datatype format	$U_{16}U_8$

Field	Description	Sup.	Range	Unit	Default
			cs	10 %/s	cs

Communication:				
DP Address: (in the server)	object_type:	440	PID:	121
	start_index:	1	nr_of_elem:	8
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.23 Parameter Dimming Speed for Switch Off (PID: 122)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Dimming Speed for Switch Off (DS_OFF)	Mandatory ☐ Optional ☒

Description:
see Functional Specification

DPT:	Name	DPT_ScalingSpeed	DPT ID	225.001	Datatype format	$U_{16}U_8$

Field	Description	Sup.	Range	Unit	Default
			cs	10 %/s	cs

Communication:				
DP Address: (in the server)	object_type:	440	PID:	122
	start_index:	1	nr_of_elem:	8
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.24 Parameter KNX Fade Time for Switch On Set Value (PID: 123)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	KNX Fade Time for Switch On Set Value (KFT_OSV)	Mandatory ☐ Optional ☒

Description:

The KNX Fade Time for Switch On Set Value implies a fixed total time after there expiration the new On Set Value will be reached.

DPT:	Name	DPT_TimePeriod100MSec	DPT ID	7.004	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default
			cs	100ms	cs

Communication Type

Group Object Datapoint			Mandatory: ☐
	Default Group Address:	---	

Property				Mandatory: ☐
DP Address: (in the server)	object_type:	440	PID:	123
	start_index:	1	nr_of_elem:	8
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.25 Parameter DALI Fade Time for Switch On Set Value (PID: 124)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	DALI Fade Time for Switch On Set Value (DFT_OSV)	Mandatory ☐ Optional ☒

Description:

The DALI Fade Time for Switch On Set Value implies a fixed total time after there expiration the new On Set Value will be reached.

DPT:	Name	DPT_DALI_Fade_Time	DPT ID	20.602	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default
			cs	100ms	cs

Communication:

DP Address: (in the server)	object_type:	440	PID:	124
	start_index:	1	nr_of_elem:	8
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.26 Parameter KNX Fade Time for Switch Off (PID: 125)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	KNX Fade Time for Switch Off (KFT_OFF)	Mandatory ☐ Optional ☒

Description:
The KNX Fade Time for Switch Off (KFT_OFF) implies a fixed total time after which the value OFF will be reached.

DPT:	Name	DPT_TimePeriod100MSec	DPT ID	7.004	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default
			cs	100ms	cs

Communication Type				
Group Object Datapoint			Mandatory:	☐
Default Group Address:	---			
Property			Mandatory:	☐
DP Address: (in the server)	object_type:	440	PID:	125
	start_index:	1	nr_of_elem:	8
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.27 Parameter DALI Fade Time for Switch Off (PID: 126)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	DALI Fade Time for Switch Off (DFT_OFF)	Mandatory ☐ Optional ☒

Description:
The DALI Fade Time for Switch Off implies a fixed total time after there expiration the new Set Value = 00h will be reached.

DPT:	Name	DPT_DALI_Fade_Time	DPT ID	20.602	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default
			cs	100ms	cs

Communication:				
DP Address: (in the server)	object_type:	440	PID:	126
	start_index:	1	nr_of_elem:	8
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.28 Parameter Switch Off Brightness (PID: 127)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Switch Off Brightness (SOB)	Mandatory ☐ Optional ☒

Description:
Limit of brightness for an automatic switching off.

DPT:	Name	DPT_Scaling	DPT ID	5.001	Datatype format	U_8

Field	Description	Sup.	Range	Unit	Default
			cs	%	cs

Communication:				
DP Address: (in the server)	object_type:	440	PID:	127
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.29 Parameter Switch Off Brightness Delay Time (PID: 128)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Switch Off Brightness Delay Time (SOBDT)	Mandatory ☐ Optional ☒

Description:
Delay time for an automatic switching off after reaching the switch off brightness.

DPT:	Name	DPT_TimePeriod_Sec	DPT ID	7.005	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default
			cs	s	cs

Communication:				
DP Address: (in the server)	object_type:	440	PID:	128
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.30 Parameter Timed On Duration (PID: 129)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Timed On Duration (TOD)	Mandatory ☐ Optional ☒

Description:
see Functional Specification

DPT:	Name	DPT_TimePeriodSec	DPT ID	7.005	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default
			cs	s	cs

Communication:				
DP Address: (in the server)	object_type:	440	PID:	129
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.31 Parameter Prewarning Duration (PID: 130)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Prewarning Duration (PWD)	Mandatory ☐ Optional ☒

Description:
see Functional Specification

DPT:	Name	DPT_TimePeriodSec	DPT ID	7.005	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default
TimePeriod	Time for the prewarning duration.	M	cs	s	1 s

Communication:				
DP Address: (in the server)	object_type:	440	PID:	130
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.32 Parameter Timed On Retrigger Function (PID: 131)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Timed On Retrigger Function (TRF)	Mandatory ☐ Optional ☒

Description:
Behaviour of the DALI-channel for the optional property “autonomous switching off”.

DPT:	Name	DPT_Enable	DPT ID	1.003	Datatype format	B_1

Field	**Description**	**Sup.**	**Range**	**Unit**	**Resol.:**	**Default**
b	Enables retriggering the on-duration times	M	{0,1}	none	none	cs

Communication:				
DP Address: (in the server)	object_type:	440	PID:	131
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.33 Parameter Manual Off Enable (PID: 132)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Manual Off Enable (MOE)	Mandatory ☐ Optional ☒

Description:
Behaviour of the DALI-channel for the optional property “autonomous switching off”

DPT:	Name	DPT_Enable	DPT ID	1.003	Datatype format	B_1

Field	Description	Sup.	Range	Unit	Default
			V : {0,1}	-	cs

Communication:				
DP Address: (in the server)	object_type:	440	PID:	132
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.34 Parameter Invert Lock Device (PID: 133)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Invert Lock Device (ILD)	Mandatory ☐ Optional ☒

Description:
Inversion of the polarity of the Datapoint “Lock Device”.

DPT:	Name	DPT_Invert	DPT ID	1.012	Datatype format	B_1

Field	Description	Sup.	Range	Unit	Default
			V : {0,1}		No inversion

Communication:				
DP Address: (in the server)	object_type:	440	PID:	133
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.35 Parameter Behaviour at Locking (PID: 134)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Behaviour at Locking (BL)	Mandatory ☐ Optional ☒

Description:
Behaviour at the beginning of the lock state of the DALI-channel

DPT:	Name	DPT_Behaviour_Lock_Unlock	DPT ID	20.600	Datatype format	N_8

Field	Description	Sup.	Range	Unit	Default
Behaviour	Lock state start behaviour	M	{0 … 4}	none	cs

Communication:				
DP Address: (in the server)	object_type:	440	PID:	134
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.36 Parameter Lock Setvalue (PID: 135)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Lock Setvalue (LSV)	Mandatory ☐ Optional ☒

Description:

Actual Value at the beginning of the lock state of the DALI-channel (frozen value)

DPT:	Name	DPT_Scaling	DPT ID	5.001	Datatype format	U_8

Field	Description	Sup.	Range	Unit	Default
			0 % … 100 %	%	cs

Communication:

DP Address: (in the server)	object_type:	440	PID:	135
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-

Exception Handling: Value after Power-up: Stored Value ☒ Act Value ☐ Default Value ☐

Special Features:

2.5.37 Parameter Behaviour at Unlocking (PID: 136)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Behaviour at Unlocking (BUL)	Mandatory ☐ Optional ☒

Description:

Behaviour at the end of the lock state of the DALI-channel

DPT:	Name	DPT_Behaviour_Lock_Unlock	DPT ID	20.600	Datatype format	N_8

Field	Description	Sup.	Range	Unit	Default
Behaviour	Lock state end behaviour	M	{0 … 6}	none	cs

Communication:

DP Address: (in the server)	object_type:	440	PID:	136
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-

Exception Handling: Value after Power-up: Stored Value ☒ Act Value ☐ Default Value ☐

Special Features:

2.5.38 Parameter Unlock Setvalue (PID: 137)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Unlock Setvalue (USV)	Mandatory ☐ Optional ☒

Description:
Actual Value at the end of the lock state of the DALI-channel

DPT:	Name	DPT_Scaling	DPT ID	5.001	Datatype format	U_8

Field	Description	Sup.	Range	Unit	Default
			0 % … 100 %	%	cs

Communication:				
DP Address: (in the server)	object_type:	440	PID:	137
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.39 Parameter Transmission Cycle Time (PID: 138)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Transmission Cycle Time (TCT)	Mandatory ☐ Optional ☒

Description:
See Functional Specification.

DPT:	Name	DPT_TimePeriodSec	DPT ID	7.005	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default
			5 s to 65,536 s	s	cs

Communication:				
DP Address: (in the server)	object_type:	440	PID:	138
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.40 Parameter Delta Dimming Value (PID: 139)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Delta Dimming Value (DDV)	Mandatory ☐ Optional ☒

Description:

Minimal change of the actual dimming value in the state ‘dimming’ to send on the bus with the optional Datapoint “Actual Dimming Value (ADV)”.

DPT:	Name	DPT_Scaling	DPT ID	5.001	Datatype format	U_8

Field	Description	Sup.	Range	Unit	Default
			5 % to 25 %	%	cs

Communication:

DP Address: (in the server)	object_type:	440	PID:	139
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.41 Parameter KNX Bus Power Up Message Delay (PID: 140)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	KNX Bus Power Up Message Delay (KPUMD)	Mandatory ☐ Optional ☒

Description:

The delay time after KNX bus power up for sending a telegram on the bus.

DPT:	Name	DPT_Timeout_10MSec	DPT ID	7.003	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default

Communication:

DP Address: (in the server)	object_type:	440	PID:	140
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

Special Features:

2.5.42 Parameter Behaviour KNX Bus Power Up (PID: 141)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Behaviour KNX Bus Power Up (BKPU)	Mandatory ☐ Optional ☒

Description:

Behaviour of the DALI-channel after KNX bus power up.

DPT:	Name	DPT_Behaviour_Bus_Power_Up_Down	DPT ID	20.601	Datatype format	N_8

Field	Description	Sup.	Range	Unit	Default
			0 : off 1 : on 2 : no change 3 : value according additional parameter 4 : last (value before bus power down) 5-255 : reserved	-	off

Communication:

DP Address: (in the server)	object_type:	440	PID:	141
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-

Exception Handling: Value after Power-up: Stored Value ☒ Act Value ☐ Default Value ☐

In case the DALI-channel is not able to save its value during/before bus KNX bus power down in non-volatile memory, it is allowed to use this parameter with restricted range 0 to 3.
In case the DALI-channel is not able to save dedicated values (in case of many devices in the DALI-channel) in non-volatile memory, it is allowed to map the value to a binary on/off-state. If the parameter is set to “last”, the DALI-channel goes to the state before KNX bus power down at KNX bus power up.

Special Features:

2.5.43 Parameter Behaviour KNX Bus Power Down (PID: 142)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	Behaviour KNX Bus Power Down (BKPD)	Mandatory ☐ Optional ☒

Description:

DPT:	Name	DPT_Behaviour_Bus_Power_Up_Down	DPT ID	20.601	Datatype format	N_8

Field	Description	Sup.	Range	Unit	Default
			0 : off 1 : on 2 : no change 3 : value according additional parameter 4-255 : reserved	-	off

Communication:

DP Address: (in the server)	object_type:	440	PID:	142
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-

Exception Handling: Value after Power-up: Stored Value ☒ Act Value ☐ Default Value ☐

In case the DALI-channel is not able to set its hardware to a dedicated value after KNX bus power down (e.g. only MAXSV is possible) , it is allowed to use this parameter with following behaviour:

Selection 2: no change

⇒ value before power down = 0: OFF

⇒ value before power down ≠ 0: ON

Selection 3: value according additional parameter

⇒ parameter value = 0: OFF

⇒ parameter value ≠ 0: ON

Special Features:

2.5.44 Parameter KNX Bus Power Up Set Value (PID: 143)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	KNX Bus Power Up Set Value (PUSV)	Mandatory ☐ Optional ☒

Description:

State of the DALI-channel after KNX bus power up.

DPT:	Name	DPT_Scaling	DPT ID	5.001	Datatype format	

Field	Description	Sup.	Range	Unit	Default
			0 % to 100 %	%	0

Communication:

DP Address: (in the server)	object_type:	440	PID:	143
	start_index:	1	nr_of_elem:	
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-

Exception Handling: Value after Power-up: Stored Value ☒ Act Value ☐ Default Value ☐

Special Features:

2.5.45 Parameter KNX Bus Power Down Set Value (PID: 144)

FB:	DALI Proxy Basic Light Application		Property Name (Server):	KNX Bus Power Down Set Value (KPDSV)		Mandatory ☐ Optional ☒	
Description:							
Value of the DALI-channel after KNX bus power down							
DPT:	Name	DPT_Scaling	DPT ID	5.001	Datatype format	U_8	
Field		Description	Sup.	Range		Unit	Default
				0 % to 100 %		%	0 %
Communication:							
DP Address: (in the server)		object_type:	440	PID:	144		
		start_index:	1	nr_of_elem:			
Property access:		Read only ☐	Read/Write ☒				
Protection		Read level	-	Write level	-		
Exception Handling:		Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐		
Special Features:							
---							

3 FB DALI Proxy Basic Scene Application (FB DPBSCA)

3.1 Aims and objectives

The FB DALI Proxy Basic Scene Application (FB DPBSCA) shall be the KNX standard model for supporting KNX Scenes in a KNX/DALI-interface.

This shall concern the reaction on input Datapoints and the resulting actions on DALI as well as the storage and use of standard Parameters.

3.2 Functional specification

3.2.1 General structure of DALI Scenes

Each scene in the DALI-system consists of one or more dedicated DALI-channels with a brightness value per DALI-channel. The maximum number of configurable scenes may be 64.

Scene Index

This FB shall make use of the *Scene Index*.

The configured Scene Numbers are stored in the array Property *KNX Scene Number List[]*. The Scene Index of a Scene Number shall equal the index of the Property array element where it is stored in this Property. This makes that the possibly discontinuous list of supports KNX scene numbers becomes mapped to the continuous range of Scene Indexes.

The Parameter *Scene Numbers* shall additionally contain the following configuration information.

- An indication *Storage Function* to indicate whether or not the set values for the DALI Channels that are part of this KNX Scene can be changed at runtime, e.g. through DPT_SceneControl, or not.
- An indication Scene Active that shall indicate whether or not this array element index is actually active or not.

EXAMPLE 1

Figure 19 shows a FB DALI Proxy Basic Scene Application that is currently configured to support exactly 4 scenes (nr_of_elem = 4), which are identified on the bus as KNX scene numbers 5, 6, 10 and 12. The FB supports at maximum 8 scenes and thus the Scene Index may count up to a maximum of 8 (max_nr_of_elem = 8).

Property array element index = Scene Index	**KNX Scene Number List**							
	S	SA	SN					
	b_7	b_6	b_5	b_4	b_3	b_2	b_1	b_0
1	1	0	5					
2	1	0	6					
3	0	1	10					
current_nr_of_elem = 4	0	0	12					
5	-	-	(void)					
6	-	-	(void)					
7	-	-	(void)					
max_nr_of_elem = 8	-	-	(void)					

NOTE "void" denotes memory space for the Property value that is reserved for this Property, but that has not been written yet. This data shall be regarded as invalid.

Figure 19 – Scene Numbers mapped to Scene Index: Parameter Scene Numbers

In the example in Figure 19, one can additionally see that all scenes are active except scene 10 (The flag "Scene Activation" (SA) is set, which means this scene is deactivated). Moreover, the scenes 5 and 6 cannot be altered at runtime. (The flag Storage Function (S) signals that their Storage Function is disabled.) For the detailed specification of the Parameter KNX Scene Number list, please refer to clause 3.7.3.

The Scene Index is moreover be used to relate array elements between this and further Parameter Properties with each other: for the following Properties, value array elements at the same array index shall relate to the same Scene Number:

- KNX Scene Number List[], and
- CAS01[] to CAS64[], and
- KNX Scene Fading Time List[], and
- DALI Scene Fade Time List[] and
- Scene Taught In[].

Channel Activation and Setvalue per Channel (CASn)

There shall for each DALI Channel n that can be part of a KNX scene, be a Parameter *Channel Activation and Setvalue n*. This Parameter shall be implemented as an array Property. Its size shall be equal to the number of KNX scenes that is supported by this FB. Each Property array element with index x shall contain the following information.

- The field Channel Activation shall indicate whether or not this DALI Channel n is part of the KNX scene x.
- The field Setvalue shall indicate the set value for the DALI Channel n for the KNX scene x.

These Parameters shall be implemented as the Properties PID 160 for the DALI Channel 1 up to at maximum PID 223 for the DALI Channel 64. The combination with the Scene Index gives the following matrix.

NOTE 2 Figure 20 below lists up to 64 possible DALI channels. This allows each individual DALI-control gear to be configured independently. In practice, the number of DALI channels, and thus the number of Properties CAS01 to CAS64 that is implemented, will be less than 64:
- by the implementation (manufacturer's choice), and
- if a DALI-channel consists of two or more DALI control gear that have the same settings for a given KNX scene.

Note again that there is no requirement concerning the DALI addressing mode to be used, as indicated in the general constraints (clause 1.4 constraint 2) and the constraints for the FB DPBSA (clause 3.3 constraint 3).

NOTE 3 There is no relation between the 64 DALI channels listed in Figure 20 and the 64 possible instances of the FB DPBLA mentioned in Figure 2.

DALI Channel nr	PID	Property name	Property array element nr = Scene Index					
			element 1	element 2	element 3		element 63	element 64
1	160	CAS01	CAS01[1]	CAS01[2]	CAS01[3]		CAS01[63]	CAS01[64]
2	161	CAS02	CAS02[1]	CAS02[2]	CAS02[3]		CAS02[63]	CAS02[64]
3	162	CAS03	CAS03[1]	CAS03[2]	CAS03[3]		CAS03[63]	CAS03[64]
63	222	CAS63	CAS63[1]	CAS63[2]	CAS63[3]		CAS63[63]	CAS63[64]
64	223	CAS64	CAS64[1]	CAS64[2]	CAS64[3]		CAS64[63]	CAS64[64]

Figure 20 – Up to 64 Properties with each up to 64 elements

3.2.2 Input Scene Number

The Input "Scene Number" (SN) shall be used to recall the set values of the DALI-channels corresponding to the received number (activate the scene). It shall be possible to call a maximum number of 64 scenes of the proxy.

It is possible that a Scene Number is supported by the FB DPBSCA, but that the scene is not active. It may also be possible that not all supported DALI-Channels are involved in a scene.

For the detailed specification of the Input Scene Number, please refer to 3.7.1.

3.2.3 Input Scene Control

The input Datapoint “Scene Control” (SC) shall be used to recall the set value of the DALI-channels corresponding to the received scene number (Activate) or to save the actual brightness of the DALI-channels as setvalues for the recall (Learn) for all DALI-channels of the scene. It shall be possible to call and store a maximum number of 64 scenes of the proxy.

“Scene Number” and “Scene Control” shall use the same scene numbers and scene indexes. Scene n called through “Scene Number” shall be the same as scene n called through “Scene Control”.

The maximum number of scenes that can be called and the maximum number of scenes that can be stored may differ.

For the detailed specification of the Input “Scene Control” please refer to 3.7.2.

3.2.4 Parameter Scene Learning Mode Enable

Via a Parameter “Scene Learning Mode Enable” (SLME), it shall be possible to activate or deactivate the Scene Learning Mode globally for this FB instance for all supported Scene Numbers and all implemented DALI-Channels.

3.2.5 Timing Behaviour of DALI Scenes

The timing function for recalling a scene shall be covered by an entry in the Parameter “KNX Scene Fade Time List” (KSFTL[]). The KNX Scene Fade Time shall be fixed total time after which the new set value of the recalled scene shall be reached. In case of implementing as Group Object, the KNX Fade Time shall mandatorily be coded as DPT_TimePeriod100MSec (DPT_ID 7.004).

By using the Parameter “KNX Scene Fade Time” (KSFTL[]) the value from KNX can be mapped to the discrete elements of the DALI Standard Value “FADE TIME”.

In addition to the Parameter “KNX Scene Fade Time List[]” (KSFTL[]) the Parameter “DALI Scene Fade Time List” (DSFTL[]), which shall be encoded as an enumeration according DPT_DALI_Fade_Time (DPT_ID: 20.602) may be implemented both as a Property or a Group Object.

3.3 Constraints

1.

The implementation of this Functional Block is only possibly in combination with a least one FB DALI Proxy Basic Light Application.

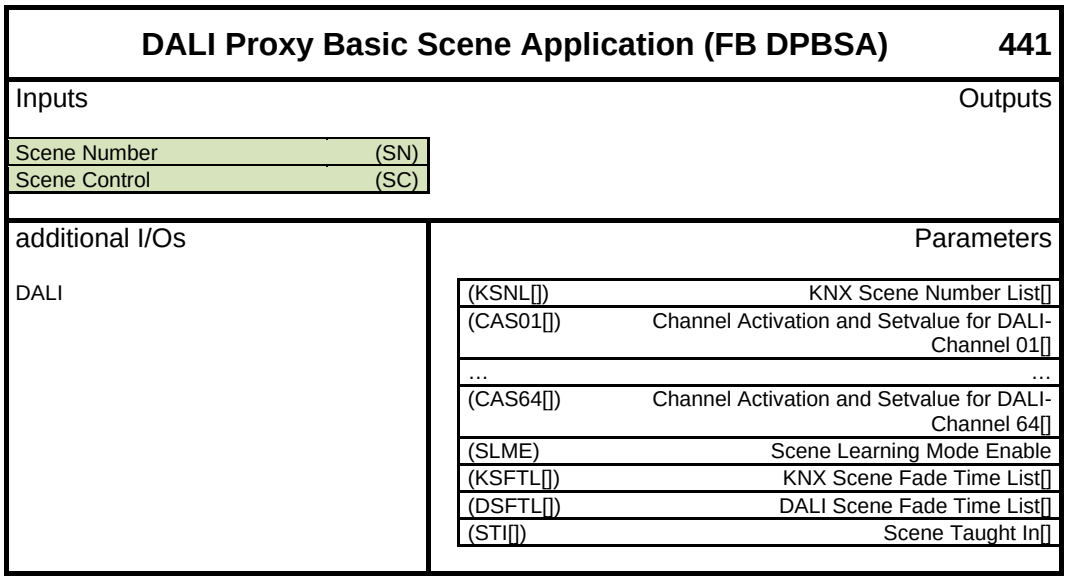
2.

There shall be a fixed relation between the Property array element number and DALI-channel Number: the numerical values shall be identical.

3.

Whether the DALI-channel Number addresses a single or a group of DALI devices is implementation specific.

3.4 Functional Block diagram



3.5 Datapoint Description

Datapoint	Description/Remarks	Datapoint Type
Inputs		
Scene Number	Recall the set value related to the encoded scene number.	17.001 DPT_SceneNumber
Scene Control	Recall or learn the set value related to encoded scene number	18.001 DPT_SceneControl

Datapoint	Description/Remarks	Datapoint Type
Outputs		
None.		

Datapoint	Description/Remarks	Datapoint Type
Parameters		
KNX Scene Number List[]	List of KNX scene numbers that are supported by this FB DPBSA. This list shall allow linking a KNX scene number to a Scene Index within the FB. It also contains the flags Storage Function and Scene Activate for each KNX Scene.	238.001 DPT_SceneConfig[]
Channel Activation and Setvalue for DALI-Channel 01	This shall be an array containing the setvalues for DALI-Channel 01 for all the scenes and a flag indicating whether this DALI-Channel is part of this scene or not.	239.001 DPT_FlaggedScaling[]
…	…	…
Channel Activation and Setvalue for DALI-Channel 64	This shall be an array containing the setvalues for DALI-Channel 64 for all the scenes and a flag indicating whether this DALI-Channel is part of this scene or not.	239.001 DPT_FlaggedScaling[]
Scene Learning Mode Enable	Enables or disables globally for all scene numbers the learning of new scenes, regardless of the value of any field Storage Function of the Scene Index in the Parameter KNX Scene Number List[].	1.003 DPT_Enable
KNX Scene Fade Time List[]	Specifies the dimming speed as fixed total time after which the new set value of the recalled scene shall be reached	7.004 DPT_TimePeriod_100MSec[]

Datapoint	Description/Remarks	Datapoint Type
Parameters		
DALI Scene Fade Time List[]	Specifies the dimming speed as fixed total time after which the new set value of the recalled scene shall be reached	20.602 DPT_DALI_Fade_Time[]
Scene Taught In[n]	Indicates whether the KNX Scene n has been taught in or not.	1.002 DPT_Bool[]

3.6 FB Profiles [4)]

Features and options	Basic FB	Standard Mode	
		FB Profile 1	FB Profile 2
Select 1 of 2 {			
Input SN	M	M	O
Input SC	M	O	M
}			
Parameter KSNL[]	M	M	M
Parameter CAS01 to CAS64	M	M	M
Parameter SLME	O	O	O
Parameter STI[]	O	O	O

Parameters and Diagnostic Data can in principle be implemented as memory mapped Datapoints or Group Objects or Properties of an Interface Object.

In case of memory mapped Datapoints the DPT may be manufacturer specific.

4) Please refer to [02] for the definition of the syntax and symbols used in this FB Profile definition.

3.7 Detailed specification of Datapoints

3.7.1 Input Scene Number

DP Name:	Scene Number	Abbr.:	SN	Mandatory	☐
FB Name:	DALI Proxy Basic Scene Application			Can be internal	☐

Description

The Input Scene Number shall be used to recall the set values of the DALI-channels that are related to the encoded scene number.
Up to 64 scene numbers (0 … 63) can be assigned to the Proxy (see parameters) [a].
If a Scene Number is received on the Input Scene Number then the FB DALI Proxy Basic Scene Application shall search for this Scene Number in the list of the Parameter KNX Scene Number List[] (KSNL[]).
The FB DPBSCA shall not react in any of the following cases.

- The received scene number is not found in the Parameter KSNL[].
- The received scene number is in the Parameter KSNL[] at a position larger than the current_nr_of_elem. (This is the standard KNX Property array handling: elements beyond the current_nr_of_elem shall not be valid.)
- The received Scene Number is found in the Parameter KSNL[] and there the field SA has the value inactive.
- The Parameter “Scene taught in” has the value False at the index equal to the received scene number.

In all other cases, the FB DPBSCA shall use the Scene Index at which the scene number is found. It shall in each of the Properties CAS01 to at maximum CAS64 at the Property Value array element equal to Scene Index read the Channel Activation and Setvalue. If the Channel Activation has the value “Active” then the FB DPBSCA shall set the set value of that DALI Channel to the contained Setvalue. If the Channel Activation has the value “Inactive” then the FB DPBSCA shall not change the set value of this DALI Channel for this scene call.

Datapoint Type

DPT_Name:	DPT_SceneNumber				
DPT Format:	r_2U_6	DPT_ID:	17.001		
Field	Description	Supp.	Range	Unit	Default
r	Reserved field. Shall be zero.	M	0	none	none
U	Scene Number.	M	{0…63}	none	none

Access Type

Input

	N → this	☒	1 → this	☐		
	Spontaneous	☒	Cyclically:	☐	Time-out:	none
	Request	☐	Polling:	☐	Period:	

Communication Type

Group Object Datapoint		Mandatory:	☒
	Default Group Address:	---	

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☐
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

[a] An application may support less than the maximal encodable number of 64 scenes. In the case, if a scene is called with a scene number **that is not** supported, the Proxy shall not react.

Special Features

3.7.2 Input Scene Control

DP Name:	Scene Control	Abbr.:	SC	Mandatory	☐
FB Name:	DALI Proxy Basic Scene Application			Can be internal	☐

Description

The Input Scene Control shall be used to recall or learn the set value related to encoded scene number. Up to 64 scene numbers (0 … 63) can be assigned to the Proxy (see parameters) [a)].

Calling of scenes

Through this Input *Scene Control*, with the field *C* set to "Activate", it shall be possible to call the KNX scene identified by the field *Scene number.* Each DALI-Channel y for which the flag Channel Activation is set to "Active" in its Parameters array element CASy[SceneIndex] shall be set to its stored Setvalue. This functionality shall be identical as specified in 3.7.1 for the input Scene Number.

Storing of scenes

Through this Input *Scene Control*, with the field *C* set to "Learn", it shall be possible to store the current Setvalue of the involved DALI-Channels for recalling later under the scene number identified by the field Scene Number.

If a KNX scene is learned ("taught in") through the Input "Scene Control" then the FB DPBSCA shall as well look up the Scene Index in the Parameter KNX Scene Number List[].

The FB DPBSCA shall not react in any of the following cases. **These conditions shall be evaluated in the following order.**

1. The Parameter SLME has the value "Disable".

   NOTE 4 This shall mean that this FB instance is configured not to accept the modification of any scene.

2. The contained KNX Scene Number is not in the list in KNX Scene Number List[] (KSNL[]).

   NOTE 5 This shall mean that this Scene Number is not supported by this FB instance. It shall not be possible to learn new Scene Numbers during runtime via this Input.

3. The contained KNX Scene Number is in the list in KNX Scene Number List[] (KSNL[]) at the index n and the field KSNL[n].SA ("Scene Active") has the value "Inactive".

   NOTE 6 This shall mean that this Scene Number is basically supported by this FB instance, but that it is inactive.

4. The field KSNL[n].S ("Storage function") has the value "Inactive".

   NOTE 7 This shall mean that this Scene Number is basically supported by this FB instance, and that this scene can be called, but that this scene cannot be modified.

In all other cases, the FB DPBSCA shall store the current set value as new Setvalue in each of the implemented Parameters CAS01 to CAS64 in the array element equal to the Scene Index, for each DALI-Channels y where the flag Channel Activation in the Parameter CASy[SceneIndex] is set to "Active".

Additionally, if a new Setvalue is stored for a DALI Channel y for a KNX Scene Number x, the flag Scene Taught In shall be set to "True".

Datapoint Type

DPT_Name:	DPT_SceneControl				
DPT Format:	$B_1r_1U_6$	DPT_ID:	18.001		
Field	Description	Supp.	Range	Unit	Default
B	Recall or learn the scene.	M	{0,1}	none	none
r	Reserved field. Shall be zero.	M	0	none	none
U	Scene number.	M	{0…63}	none	none

Access Type

Input

	N → this	☒	1 → this	☐		
	Spontaneous	☒	Cyclically:	☐	Time-out:	none
	Request	☐	Polling:	☐	Period:	

Communication Type

Group Object Datapoint			Mandatory:	☒
	Default Group Address:	---		

DP Name:	Scene Control	Abbr.:	SC	Mandatory	☐
FB Name:	DALI Proxy Basic Scene Application			Can be internal	☐
♦ Property				Mandatory:	☒
DP Address: (in the server)		IO Type(ID): Start-Index:		Property ID: N° of elements	
Property access:		Read only ☐		Read/Write ☒	
Protection *)		Read level	-	Write level	-
Dynamics					
Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Current value (not for input):	☐
		Transmit on bus (only for output):	☐	Read from bus (only for input):	☐
Exception Handling					
a) An application may support less than the maximal encodable number of 64 scenes. In the case, if a scene is learned or called with a scene number that is not supported, the Proxy shall not react.					
Special Features					

3.7.3 Parameter KNX Scene Number List[](PID: 150)

FB:	DALI Proxy Basic Light Application	Property Name (Server):	KNX Scene Number List[]	Mandatory ☒ Optional ☐

Description:

The KNX Scene Number List[] shall contain all KNX scene numbers that are supported by the DALI Proxy Basic Light Application. For each contained KNX scene, it shall contain two bit configuration information as specified in the specification of the fields below.
This Parameter shall be an array Property. The current_nr_of_elem shall equal the number of KNX scenes that is currently configured in this FB; the max_nr_of_elem shall equal the maximal number of KNX scenes that is supported by this FB. Values at an index n in this array Property shall relate to the same KNX scene number as the array elements in the following array Properties:

- CAS01[] to CAS64[], and
- KNX Scene Fading Time List[], and
- DALI Scene Fade Time List[] and
- Scene Taught In[].

DPT:	Name	DPT_SceneConfig	DPT ID	238.001	Datatype format	B_2U_6

Field	Description	Sup.	Range	Unit	Default
S	The field *Storage function* shall indicate whether it shall be possible or not to change the dim set value for this Scene Number at runtime over the bus through DPT_SceneControl. NOTE 8 Please note the specific encoding of the field S in the specification of the DPT_SceneConfig. This encoding is the inverse coding of the standard DPT_Enable (1.003).	M	{0, 1}	none	none
SA	The field Scene Active shall indicate whether or not the scene is active. If this field has the value *inactive* then this Scene Index is inactive and the contained Scene Number shall be regarded as void and not supported by the FB. NOTE 9 Please note the specific encoding of the field SA in the specification of the DPT_SceneConfig. This encoding is the inverse coding of the standard DPT_State (1.011).	M	{0, 1}	none	none
SN	This field shall contain the list of Scene Numbers that are supported by the FB. In case less Scene Numbers are configured than the maximal supported by this FB, then the field A shall be set to “Inactive” for this index and the value of the field SN shall be don’t care. This list does not need to be sorted. Active and inactive Scene Numbers can be at any position. Any Scene Number shall appear at maximum once in this list; this list shall not have duplicate entries. This is the responsibility of the Management Client that sets this Property Value.	M	0 to 63	none	none

Communication Type

Property				Mandatory: ☒
DP Address: (in the server)	object_type:	441	PID:	150
	start_index:	1	nr_of_elem:	See above.
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

None.

Special Features:

None.

3.7.4 Parameter Channel Activation and Setvalue[] 1 to 64 (CAS01 to CAS64) (PID: 160 to 223)

NOTE 10 These Property Identifiers reside in the manufacturer specific range!

FB:	DALI Proxy Basic Scene Application	Property Name (Server):	Channel Activation and Setvalue[]	Mandatory ☒ Optional ☐

Description:

The Parameters *Channel Activation and Setvalue 01* (CAS01) up to at maximum *Channel Activation and Setvalue 64* shall contain the set values for the DALI Channels for the different scenes.
For each DALI Channel x that is part of a KNX Scene and that can be configured, there shall be a dedicated Parameter CASx. Each Property array element y shall encode for the KNX Scene y whether the DALI Channel x is part of that scene or not, and the setvalue that shall be assumed in case the scene that it is part of is called.

This Parameter shall be an array Property. The current_nr_of_elem shall equal the number of KNX scenes that is currently configured in this FB; the max_nr_of_elem shall equal the maximal number of KNX scenes that is supported by this FB. Values at an index n in this array Property shall relate to the same KNX scene number as the array elements in the following array Properties:

- KNX Scene Number List[], and
- KNX Scene Fading Time List[], and
- DALI Scene Fade Time List[] and
- Scene Taught In[].

DPT:	Name	DPT_FlaggedScaling[]	DPT ID	239.001	Datatype format	$U_8r_7B_1$

Field	Description	Sup.	Range	Unit	Default
Setvalue	This field shall contain the *Setvalue* for this DALI Channel for this KNX Scene. If the field *Channel Activation* has the value “Inactive”, then the value of this field *Setvalue* shall be void.	M	1 % to 100 %	%	none
Channel Activation	This field shall indicate whether or not this DALI Channel is part of this KNX scene or not.	M	{0,1}	none	none

Communication:

DP Address: (in the server)	object_type:	441	PID:	CAS01: 160 to CAS64: 223
	start_index:	1	nr_of_elem:	See above.
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-

Exception Handling: Value after Power-up: Stored Value ☒ Act Value ☐ Default Value ☐

If the field *Channel Activation* has the value “Inactive” then the field *Setvalue* can have any value, but this shall not be interpreted.

Special Features:

None.

3.7.5 Parameter Scene Learning Mode Enable (PID: 151)

DP Name:	Scene Learning Mode Enable	**Abbr.:**	SLME	**Mandatory**	☐
FB Name:	DALI Proxy Basic Scene Application			**Can be internal**	☐

Description

Via this parameter DP, it shall be possible to activate or deactivate the Scene Learning Mode (e.g. to prevent unauthorised modification of scenes). If the value of this DP is Enabled, it shall be only possible to store the Setvalue of any DALI-Channel y for a given KNX scene with Scene Index x, for which the corresponding field Storage Function (S) in the parameter CASx[y] is set to “Enable”.
This DP is optional, even if the scene functionality is implemented. This DP shall be implemented as Group Object.

DP Type

DPT_Name:	DPT_Enable					
DPT Format:	B_1			**DPT_ID:**	1.003	
Field:	**Description:**	**Supp.:**	**Range:**	**Unit:**	**Resol.:**	**Default:**
b	Enabling scene learning	M	{0,1}	none	none	none

Access Type

♦ **Input**

	N → this	☒	1 → this	☐		
	Spontaneous	☒	Cyclically:	☐	Time-out:	no
	Request	☐	Polling:	☐	Period:	

Communication Type

Group Object DP				**Mandatory:**	☒
	Default Group Address:	---			
♦ Property				Mandatory:	☐
	DP Address: (in the server)	IO Type(ID): 441 Start-Index: 1		Property ID: 151 Nr of elements 1	
	Property access:	Read only ☐		Read/Write ☒	
	Protection *)	Read level -		Write level	-

Dynamics

	Power down:	Save:	☒		
	Power up:	Value:	No initialisation: ☐	Default value:	☐
			Saved value: ☒	Current value (not for input):	☐
		Transmit on bus (only for output):	☐	Read from bus (only for input):	☐

Exception Handling

None.

Special Features

None.

3.7.6 Parameter KNX Scene Fade Time List[](PID: 154)

FB:	DALI Proxy Basic Scene Application	Property Name (Server):	KNX Scene Fade Time List[] (KSFTL[])	Mandatory ☐ Optional ☒

Description:

The KNX Scene Fade Time shall be a fixed total time after which the new set value of the recalled scene shall be reached.
The fade time for each KNX Scene shall be stored in this array Property, with the Scene Index as Property array element Index.

Property array element index = Scene Index	KNX Scene Fade Time List[]
1	Fade Time for KNX scene with Scene Index 1
2	Fade Time for KNX scene with Scene Index 2
3	Fade Time for KNX scene with Scene Index 3
4	Fade Time for KNX scene with Scene Index 4
5	…

Figure 21 – Parameter KNX Scene Fade Time List[]

If the FB DPBSA executes a scene with scene number n, then it shall make sure that all DALI-Channels that are part of this KNX Scene have reached their configured setvalue after the time given by the array element with index n in the Parameter KNX Scene Fade Time List.

This Parameter shall be an array Property. The current_nr_of_elem shall equal the number of KNX scenes that is currently configured in this FB; the max_nr_of_elem shall equal the maximal number of KNX scenes that is supported by this FB. Values at an index n in this array Property shall relate to the same KNX scene number as the array elements in the following array Properties:

- KNX Scene Number List[], and
- CAS01[] to CAS64[], and
- DALI Scene Fade Time List[] and
- Scene Taught In[].

DPT:	Name	DPT_TimePeriod100MSec	DPT ID	7.004	Datatype format	U_{16}

Field	Description	Sup.	Range	Resol.	Default
TimePeriod	This field shall specify the time after which each involved DALI-Channels shall have reached its new setvalue.	M	cs	100 ms	cs

Communication Type					
Group Object Datapoint				Mandatory:	☐
Default Group Address:	---				
Property				Mandatory:	☐
DP Address: (in the server)	object_type:	441	PID:	154	
	start_index:	1	nr_of_elem:	See above.	
Property access:	Read only ☐	Read/Write ☒			
Protection	Read level	-	Write level	-	
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐	
Error handling					
Special Features:					
None.					

3.7.7 Parameter DALI Scene Fade Time[] (PID: 155)

FB:	DALI Proxy Basic Scene Application	Property Name (Server):	DALI Scene Fade Time List (DSFTL)	Mandatory ☐ Optional ☒

Description:

The DALI Scene Fade Time shall for each KNX scene specify a fixed total time after which the new set value of the recalled scene shall be reached.
The DALI Scene Fade Time List shall be stored in this array Property, with the Scene Index as Property Index.

Property array element index = Scene Index	DALI Scene Fade Time List[]
1	Fade Time for KNX scene with Scene Index 1
2	Fade Time for KNX scene with Scene Index 2
3	Fade Time for KNX scene with Scene Index 3
4	Fade Time for KNX scene with Scene Index 4
5	…

Figure 22 – Parameter DALI Scene Fade Time List[]

This Parameter shall be an array Property. The current_nr_of_elem shall equal the number of KNX scenes that is currently configured in this FB; the max_nr_of_elem shall equal the maximal number of KNX scenes that is supported by this FB. Values at an index n in this array Property shall relate to the same KNX scene number as the array elements in the following array Properties:

- KNX Scene Number List[], and
- CAS01[] to CAS64[], and
- KNX Scene Fading Time List[], and
- Scene Taught In[].

DPT:	Name	DPT_DALI_Fade_Time	DPT ID	20.602	Datatype format	N_8

Field	Description	Sup.	Range	Unit	Default
FadeTime	This field shall identify the DALI fade time.	M	0 to 15	none	none

Communication Type

Group Object Datapoint				Mandatory: ☐
Default Group Address:	---			
Property				Mandatory: ☐
DP Address: (in the server)	object_type:	441	PID:	155
	start_index:	1	nr_of_elem:	See above.
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

None.

Special Features:

None.

3.7.8 Parameter Scene Taught In[] (STI[])(PID: 152)

FB:	DALI Proxy Basic Scene Application	Property Name (Server):	Scene Taught In[]	Mandatory ☐ Optional ☒

Description:

This array Property shall contain one entry for each KNX scene that is supported by the FB DPBSCA. For each KNX Scene x the Property array element x shall contain a Boolean indication about whether (True) or not (False) the KNX scene x has been taught in already via the Input Scene Control.
If a KNX Scene is called (via the Input Scene Number or the Input Scene Control), then the FB DPBSCA shall only interpret this scene if its flag STI(x) is True.

This Parameter shall be an array Property. The current_nr_of_elem shall equal the number of KNX scenes that is currently configured in this FB; the max_nr_of_elem shall equal the maximal number of KNX scenes that is supported by this FB. Values at an index n in this array Property shall relate to the same KNX scene number as the array elements in the following array Properties:

- KNX Scene Number List[], and
- CAS01[] to CAS64[], and
- KNX Scene Fading Time List[], and
- DALI Scene Fade Time List[].

DPT:	Name	DPT_Bool[]	DPT ID	1.002	Datatype format	B_1[]

Field	Description	Sup.	Range	Unit	Default
b[n]	0: False: The KNX Scene with Scene Index n is not (yet) taught in. 1: True: The KNX Scene with Scene Index n is taught in.	M	{0, 1}	none	False

Communication Type

Property			Mandatory: ☒	
DP Address: (in the server)	object_type:	441	PID:	152
	start_index:	1	nr_of_elem:	See above.
Property access:	Read only ☐	Read/Write ☒		
Protection	Read level	-	Write level	-
Exception Handling:	Value after Power-up:	Stored Value ☒	Act Value ☐	Default Value ☐

None.

Special Features:

None.

4 DALI Proxy Basic Device specific

4.1.1 Overview

This part describes DALI specific behaviour and properties of the system. The information is based on [03].
As the DALI-system has some fixed specific system features, there is a need for a specific proxy to map these features to KNX.

4.1.2 Constraints

The following features are not part of this Functional Block:

- DALI Colour Control "IEC 62386-209", and
- DALI Self contained emergency lighting "IEC 62386-202".

4.1.3 Overlapping DALI Groups

4.1.3.1 Recommended grouping

There exists two ways of Grouping DALI-channels.

1. A DALI device is part of only one DALI Group – grouping can be done by linking several KNX Functional Blocks to the same KNX Group Address.
2. A DALI device may also be part of more than one DALI-channel controlled by one KNX Functional Block - in this case the status of the Functional Block mapped to the DALI Group may be inconsistent.

Because of this inconsistency in the latter case, the first method is recommended for commissioning.

4.1.3.2 DALI Commissioning

In order to use the Address Modes

- single addressing ("DALI Short Address"), and
- group addressing ("DALI Group")

in the DALI proxy for controlling a DALI-channel, the installer has to start a commissioning of the DALI-system. This can be activated from an ETS plug-in or an external tool. Goal of the commissioning is to program the addresses of all DALI devices so the DALI driver in the proxy can control the DALI-channels.

At the end of the commissioning every DALI device has a unique DALI single address (0 to 63) and in the case the group address mode is used, the DALI devices are part of one or more DALI groups (0 to 15).

The behaviour of the DALI commissioning is implementation specific.

4.1.4 Status information of DALI specific information

4.1.4.1 Introduction

There is optionally a lot of information from the DALI-system that can be mapped to KNX for purposes of visualisation and diagnostics.

4.1.4.2 Failure of the DALI power supply (in the gateway)

The failure of the DALI power supply that is part of the Gateway can be visualized with the optional Datapoint "DALI PSU Failure" (DPT_Alarm, DPT_ID 1.005; B_1).

4.1.4.3 Short circuit of the DALI line

A short circuit of the DALI line will be detected by the gateway and shall be visualized with the optional Datapoint “DALI Short Circuit”’ (DPT_Alarm, DPT_ID 1.005; B_1).

4.1.4.4 Failure of a DALI-channel

The Datapoint “DALI-channel Failure” (DPT_Alarm, DPT_ID 1.005; B_1) shall be used to signal the failure of a DALI-channel that is controlled by the gateway. The value “Alarm” of this Datapoint shall signal that at least one DALI slave of the dedicated DALI-channel is in failure due to e.g. an error of its mains power supply.

The gateway may detect the failure in case of a time-out of the cyclic communication to this DALI slave.

4.1.4.5 Extended error status of a DALI-channel

Every DALI Device that is a DALI Control Gear based on [03] has two pieces of information that can be visualized.

1. Information which can be visualized. The first error information is a status bit “Lamp Failure” that will be set by the DALI Control Gear in case of the failure of the connected lamp.
2. The second error information is a status “Ballast Failure” that will be set by the DALI Control gear in case of an internal device failure.

For DALI Control gears in addition based on [04] the additional error information “Converter Error” will available. The converter will be set due to an error of the DALI Converter device.

The described error information of all DALI Control Gears will be visualized with an optional combined Datapoint ‘DALI Control Gear Information’ ($B_{10}U_6$).

DPT DALI Control Gear Diagnostics

$B_{10}U_6$

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Coding	r	r	r	r	r	CE	BF	LF	RR	AI	Addr.					

CE [5]	Converter Error	0: no error; 1: error
BF	Ballast Failure	0: no error; 1: error
LF	Lamp Failure	0: no error; 1: error
RR	Read or Response	0: Response or spontaneous sending 1: Read
AI	Address Indicator	0: DALI Device Address; 1: DALI Group Address
Addr	DALI Device Address: DALI Group Address:	0 to 63 0 to 15
r	Reserved, shall be 0	

Figure 23 - Datapoint Type “DALI Control Gear Diagnostic”

The error information can be visualized separately for each DALI Control Gear or for a DALI Group (as logical disjunction for all DALI Control Gears of the DALI Group).

The controlling of this KNX Datapoint shall be independent of the configured DALI-channels. This means that e.g. only DALI-channels based on DALI Groups are used; the separate error status of all DALI Devices of a DALI-channel can be visualized by using the Datapoint “DALI Control Gear Diagnostic”.

The Datapoint shall be bidirectional.

5) The bit CE (Converter Error) shall be reserved for the application “emergency lighting”.

It shall be possible to use this Datapoint as an input Datapoint: a write action to it shall be interpreted as a request to transmit the error information of one DALI Device or DALI Group.

For the use as an output Datapoint the error information shall be sent by the DALI Gateway

- as an answer to the read requested for the dedicated DALI Device or DALI Group, or
- spontaneously in case of a new error of a DALI Device or DALI Group, or
- spontaneously in case of an elimination of an error of a DALI Device or DALI Group.

The difference of visualizing a DALI Device or DALI Group shall be made by the address indicator AI as part of the Datapoint.

4.1.4.6 Datapoint “DALI Diagnostics”

In addition to the Datapoint from 4.1.4.5 the Datapoint “DALI Diagnostics” may be implemented for visualization purposes. It shall be encoded according the DPT_DALI_Diagnostics as specified in [01].

This Datapoint “DALI Diagnostics” is also a encoded according a structured DPT, but shall serve solely for the visualization of single DALI Control Devices and not for summary information of a DALI Group.

This Datapoint shall be readable.

4.1.4.7 Combined Info On Off

For visualization of the binary status of any connected DALI-channel, the DPs as listed in Table 11 may be implemented.

Table 11 – DPs for binary status information of individual DALI-channels

DP Name	Use
Combined Info On Off 1	Visualisation of the DALI-channels 1 to 16
Combined Info On Off 2	Visualisation of the DALI-channels 17 to 32
Combined Info On Off 3	Visualisation of the DALI-channels 33 to 48
Combined Info On Off 4	Visualisation of the DALI-channels 49 to 64
Combined Info On Off 5	Visualisation of the DALI-channels 65 to 80

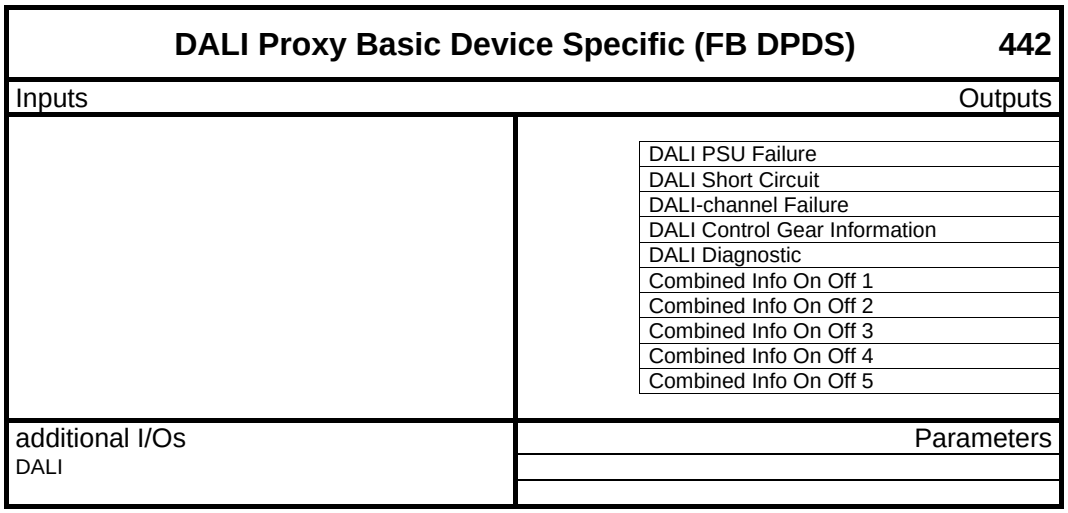
Each of these DPs shall be encoded according DPT_CombinedInfoOnOff (B_{32}; DPT_ID: 27.001; see [01]).

In case of a device KNX/DALI-Gateway consisting of

- 64 DALI-channels with DALI single addressing, and
- 16 DALI-channels with DALI group addressing,

the Datapoint “Combined Info On Off 1” to “Combined Info On Off 5” shall allow for the visualization of the binary status for all 80 DALI-channels.

4.2 Functional Block diagram



mandatory optional

4.3 FB Profiles

There are no FB Profiles for the *FB "DALI Proxy Basic Device specific"*. All DPs are optional. However, implementation of the DPs CIOO1 up to CIOO5 will become mandatory if for any of the implemented FBs "DALI Proxy Basic Light Application" the state output IOO is not implemented.

4.4 Datapoint description

Datapoint	Description/Remarks	Datapoint Type
Outputs		
DALI PSU Failure	Indicates PSU failure	1.005 DPT_Alarm
DALI Short Circuit	Indicates DALI Short Circuit	1.005 DPT_Alarm
DALI-channel Failure	Indicates DALI-channel failure	1.005 DPT_Alarm
DALI Control Gear Information	Indicates DALI Device Error	237.600 DPT_DALI_Control_Gear_Diagnostics
DALI Diagnostic	Indicates DALI Device Errror	238.600 DPT_DALI_Diagnostics
Combined Info On Off 1	Indicates the binary status of the DALI-channels 1 to 16.	27.001 Combined Info On Off
Combined Info On Off 2	Indicates the binary status of the DALI-channels 17 to 32.	27.001 Combined Info On Off
Combined Info On Off 3	Indicates the binary status of the DALI-channels 33 to 48.	27.001 Combined Info On Off
Combined Info On Off 4	Indicates the binary status of the DALI-channels 49 to 64.	27.001 Combined Info On Off
Combined Info On Off 5	Indicates the binary status of the DALI-channels 65 to 80.	27.001 Combined Info On Off

Parameters and Diagnostic Data can in principle be implemented as memory mapped Datapoints or Group Objects or Properties of an Interface Object.

4.5 Detailed specification of Datapoints

4.5.1 DALI PSU Failure

DP Name:	DALI PSU Failure	Abbr.:	DPSF	Mandatory	☐
FB Name:	DALI Proxy Basic Device specific			Can be internal	☐

Description

This DP “DALI PSU Failure” shall be used to report the failure or absence of failure of the DALI power supply, which shall be an integral part of the Gateway.

Datapoint Type

DPT_Name:	DPT_Alarm				
DPT Format:	B_1	DPT_ID:	1.005		
Field	Description	Supp.	Range	Unit	Default
b	Failure of the DALI power supply 0: no alarm: no failure 1: alarm: failure	M	{0,1}	none	none

Access Type

Output

	this → M	☒	this → 1	☐				
	Spontaneous	☒	COV:	☒	Δ-Value:	1	Min repetition time:	none
			Cyclic	☐	Period:	no		
	Request	☒						

Communication Type

Group Object Datapoint		Mandatory:	☒
	Default Group Address:	---	

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☒
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

None.

Special Features

None.

4.5.2 DALI Short Circuit

DP Name:	DALI Short Circuit	Abbr.:	DSC	Mandatory	☐
FB Name:	DALI Proxy Basic Device specific			Can be internal	☐

Description

This DP “DALI Short Circuit” shall be used to report a short circuit or absence of short circuit of the connected DALI line.

Datapoint Type

DPT_Name:	DPT_Alarm				
DPT Format:	B_1	DPT_ID:	1.005		
Field	Description	Supp.	Range	Unit	Default
b	Short Circuit of the DALI line 0: no alarm: no short circuit 1: alarm: short circuit	M	{0,1}	none	none

Access Type

Output

	this → M	☒	this → 1	☐			
	Spontaneous	☒	COV:	☒	Δ-Value:	1	Min repetition time:	none
			Cyclic	☐	Period:	no		
	Request	☒						

Communication Type

Group Object Datapoint		Mandatory:	☒
	Default Group Address:	---	

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☒
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

None.

Special Features

None.

4.5.3 DALI channel Failure

DP Name:	DALI-channel Failure	Abbr.:	DCF	Mandatory	☐
FB Name:	DALI Proxy Basic Device specific			Can be internal	☐

Description

This DP “DALI-channel Failure” shall be used to report whether
- none at all, or
- one or more

DALI-channels in the connected DALI-line has a failure.

Datapoint Type

DPT_Name:	DPT_Alarm				
DPT Format:	B_1	DPT_ID:	1.005		
Field	Description	Supp.	Range	Unit	Default
b	Failure of the DALI-channel 0: none of the connected DALI-channels has a failure 1: 1 or more of the connected DALI-channels has a failure	M	{0,1}	none	none

Access Type

Output

	this → M	☒	this → 1	☐				
	Spontaneous	☒	COV:	☒	Δ-Value:	1	Min repetition time:	none
			Cyclic	☐	Period:	no		
	Request	☒						

Communication Type

Group Object Datapoint		Mandatory:	☒
	Default Group Address:	---	

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☒
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

None.

Special Features

None.

4.5.4 DALI Control Gear Information

DP Name:	DALI Control Gear Information	Abbr.:	DCGI	Mandatory	☐
FB Name:	DALI Proxy Basic Device specific			Can be internal	☐

Description

This Datapoint shall be used to report and respond on any error information of a DALI control gear of which the address is contained.

Datapoint Type

DPT_Name:	DPT_DALI_Control_Gear_Diagnostics				
DPT Format:	$B_{10}U_6$	DPT_ID:	237.600		
Field	Description	Supp.	Range	Unit	Default
Addr	See specification of DPT_DALI_Control_Gear_Diagnostics.	M	0 to 63 0 to 15	none	none
AI		M	{0,1}	none	none
RR		M	{0,1}	none	none
LF		M	{0,1}	none	none
BF		M	{0,1}	none	none
CE		M	{0,1}	none	none

Access Type

Output

	this → M	☒	this → 1	☐				
	Spontaneous	☒	COV:	☒	Δ-Value:		Min repetition time:	none
			Cyclic	☐	Period:	no		
	Request	☒						

Communication Type

Group Object Datapoint			Mandatory:	☒
	Default Group Address:	---		

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☐
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

None.

Special Features

None.

4.5.5 DALI Diagnostics

DP Name:	DALI Diagnostics	Abbr.:	DDS	Mandatory	☐
FB Name:	DALI Proxy Basic Device specific			Can be internal	☐

Description

The combined error information of all DALI Control Gears will be visualized in a reduced format

Datapoint Type

DPT_Name:	DPT_DALI_Diagnostics				
DPT Format:	B_2U_6	DPT_ID:	238.600		
Field	Description	Supp.	Range	Unit	Default
Addr	This shall be the DALI device address of the DALI control gear for which this DP reports the diagnostic information.	M	0 to 63	none	none
LF	This field shall signal whether or not the referred DALI control gear has a lamp failure or not.	M	{0,1}	none	none
BF	This field shall signal whether or not the referred DALI control gear has a ballast failure or not.	M	{0,1}	none	none

Access Type

Output

	this → M	☒	this → 1	☐				
	Spontaneous	☒	COV:	☒	Δ-Value:		Min repetition time:	none
			Cyclic	☐	Period:	no		
	Request	☒						

Communication Type

Group Object Datapoint		Mandatory:	☒
	Default Group Address:	---	

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☒
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

None.

Special Features

None.

4.5.6 Combined Info On Off 1 (CIOO1)

DP Name:	Combined Info On Off 1	Abbr.:	CIOO1	Mandatory	☐
FB Name:	DALI Proxy Basic Device specific			Can be internal	☐

Description

This Datapoint shall be used to report the binary status of the DALI-channels 1 to 16 represented by instances of FBs DALI Proxy Basic Light Application.
CIOO1 is mandatory if there is one or more DALI-channel within the DALI-channel number range from 1 to 16 for which the DP IOO is not implemented.
The instances of the FB DPBLA and the bits in an Output CIOO1 shall relate as follows.

Table 12 – Relations between DALI-channel Number and fields in the GO CIOO1

Datapoint	Bit within DPT_CombinedInfoOnOff for CIOO1															
	s_{15}	s_{14}	s_{13}	s_{12}	s_{11}	s_{10}	s_9	s_8	s_7	s_6	s_5	s_4	s_3	s_2	s_1	s_0
DALI-channel number	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Datapoint Type

DPT_Name:	DPT_CombinedInfoOnOff				
DPT Format:	B_{32}	DPT_ID:	27.001		
Field	Description	Supp.	Range	Unit	Default
s_x	Binary state of the DALI-channel x + 1	M	{0,1}	none	none
m_x	Each bit m_x shall indicate whether the state information s_x is valid or not. In particular, if there is no DALI-channel with the number x + 1, then this bit shall be set to “not valid”. NOTE 11 These fields m are not shown in the above Table 12.	M	{0,1}	none	none

Access Type

Output

	this → M	☒	this → 1	☐				
	Spontaneous	☒	COV:	☒	Δ-Value:		Min repetition time:	none
			Cyclic	☐	Period:	none		
	Request	☒						

Communication Type

Group Object Datapoint			Mandatory:	☒
	Default Group Address:	---		

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☒
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

DPT_CombinedInfoOnOff defines mask bits. These shall be used to mark if the state of any output is unknown or not.

Special Features

None.

4.5.7 Combined Info On Off 2 (CIOO2)

DP Name:	Combined Info On Off 2	Abbr.:	CIOO2	Mandatory	☐
FB Name:	DALI Proxy Basic Device specific			Can be internal	☐

Description

This Datapoint shall be used to report the binary status of the DALI-channels 17 to 32 represented by instances of FBs DALI Proxy Basic Light Application.
CIOO2 is mandatory if there is one or more DALI-channel within the DALI-channel number range from 17 to 32 for which the DP IOO is not implemented.
The instances of the FB DPBLA and the bits in an Output CIOO2 shall relate as follows.

Table 13 – Relations between DALI-channel Number and fields in the GO CIOO2

	Bit within DPT_CombinedInfoOnOff for values CIOO2															
Datapoint	s_{15}	s_{14}	s_{13}	s_{12}	s_{11}	s_{10}	s_9	s_8	s_7	s_6	s_5	s_4	s_3	s_2	s_1	s_0
DALI-channel number	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Datapoint Type

DPT_Name:	DPT_CombinedInfoOnOff				
DPT Format:	B_{32}	DPT_ID:	27.001		
Field	Description	Supp.	Range	Unit	Default
s_x	Binary state of the DALI-channel 17 + x	M	{0,1}	none	none
m_x	Each bit m_x shall indicate whether the state information s_x is valid or not. In particular, if there is no DALI-channel with the number 17 + x, then this bit shall be set to “not valid”. NOTE 12 These fields m are not shown in the above Table 13.	M	{0,1}	none	none

Access Type

Output

	this → M	☒	this → 1	☐				
	Spontaneous	☒	COV:	☒	Δ-Value:		Min repetition time:	none
			Cyclic	☐	Period:	none		
	Request	☒						

Communication Type

Group Object Datapoint			Mandatory:	☒
	Default Group Address:	---		

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☒
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

None.

Special Features

None.

4.5.8 Combined Info On Off 3 (CIOO3)

DP Name:	Combined Info On Off	Abbr.:	CIOO3	Mandatory	☐
FB Name:	DALI Proxy Basic Device specific			Can be internal	☐

Description

This Datapoint shall be used to report the binary status of the DALI-channels 33 to 48 represented by instances of FBs DALI Proxy Basic Light Application.
CIOO3 is mandatory if there is one or more DALI-channel within the DALI-channel number range from 33 to 48 for which the DP IOO is not implemented.
The instances of the FB DPBLA and the bits in an Output CIOO3 shall relate as follows.

Table 14 – Relations between DALI-channel Number and fields in the GO CIOO3

	Bit within DPT_CombinedInfoOnOff for CIOO3															
Datapoint	s_{15}	s_{14}	s_{13}	s_{12}	s_{11}	s_{10}	s_9	s_8	s_7	s_6	s_5	s_4	s_3	s_2	s_1	s_0
DALI-channel number	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33

Datapoint Type

DPT_Name:	DPT_CombinedInfoOnOff				
DPT Format:	B_{32}	DPT_ID:	27.001		
Field	Description	Supp.	Range	Unit	Default
s_x	Binary state of the DALI-channel.	M	{0,1}	none	none
m_x	Each bit m_x shall indicate whether the state information s_x is valid or not. In particular, if there is no DALI-channel with the number 33 + x, then this bit shall be set to “not valid”. NOTE 13 These fields m are not shown in the above Table 14.	M	{0,1}	none	none

Access Type

Output

	this → M	☒	this → 1	☐				
	Spontaneous	☒	COV:	☒	Δ-Value:		Min repetition time:	none
			Cyclic	☐	Period:	none		
	Request	☒						

Communication Type

Group Object Datapoint			Mandatory:	☒
	Default Group Address:	---		

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☒
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

None.

Special Features

None.

4.5.9 Combined Info On Off 4 (CIOO4)

DP Name:	Combined Info On Off	Abbr.:	CIOO4	Mandatory	☐
FB Name:	DALI Proxy Basic Device specific			Can be internal	☐

Description

This Datapoint shall be used to report the binary status of the DALI-channels 49 to 64 represented by instances of FBs DALI Proxy Basic Light Application.
CIOO4 is mandatory if there is one or more DALI-channel within the DALI-channel number range from 48 to 64 for which the DP IOO is not implemented.
The instances of the FB DPBLA and the bits in an Output CIOO4 shall relate as follows.

Table 15 – Relations between DALI-channel Number and fields in the GO CIOO4

	Bit within DPT_CombinedInfoOnOff for CIOO4															
Datapoint	s_{15}	s_{14}	s_{13}	s_{12}	s_{11}	s_{10}	s_9	s_8	s_7	s_6	s_5	s_4	s_3	s_2	s_1	s_0
DALI-channel number	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49

Datapoint Type

DPT_Name:	DPT_CombinedInfoOnOff				
DPT Format:	B_{32}	DPT_ID:	27.001		
Field	Description	Supp.	Range	Unit	Default
s_x	Binary state of the DALI-channel.	M	{0,1}	none	none
m_x	Each bit m_x shall indicate whether the state information s_x is valid or not. In particular, if there is no DALI-channel with the number 49 + x, then this bit shall be set to “not valid”. NOTE 14 These fields m are not shown in the above Table 15.	M	{0,1}	none	none

Access Type

Output

	this → M	☒	this → 1	☐				
	Spontaneous	☒	COV:	☒	Δ-Value:		Min repetition time:	none
			Cyclic	☐	Period:	none		
	Request	☒						

Communication Type

Group Object Datapoint			Mandatory:	☒
	Default Group Address:	---		

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☒
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

None.

Special Features

None.

4.5.10 Combined Info On Off 5 (CIOO5)

DP Name:	Combined Info On Off	Abbr.:	CIOO5	Mandatory	☐
FB Name:	DALI Proxy Basic Device specific			Can be internal	☐

Description

This Datapoint shall be used to report the binary status of the DALI-channels 65 to 80 represented by instances of FBs DALI Proxy Basic Light Application.
CIOO5 is mandatory if there is one or more DALI-channel within the DALI-channel number range from 65 to 80 for which the DP IOO is not implemented.
The instances of the FB DPBLA and the bits in an Output CIOO5 shall relate as follows.

Table 16 – Relations between DALI-channel Number and fields in the GO CIOO5

Datapoint	Bit within DPT_CombinedInfoOnOff for CIOO5															
	s_{15}	s_{14}	s_{13}	s_{12}	s_{11}	s_{10}	s_9	s_8	s_7	s_6	s_5	s_4	s_3	s_2	s_1	s_0
DALI-channel number	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65

Datapoint Type

DPT_Name:	DPT_CombinedInfoOnOff				
DPT Format:	B_{32}	DPT_ID:	27.001		
Field	Description	Supp.	Range	Unit	Default
s_x	Binary state of the DALI-channel.	M	{0,1}	none	none
m_x	Each bit m_x shall indicate whether the state information s_x is valid or not. In particular, if there is no DALI-channel with the number 64 + x, then this bit shall be set to “not valid”. NOTE 15 These fields m are not shown in the above Table 16.	M	{0,1}	none	none

Access Type

Output

	this → M	☒	this → 1	☐				
	Spontaneous	☒	COV:	☒	Δ-Value:		Min repetition time:	none
			Cyclic	☐	Period:	none		
	Request	☒						

Communication Type

Group Object Datapoint			Mandatory:	☒
	Default Group Address:	---		

Dynamics

	Power down:	Save:	☐			
	Power up:	Value:	No initialisation:	☐	Default value:	☐
			Saved value:	☐	Current value (not for input):	☒
		Transmit on bus (only for output):		☐	Read from bus (only for input):	☐

Exception Handling

None.

Special Features

None.