

# **Application Descriptions**

**Shutters and Blinds** 

**Shutters and Blinds Sensors** 

# Supplement 1 LTE-Mode Extensions

#### Summary

This document specifies the Functional Blocks for sensors in the Shutters and Blinds Application Domain.

Version 01.00.02 is a KNX Approved Standard.

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

7

**50** 

1

## **Document updates**

Version	Date	Modifications
AN143 v02	2011.10.28	Preparation of the Draft for Voting.
7/50/1 S1 v01.00.00	2013.09.13	Publication as Chapter 7/50/1 Supplement 1 "Shutters and blinds sensors LTE-Mode extensions"
v01.00.01	2013.10.22	Editorial review in view of integration in the KNX Specifications v2.1.
01.00.02	2013.10.29	Editorial review in view of integration in the KNX Specifications v2.1.

#### References

[01] Chapter 7/50/1 "Shutters and Blinds Sensors"

Filename: 07\_50\_01 Supp1 Shutters and blinds sensors LTE-Mode extensions AS v01.00.02.docx

Version: 01.00.02

Status: Approved Standard

Savedate: 2013.10.29

Number of pages: 36

## **Contents**

1	FB Shutters and Sunbl	lind Sensor Basic (SSSB)	5				
		ves					
	1.2 Functional specific	ication	5				
	1.2.1 Overview.		5				
	1.3 Functional Block	diagram					
		ation of the Datapoints					
		oveUpDown					
	-	ppStepUpDown					
	*	edicatedStop					
		ontrolModeUser					
	1	tAbsPosBlindsPercentage					
	1	tAbsPosSlatsPercentage					
		otoAbsPosition					
		MoveUpDown					
	<u> </u>	trolModeEff					
	_	-set BlindsGroup					
		SSSBMode					
		PBInterfNormalState					
		TimeLongKeypress					
		EnableBlindsMode					
_							
2		)					
		ves					
		ication					
		diagram					
		ation of the Datapoints					
		indAlarm					
		OutsideSensorZone					
	2.5.3 Parameter	HeartbeatPeriod	28				
3	FB Rain Sensor (RS)		29				
		ves					
	3.2 Functional specific	ication	29				
	3.3 Functional Block	diagram	29				
		ation of the Datapoints					
	3.5.1 Output Rai	inAlarm	30				
	-	OutsideSensorZone					
	3.5.3 Parameter	HeartbeatPeriod	32				
4	FR Frost Sensor (FS)		37				
•		ves					
		diagram					
		ation of the Datapoints					
	<u> </u>	ostAlarm					
	_	OutsideSensorZone					
	1.5.2 I didilicted	~ distance					

#### 

#### **Abbreviations**

COV Change Of Value FS FB Frost Sensor

IR LTE-Mode InfoReport serviceLDSB Light Dimming Sensor BasicLSSB Light Switching Sensor Basic

LTE-Mode Logical Tag Extended easy mode

RS FB Rain Sensor

SAB FB Sunblind Actuator Basic

SSSB FB Shutters and Blinds Sunblind Sensor Basic

WS FB Wind Sensor

#### 1 FB Shutters and Sunblind Sensor Basic (SSSB)

#### 1.1 Aims and objectives

The definitions in this document for FB Shutters and Blinds Sunblind Sensor Basic (SSSB) are an add-on to the existing FB Specification in [01] to describe the LTE-Mode runtime interface and LTE-Mode specific parameters of FB SSSB.

The FB SSSB is used in the Application Domain of Shutters and Blinds:

- to notify control commands to shutters and blinds actuators (traditional direct sensor actuator communication), where the control functionality, command arbitration and priority handling is located in the actuator, or
- to provide control data to shutters and blinds controllers (sensor controller actuator communication)

The inputs and outputs of FB SSSB are specified in this document but not the Human Machine Interface (HMI). Consequently, product manufacturers have the possibility to implement their design and their operation methods.

#### **1.2** Functional specification

#### 1.2.1 Overview

The FB Shutters and Sunblind Sensor Basic

- provides hardwired inputs or local button/HMI functionality to trigger output messages to control the Up/Down status of FB Sunblind Actuator Basic (SAB)
- receives status feedback messages from sunblind actuators according to the FB specification in [01]

Binding of SSSB and SAB FBs is based on LTE-Mode zoning concepts. Control and status feedback information are exchanged according to LTE-Mode mechanisms in a common BlindsGroup.

In the LTE-Mode runtime system BlindsGroup is mapped to existing LTE-Mode Geographical zones.

Runtime process communication of SSSB is disabled if LTE-Mode BlindsGroup is 'OutOfService'

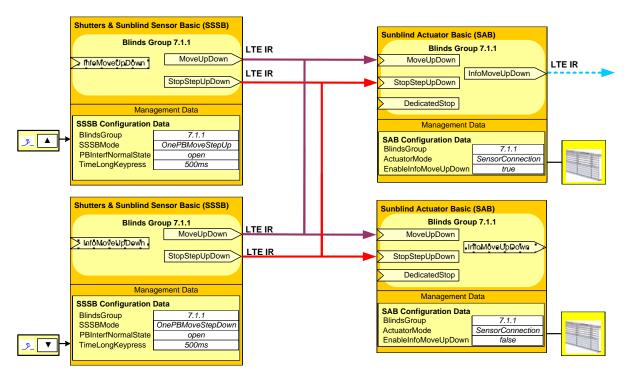


Figure 1 – Example with parallel sunblind sensors and actuators

This example shows the direct binding of two SSSB sensors with two parallel actuators SAB. All process data are exchanged in the same BlindsGroup

SSSB is configured to be operated via 2 push-buttons or binary inputs.

- one push-button / binary input to provide control commands to move up / step up
- one push-button / binary input to provide control commands to move down / step down

Runtime process data MoveUpDown and StopStepUpDown is provided by both SSSB and received (last wins principle) by both SAB

Actuator feedback information InfoMoveUpDown could be provided by both SAB actuators to support e.g. the toggle functionality in the SSSB. However, in the example above InfoMoveUpDown is in principle not needed on the SSSB. InfoMoveUpDown is provided by one SAB only (configured as group-speaker).

NOTE 1 Since both actuators are controlled together, InfoMoveUpDown value of both actuator feedback messages would normally be identical (=> last wins principle on the input in the SSSB). Redundant InfoMoveUpDown messages create unnecessary traffic and should be avoided.

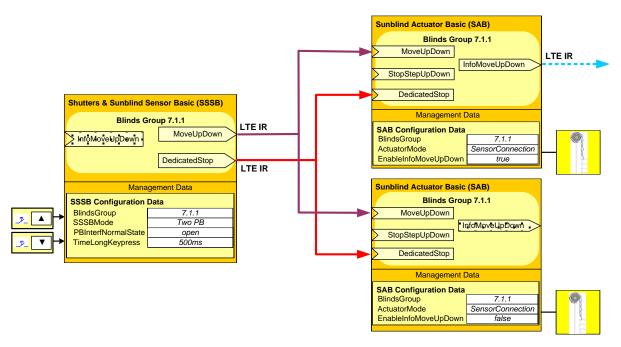


Figure 2 - Example of direct SSSB - SAB connection: manual shutter control, basic interworking

Figure 2 illustrates direct binding of one SSSB with two parallel actuators SAB. Runtime interworking covers basic functionality to manually control the shutter position.

SSSB is configured to be operated via 2 push-buttons or binary inputs.

- one push-button / binary input to provide control commands to move up / stop movement
- one push-button / binary input to provide control commands to move down / stop movement

Control command **MoveUpDown** is provided by the SSSB to trigger up/down movement of the shutter.

Specific control command **DedicatedStop** is provided by the SSSB instead of StopStepUpDown to trigger a stop command if the shutter is moving. DedicatedStop command is sent by the SSSB using LTE-Mode InfoReport Service and is received and processed by both SAB in the same BlindsGroup.

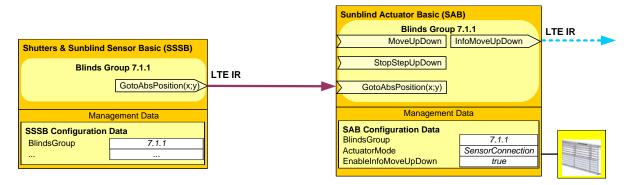


Figure 3 – SSSB providing combined absolute positioning command

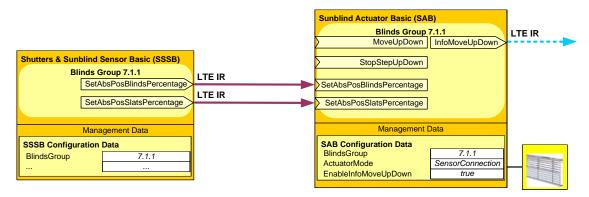


Figure 4 – SSSB providing separate height and slats positioning commands

Figure 3 and Figure 4 illustrate extended runtime interworking mechanisms between a SSSB and a SAB with the purpose to start moving the blinds towards an absolute position specified by the HeightPosition (%) and SlatsPosition (%).

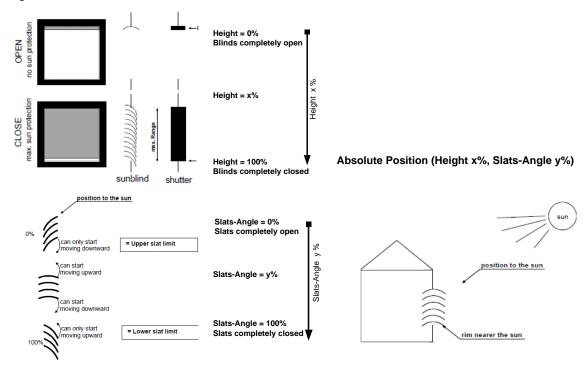


Figure 5 – Representation of height and slats position in percentage

Control command **GotoAbsPosition(x;y)** according to Figure 3 contains both HeightPosition(x) and SlatsPosition(y) and validity attributes for both position fields. Combination of both position fields in one message ensures consistency of the target position. The actuator will usually move the blinds to the target HeightPosition first and will then move the slats to the target SlatsPosition.

Usage of combined control command GotoAbsPosition is recommended if the actuator supports control of height- and slats-angle position (e.g. for venetian sunblind)

Control commands **SetAbsPosBlindsPercentage** and **SetAbsPosSlatsPercentage** according to Figure 4 are used to control HeightPosition(x) and AnglePosition(y) independently. Usage of separate control commands **SetAbsPosBlindsPercentage** and **SetAbsPosSlatsPercentage** is recommended if either height – or angle position can be controlled (e.g. for shutters or vertical jalousies).

Absolute positioning control commands are provided by the SSSB using LTE-Mode InfoReport Service and are received and processed by the SAB in the same BlindsGroup.

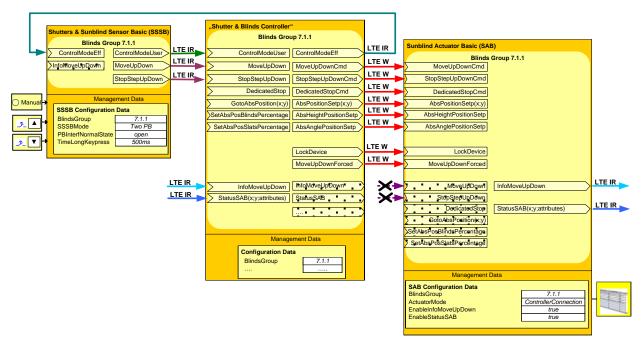


Figure 6 – Sunblind sensor – controller – actuator model: basic features

Figure 6 illustrates the basic application model for <u>indirect</u> binding of Sunblind Sensor SSSB with a Sunblind Actuator SAB via a Shutter & Blinds Controller.

#### **Runtime interworking SSSB – Controller**

The LTE-Mode Shutter & Blinds application model does not define a dedicated 'Shutter & Blinds Controller' FB. The design and runtime interface of the Shutter & Blinds Controller is manufacturer specific. However in the runtime system, the Shutter & Blinds Controller shall emulate a Sunblind Actuator 'proxy SAB' as the counterpart for the Sunblind Sensors SSSB.

Sunblind Sensors SSSB are connected to the Controller to notify direct control commands requested by the room occupant (manual control). The runtime interface between SSSB and the Controller is the same as for sensor – actuator binding

Inputs **MoveUpDown**, **StopStepUpDown**, **DedicatedStop** etc. on the Controller are usually processed with the same priority (last wins principle).

In addition the SSSB may provide the optional signal **ControlModeUser** representing a request by the user to change from manual to automatic control mode (and vice versa). The Controller provides the current control mode **ControlModeEff** (automatic/manual) as optional feedback information for the SSSB. For further details: see specification of FB SSSB.

The Controller determines the resulting control command to change the setpoint of the connected SAB according to control commands from SSSB and other criteria (e.g. scheduler, room occupancy etc.).

## 1.3 Functional Block diagram

FB Shutters and Sunblind Sensor Basic (SSSB) 801							
Inputs	Outputs						
Binding Grp.: BlindsGroup (Geographical)							
IR: InfoMoveUpDown	IR: MoveUpDown						
IR: ControlModeEff	IR: StopStepUpDown						
	IR: DedicatedStop						
	IR: ControlModeUser						
	IR: SetAbsPosBlindsPercentage						
	IR: SetAbsPosSlatsPercentage						
	IR: GotoAbsPosition						
additional I/Os	Parameters						
- two on board push buttons	BlindsGroup (Geographical)						
- or two inputs to wire external switches/push	SSSBMode						
buttons	EnableBlindsMode						
	PBInterfNormalState						
	TimeLongKeypress						
mandatory	optional IR: LTE-Mode InfoReport						

Figure 7 – Functional Block Diagram for FB Shutters and blinds sunblind Sensor Basic

## 1.4 Datapoints

Datapoint	Description	Datapoint Type	SSSB PID
Outputs			
MoveUpDown	Control signal to move the blinds up (=0) or down (=1)	DPT_UpDown (1.008)	PID 61
StopStepUpDown	Control signal to stop movement of the sunblind or to perform a step Up/Down	DPT_Step (1.007)	PID 62
DedicatedStop	Control signal to stop movement of the sunblind	DPT_Trigger (1.017)	PID 63
ControlModeUser	Command to request manual shutter / blinds	BlindsControlMode	PID 64
	control by local operation	(20.804)	
	- 0: automatic control		
	- 1: local manual control		
SetAbsPosBlinds	To set the absolute position of the blinds in	DPT_Scaling (5.001)	PID 65
Percentage	percentage.		
SetAbsPosSlats	To set the absolute position of the slats in	DPT_Scaling (5.001)	PID 66
Percentage	percentage.		
GotoAbsPosition	Command to start moving the blinds towards the absolute target position specified by the combined command fields HeightPosition (%) and SlatsPosition (%) Validity of the individual command fields is indicated by two additional attributes	DPT_CombinedPosition (240.800)	PID 67

Datapoint	Description	Datapoint Type	SSSB PID
Inputs			
SAB.InfoMoveUpDown	Feedback information from the actuator to indicate the last moving direction	DPT_UpDown (1.008)	SAB PID 51
SAB.ControlModeEff	Feedback information to indicate whether automatic or manual control mode is	DPT_BlindsControl-Mode (20.804)	SAB PID 54

Datapoint	Description	Datapoint Type	SSSB PID
Inputs			
	currently active - 0: automatic control - 1: manual control		

Datapoint	Description	Datapoint Type	SSSB PID
Parameters			
BlindsGroup (3 Properties)	LTE-Mode Geographical Zone - Building zone like Floor, Apartment - Room within the Building zone - Subzone within the Room	- DPT_UcountValue8_Z (202.002) - DPT_UcountValue8_Z (202.002) - DPT_UcountValue8_Z (202.002)	PID 101- 103
EnableBlindsMode	Defines which of the outputs StopStepUpDown or DedicatedStop is active.	DPT_Enable (1.003)	PID 51
SSSBMode	Defines the basic behaviour of SSSB: 1: one push button/binary input; MoveUpDown inverts on each transmission 2: one push button/binary input, MoveUp / StepUp message sent 3: one push button/binary input, MoveDown/ StepDown message sent 4: two push buttons/binary inputs mode	DPT_SSSBMode (20.803)	PID 120
PBInterfNormalState	Defines normally open/closed behaviour of push button interface - 0: open - 1: closed	DPT_OpenClose (1.009)	PID 121
TimeLongKeypress	Time to detect long key press 0,3 s to 7 s;100ms resolution	DPT_TimePeriod100- Msec (7.004)	PID 122

**Table 1 - LTE-Mode specific Properties** 

		Support
Parameter	BlindsGroup	М

**Table 2 - Standard Properties of Interface Object** 

		Support
Parameter	EnableBlindsMode	0
	SSSBMode	0
	PBInterfNormalState	0
	TimeLongKeypress	0
Diagnostic Data		

#### **Detailed specification of the Datapoints** 1.5

#### 1.5.1 Output MoveUpDown

FB:	SSSB	LTE-Mod	de Server Output Na	me: Mo	oveUpD	own	Mandatory 🛛 Optional 🗌		
Desc	ription:								
Outpu	Output MoveUpDown represents control commands to trigger Up/Down movement of the sunblind								
actua	actuator								
DPT:	Name	DPT_U	JpDown	DPT ID	1.008	Data	atype form	nat B <sub>1</sub>	
Field	Descri				Sup.	Range	Unit	COV	Default
b			idicate whether the su	ınblinds	М	{0, 1}			
	actuat	or will mov	ve up (0) or down (1)						
	municatio								
Bind	ling Groບ	ıp:							
Clas			Туре			Default			
	graphical		BuildingZone.Roon	n.Subzone		cs (see	paramete	er BlindsG	roup)
	ication Sp	pecific							
	ssigned		Broadcast Configurable Solution Solutio						
	Address:		IO Type(ID):	Property ID: 61					
	-Mode-Se	ervices							<u>min</u>
(eve	•	_		Output per default communicating Binding Group Wildcard allow				lowed 🖂	
	Report		Tx Prio:	High 🗌		Norm	nal 🛚	Lo	w 🗌
	-Mode R								
	oonse pol	-	Transm after Powerup: Stored Value ☐ Act Value ☐ Default Value ☐						
	output sha							20.00	
	upported)								
	perty-Ser		Read only		Read/W	/rite			
(individual access):							Cov	o of Dowe	rd a v va
Exception Handling: Save at Powerdown							down		
<ul> <li>Special Features:</li> <li>Depending on the parameter SSSBMode it is possible that only one value of the range is transmitted</li> </ul>									
			atures can be used to ildingZone	control e.g	. ali Sun	Dillid acti	uators wit	nin the sar	ne Room

- No spontaneous transmission of a default value after power-return. Transmission shall be triggered by user interaction only

## 1.5.2 Output StopStepUpDown

FB:	SSSB	LTE-I	Mode	Server Output Nar	ne: Sto	pStepU	StepUpDown   Mandatory   Optional				ional 🗌
Desc	Description:										
	Output StopStepUpDown shall be used to stop the movement of a blinds actuator or perform a gradual										
	movement of its slats. It can also stop a movement of a shutter actuator.										
DPT:	Name	DP	_Ste	l	DPT ID	1.001		Datatype	format	B <sub>1</sub>	
Field				scription		Sup.		ange	Unit	COV	Default
b				tep up or stop		М	{0,	1}	-	-	-
			1: s	tep down or stop			-				
	municatio										
	ling Grou	ıp:	1								
Clas				Туре			_	efault			
	graphical			BuildingZone.Room	n.Subzone		CS	s (see par	ameter B	lindsGro	nb)
	ication Sp	pecific	Щ								
	ssigned		Ш	Broadcast C	onfigurable						
DP Address:				IO Type(ID): 801 (SSSB)		SSB)	Ρ	roperty ID	):	62	
	-Mode-Se	ervices	;	COV MinRepTime:			sec Heartbeat: min				
(eve				Output per default communicating   Tx Prio: High							
	Report		$\boxtimes$					Normal ⊠ Low □			
(LTE-Mode Read- Response polling of the output shall always be supported)			ys	Transm after Powe	rup: Store	d Value		Act Valu	ue 🗌 🏻 🗅	efault Va	alue 🗌
	perty-Ser ividual ac			Read only		Read/V	Vrite	; <u> </u>			
Exce	ption Har	ndling:	1						Save at	Powerd	own 🗌
Read	access to	this o	utput	t is in practice not me	eaningful. F	lowever	the	read resp	onse ma	ay cause	a moving
sunblind actuator to stop or a stopped sunblind actuator to perform a step.											
Special Features:											
<ul> <li>Depending on the parameter SSSBMode it is possible that only one value of the range is transmitted</li> <li>LTE-Mode wildcard features can be used to control e.g. all sunblind actuators within the same Room or within the same BuildingZone</li> </ul>											
	- No spontaneous transmission of a default value after power-return. Transmission shall be triggered by										

user interaction only

## 1.5.3 Output DedicatedStop

FB: SSS	В	LTE-Mode Server Output Name:			DedicatedStop Mandatory				Opt	tional 🛚	
Description:											
Output Dec	dicat	edSto	op sha	II be used to reques	t a shutter o	or blinds	actuato	r to s	top its mo	vement.	i
				to user interactions	(e.g. via a 3	3 <sup>rd</sup> push	-button)	to the	correspo	nding	
				s product specific.							
				epUpDown and/or [							
				ending on the feature			sually ei	ther S	StopStepU	IpDown	(for
			- •	for shutters) are acti							
	ame	DF	PT_Tri		DPT ID	1.017			e format	B <sub>1</sub>	•
Field				ription		Sup.	Range		Unit	COV	Default
b			0, 1: I	Requests to stop mo	vement.	М	{0, 1}		-	-	-
Communic											
Binding C	≩rou	ıp:									
Class				Туре			Defau				
Geograph				BuildingZone.Roor	n.Subzone		cs (se	e par	ameter Bl	indsGro	up)
Applicatio		ecific	<u> </u>								
Unassigned				Broadcast Configurable							
DP Addre				IO Type(ID): 801 (SSSB)			Property ID: 63				
LTE-Mod	e-Se	ervice	es	COV MinRepTime:			sec Heartbeat: min				
(event):				Output per default		ting 🖂			roup Wildo	card allo	wed 🖂
InfoRepor			$\boxtimes$	Tx Prio:	High 🗌		Nor	mal 🛭		Low	
(LTE-Mod											
Response				Transm after Power	run. Stored	مبراد// ا	Π Δα	t Valı	ue □ De	efault Va	ا عبراد
the output			ays	Transm alter rowe	rup. Otoroc	ı valac		r van		Siddit Vi	
be suppor											
Property-				Read only	1	Read/V	Vrite	П			
(individua					•				T	_	
Exception	Har	ndling	g:						Save at	Powerd	lown 📙
Special Features:											
<ul> <li>LTE-Mode wildcard features can be used to control e.g. all sunblind actuators within the same Room or within the same BuildingZone</li> </ul>											
				nission of a default v	alue after p	ower-re	turn. Tra	ansmi	ssion sha	II be trig	gered by
user interaction only											

#### 1.5.4 Output ControlModeUser

FB:	SSSB	LTE-Mode	e Server Output Na	ame:	Contro	lMod	eUs	er Mar	ndatory [	Optio	onal 🛛
Desc	ription:		·	_				<u>.</u>			
Outpi	ut Control	/lodeUser p	provides a comman	d to requ	Jest/rele	ease i	man	ual shutter	r / blinds	control I	oy local
opera	ation.										
The F	HMI action	to trigger the	his command is ma	nufactur	er spec	ific.					
			he SSSB may be us			infor	mati	ion to sync	hronize		
Contr	olModeUs	er values c	of multiple SSSB in	the same	e zone						
DPT:		DPT_Bli	ndsControlMode	DPT I	ID 20	.804		Datatype f		N <sub>8</sub>	
Field		Descript				Sup	p.	Range	Unit	COV	Default
Contr	olMode	This field	d shall indicate whe	ther auto	omatic	M		0, 1 *)	-	-	cs
			0) or manual control (1) is								
			ed by the room occu								
			2 to 255 are reserve	ed for fut	ure						
		extensio	ns								
Com	municatio	n:									
	ding Grou	p:									
Clas	S		Type				De	fault			
	graphical		BuildingZone.Roo	m.Subzo	one		cs	(see paran	neter Blir	าdsGrou	p)
	lication Sp	ecific									
	ssigned			Configur							
	Address:		IO Type(ID):	801 (S			Pro	operty ID:	6		
	-Mode-Se	rvices	COV 🛛	MinRep				sec	Heartbe		<u> min</u>
(eve			Output per default			<u> </u>		inding Gro	up Wildca	ard allov	ved 🛚
	Report	$\boxtimes$	Tx Prio:	High			١	Normal 🛛		Low [	
`	E-Mode Re										
	ponse poll		Transm after Pow	erun *;	*) Store	d Valı	пе Б	∏Act Value	e 🗆 De	fault Va <sup>i</sup>	lue 🕅
	output sha	ll always	Transmatter row	crup	) Otoro	a van	uc <sub>E</sub>	Not value		iddit vai	
	upported)	_									
	perty-Serv		Read only	3	Re	ad/W	rite				
_	ividual ac					u.u.,					
Exce	ption Han	dling:							Save at I	Powerdo	own 📙
	ial Featur										
*) It s	hall be pos	ssible that o	only one value of th	e range	is trans	mitte	d, e.	g. to trigge	r 'automa	atic cont	rol' only
**) It :	shall be po	ssible that	a default/stored va	lue is tra	nsmitte	d spc	ntar	neously aft	er power	return (	or that

<sup>\*\*)</sup> It shall be possible that a default/stored value is transmitted spontaneously after power-return or that SSSB does not send an initial ControlModeUser message after power-return.

# 1.5.5 Output SetAbsPosBlindsPercentage

· · · · · · · · · · · · · · · · · · ·					sPosE ntage	Blinds-	Mandator	у 🗌 Ор	tional 🛚
Desc	ription:			<del>.</del>					
Comr (fully The e	nand to st closed). effective ra	J	the blinds towards a s wed height positions m				` .	,	
paran	neters.		1	1					
		N O	no sun protection	<u></u> →(	Blind	nt = 0% s completely			
		CLOSE	max. sun protection	e Shutter	Heigh	nt = x% nt = 100% s completely	%× tugieH ▼ closed		
DPT:	Name	DPT_Sc	aling	DPT ID 5	.001	Datat	ype format	U <sub>8</sub>	
Field		Descrip			Sup.	Range		COV	Default
Heigh	ntPosition		ld specifies the reques d height-position in per		М	{0 to 10	00}   %	CS	
Comi	municatio		<u> </u>				l e		L
	ling Grou								
Clas		•	Туре			Default			
Geo	graphical	$\boxtimes$	BuildingZone.Room.	Subzone		cs (see p	oarameter l	BlindsGro	up)
Appl	ication Sp	pecific 🗌				•			. ,
Una	ssigned		Broadcast Co	nfigurable [					
DP A	Address:			801 (SSSB)		Property	/ ID:	65	
LTE	-Mode-Se	ervices	COV Mi	nRepTime:		sec	Hear	rtbeat:	min
(eve	nt):		Output per default co	mmunicatin	ıg 🛛	Binding	Group Wil	dcard allo	owed 🛛
	Report	$\boxtimes$	Tx Prio:	High 🗌		Norma	al 🛛	Low	<i>I</i>
Resp	E-Mode Roponse poleoutput sha Sutput sha Supported)	ling of all always	Transm after Poweru	p: Stored \	/alue [	Act \	/alue □	Default V	alue 🗌
	perty-Ser ividual ad		Read only	R	ead/W	rite			
	ption Har		÷				Save	at Powerd	down 🗍
Spec	ial Featu	res:							

## 1.5.6 Output SetAbsPosSlatsPercentage

FB:	SSSB	LTE-Mo	de Server Output Name:	SetAbsPos Percentage		Mandatory	∐ Opt	ional 🖂
Desc	ription:				÷			
Comr The e	mand to st		g the slats towards a specif lowed slats positions may b					
				posi	tion to the sun			
				0% max. Range				
DPT:	Name			T ID 5.001		pe format	U <sub>8</sub>	
Field			escription	Sup.	Range	Unit	COV	Default
Slats	Position		his field specifies the reques		{0 to 100}	%	CS	
			ats-angle position in percen	tage.				
	municatio				-			
Bind	ding Grou							
Bind Clas	<b>ling Gro</b> u s	ıp:	Туре		Default			
Bind Clas Geo	<b>ling Gro</b> u s graphical	ıp:	Type BuildingZone.Room.Sub	zone		arameter Bl	indsGro	up)
Bind Clas Geo Appl	ling Grou s graphical lication Sp	ıp:	BuildingZone.Room.Sub			arameter Bl	indsGro	up)
Bind Clas Geo Appl Unas	ding Grounds Sigraphical Dication Sp Signed	ip:	BuildingZone.Room.Sub	urable 🗌	cs (see p			up)
Clas Geo Appl Unas	ding Grounds In graphical Ilication Spansioned Address:	pecific	Broadcast Config	urable  (SSSB)		ID:	66	up)
Geo Appl Unas DP /	ding Grounds s graphical lication Sp ssigned Address: -Mode-Se	pecific	Broadcast Config IO Type(ID): 801 COV MinRe	urable (SSSB) epTime:	Property sec	ID: Hearth	66 peat:	min
Bind Clas Geo Appl Unas DP / LTE (eve	ding Grounds graphical lication Sp ssigned Address: -Mode-Seent):	pecific	Broadcast Config IO Type(ID): 801 COV MinRo Output per default comm	urable (SSSB) epTime:	Property sec Binding	ID: Hearth	66 peat:	min
Bind Clas Geo Appl Unas DP / LTE (eve	ding Grounds graphical lication Sp ssigned Address: -Mode-Seent): Report	pecific   ervices	Broadcast Config IO Type(ID): 801 COV MinRe	urable (SSSB) epTime: hunicating (SSSB)	Property sec	ID: Hearth	66 peat:	min wed ⊠
Binc Class Geo Appl Unas DP / LTE (eve InfoR (LTE Res)	ding Grounds graphical lication Sp ssigned Address: -Mode-Seent):	pecific   ervices  ead- ling of all always	Broadcast Config IO Type(ID): 801 COV MinRo Output per default comm	urable (SSSB) epTime: nunicating (M) gh (I)	Property sec Binding Normal	ID:  Hearth Group Wilde	66 beat: card allo	min wed 🗵
Bind Class Geo Appl Unas DP / LTE (eve Infof (LTE Resp the co be s	ding Grounds graphical lication Sp ssigned Address: -Mode-Se ent): Report E-Mode Re ponse polication sha upported) perty-Ser ividual ad	ead- ling of all always vice ccess):	BuildingZone.Room.Sub  Broadcast Config  IO Type(ID): 801  COV MinRo Output per default comm Tx Prio: Hig	urable (SSSB) epTime: nunicating (M) gh (I)	Property sec   Binding   Normal	ID: Hearth Group Wilde	66 peat: card allo Low efault Va	min wed 🗵
Bind Class Geo Appl Unas DP / LTE (eve Infof (LTE Resp the co be s	ding Grounds graphical lication Spansigned Address: -Mode-Seant): Report -Mode Reponse poliput shaupported) poerty-Serventy-Serventy-Serventy-	ead- ling of all always vice ccess):	BuildingZone.Room.Sub Broadcast	urable (SSSB) epTime: nunicating (S) ph (Stored Value)	Property sec   Binding   Normal	ID: Hearth Group Wilde	66 beat: card allo Low	min wed 🗵
Bind Class Geo Appl Unas DP / LTE (eve Infof (LTE Resp the co be s	ding Grounds graphical lication Sp ssigned Address: -Mode-Se ent): Report E-Mode Re ponse polication sha upported) perty-Ser ividual ad	ead- ling of all always vice ccess):	BuildingZone.Room.Sub Broadcast	urable (SSSB) epTime: nunicating (S) ph (Stored Value)	Property sec   Binding   Normal	ID: Hearth Group Wilde	66 peat: card allo Low efault Va	min wed 🗵
Bind Class Geo Appl Unas DP / LTE (eve Infof (LTE Resp the co be s Prop (indi	ding Grounds graphical lication Sp ssigned Address: -Mode-Se ent): Report E-Mode Re ponse polication sha upported) perty-Ser ividual ad	ervices  ead- ling of all always vice ccess): ndling:	BuildingZone.Room.Sub Broadcast	urable (SSSB) epTime: nunicating (S) ph (Stored Value)	Property sec   Binding   Normal	ID: Hearth Group Wilde	66 peat: card allo Low efault Va	min wed 🗵

# 1.5.7 Output GotoAbsPosition

FB: SSSB	LTE-Mod	e Server Output Na	me: Got	oAbsPc	osition	Mandatory	Opt	ional 🛚	
Description:	-5		-		-				
		the blinds towards th			n specified	by the comb	oined cor	nmand	
		and SlatsPosition ( %							
		alues ensures consis							
		ommand fields is indi					T =		
DPT: Name		ombinedPosition	DPT ID	240.80		/pe format	U <sub>8</sub> U <sub>8</sub> B <sub>8</sub>		
Field		cription		Sup.	Range	Unit	COV	Default	
HeightPosition		field specifies the red		M	{0 to 100}	}   %	cs		
		olind position between						ļ	
open) and 100 % (fully closed).									
The supported range may be limited in the implementation									
SlatsPosition		field specifies the rec	guested	М	{0 to 100	} %	CS		
		-angle position between			(0.10.100)	,			
		100 %.						ļ	
		supported range may	be limited						
		e implementation							
Attributes	Bit #								
<ul> <li>ValidHeightP</li> </ul>		Validity of HeightP		M	true/false				
- ValidSlatsPo		Validity of SlatsPo		M	true/false				
- reserved	2-7	reserved bits shall	be 0					0	
Communicati									
Binding Gro	up:				_				
Class		Туре			Default				
Geographical		BuildingZone.Roon	n.Subzone		cs (see p	arameter B	lindsGro	up)	
Application S	pecific			_					
Unassigned			Configurable						
DP Address:		IO Type(ID):	801 (SSSE		Property		67		
LTE-Mode-S	ervices		MinRepTime		Sec	Heart		min	
(event): InfoReport	$\bowtie$	Output per default of Tx Prio:		ing 🖂		Group Wild			
(LTE-Mode R		TX Prio:	High 🗌		Norma		Low		
Response po									
the output sh		Transm after Powe	rup: Stored	Value	Act V	'alue 🗌 D	efault Va	alue 🗌	
be supported									
Property-Sei			1						
	(individual access):								
<b>Exception Ha</b>	Exception Handling: Save at Powerdown								
Special Featu	ires:								

# 1.5.8 Input InfoMoveUpDown

FB:	FB: SSSB										
Desci	ription:	-						<u>-</u>			
Input	InfoMov	eUpDo	wn sh	nall be used to recei	ve from FB	SAB the	last mo	ving dire	ection of	the sur	blind or
shutte											
				sed solely for visuali	sation purpo	ses, for	realizing	g the too	ggle fund	tionality	/ of
				her purposes.							
DPT:	Nam	e DP	T_Uր	Down	DPT ID	1.008	Dat	atype fo	ormat	B <sub>1</sub>	
Field		cription							Sup.	Unit	Default
b											
Comr	nunicati	on:									
Bindi	ing Grou	p:									
	Class Type Default										
	graphica			BuildingZone.Roo	m.Subzone		cs (see	param	eter Blin	dsGrou	p)
	cation S	pecific	<u>Ц</u>								
	ssigned			Broadcast	Configurat						
	ddress:			IO Type(ID):	800 (SAB)		Prope	rty ID:	5	1	
	Mode-S	ervice		InfoReport Sniffer	on Binding	Group:					
(ever	,		<u> </u>	Timeout:			Min				
	Report		$\boxtimes$								
	Mode-S	ervice		D 134711 1/D	0 '''	D: "	_				
(polli	<b>O</b> /			Read Wildcard / R	esp Sniffer o	on Bindii	ng Grou	p:			
	l – Resp		Ш	5 ( 1)							
	after Po			Default '	value 🔲			1 -		red Val	
	otion Ha								at Pow		
				y the SSSB (commi							3) and
			ty is i	mplemented in SSS	B, then the	output N	loveUpL	own wi	ll still tog	gle.	
	al Featu										
				the same zone, each							
	Since all actuators in the same zone are controlled together, subsequent InfoMoveUpDown feedback messages are normally identical => last wins principle on the input										
								. 1.6.84			
		nighly r	ecom	mended to configur	e one actua	tor in the	e zone a	s IntoMo	oveUpDo	own gro	oup-
speak	cer										

# 1.5.9 Input ControlModeEff

FB:	SSSB	LTE-Mode	Client Input Nam	e: Cor	ntrolMod	eEff	Mandatory	y 🔲 Opti	onal 🛚
Desc	ription:					•			
			ovided by a Shutter		Controlle	or FB SA	B to indicat	te if manu	al or
			tly active in the Blin						
			ed solely for visuali			o synchro	nize Contro	olModeUse	er values
of mu	ıltiple SSS	B in the sa	me zone, or for othe	er purposes.					
DPT:	Name	DPT_Bli	ndsControlMode	DPT ID	20.804	Dataty	ype format	N <sub>8</sub>	
Field		Description					Sup.	Unit	Default
Contr	ontrolMode This field shall indicate whether automatic control (0) or M cs								
	manual control (1) is currently active.								
	Values 2 to 255 are reserved for future extensions								
Com	municatio	on:							
	ding Grou	ıp:							
Clas	S		Туре			Default			
	graphical	$\boxtimes$	BuildingZone.Roo	m.Subzone		cs (see p	arameter E	BlindsGrou	ıp)
App	lication Sp	ecific 🗌							
	ssigned		Broadcast	Configurat					
DP /	Address:		IO Type(ID):	800 (SAB)		Property	/ ID:	54	
	-Mode-Se	rvice	InfoReport Sniffer	r on Binding	Group:				
(eve	•	_	Timeout:			Min			
	Report		Tillicout.						
	-Mode-Se	rvice				_			
	ling):		Read Wildcard / R	Resp Sniffer (	on Bindii	ng Group:			
	d – Respo								
	e after Po		Default	Value ⊠				Stored Val	
Exce	ption Har	ndling:					Save at P	owerdown	
Spec	ial Featu	res:							
	ControlModeEff feedback from a Shutters & Blinds Controller is represented in the LTE-Mode runtime								
			om a SAB. From th						ontroller
beha	ves like ar	n actuator p	roxy to emulate trad	ditional direc	t sensor	- actuator	r communic	cation.	

#### 1.5.10 Parameter-set BlindsGroup

BlindsGroup is implemented using the LTE-Mode Geographical zone concept. It consists of 3 properties belonging together.

#### 1.5.10.1 Parameter BuildingZone

FB: SSSB Property	Name (Server):	.Building	Zone	Mandatory	/ 🛛 Optio	onal 🗌	
Description:							
Part of BlindsGroup para			Geograp	hical zo	one:		
-> BuildingEntity (Floor, A	Apartment, Building so	ection etc.)					
<b>DPT</b> : Name DPT_U	lcountValue8_Z	DPT ID	202.002		atype format	U <sub>8</sub> Z <sub>8</sub>	
Field	Description		Sup.	Range	Unit	Default	
CounterValue Number of the BuildingZone					1 to 126		CS
Status						bitset	
- OutOfService zone active /inactive					true/false		cs
- all other flags not supported, fixed to '0'							
Command						enum	
- NormalWrite				М			
- SetOSV & ResetOSV	set zone inactive / a	active		0			
- all other commands	not supported			NA			
Communication:							
DP Address:	IO Type(ID):	301 (SSSB)		Prope	rty ID:	101	
(in the server)	Start-Index:	1			elements	1	
Property access:	Read only	]	Read/W	rite	$\boxtimes$		
Protection	Read level -	-		Write	level		
Exception Handling:	Value after Powerup	: Stored	Value 🔯	Act Va	alue 🗌 🛮 Def	ault Value	
Special Features:							
SSSB runtime Datapoint							er
BuildingZone is 'OutOfSe		ponding Ro	oom and S	Subzon	e parameters	are	
'OutOfService' (common	flag)						

#### 1.5.10.2 Parameter Room

FB:							Mandatory	y 🛛 Optio	onal 🗌
Desci	ription:								
Part o	f Blinds	Froup parai	meter set mapped to	LTE-Mode	Geograp	hical zo	ne:		
-> Ro	om withir	n BuildingZ	one						
DPT:	Name	DPT_U	countValue8_Z	DPT ID	202.002	2 Dat	atype format	$U_8Z_8$	
Field							Range	Unit	Default
CounterValue Room number					М	1 to 63		cs	
Status							bitset		
- OutOfService zone active /inactive						0	true/false		CS
	ther flags	3	not supported, fixed	to '0'		NA			
Comn								enum	
	nalWrite					M			
		esetOSV	set zone inactive / a	active		0			
	ther com		not supported			NA		<u> </u>	
	nunicati		1						
	Address	=	IO Type(ID):	801 (SSS	SB)		rty ID:	102	
•	he serve	•	Start-Index:	1			<u>elements</u>	1	
	perty acc	cess:	Read only		Read/W	rite	$\boxtimes$		
	ection		Read level			Write	level		
Exce	otion Ha	ndling:	Value after Powerup:	Stored	Value 🛚	Act Va	ılue 🗌 🛮 Def	fault Value	
Speci	al Featu	res:							
			are not LTE-Mode c						er
Buildi	ngZone i	s 'OutOfSe	rvice' also the corresp	ponding Ro	oom and S	Subzon	e parameters	are	
'OutO	fService'	(common	flag)						

#### 1.5.10.3 Parameter Subzone

FB:	SSSB	Property	Name ( <u>Server</u> ):	.Subzon	е	Mandator	y 🛛 Opti	ional 🗌	
Descr	ription:		-				<del>-</del>		
			meter set mapped to	LTE-Mode	Geograp	hical zo	ne:		
-> Sub	ozone wit	hin Buildin	igZone.Room						
DPT:	Name	DPT_U	countValue8_Z	DPT ID	202.002	2 Dat	tatype format	$U_8Z_8$	
Field			Description			Sup.	Range	Unit	Default
Count	erValue		Subzone number			М	1 to 15		cs
Status	3							bitset	
- OutC	OfService		zone active /inactive	9		0	true/false		cs
- all ot	ther flags		not supported, fixed	to '0'		NA			
Comm	nand							enum	
	nalWrite					M			
- SetC	OSV & Re	setOSV	set zone inactive / a	ctive		0			
- all ot	ther comi	mands	not supported			NA			
Comr	nunicatio	on:							
DP /	Address:		IO Type(ID):	801 (SSS	B)	Prope	erty ID:	103	
(in t	he serve	r)	Start-Index:	1		N° of	elements	1	
Prop	perty acc	ess:	Read only		Read/W	/rite	$\boxtimes$		
Prot	ection		Read level			Write	level		
Excep	otion Hai	ndling:	Value after Powerup	Stored \	/alue ⊠	Act Va	alue 🗌 🛮 De	fault Value	
Speci	al Featu	res:							
SSSB	runtime	Datapoints	are not LTE-Mode c	ommunicat	ing if zon	e is 'Ou	utOfService'.	If paramet	ter
Buildir	ngZone is	s 'OutOfSe	rvice' also the corresp	ponding Ro	om and	Subzon	e parameters	s are	
'OutO	fService'	(common	flag)						

## 1.5.11 Parameter SSSBMode

FB: SSSB Pr	operty	/ Name ( <u>Server</u> ):	SSSBMod	е		Mandator	y 🔲 Opt	ional 🛚
Description:		<del>-</del>				<del>-</del>		
trigger control commoduttons/switches are	nands f e conne	basic behavior of the for shutter & blinds c ected to the SSSB. I; additional modes n	ontrol. This	paramet	er is me			
		SBMode	DPT ID	20.803		atype format	N <sub>8</sub>	
Field	Desc	cription			Sup.	Range	Unit	Default
n	- 2: Mo	one push button/bina veUpDown inverts on eac poor usability, not recome one push button/bina oveUp / StepUp mes one push button/bina oveDown / StepDown two push buttons/bina	ch transmission mended ary input, sage sent ary input, n message	sent		[1 to 4]	1	CS
Communication:	•						3	3
DP Address:		IO Type(ID):	801 (SSSI	3)	Prope		120	
(in the server)		Start-Index:	1			elements	1	
Property access:		Read only		Read/W		$\boxtimes$		
Protection		Read level			Write	evel		
Exception Handling	g: \	/alue after Powerup:	Stored \	/alue 🛚	Act Va	lue 🗌 Def	fault Value	<del>-</del>
Special Features:								

## 1.5.12 Parameter PBInterfNormalState

FB:	SSSB	Proper	y Name ( <u>Server</u> ):	PBInterfNo	ormalStat	e	Mandator	y 🔲 Opt	ional 🛚
Desc	ription:		-				- <del>-</del>		
Defin	es normall	y open/cl	osed behavior of the	physical pu	sh-buttor	n interfa	ce		
DPT:	Name	DPT_C	)penClose	DPT ID	1.009	Dat	atype format	B <sub>1</sub>	
Field	<u>'</u>					Sup.	Range	Unit	Default
			- 0: normally open						
			- 1: normally closed						
Com	municatio	n:			•		-		-
DP	Address:		IO Type(ID):	801 (SSS	B)	Prope	rty ID:	121	
(in t	he server	)	Start-Index:	1		N° of	elements	1	
Pro	perty acce	ess:	Read only		Read/W	rite/	$\boxtimes$		
Pro	tection		Read level			Write	level		
Exce	ption Han	dling:	Value after Powerup	: Stored	Value 🛚	Act Va	lue 🗌 Def	ault Value	e 🗌
Spec	ial Feature								
	•	•	_	•	•		•	•	

## 1.5.13 Parameter TimeLongKeypress

ED.	CCCD	Drama	ut. Nama (Caman).	Time all am all	<b>'</b> - 1 110	***	Mandat	<i>.</i> [	0-4	ional M
FB:	SSSB	Prope	rty Name ( <u>Server</u> ):	TimeLongK	кеур	ress	Mandat	ory L	Opt	ional 🛚
Desc	ription:									
Time	to detect lo	ng key p	oress 0,3s to 7s to cha	inge SSSB fi	rom	steppir	ng to moving co	mm	ands	
DPT:	Name	DPT_1	imePeriod100Msec	DPT ID	7.00	)4	Datatype form	at	U <sub>16</sub>	
Field		cription			Sup. Range			Unit	Default	
value	!	e indication with 100m	s resolution			300 to 7000		ms	CS	
Com	munication	າ:					-	-		
DP	Address:		IO Type(ID):	801 (SSSB	5)	Pi	roperty ID:	1	22	
(in t	the server)	1	Start-Index:	1		N'	° of elements	1		
Pro	perty acce	ss:	Read only		Rea	d/Write	$\boxtimes$			
Pro	tection		Read level			W	rite level	-	-	
Exce	ption Hand	lling:	Value after Powerup	Stored Va	alue	e 🛛 Ac	t Value 🗌 🏻 🗅	efau	ılt Value	
Spec	ial Feature	s:								
						•				

## 1.5.14 Parameter EnableBlindsMode

PID: 51

Detailed specifications see [01].

## 2 FB Wind Sensor (WS)

#### 2.1 Aims and objectives

The functionality of FB Wind Sensor is to detect strong wind and to provide WindAlarm information with the purpose to move the sunblind to a secure position in case of strong wind and to block it for any further control.

#### 2.2 Functional specification

The physical implementation of the wind sensor is manufacturer specific.

If the Wind Sensor detects strong wind then it will notify WindAlarm(true) otherwise WindAlarm(false).

The distribution of WindAlarm information in the system shall be event-driven and in addition be repeated periodically. The heartbeat-repetition time is either fixed or may be configurable by parameter HeartbeatPeriod.

In the LTE-Mode runtime system WindAlarm information is provided by FB WS using LTE-Mode InfoReport mechanisms in a dedicated OutsideSensorZone.

#### 2.3 Functional Block diagram

	FB Wind Sensor (WS)						
Inputs		Dinding Crn , Out	oido Conoc	r7ana	Outputs		
		Binding Grp.: Outs	sideSenso		IR: WindAlarm		
additional I/Os					<b>Parameters</b>		
- sensor input				Outsid	deSensorZone		
				Н	eartbeatPeriod		
	mandatory	optio	onal	IR: LTE-Mode InfoReport			

Figure 8 – Functional Block Diagram for FB Wind Sensor

#### 2.4 Datapoints

Datapoint	Description	Datapoint Type	WS PID
Outputs			
WindAlarm	Wind alarm status indication from the Wind Sensor	DPT_Alarm (1.005)	PID 51
Inputs			
none			
Parameters			
OutsideSensorZone	LTE-Mode Zone to distribute Wind Alarm information	DPT_UcountValue8_Z (202.002)	PID 101
HeartbeatPeriod	Parameter to define the heartbeat repetition time for WindAlarm	DPT_TimePeriodSec (7.005)	PID 111

**Table 3 - LTE-Mode specific Properties** 

_		Support
Parameter	OutsideSensorZone	М

**Table 4 - Standard Properties of Interface Object** 

		Support
Parameter	HeartbeatPeriod	0
Diagnostic Data		

# 2.5 Detailed specification of the Datapoints

## 2.5.1 Output WindAlarm

#### **Standard Mode**

DP	Name:	Wind	dAlarm				Ab	br.:		•		Manda	tory		$\boxtimes$
FB	Name:	WS										Can be	interna		
Des	scription														
Out	tput WindA	larm	indicat	es whe	ether or not	strong v	wind is	dete	cted.	This	inform	ation may	y be use	d for	
sun	blind contr	ol to	move t	he sur	nblind to a se	ecure p	ositior	in ca	ase of	stro	ng wind	d and to b	lock it fo	or any	y
furt	further control as long as the WindAlarm persists.														
Dat	Datapoint Type														
DP.	PT_Name: DPT_Alarm														
DP.	T Format:	B₁								DPT	Γ_ID:	1.005			
Fie	ld	De	scripti	on					Supp	).	R	ange	Unit	Def	ault
b	This field shall indicate whether or not			not		M		{0, 1}			-	-			
strong wind is detected															
Acc	cess Type														
	this $\rightarrow$ M		$\boxtimes$	1	this $\rightarrow$ 1										
i	Spontane	ous		COV	: 🛛	Delta	-			Minl	RepTin	ne:	10 sec	;	
	•					Value	e:				•				
				Cycli	c 🛛	Perio	d:	1(	) min	1)					
	Request					<u>,-I </u>									
Co	mmunicat	ion 1	Гуре												
•	Group Ob			int								Mandato	ry: 🛛		
	Default G										I		, _		
Dy	namics														
	Power do	wn:	Save												
	Power up	:	Value	<b>:</b>	No initialisa	ation:			Defa	ault v	alue:				
	•				Saved valu	ie:			Actu	ıal va	alue:				
	Transmit on bus:														
Ex	Exception Handling														
	<u> </u>														
Sp	ecial Feat	ures													
			er fixed	d or de	fined by par	ameter	Hear	beat	Period	<u> </u>					
					,										

#### LTE-Mode

FB:	WS	LTE-I	Mode	Server Output Nai	me: Wir	ndAlarm	dAlarm Mandatory ⊠ Optional □					
Descr	iption:				<del></del>			<del></del>				
				es whether or not stro								
				ne sunblind to a secu		in case	of s	trong wir	nd and to	block it fo	or any	
	-			he WindAlarm persis								
DPT:	Name	DP	T_Ala	arm	DPT ID	1.005		Datatyp	e format	B <sub>1</sub>		
Field				scription		Sup.		ange	Unit	COV	Default	
b				s field shall indicate v		M	{0,	, 1}		Y		
			not	strong wind is detect	ted							
	nunicatio											
Bindi	ing Grou	p:										
Class	3			Туре			De	fault				
	graphical											
	cation Sp	ecific	$\boxtimes$	OutsideSensorZone								
	signed			Broadcast C	Configurable	<del>-</del>						
DP A	ddress:			IO Type(ID): 802 (WS)			Pr	operty II		51	4)	
	Mode-Se	rvices	<b>;</b>	COV 🔀 2) MinRepTime:			10	sec	Heartb		) <u>m</u> in	
(ever	•			Output per default	communica	ting 🖂			roup Wild	card allo	wed 🗌	
	eport		$\boxtimes$	Tx Prio:	High 🗌			Normal 🛭	$\leq$	Low		
	-Mode Re											
	onse poll			Transm after Powe	Transm after Powerup: Stored Value ☐ Act Value ☑ Default Value				alue 🗆			
	utput sha	ili alwa	ys					7.00.		0.00.0		
	ipported)											
	erty-Serv vidual ac		:	Read only		Read/W	/rite					
Excep	Exception Handling: Save at Powerdown											
Specia	al Featur	es:										
1) Hea	1) Heartbeat is either fixed or defined by parameter HeartbeatPeriod											
2) Spor	ntaneous	transn	nissio	on of WindAlarm in th	ne LTE-Mod	de runtin	ne is	disable	d if Outsic	deSensor	Zone is	
OutOf	Service. I	Howev	er th	<sup>2)</sup> Spontaneous transmission of WindAlarm in the LTE-Mode runtime is disabled if OutsideSensorZone is OutOfService. However the value of property WindAlarm is always accessible via Property Read service.								

## 2.5.2 Parameter OutsideSensorZone

FB:	WS	Property	Name ( <u>Server</u> ):	lame (Server): OutsideSensorZone Mandatory ☑ Optional ☐							
Desc	ription:										
			ensor Zone to be us		for the bir	nding of F	-B	WSp	providing Wi	ndAlarm	
inforn	nation in	the LTE-Mo	ode runtime system	١.							
<b>DPT:</b> Name DPT_UcountValue8_Z DPT ID 202.002 Datatype format U <sub>8</sub> Z <sub>8</sub>											
Field			Description				S	up.	Range	Unit	Default
Senso	orZone		Number of the ser	ารด	r zone			M	1 to 31		cs
Status	S									bitset	
- Out	OfService	€	zone active /inactive					0	true/false		cs
- all o	ther flags	5	not supported, fixed to '0'				1	NA			
Comr	nand									enum	
- Norr	malWrite							M			
- SetC	DSV & R	esetOSV	set zone inactive / active				0				
- all o	ther com	mands	not supported			1	NA				
Comi	municati	on:				·-	_			•	
DP	Address	:	IO Type(ID):		802 (WS)		F	rope	rty ID:	101	
(in t	he serve	er)	Start-Index:		1		N	l° of €	elements	1	
Pro	perty ac	cess:	Read only			Read/W	/rite	Э			
Pro	tection		Read level				٧	Vrite	level		
Exce	ption Ha	ndling:	Value after Poweru	ıp:	Stored '	Value ⊠	Α	ct Va	lue 🗌 De	fault Value	<del>,</del> 🗌
-											
Spec	ial Featι	ires:									
WS ru	ıntime oı	utput Wind/	Alarm is not LTE-Mo	ode	communi	cating if a	zor	ne is '	OutOfService	e'.	

## 2.5.3 Parameter HeartbeatPeriod

FB:	WS	Property Name ( <u>Server</u> ):		HeartbeatPeriod			Mandator	y 🔲 Opt	ional 🛚	
Desc	ription:	-					<del></del>			
This p	This parameter defines heartbeat period to update output WindAlarm if there is no change of value.									
DPT:	Name	DPT_T	imePeriodSec	DPT ID	7.005	Dat	tatype format	U <sub>16</sub>		
Field			Description			Sup.	Range	Unit	Default	
Timel	PeriodSec		See above			М	CS	S	600	
Comi	municatior	<b>า</b> :								
DP	Address:		IO Type(ID):	802 (WS)		Prope	erty ID:	111		
(in t	he server)		Start-Index:	1		N° of elements		1		
Pro	perty acce	ss:	Read only		Read/W	/rite	$\boxtimes$			
Pro	tection		Read level			Write	level			
Exce	ption Hand	lling:	Value after Powerup	: Stored \	/alue ⊠	Act Va	alue 🗌 🛮 Def	ault Value		
Spec	ial Feature	s:								
		•								

#### **3 FB Rain Sensor (RS)**

#### 3.1 Aims and objectives

The functionality of FB Rain Sensor is to detect rain and to provide RainAlarm information with the purpose to move the sunblind to a secure position in case of rain and to block it for any further control.

#### 3.2 Functional specification

The physical implementation of the rain sensor is manufacturer specific.

If the Wind Sensor detects rain then it will notify RainAlarm(true) otherwise RainAlarm(false).

The distribution of RainAlarm information in the system shall be event-driven and in addition be repeated periodically. The heartbeat-repetition time is either fixed or may be configurable by parameter HeartbeatPeriod.

In the LTE-Mode runtime system RainAlarm information is provided by FB RS using LTE-Mode InfoReport mechanisms in a dedicated OutsideSensorZone.

#### 3.3 Functional Block diagram

		FB Rain Se	ensor (RS)		803
Inputs		Binding Grp.: (	Dutsi <u>deSen</u>	sorZone	Outputs
					IR: RainAlarm
additional I/Os					Parameters
- sensor input					OutsideSensorZone HeartbeatPeriod
	mandatory		optional	IR: LTE-Mod	le InfoReport

Figure 9 - Functional Block Diagram for FB Rain Sensor

#### 3.4 Datapoints

Datapoint	Description	Datapoint Type	WS PID
Outputs			
RainAlarm	Rain alarm status indication from the Rain Sensor	DPT_Alarm (1.005)	PID 51
Inputs			
none			
Parameters			
OutsideSensorZone	LTE-Mode Zone to distribute Rain Alarm information	DPT_UcountValue8_Z (202.002)	PID 101
HeartbeatPeriod	Parameter to define the heartbeat repetition time for RainAlarm	DPT_TimePeriodSec (7.005)	PID 111

**Table 5 - LTE-Mode specific Properties** 

_		Support
Parameter	OutsideSensorZone	М

**Table 6 - Standard Properties of Interface Object** 

		Support
Parameter	HeartbeatPeriod	0
Diagnostic Data		

# 3.5 Detailed specification of the Datapoints

## 3.5.1 Output RainAlarm

#### **Standard Mode**

DΡ	Name:	Rair	Alarm					Abbr.:				Mandatory $\boxtimes$			$\boxtimes$	
FB	Name:	RS											Can be	e internal		
Des	scription															
	put RainAl															ł
con	trol to mov	e the	e sunbli	nd to a	a secur	e posi	ition in	case	of ra	in ala	arm an	d to bl	ock it for	any furth	er	
	trol as long		the alar	m pers	sists.											
	apoint Ty															
	T_Name:	DF	PT_Alar	m												
												1.005				
Fie	ld	De	escripti	on						Sup	op.	R	ange	Unit	Def	ault
b		Th	is field	shall ir	ndicate	wheth	ner or r	ot		N		{0, 1}			-	-
	rain is detected															
Acc	Access Type															
	this $\rightarrow$ M		$\boxtimes$	1	his →	1										
	Spontaneous   COV:   Delta-										Min	RepTir	ne:	10 sec	;	
	Value:						<b>:</b> :				·					
				Cyclic	С	$\boxtimes$	Perio	d:		10 mi	n <sup>1)</sup>					
	Request				•		•									
Co	mmunicat	ion	Туре													
<b>*</b>	Group Ob	oject	Datapo	int									Mandato	ory: 🛛		
	Default G	roup	Addres	ss: -								•				
Dy	namics															
	Power do	wn:	Save	:												
	Power up	:	Value	e:	No in	itialisa	ition:			De	efault v	alue:				
					Save	d valu	e:			Ac	tual va	alue:				
			Trans	smit on	bus:				$\boxtimes$							
Ex	ception Ha	andli	ing													
	•															
Sp	Special Features															
1) H	leartbeat is	s eith	ner fixed	d or de	fined b	y para	ameter	Hear	tbea	tPeri	od					
	. Jan to Jat 1	J 0.11		<u> </u>		- Pare				0///						

#### LTE-Mode

FB:	RS	LTE-		Server Output	RainAlarm			Ma	andatory [	⊠ Opti	ional 🗌		
Desc	ription:				-			÷					
Outpu	ıt RainAla	rm inc	licate	s whether or not rai	n is detected	. This in	forr	mation ma	ay be use	d for sur	blind		
contro	ol to move	the s	unblir	nd to a secure posit	ion in case of	rain ala	arm	and to bl	ock it for	any furth	er		
contro	ol as long	as the	alarr	m persists.									
DPT:	Name	DP	T_Ala	arm	DPT ID	1.005		Datatype	e format	B <sub>1</sub>			
Field			Des	scription	•			ange	Unit	COV	Default		
b			This	s field shall indicate	whether or	М	{0	, 1}	}				
				rain is detected									
	nunicatio												
Binding Group:													
Clas				Туре			De	efault					
	graphical												
	ication Sp	pecific	$\boxtimes$	OutsideSensorZor	ne		CS						
	ssigned			Broadcast									
DP A	Address:			IO Type(ID):	803 (RS)		Р	roperty ID	):	51			
	-Mode-Se	ervices	3	COV 🛛 2)	sec	Heartbe							
(eve				Output per default	communicat	ing 🖂	Binding Group Wildcard allowed						
	Report		$\boxtimes$	Tx Prio:	High 🗌		Normal \( \sumb \) Low \( \subseteq \)						
Resp	i-Mode Re conse pol output sha upported)	ling of all alwa	ıys	Transm after Pow	erup: Stored	Value [		Act Val	ue 🛛 D	efault Va	alue 🗌		
	erty-Ser vidual ac		:	Read only	3	Read/W	'rite						
Exce	otion Har	ndling							Save at	Powerdo	own 🗌		
Speci	ial Featui	res:											
1) Hea	1) Heartbeat is either fixed or defined by parameter HeartbeatPeriod												
				on of RainAlarm in t				disabled	I if Outside	eSensor.	Zone is		
OutO	Service.	Howev	er th	e value of property	RainAlarm is	always	acc	essible v	ria Proper	ty Read	service.		

## 3.5.2 Parameter OutsideSensorZone

FB:	RS	Property	y Name ( <u>Server</u> ): OutsideSensorZone							ry 🛛 Opti	onal 🗌
Desc	ription:								-		
Numb	er of the	Outside So	ensor Zone to be u	sed	for the bi	nding of F	BR	S pi	roviding Ra	inAlarm inf	ormation
in the	LTE-Mo	de runtime	system.					-			
DPT:	Name	DPT_U	countValue8_Z		DPT ID	202.002	2 [	ata	atype forma	t $U_8Z_8$	
Field			Description					١.	Range	Unit	Default
SensorZone			Number of the sensor zone						1 to 31		CS
Status										bitset	
- Out	OfService	Э	zone active /inact	tive			Ο		true/false		CS
- all o	ther flags	6	not supported, fixed to '0'								
Command										enum	
- Nori	malWrite					M					
- Set0	DSV & R	esetOSV	set zone inactive / active								
- all o	ther com	mands	not supported								
Com	<b>nunicati</b>	on:				•				•	
DP	Address	:	IO Type(ID):		803 (RS)		Pro	per	ty ID:	101	
(in t	he serve	er)	Start-Index:		1		N°	of e	lements	1	
Pro	perty ac	cess:	Read only			Read/W	rite		$\boxtimes$		
Pro	tection		Read level				Wri	te l	evel		
Exce	ption Ha	ndling:	Value after Power	up:	Stored	Value 🛚	Act	Val	ue 🔲 De	efault Value	:
Spec	Special Features:										
RS ru	ntime ou	tput RainA	arm is not LTE-Mo	ode	communic	cating if zo	one is	s 'O	outOfServic	e'.	

## 3.5.3 Parameter HeartbeatPeriod

FB:	RS	Proper	ty Name ( <u>Server</u> ):	HeartbeatP	eriod	Mandatory 🗌 Optional 🛛					
Desc	ription:						<del>-</del>				
This p	oarameter o	defines h	eartbeat period to upo	date output F	RainAlar	m if the	ere is no chan	ge of valu	ie.		
DPT:	Name	DPT_T	imePeriodSec	DPT ID	7.005	Dat	tatype format	U <sub>16</sub>			
Field			Description			Sup.	Range	Unit	Default		
TimePeriodSec			See above			M	CS	S	600		
Com	municatior	1:									
DP	Address:		IO Type(ID):	803 (RS)		Prope	erty ID:	111			
(in t	the server)		Start-Index:	1		N° of	1				
Pro	perty acce	ss:	Read only		Read/W	rite					
Pro	tection		Read level			Write	level				
Exce	ption Hand	lling:	Value after Powerup	Stored V	alue 🛚	Act Va	alue 🔲 🛮 Def	ault Value	<del>-</del>		
Spec	ial Feature	s:									
				•		•	•	•			

#### 4 FB Frost Sensor (FS)

#### 4.1 Aims and objectives

The functionality of FB Frost Sensor is to detect rain and to provide FrostAlarm information with the purpose to move the sunblind to a secure position in case of frost and to block it for any further control.

#### **4.2** Functional specification

The physical implementation of the frost sensor is manufacturer specific.

If the Frost Sensor detects frost then it will notify FrostAlarm(true) otherwise FrostAlarm(false).

The distribution of FrostAlarm information in the system shall be event-driven and in addition be repeated periodically. The heartbeat-repetition time is either fixed or may be configurable by parameter HeartbeatPeriod.

In the LTE-Mode runtime system FrostAlarm information is provided by FB FS using LTE-Mode InfoReport mechanisms in a dedicated OutsideSensorZone.

#### 4.3 Functional Block diagram

	FB Frost Sensor (FS)	804
Inputs	Binding Grp.: OutsideSensorZo	<b>Outputs</b> ne
		IR: FrostAlarm
additional I/Os - sensor input		Parameters OutsideSensorZone HeartbeatPeriod
ma	ndatory optional IF	t: LTE-Mode InfoReport

Figure 10 - Functional Block Diagram for FB Rain Sensor

#### 4.4 Datapoints

Datapoint	Description	Datapoint Type	WS PID
Outputs			
FrostAlarm	Frost alarm status indication from the Frost Sensor	DPT_Alarm (1.005)	PID 51
Inputs			
none			
Parameters			
OutsideSensorZone	LTE-Mode Zone to distribute Frost Alarm information	DPT_UcountValue8_Z (202.002)	PID 101
HeartbeatPeriod	Parameter to define the heartbeat repetition time for FrostAlarm	DPT_TimePeriodSec (7.005)	PID 111

**Table 7 - LTE-Mode specific Properties** 

_		Support
Parameter	OutsideSensorZone	М

**Table 8 - Standard Properties of Interface Object** 

		Support
Parameter	HeartbeatPeriod	0
Diagnostic Data		

# 4.5 Detailed specification of the Datapoints

## 4.5.1 Output FrostAlarm

#### **Standard Mode**

DP	Name:	Frost	Alarm		Abb	r.:				Mandat	ory		$\bowtie$			
FB	Name:	FS											Can be	internal		
Des	scription															
	tput FrostA															d
con	ntrol to mov	e the	sunbli	ind to a	a secu	re pos	ition in d	case of	ffros	t ala	rm ar	nd to b	ock it for	any furth	ner	
con	ntrol as long	g as th	ne alaı	m per	sists.											
	tapoint Typ															
DP	T_Name:	DP	T_Alar	m												
DPT Format:         B <sub>1</sub> DPT_ID:         1.005																
Fie	Field Description									Supp	).	R	ange	Unit	Def	ault
b		This	s field	shall in	ndicate	whetl	ner or n	ot		М		{0, 1}			-	-
		fros	t is de	tected												
Acc	cess Type															
	this $\rightarrow$ M $\boxtimes$ this $\rightarrow$ 1 $\square$															
	Spontaneous X COV:					Delta-				RepTin	ne:	10 sec	;			
	oponianeous 🔼 oo						Value					-				
				Cycli	С	$\boxtimes$	Period	l:	10	min	1)					
	Request						•									
Co	mmunicat	ion T	уре													
•	Group Ob	ject [	Datapo	oint									Mandato	ry: 🛛 🖂		
	Default G	roup	Addres	ss:								•		•		
Dy	namics															
	Power do	wn:	Save													
	Power up		Value	<b>e</b> :	No in	itialisa	ition:			Defa	ault v	alue:				
	-				Save	d valu	e:			Actu	ıal va	lue:				
			Trans	smit or	bus:											
Ex	ception Ha	andlir	ng													
Sp	Special Features															
1) F	Heartbeat is	s eithe	er fixe	d or de	efined b	by para	ameter	Heartb	eatP	erioc						

#### LTE-Mode

FB: FS	LTE-N	/lode	Server Output Na	me:	FrostAlarm Mandatory 2					Opt	ional 🗌	
Description:	-				_			<del></del>				
Output FrostAl	arm ind	licate	es whether or not fro	st is de	tected	d. This i	nfo	rmation i	may be u	sed for su	ınblind	
control to move	e the su	ınblir	nd to a secure position	on in ca	ase of	frost ala	arm	and to I	block it fo	r any furth	ner	
control as long			·									
<b>DPT</b> : Name	DP1	Γ_Ala	arm	DPT	ID	1.005		Datatyp	type format B₁			
Field			scription			Sup.	Ra	ange	Unit	COV	Default	
b		s field shall indicate v	whethe	r or	М	{0	, 1}		Υ			
		not	ost is detected									
Communicati												
Binding Grou	up:											
Class			Туре				De	efault				
Geographical												
Application S	pecific	$\boxtimes$	OutsideSensorZon	е			CS					
Unassigned			Broadcast Configurable									
DP Address:			IO Type(ID): 804 (FS) Property ID: 51							51		
LTE-Mode-S	ervices	;	COV $\boxtimes^{2}$ MinRepTime: 10 sec Heartbeat:							beat: 10	) <sup>1)</sup> min	
(event):			Output per default	commu	unicati	ng 🛛	Binding Group Wildcard allowed					
InfoReport		$\boxtimes$	Tx Prio:	High			Normal \( \sumber \) Low \( \superstandar \)					
(LTE-Mode R												
Response po			Transm after Powe	rup: S	tored	Value [	٦	Act Va	lue 🖂 🏻 I	Default Va	alue 🗆	
the output sha		ys	Transmanor romo	. чр. О	.0.00	Talao L		7101 74		Jordan To		
be supported												
Property-Ser (individual a			Read only		F	Read/W	rite		]			
			•						0	4 Daand		
Exception Ha	naling:								Save a	t Powerde	own 🔲	
Consider Francis												
Special Featu			1.6									
			or defined by param						1.40		<b>.</b>	

<sup>&</sup>lt;sup>2)</sup> Spontaneous transmission of FrostAlarm in the LTE-Mode runtime is disabled if OutsideSensorZone is OutOfService. However the value of property FrostAlarm is always accessible via Property Read service.

## 4.5.2 Parameter OutsideSensorZone

FB:	FS	Property	Name ( <u>Server</u> ):	Mandato	ry 🖂	Opti	ional 🔲					
Descr	iption:											
Numb	er of the	Outside S	ensor Zone to be u	isec	for the bir	nding of F	В	FS p	roviding Fro	ostAla	ırm inf	ormation
in the	LTE-Mo	de runtime	system.									
DPT:	Name	DPT_U	lcountValue8_Z		DPT ID	202.002	2	Datatype format			$J_8Z_8$	
Field			Description						Sup. Range		nit	Default
SensorZone			Number of the sensor zone						1 to 31			CS
Status	3									bits	set	
- OutC	OfService	Э	zone active /inact			Ο	true/false			CS		
- all ot	her flags	5	not supported, fixed to '0'						NA			
Comm	nand									en	um	
- Norn	nalWrite					M						
		esetOSV	set zone inactive / active									
- all ot	her com	mands	not supported				1	NA_				
Comn	nunicati	on:								-		
DP A	Address	<b>:</b> :	IO Type(ID):		804 (FS)				rty ID:	10	1	
(in t	he serv	er)	Start-Index:		1		N	l° of	elements	1		
Prop	erty ac	cess:	Read only			Read/W	rite	Э	$\boxtimes$			
Prot	ection		Read level				٧	Vrite	level			
Excep	Exception Handling: Value after Powerup: Stored Value ☐ Act Value ☐ Default Value ☐											
Speci	Special Features:											
FS rur	ntime ou	tput FrostA	larm is not LTE-Mo	ode	communic	ating if z	on	e is '	<b>OutOfService</b>	ce'.		

## 4.5.3 Parameter HeartbeatPeriod

FB:	FS	Proper	ty Name ( <u>Server</u> ):	Heartbeat	Period		Mandator	y 🗌 Opt	ional 🛚	
Desc	ription:	-	,							
This p	oarameter o	defines h	eartbeat period to upo	date output	FrostAla	rm if the	ere is no char	nge of valu	ıe.	
DPT:	Name	DPT_T	imePeriodSec	DPT ID	7.005	Dat	atype format	U <sub>16</sub>		
Field			Description			Sup.	Range	Unit	Default	
Timel	PeriodSec		See above			M	CS	S	600	
Comi	municatior	<b>า</b> :								
DP	Address:		IO Type(ID):	804 (FS)		Prope	rty ID:	111		
(in t	he server)	1	Start-Index:	1 N°			N° of elements 1			
Pro	perty acce	ss:	Read only		Read/W	rite	$\boxtimes$			
Pro	tection		Read level			Write	level			
Exce	ption Hand	dling:	Value after Powerup:	Stored \	/alue 🛚	Act Va	lue 🔲 🛮 Def	ault Value	<del>-</del>	
Spec	ial Feature	s:								