Application Descriptions

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HVAC General Functional Blocks

HVAC Actuator Functional Blocks

Summary

This document is a part of the HVAC Application Interworking Standard for HVAC applications. This Chapter describes the Actuator Functional Blocks.

Version 02.05.02 is WGI approved.

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

Document updates

Version	Date	Modifications
2.3	2006.09.10	Publication of the Approved Standard.
2.4 AS	2008.09.09	• AN106 "Phasing out TP0" integrated. • AN107 "Phasing out LT-R" integrated. • AN108 "Phasing out LT-S" integrated. • AN109 "Phasing out PL132" integrated. • AN110 "Phasing out A-Mode" integrated.
2.4 AS	2009.05.07	Editorial update in view of publication in KNX Specifications v2.0.
2.5.01 WGI	2011.09.13	Update according the review and extension of the FB ADA as discussed and agreed in WGI discussion topic [WGI00072].
02.05.02	2013.10.29	Editorial updates for the publication of KNX Specifications 2.1.

Copies with the same version number but a newer save date contain small corrections without impact on the content.

Referenced documents

[01]	Chapter 3/7/2	“Datapoint Types”
[02]	Chapter 7/10/1	“HVAC Sensor Functional Blocks”
[03]	Chapter 7/10/2	“HVAC HMI Functional Blocks”
[04]	Chapter 7/10/3	“HVAC Actuator Functional Blocks”
[05]	Chapter 7/10/4	“HVAC Common Functional Blocks”
[06]	Chapter 7/10/5	“HVAC Scheduler Functional Blocks”
[07]	Chapter 7/10/9	“Property Identifiers”
[08]	Chapter 7/10/10	HVAC Interface Object Type Identifier”
[09]	Part 7/11	“Hot Water Heating - Introduction”
[10]	Part 7/12	“Direct Electric Heating”
[11]	Part 7/13	“Terminal Unit Functional Blocks”
[12]	Part 7/14	“Ventilation & Air Conditioning and Cold Water”
[13]	Part 10/1	“Logical Tag Extended”

Filename: 07_10_03 HVAC FB Actuators v02.05.02 WGI.docx
Version: 02.05.02
Status: WGI approved
Savedate: 2013.10.29
Number of pages: 190

Contents

1 Introduction

1.1 Scope

This document is part of the KNX HVAC Application Interworking Standard.
It contains the Specification of the Sensor Functional Blocks used for HVAC applications.

Other general purpose Functional Blocks used for HVAC applications such as 'HVAC HMI' [03], 'HVAC Actuators' [04], 'HVAC Common Functions' [05] and 'HVAC Schedulers' [06] are described in separate documents.

Functional Block specification for the applications 'Hot Water Heating' (HWH) [09], 'Direct Electric Heating' (DEH) [10], 'Terminal Units' (TU) [11] and 'Ventilation & Air Conditioning' (VAC) [12] are described in separate documents.

1.2 Objectives

This document includes the information necessary to build interoperable HVAC Sensor products using the KNX Bus. Runtime process Interworking between HVAC control devices at the application level is the focus. Also data-interfaces for parameter setting, visualisation etc. are specified where appropriate (only state of the art datapoints generally used in all companies).

In addition, this document specifies the specific mechanisms for zoning and runtime process data distribution used in HVAC for an ‘easy installation’ system (LTE-Mode [13]).

This is a technical specification with informative material provided as needed to convey key concepts. The approach taken here is a top-down view of interoperability. The HVAC system model is based on the decomposition of the distributed HVAC application by means of Functional Blocks, i.e. black-box description of Functional Blocks including data-interface and relationship to other Functional Blocks.

Every Functional Block may be part of a complex device (e.g. a heating controller) containing more than one Functional Block. Because of this modular approach, there is no attempt in this specification to describe or dictate the internal construction of a Functional Block or to describe specific device types.

This document only includes details of the transport protocol as needed to specify interoperability and easy installation mechanisms. The document does not specifically cover implementation aspects, but guidelines are included where appropriate.

This part of the KNX HVAC specification is mainly but not completely independent of the underlying protocol since specific mechanisms for “easy configuration” and runtime data distribution must be available on the network.

Completely protocol dependent parts of the HVAC Sensor Specification such as data encoding and datapoint-types, object address tables, group address tables etc. are not part of this document.

1.3 Dependence on Configuration Modes

The main focus of this document is the specification of the **Basic Functional Blocks** and the **LTE specific parts**.

The document provides all necessary information needed

- for a complete implementation of the Functional Blocks in LTE-Mode
- for the implementation of mandatory objects used for runtime Interworking in standard mode (Basic Functional Block)

1.3.1 Runtime Interworking

Configuration Mode dependent (S-Mode, Ctrl-Mode, PB-Mode) implementation of optional runtime Interworking objects is not specified in this document, e.g. “E-Mode Channel” definitions.

The following table (example) shows the mode dependencies concerning runtime Interworking

			STANDARD MODE	EXTENDED MODE	
		Basic FB	**S-Mode**	**Standard Mode Interface**	**LTE-MODE**
Inputs	Inp1	**NA**	NA	NA	M
	Inp2	**NA**	NA	NA	O
	Inp3	**(GO_b)**		(GO)	O
Outputs	Outp1	**NA**	NA	NA	M
	- Outp1-1	**GO_b**	GO	GO	NA
	- Outp1-2	**GO_b**	GO	GO	NA
	Outp 2	**GO_b**	GO	GO	M

Inp1: is mandatory M in LTE-Mode but the information is not available NA in the Basic FB and all other modes because the datapoint type (DPT) is today not available in standard mode and there are no products on the market with this functionality.

Inp2: is optional O in LTE-Mode but the information is not available NA in the Basic FB and all other modes because the DPT is today not available in standard mode and there are no products on the market with this functionality.

Inp3: is optional O in LTE-Mode and an optional Group Object in the Basic FB (GO_b). The datapoint is optionally supported as Group Object in the LTE Standard Mode Interface (GO).
For all other modes the implementation is not defined. This is indicated by an empty field.

Outp1: is mandatory M in LTE-Mode and has a structured DPT or a DPT with extended features which is today not available in standard mode. In the Basic FB the information of Outp1 is split up into Outp1-1 and Outp1-2 (separate datapoints with standard DPT).
Outp1-1 and Outp1-2 are mandatory Group Objects GO in the Basic FB and are therefore mandatory in all modes.

Outp2: is mandatory in all modes.

1.3.2 Parameters and Diagnostic Data

LTE implementation:

- Parameters and Diagnostic Data of a Functional Block shall be implemented as Properties of the corresponding Interface Object which are accessed using individual addressing.
- These Properties are addressed via the standard Interface Object Type (IO Type) for this Functional Block. This IO Type is also used for datapoint addressing in the LTE runtime Interworking model
- Standard DPT or HVAC specific DPT with extended features are used where appropriate.

Other modes:

- Parameters and Diagnostic Data can in principle be implemented as memory mapped datapoints or Group Objects or Properties of an Interface Object using individual addressing. This document does not lay down how to implement Parameters and Diagnostic Data in S-Mode, Ctrl-Mode and PB-Mode.
- In case of **Memory Mapped** datapoints the DPT may be manufacturer specific
- In case of **Group Objects** standard DPT shall be used instead of HVAC specific (extended) DPT. The description of these Group Objects shall be part of the mode-dependent specification (e.g. Channel definition).
- In case of **Properties**, the implementation of HVAC specific DPT with extended features may be a problem (depending on the available microcontroller ressources). The manufacturer has the choice:
  - ⇨ to use the LTE style Property implementation as specified in this document (with the DPT and IO Type for LTE implementations) **$\text{IO Type}^{\text{used}} = \text{IO Type}^{\text{HVAC-LTE}}$**
  - ⇨ to implement these Properties using standard DPT only.
    In this case, the same Property ID but a different IO Type shall be used since the DPT of a Property shall be unambiguous for each IO Type.
    Simple IOT mapping rule: $\text{IO Type}^{\text{used}} = \text{IO Type}^{\text{standardDPT}} = \text{IO Type}^{\text{HVAC-LTE}} + 10000\text{d}$
    (e.g. $\text{BUC}^{\text{HVAC-LTE}} = 128 \Rightarrow \text{BUC}^{\text{standardDPT}} = 10128$)
  - ⇨ It is allowed to implement in a device both Interface Object Types $\text{IO Type}^{\text{HVAC-LTE}}$ and $\text{IO Type}^{\text{standardDPT}}$. The implementation of parameters and diagnostic data of one given Functional Block shall however be complete. It is thus not allowed to implement part of the datapoints of a Functional Block in $\text{IO Type}^{\text{standardDPT}}$ and the remaining in $\text{IO Type}^{\text{HVAC-LTE.}}$

	Implementation of Parameter and Diagnostic Data			
	Property based		**Group Object**	**Memory mapped**
	LTE style	**Standard DPT**		
IO Type	$\text{IO Type}^{\text{HVAC-LTE}}$ e.g. BUC=128	$\text{IO Type}^{\text{HVAC-LTE}}$ + 10000 e.g. BUC=10128		
Property ID	Property ID x	Property ID x		
DPT	if standard DPT	=> same standard DPT	=> same standard DPT	company specific
	if HVAC-LTE specific***)** e.g. 205.100	=> mapped standard DPT, e.g. 9.001	=> mapped standard DPT, e.g. 9.001	

In this document only the **HVAC-LTE style** of Parameters and Diagnostic Data is specified for $\text{IO Type}^{\text{HVAC-LTE}}$.

In the FB datapoint overview those Parameters and Diagnostic Data with HVAC-LTE specific (extended) DPT are marked " *) "
The mapping of HVAC specific DPT to standard DPT is generic and described in the document [01].

1.4 Glossary

This glossary only contains a few positions, which might be misunderstood.

Term	Description
Supervisor	Supervisor stands for building management station, programme unit or similar installations, which normally are computer based.

1.5 Abbreviations

Functional Blocks:

Sensors [02], HMI [03], Actuators [04], Common Controller Functions [05]

Abbreviation	[Doc]	Description
ADA	3	Air Damper Actuator
CIVA	3	Compressor Inverting Valve Actuator
CPA	3	Compressor Actuator
EHEA	3	Electrical Heat Element Control
FSA	3	Fan Speed Actuator
HVA	3	HVAC Valve Actuator

Terminal Units (TU) [11]

as far as relevant in this document

Abbreviation	Description
SPUC	Split Unit Control
WHPC	Water Heat Pump Control

General

Abbreviation	Description
COV	Change of Value
cs	Company Specific
GO	Group Object mandatory
(GO)	Group Object optional
M	Mandatory
NA	Not Allowed / Not Applicable
O	Optional
S	Has to be implemented in Standard Mode, if implemented in LTE-Mode
HVAC	Heating Ventilation Air Conditioning
LTE	Logical Tag Extended
IR	LTE-Service InfoReport
R	LTE-Service Read
W	LTE-Service Write
DEH	Direct Electric Heating
DHW	Domestic Hot Water
TU	Terminal Unit
VAC	Ventilation and Air Conditioning
VAV	Variable Air Volume

2 Formal matters

2.1 Introduction to Functional Block

The Functional Blocks are described in a standard way as described below.

Every Functional Block may be part of a complex device (e.g. a controller) containing more than one Functional Block.

A Functional Block never can be split. Although not all inputs, outputs etc. are mandatory. The optional inputs, outputs do not have to be realised.

2.2 Description of Functional Block

2.2.1 Aims and objectives

This Chapter shall give a overview of the functionality of the Functional Block, as well as eventually information about Interworking with other Functional Blocks.

2.2.2 Functional Specifications

This chapter gives detailed information about the Inputs, the Outputs, the Parameters, the Diagnostic Data, the Alarms and the Hardwired I/O's.

2.2.3 Constraints

Constraints for the use of the Functional Block as well as for the use of Inputs, Outputs, Parameters, Diagnostic Data, Alarms etc. are described here.

2.2.4 Functional Block Diagram

On top of the Functional Block the name, Interface Object Type Identifier (IOTI) and the abbreviation are marked.

Then the Inputs / Outputs are following.

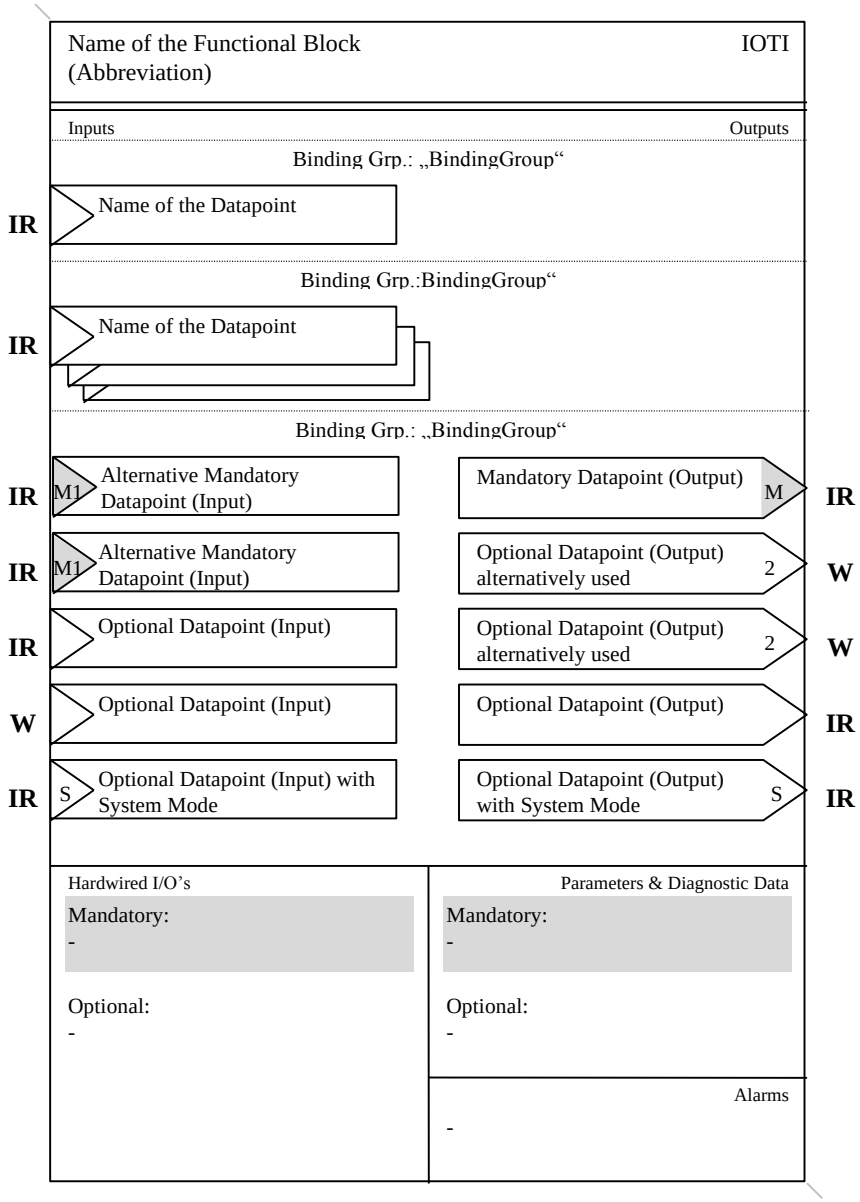
The Inputs / Outputs are grouped in Binding Groups, according to LTE (Logical Tag Extended).
Each Input / Output is marked with the LTE-Service (e.g. IR or W).

Mandatory Inputs / Outputs have a grey arrow with the letter M.
They also have to be available in the System Mode.
Optional Inputs / Outputs have a white arrow.
Some of the Inputs / Outputs, in case of being implemented, also have to be available in the System Mode. These Inputs / Outputs have a white arrow with the letter S.

Some of the Inputs / Outputs only make sense in combination, others may be used either / or.
Such Inputs / Outputs are grouped with numbers.

At the bottom there are three fields:

On the left-hand side we find the Hardwired Inputs / Outputs, the mandatory ones in a grey field, the optional ones in a white field.
On the right-hand side there is a field for the Parameters and the Diagnostic Data used in the Functional Block (mandatory in grey, optional in white).
On the right-hand side at the bottom there is the field for the Alarms, generated in the Functional Block (for use in the Functional Block Alarm Source).



2.2.5 Datapoint Description

2.2.5.1 Overview

ID	Datapoints	Description / Remarks	Data Point Type	Additional Information
	Inputs			
	Name of the Data-Point	Descriptions, remarks if necessary	Name of the Datapoint Type and/or coding	
			LTE: XXX.XXX DPT_TempHVACAbs_Z $V_{16}Z_8$ S: DPT_Value_Temp F_{16}	
				M = mandatory, with system mode M1/M2 = alternative mandatory

ID	Datapoints	Description / Remarks	Data Point Type	Additional Information
	Inputs			
				O = optional, system mode optional
				S = optional, but if implemented, then with system mode
				1,2 the numbers represent alternative packages
				Unit of the Datapoint Value Default Value
				Enumeration indications

ID	Datapoints	Description / Remarks	Data Point Type	Additional Information
	Outputs			
	Name of the Data-Point	see above	see Inputs	see above

ID	Datapoints	Description / Remarks	Data Point Type	Additional Information
	Parameters			
	Name of the Parameter	see above	Name of the Datapoint Type and/or coding XXX.XXX DPT_TempHVACAbs_Z $V_{16}Z_8$	see above

ID	Datapoints	Description / Remarks	Data Point Type	Additional Information
	Diagnostic Data			
	Name of the Diagnostic Data	see above	see Parameters	see above

ID	Alarm	Description / Remarks	Error		Additional Information
			Code	Prio	
	Name of the Alarm	Descriptions, remarks if necessary	Code of the Alarm	Priority of the Alarm	Additional Information

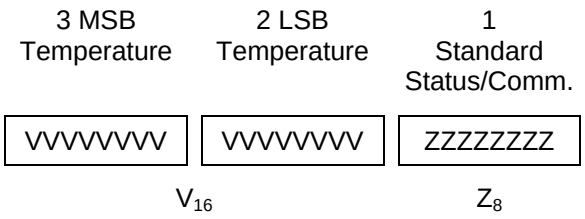
Detailed Specification of the Datapoints

Detailed description of the Datapoints is given in a separate document [01].

Notations:

Symbol	Field
A	Character
$A_{[n]}$	Character String with Length n
B	Boolean / Bit set
C	Control
E	Exponent
F	Float (with ME)
M	Mantisse
N	eNumeration
S	Sign
U	Unsigned value
V	2's Complement signed value
Z_8	Standardised Status/Command B_8

Example:

Format:	3 octet; $V_{16}Z_8$
	
Encoding:	See below

Octets are transmitted from left to right, i.e. octet 1 is transmitted last.

Standard Status/Command Information

Some of the Datapoints are combined with Standard Status/Command Information.
For further information see [01].

3 Actuator Functional Blocks

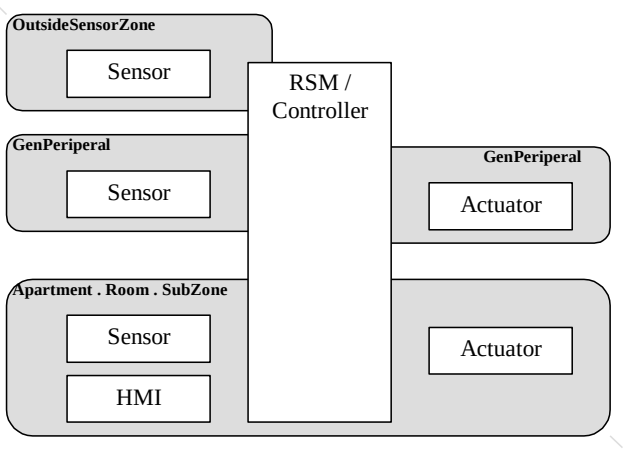
3.1 Introduction to Actuator Functional Blocks

This document contains the actuator Functional Blocks.

The blocks are deliberately kept small in order to keep transparency.

It is possible to combine more than one Functional Block in a device.

Actuator Functional Blocks may be in different Binding groups. A general overview is shown below.



3.2 HVAC Valve Actuator (HVA)

3.2.1 Aims and objectives

The Functional Block ‘HVAC Valve Actuator’ contains the functionality for the following "valves":
- Heating Stage A
- Heating Stage B
- Cooling Stage A
- Cooling Stage B
- Heating / Cooling for changeover applications

It is possible to implement only part of this functionality.

The Functional Block translates the valve position setpoint information to the valve position and eventually provides the system with the actual valve position as feedback.

It is also possible to realise an only ON/OFF valve actuator by using only 0% (0) and 100% (255). Another possibility is to define 0 % to 50 % (0 to 127) as closed and 51 % to 100 % (128 to 255) as open.

3.2.2 Functional Specifications

As the distribution of the setpoint information in the system is event-driven (COV-condition, change of value) and in addition repeated periodically, the input has a timeout.

The 'HVAC Valve Actuator' supports the following LTE zoning:
- "Apartment . Room . SubZone"
- "General Peripheral Tag".

Optional function:
- Faults in the valve actuator device may be detected and reported in the ActPosHeatStageA etc.
- The ActPosSetpHeatStageA etc. may temporary be overridden by means of a tool for service purpose.
  The ‘Overridden’ condition must be reported.

Behaviour of the valve if no valid position setpoint is available (company specific):
- close the valve
- open the valve
- leave position unchanged

Inputs

- ActPosSetpHeatStageA — This is the actuator position setpoint given by a controller.
- ActPosSetpHeatStageB — ditto
- ActPosSetpCoolStageA — ditto
- ActPosSetpCoolStageB — ditto

Outputs

- ActPosHeatStageA — This is the effective position of the valve, in LTE together with attributes to define special situations.
- ActPosHeatStageB — ditto
- ActPosCoolStageA — ditto
- ActPosCoolStageB — ditto
- ActPosHeatCool — ditto
- Fault — Fault indication in S-Mode
- Overridden — Overridden indication in S-Mode
- CalibrationMode — CalibrationMode indication in S-Mode
- ValveKick — ValveKick indication in S-Mode

Binding Group (LTE)

- Apartment . Room . SubZone General Peripheral — This valve can be used in different applications. For this reason different binding possibilities are offered. The binding group that shall not be active has to be set to out of service. It is possible to realise only one of the possibilities.

Parameters

- ValveMode — This parameter is used when a device contains more than one valve actuator functionality. The following table shows the modes and the corresponding implementation of the inputs / outputs:

		Implementation of												
		Inputs				Outputs								
ValveMode		ActPosSetp HeatStageA	ActPosSetp HeatStageB	ActPosSetp CoolStageA	ActPosSetp CoolStageB	ActPos HeatStagA	ActPos HeatStagB	ActPos CoolStagA	ActPos CoolStagB	ActPos HeatCool	Fault	Overridden	CalobrationMode	ValveKick
1	Heating Valve Stage A	M				O					(GO)	(GO)	(GO)	(GO)
2	Heating Valve Stage B		M				O				(GO)	(GO)	(GO)	(GO)
3	Cooling Valve Stage A			M				O			(GO)	(GO)	(GO)	(GO)
4	Cooling Valve Stage B				M				O		(GO)	(GO)	(GO)	(GO)
5	Heat Cool Valve (for changeover)	M		M						O	(GO)	(GO)	(GO)	(GO)

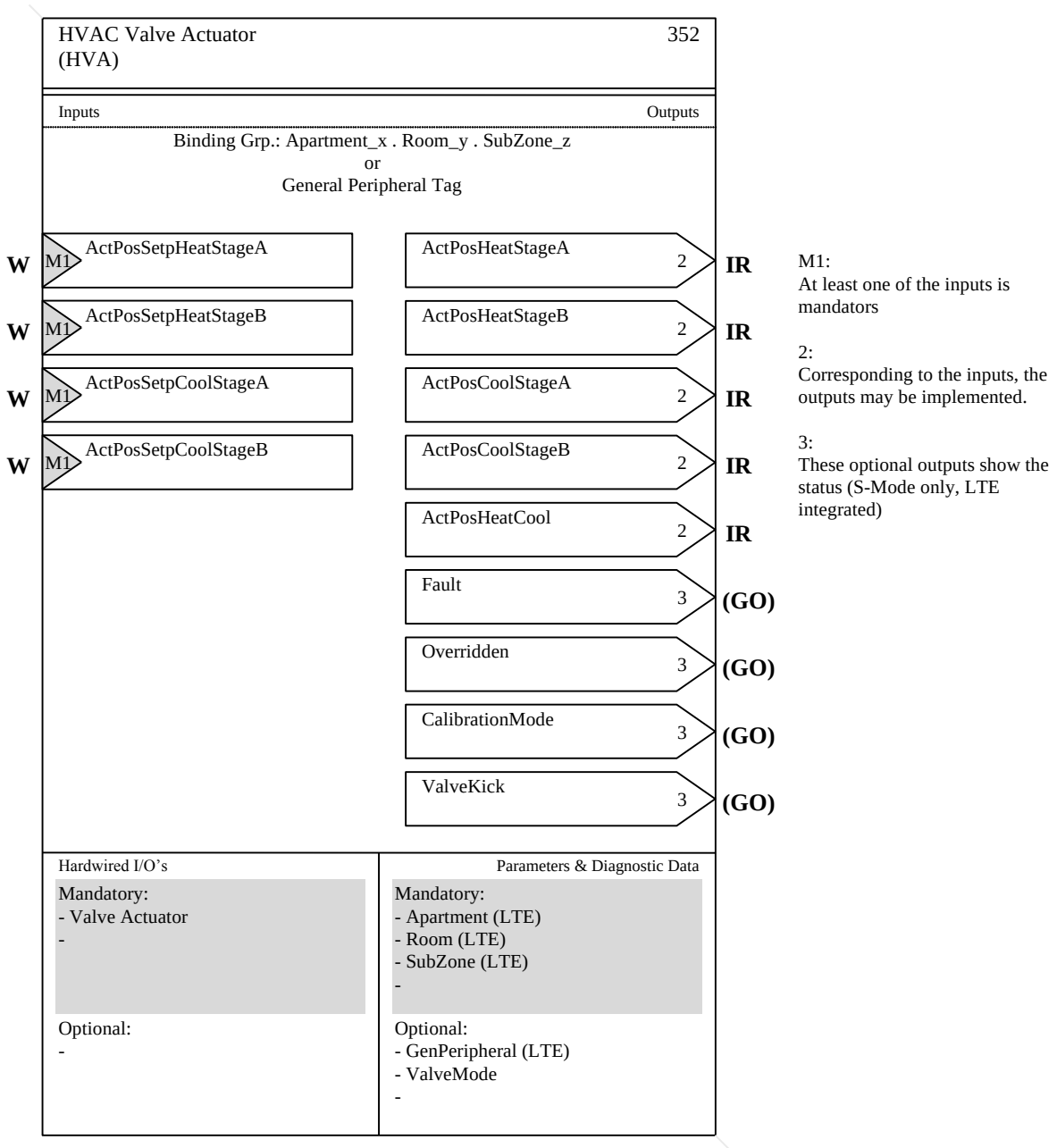
So if a device shall contain the functionality of
a Heating Valve Stage A and a Cooling Valve Stage A
the parameter ValveMode is necessary and can be 1 or 3 and
the following inputs are mandatory:
- ActPosSetpHeatStageA
- ActPosSetpCoolStageA

The corresponding outputs are optional.

3.2.3 Constraints

None.

3.2.4 Functional Block Diagram



3.2.5 Datapoint Description

Overview

Datapoints	Description / Remarks	Data Point Type	Additional Info
Inputs			
Act Pos Setp Heat StageA	Position value for the heating actuator stage A with: - COV and RepPer - Z_8 STATUS and - Z_8 COMMAND supported from FB various controller	LTE: 202.001 DPT_RelValue_Z U_8Z_8 S: 5.001 DPT_Scaling U_8	LTE: M1 1) S: GO %
Act Pos Setp Heat StageB	Position value for the heating actuator stage B with: - COV and RepPer - Z_8 STATUS and - Z_8 COMMAND supported from FB various controller	LTE: 202.001 DPT_RelValue_Z U_8Z_8 S: 5.001 DPT_Scaling U_8	LTE: M1 1) S: GO %
Act Pos Setp Cool StageA	Position value for the cooling actuator stage A with: - COV and RepPer - Z_8 STATUS and - Z_8 COMMAND supported from FB various controller	LTE: 202.001 DPT_RelValue_Z U_8Z_8 S: 5.001 DPT_Scaling U_8	LTE: M1 1) S: GO %
Act Pos Setp Cool StageB	Position value for the cooling actuator stage B with: - COV and RepPer - Z_8 STATUS and - Z_8 COMMAND supported from FB various controller	LTE: 202.001 DPT_RelValue_Z U_8Z_8 S: 5.001 DPT_Scaling U_8	LTE: M1 1) S: GO %

Datapoints	Description / Remarks	Data Point Type	Additional Info
Outputs			
Act Pos Heat StageA	Position value of heating valve stage A with - COV and RepPer - Status B_8 mainly to FB 'HMI' or supervisor	LTE: 207.105 DPT_StatusAct U_8B_8 S: 5.001 DPT_Scaling U_8	LTE: O2 1) S: (GO) %
Act Pos Heat StageB	Position value of heating valve stage B with - COV and RepPer - Status B_8 mainly to FB 'HMI or supervisor	LTE: 207.105 DPT_StatusAct U_8B_8 S: 5.001 DPT_Scaling U_8	LTE: O2 1) S: (GO) %
Act Pos Cool StageA	Position value of cooling valve stage A with - COV and RepPer - Status B_8 mainly to FB 'HMI' or supervisor	LTE: 207.105 DPT_StatusAct U_8B_8 S: 5.001 DPT_Scaling U_8	LTE: O2 1) S: (GO) %
Act Pos Cool StageB	Position value of cooling valve stage B with - COV and RepPer - Status B_8	LTE: 207.105 DPT_StatusAct U_8B_8 S: 5.001	LTE: O2 1) S: (GO) %

Datapoints	Description / Remarks	Data Point Type	Additional Info
Outputs			
	mainly to FB 'HMI' or supervisor	DPT_Scaling U_8	
Act Pos Heat Cool	Position value of heat/cool valve (ChangeOver) with - COV and RepPer - Status B_8 mainly to FB 'HMI' or supervisor	LTE: 207.105 DPT_StatusAct U_8B_8 S: 5.001 DPT_Scaling U_8	LTE: O2 1) S: (GO) %
Fault	The actuator has a fault detected	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA 1) S: (GO) true/false
Overridden	The actuator is overridden (manually)	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA 1) S: (GO) true/false
CalibrationMode	The actuator is in the calibration Mode	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA 1) S: (GO) true/false
ValveKick	The valve is executing a valve kick	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA 1) S: (GO) true/false

Datapoints	Description / Remarks	Data Point Type	Additional Info
Parameters			
Apartment	LTE zoning number for Apartment	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
Room	LTE zoning number for Room	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
SubZone	LTE zoning number for SubZone	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
Gen Peripheral	LTE zoning number for general peripheral	203.012 DPT_UcountValue16_Z $U_{16}Z_8$	O 1
Valve Mode	Valve Mode: Defining the usage of the valve	20.107 2) DPT_ValveMode N_8	O 1

1) See Aims and objectives in clause 3.2.1.

2) Implementation of Properties using standard DPT see clause 1.3.2.

HVA Runtime Interworking - Dependence on Configuration Modes

			STANDARD MODE	EXTENDED MODE	
		Basic FB	S-Mode	Standard Mode Interface	LTE-MODE
Inputs	ActPosSetpHeatStageA	**GO_b** [1]	GO [1]	GO [1]	**M** [1]
	ActPosSetpHeatStageB	**GO_b** [1]	GO [1]	GO [1]	**M** [1]
	ActPosSetpCoolStageA	**GO_b** [1]	GO [1]	GO [1]	**M** [1]
	ActPosSetpCoolStageA	**GO_b** [1]	GO [1]	GO [1]	**M** [1]
Outputs	ActPosHeatStageA	**$(GO)_b$**		(GO)	**O**
	ActPosHeatStageB	**$(GO)_b$**		(GO)	**O**
	ActPosCoolStageA	**$(GO)_b$**		(GO)	**O**
	ActPosCoolStageB	**$(GO)_b$**		(GO)	**O**
	ActPosHeatCool	**$(GO)_b$**		(GO)	**O**
	Fault	**$(GO)_b$**		(GO)	**NA**
	Overridden	**$(GO)_b$**		(GO)	**NA**
	CalibrationMode	**$(GO)_b$**		(GO)	**NA**
	ValveKick	**$(GO)_b$**		(GO)	**NA**

[1] See Aims and objectives 3.2.1

HVA LTE specific Properties

		Support
Parameter	Apartment	**M**
	Room	**M**
	SubZone	**M**
	GenPeripheral	**O**

HVA Standard Properties of Interface Objects (or memory mapped DP)

		Support
Parameter	ValveMode	**O**

3.2.6 Detailed Specification of the Datapoints

3.2.6.1 Input ActPosSetpHeatStageA

Standard Mode

DP Name:	ActPosSetpHeatStageA	Abbr.:	---	Mandatory	☒
FB Name:	HVA			Can be internal	☐

Description

This input signal contains the percent setpoint value for the valve position (HeatStageA).

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0...100*)	%	cs

Access Type

♦ Input

N → this	☐	1 → this	☒			
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)	
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:	☐		☐	
			☐	Read from bus:	☐	

Exception Handling

Special Features

*) The coding of the actuator setpoint value is: 0% → 0 100% → 255

LTE-Mode

FB: HVA	**LTE Server Input Name:** ActPosSetpHeatStageA	Mandatory ☒ Optional ☐

Description:

This input receives the percent setpoint value for the valve position (HeatStageA) with a STATUS information. The input may be overridden by means of COMMAND.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Actuator position	Percent value of the actuator position	M	%	0
STATUS	For Read Service only		Bitset	
- OutOfService	Input out of service	O	Bit 0	false
- Overridden	Input is temporarily overridden	O	Bit 2	false
- all other bits	fixed to '0'	NA		false
COMMAND	For Write Service only		enum.	
- NormalWrite	Used for normal runtime communication (LTE Write Service)	M	0	
- Override / Release	Used for temporary override / release of the input (mainly by a tool using Property Write access with individual addressing)	O	1 / 2	
- all other commands		NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	352 (HVA)	Property ID:	51
LTE-Service (event): Write ☒	Timeout:	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Power-down ☐

Special Features:

3.2.6.2 Input ActPosSetpHeatStageB

Standard Mode

DP Name:	ActPosSetpHeatStageB	Abbr.:	---	Mandatory	☒
FB Name:	HVA			Can be internal	☐

Description

This input signal contains the percent setpoint value for the valve position (HeatStageB).

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0...100*)	%	cs

Access Type

♦ Input

N → this	☐	1 → this	☒			
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)	
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:	☐		☐	
			☐	Read from bus:	☐	

Exception Handling

Special Features

*) The coding of the actuator setpoint value is: 0% → 0 100% → 255

LTE-Mode

FB: HVA	**LTE Server Input Name:** ActPosSetpHeatStageB	Mandatory ☒ Optional ☐

Description:

This input receives the percent setpoint value for the valve position (HeatStageB) with a STATUS information. The input may be overridden by means of COMMAND.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Actuator position	Percent value of the actuator position	M	%	0
STATUS	For Read Service only		Bitset	
- OutOfService	Input out of service	O	Bit 0	false
- Overridden	Input is temporarily overridden	O	Bit 2	false
- all other bits	fixed to '0'	NA		false
COMMAND	For Write Service only		enum.	
- NormalWrite	Used for normal runtime communication (LTE Write Service)	M	0	
- Override / Release	Used for temporary override / release of the input (mainly by a tool using Property Write access with individual addressing)	O	1 / 2	
- all other commands		NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	352 (HVA)	Property ID:	52
LTE-Service (event): Write ☒	Timeout:	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Power-down ☐

Special Features:

3.2.6.3 Input ActPosSetpCoolStageA

Standard Mode

DP Name:	ActPosSetpCoolStageA	Abbr.:	---	Mandatory	☒
FB Name:	HVA			Can be internal	☐

Description

This input signal contains the percent setpoint value for the valve position (CoolStageA).

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0...100*)	%	cs

Access Type

♦ Input

N → this	☐	1 → this	☒			
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)	
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

Special Features

*) The coding of the actuator setpoint value is: 0% → 0 100% → 255

LTE-Mode

FB: HVA	**LTE Server Input Name:** ActPosSetpCoolStageA	Mandatory ☒ Optional ☐

Description:

This input receives the percent setpoint value for the valve position (CoolStageA) with a STATUS information. The input may be overridden by means of COMMAND.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Actuator position	Percent value of the actuator position	M	%	0
STATUS	For Read Service only		Bitset	
- OutOfService	Input out of service	O	Bit 0	false
- Overridden	Input is temporarily overridden	O	Bit 2	false
- all other bits	fixed to '0'	NA		false
COMMAND	For Write Service only		enum.	
- NormalWrite	Used for normal runtime communication (LTE Write Service)	M	0	
- Override / Release	Used for temporary override / release of the input (mainly by a tool using Property Write access with individual addressing)	O	1 / 2	
- all other commands		NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	352 (HVA)	Property ID:	53
LTE-Service (event): Write ☒	Timeout:	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Power-down ☐

Special Features:

3.2.6.4 Input ActPosSetpCoolStageB

Standard Mode

DP Name:	ActPosSetpCoolStageB	Abbr.:	---	Mandatory	☒
FB Name:	HVA			Can be internal	☐

Description

This input signal contains the percent setpoint value for the valve position (CoolStageB).

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0...100*)	%	cs

Access Type

♦ Input

N → this	☐	1 → this	☒			
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)	
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:	☐		☐	
			☐	Read from bus:	☐	

Exception Handling

Special Features

*) The coding of the actuator setpoint value is: 0% → 0 100% → 255

LTE-Mode

FB: HVA	**LTE Server Input Name:** ActPosSetpCoolStageB	Mandatory ☒ Optional ☐

Description:

This input receives the percent setpoint value for the valve position (CoolStageB) with a STATUS information. The input may be overridden by means of COMMAND.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Actuator position	Percent value of the actuator position	M	%	0
STATUS	For Read Service only		Bitset	
- OutOfService	Input out of service	O	Bit 0	false
- Overridden	Input is temporarily overridden	O	Bit 2	false
- all other bits	fixed to '0'	NA		false
COMMAND	For Write Service only		enum.	
- NormalWrite	Used for normal runtime communication (LTE Write Service)	M	0	
- Override / Release	Used for temporary override / release of the input (mainly by a tool using Property Write access with individual addressing)	O	1 / 2	
- all other commands		NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	352 (HVA)	Property ID:	54
LTE-Service (event): Write ☒	Timeout:	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Power-down ☐

Special Features:

3.2.6.5 Output ActPosHeatStageA

Standard Mode

DP Name:	ActPosHeatStageA	Abbr.:	---	Mandatory	☐
FB Name:	HVA			Can be internal	☐

Description

This datapoint contains the percent value of the actual actuator position (HeatStageA).

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0...100*)	%	cs

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

*) The coding of the actuator setpoint value is: 0% → 0 100% → 255

LTE-Mode

FB: **HVA**	**LTE Server Output Name:** **ActPosHeatStageA**	Mandatory ☐ Optional ☒

Description:

This output contains the value of the actual actuator position (HeatStageA) as well as a STATUS information.

DPT:	Name	DPT_StatusAct	DPT ID	207.105	Datatype format	U_8B_8

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	Actual actuator position	M	Full Range	%	1	cs
STATUS	For LTE-Service InfoReport and Property-Service Response only			bitset		
- Fault	Actuator fault	O	true/false	Bit 0	Y	false
- Overridden	Actuator is temp. overridden	O	true/false	Bit 1	Y	false
- CalibrationMode	Actuator is in calibration mode	O	true/false	Bit 2	Y	false
- ValveKick	Actuator is in valve kick mode	O	true/false	Bit 3	Y	false
	all other bits	NA		Bit 4-7		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID): 352 (HVA)		Property ID: 55	
LTE-Services (event):	COV ☒	MinRepTime: 10 sec	Heartbeat: 15 min	
InfoReport ☒	Output per default communicating ☐		Binding Group Wildcard allowed ☐	
	Tx Prio:	High ☐	Normal ☒	Low ☐
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☒	Read/Write ☐		

Exception Handling: Save at Powerdown ☐

Special Features:

3.2.6.6 Output ActPosHeatStageB

Standard Mode

DP Name:	ActPosHeatStageB	Abbr.:	---	Mandatory	☐
FB Name:	HVA			Can be internal	☐

Description

This datapoint contains the percent value of the actual actuator position (HeatStageB).

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0...100*)	%	cs

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

*) The coding of the actuator setpoint value is: 0% → 0 100% → 255

LTE-Mode

FB: HVA	**LTE Server Output Name:** ActPosHeatStageB	Mandatory ☐ Optional ☒

Description:

This output contains the value of the actual actuator position (HeatStageB) as well as a STATUS information.

DPT:	Name	DPT_StatusAct	DPT ID	207.105	Datatype format	U_8B_8

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	Actual actuator position	M	Full Range	%	1	cs
STATUS	For LTE-Service InfoReport and Property-Service Response only			bitset		
- Fault	Actuator fault	O	true/false	Bit 0	Y	false
- Overridden	Actuator is temp. overridden	O	true/false	Bit 1	Y	false
- CalibrationMode	Actuator is in calibration mode	O	true/false	Bit 2	Y	false
- ValveKick	Actuator is in valve kick mode	O	true/false	Bit 3	Y	false
	all other bits	NA		Bit 4-7		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID): 352 (HVA)		Property ID: 56	
LTE-Services (event):	COV ☒	MinRepTime: 10 sec	Heartbeat: 15 min	
InfoReport ☒	Output per default communicating ☐		Binding Group Wildcard allowed ☐	
	Tx Prio:	High ☐	Normal ☒	Low ☐
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☒	Read/Write ☐		

Exception Handling: Save at Powerdown ☐

Special Features:

3.2.6.7 Output ActPosCoolStageA

Standard Mode

DP Name:	ActPosCoolStageA			Abbr.:	---			Mandatory	☐		
FB Name:	HVA							Can be internal	☐		
Description											
This datapoint contains the percent value of the actual actuator position (CoolStageA).											
Datapoint Type											
DPT_Name:	DPT_Scaling										
DPT Format:	U_8					DPT_ID:	5.001				
Field	Description					Supp.	Range		Unit	Default	
							0...100*)		%	cs	
Access Type											
♦ Output											
this → M	☒	this → 1	☐								
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec				
		Cyclic	☒	Period:	15 min (recommended value)						
Request	☒										
Communication Type											
♦ Group Object Datapoint								Mandatory:	☐		
Default Group Address:	---										
Dynamics											
Power down:	Save:	☐									
Power up:	Value:	No initialisation:	☐	Default value:	☐						
		Saved value:	☐	Actual value:	☒						
	Transmit on bus:	☒			☐						
Exception Handling											

Special Features											
*) The coding of the actuator setpoint value is: 0% → 0 100% → 255											

LTE-Mode

FB: HVA	**LTE Server Output Name:** ActPosCoolStageA	Mandatory ☐ Optional ☒

Description:

This output contains the value of the actual actuator position (CoolStageA) as well as a STATUS information.

DPT:	Name	DPT_StatusAct	DPT ID	207.105	Datatype format	U_8B_8

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	Actual actuator position	M	Full Range	%	1	cs
STATUS	For LTE-Service InfoReport and Property-Service Response only			bitset		
- Fault	Actuator fault	O	true/false	Bit 0	Y	false
- Overridden	Actuator is temp. overridden	O	true/false	Bit 1	Y	false
- CalibrationMode	Actuator is in calibration mode	O	true/false	Bit 2	Y	false
- ValveKick	Actuator is in valve kick mode	O	true/false	Bit 3	Y	false
	all other bits	NA		Bit 4-7		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID): 352 (HVA)		Property ID: 57	
LTE-Services (event):	COV ☒	MinRepTime: 10 sec	Heartbeat: 15 min	
InfoReport ☒	Output per default communicating ☐		Binding Group Wildcard allowed ☐	
	Tx Prio:	High ☐	Normal ☒	Low ☐
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☒	Read/Write ☐		

Exception Handling: Save at Powerdown ☐

Special Features:

3.2.6.8 Output ActPosCoolStageB

Standard Mode

DP Name:	ActPosCoolStageB	Abbr.:	---	Mandatory	☐
FB Name:	HVA			Can be internal	☐

Description

This datapoint contains the percent value of the actual actuator position (CoolStageB).

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0...100*)	%	cs

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

*) The coding of the actuator setpoint value is: 0% → 0 100% → 255

LTE-Mode

FB: HVA	**LTE Server Output Name:** ActPosCoolStageB	Mandatory ☐ Optional ☒

Description:

This output contains the value of the actual actuator position (CoolStageB) as well as a STATUS information.

DPT:	Name	DPT_StatusAct	DPT ID	207.105	Datatype format	U_8B_8

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	Actual actuator position	M	Full Range	%	1	cs
STATUS	For LTE-Service InfoReport and Property-Service Response only			bitset		
- Fault	Actuator fault	O	true/false	Bit 0	Y	false
- Overridden	Actuator is temp. overridden	O	true/false	Bit 1	Y	false
- CalibrationMode	Actuator is in calibration mode	O	true/false	Bit 2	Y	false
- ValveKick	Actuator is in valve kick mode	O	true/false	Bit 3	Y	false
	all other bits	NA		Bit 4-7		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	352 (HVA)	Property ID:	58
LTE-Services (event):	COV ☒	MinRepTime: 10 sec	Heartbeat: 15 min	
InfoReport ☒	Output per default communicating ☐		Binding Group Wildcard allowed ☐	
	Tx Prio:	High ☐	Normal ☒	Low ☐
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☒	Read/Write ☐		

Exception Handling: Save at Powerdown ☐

Special Features:

3.2.6.9 Output ActPosHeatCool

Standard Mode

DP Name:	ActPosHeatCool	Abbr.:	---	Mandatory	☐
FB Name:	HVA			Can be internal	☐

Description

This datapoint contains the percent value of the actual actuator position (HeatCool).

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0...100 *)	%	cs

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

*) The coding of the actuator setpoint value is: 0% → 0 100% → 255

LTE-Mode

FB: **HVA**	**LTE Server Output Name:** **ActPosHeatCool**	Mandatory ☐ Optional ☒

Description:

This output contains the value of the actual actuator position (HeatCool) as well as a STATUS information.

DPT:	Name	DPT_StatusAct	DPT ID	207.105	Datatype format	U_8B_8

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	Actual actuator position	M	Full Range	%	1	cs
STATUS	For LTE-Service InfoReport and Property-Service Response only			bitset		
- Fault	Actuator fault	O	true/false	Bit 0	Y	false
- Overridden	Actuator is temp. overridden	O	true/false	Bit 1	Y	false
- CalibrationMode	Actuator is in calibration mode	O	true/false	Bit 2	Y	false
- ValveKick	Actuator is in valve kick mode	O	true/false	Bit 3	Y	false
	all other bits	NA		Bit 4-7		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID): 352 (HVA)	Property ID: 59
LTE-Services (event):	COV ☒ MinRepTime: 10 sec	Heartbeat: 15 min
InfoReport ☒	Output per default communicating ☐	Binding Group Wildcard allowed ☐
	Tx Prio: High ☐ Normal ☒ Low ☐	
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐ Act Value ☒ Default Value ☐	
Property-Service (individual access):	Read only ☒ Read/Write ☐	

Exception Handling: Save at Powerdown ☐

Special Features:

3.2.6.10 Output Fault

LTE-Mode

Not available.

Standard Mode

DP Name:	Fault	Abbr.:	---	Mandatory	☐
FB Name:	HVA			Can be internal	☐

Description

This datapoint may indicate a fault in the actuator (S-Mode only) see also ActPos.....

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

3.2.6.11 Output Overridden

LTE-Mode

Not available.

Standard Mode

DP Name:	Overridden	Abbr.:	---	Mandatory	☐
FB Name:	HVA			Can be internal	☐

Description

This datapoint may indicate that the actuator is overridden (S-Mode only) see also ActPos.....

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

3.2.6.12 Output CalibrationMode

LTE-Mode

Not available.

Standard Mode

DP Name:	CalibrationMode	Abbr.:	---	Mandatory	☐
FB Name:	HVA			Can be internal	☐

Description

This datapoint may indicate that the actuator is in the calibration mode (S-Mode only) see also ActPos.....

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

3.2.6.13 Output ValveKick

LTE-Mode

Not available.

Standard Mode

DP Name:	ValveKick	Abbr.:	---	Mandatory	☐
FB Name:	HVA			Can be internal	☐

Description

This datapoint may indicate a valve kick (S-Mode only) see also ActPos.....

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

3.2.6.14 Parameter Apartment

FB: HVA	Property Name (Server): Apartment	Mandatory ☒ Optional ☐

Description:

Number of the apartment zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the apartment zone	M	(0) 1...126		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	352 (HVA)	Property ID:	101
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
If Apartment is 'OutOfService' Room and SubZone automatically are 'OutOfService'

3.2.6.15 Parameter Room

FB: HVA	Property Name (Server): Room	Mandatory ☒ Optional ☐

Description:

Number of the room zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the room zone	M	(0) 1...63		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	352 (HVA)	Property ID:	102
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
'OutOfService' is taken over from Apartment

3.2.6.16 Parameter SubZone

FB: HVA	Property Name (Server): SubZone	Mandatory ☒ Optional ☐

Description:

Number of the sub zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the SubZone	M	(0) 1...15		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	352 (HVA)	Property ID:	103
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
'OutOfService' is taken over from Apartment

3.2.6.17 Parameter GenPeripheral

FB: HVA	Property Name (Server): GenPeripheral	Mandatory ☐ Optional ☒

Description:

Number of the general peripheral tag.

DPT:	Name	DPT_UcountValue16_Z	DPT ID	203.012	Datatype format	$U_{16}Z_8$

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the SubZone	M	full		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	352 (HVA)	Property ID:	104
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'

3.2.6.18 Parameter ValveMode

FB: HVA	Property Name (Server): ValveMode	Mandatory ☐ Optional ☒

Description:

Selection of the valve function.

DPT:	Name	DPT_ValveMode	DPT ID	20.108	Datatype format	N_8

Field	Description	Sup.	Range	Unit	Default
ValveMode	Definition of the valve functionality	M	1...5	enum	1
Heat stage A	for normal heating	O	1		
Heat stage B	for heating with two stages	O	2		
Cool stage A	for normal cooling	O	3		
Cool stage B	for cooling with two stages	O	4		
HeatCool	for changeover applications	O	5		

Communication:

DP Address:	IO Type(ID):	352 (HVA)	Property ID:	111
(in the server)	Start-Index:	1	N° of elements	1
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:

3.3 Air Damper Actuator (ADA)

3.3.1 Aims and objectives

The Functional Block ‘Air Damper Actuator’ contains the functionality for the following "air dampers":

- Fresh Air Damper (for fancoils)
- Supply Air Damper
- Discharge Air Damper
- Extract Air Damper

It is possible to implement only part of this functionality.

The Functional Block translates the damper position setpoint information to the damper position and finally provides the system with the actual damper position as feedback.

This FB allows distinguishing between VAV and Air Damper control applications.

- Air Damper control application

  The actuator setpoint represents the target position (%) of the damper

- VAV control application

  The actuator setpoint represents the target air volume flow (percentage of a nominal flow).

Implementations of FB ADA may support the functionality to control an Air Damper or a VAV actuator or both. If the implementation of the ADA supports both applications, the effective functionality shall be selectable via configuration (Air Damper or VAV mode).

The Controller needs to know, whether the connected FB ADA represents an Air Damper or VAV actuator. The effective functionality of the ADA can be detected at runtime via VAV specific status information.

3.3.2 Functional specification

3.3.2.1 Overview

FB ADA covers both Air Damper and VAV control applications. If the implementation of FB ADA supports both applications, the standardized parameter “ADAType” shall be implemented to select the effective functionality and the corresponding runtime interworking interface of the actuator.

LTE application model

FB ADA can be used in different ventilation applications. The LTE-Model supports dedicated runtime process signals for the following use cases:

- Fresh Air (for fan coils)
- Supply Air
- Discharge Air
- Extract Air

Based on this concept different ventilation applications can be controlled in the same LTE zone.

It is allowed that ADA implementations support exactly one or a subset of the above mentioned use cases.

If the implementation of FB ADA supports multiple ventilation applications, the application scheme shall be configurable via parameter “DamperMode” to select the appropriate runtime interworking interface.

FB ADA can be used in various application areas. Therefore multiple types of LTE Binding Groups may be supported (optional feature). Inactive Binding Groups shall be set to 'OutOfService'.

- Geographical Zone — primarily used for HVAC secondary applications (e.g. room automation)
- Ventilation Distribution Segment — primarily used to distribute air damper status information in HVAC primary applications
- General Peripheral Zone — primarily used for HVAC primary or other applications

Standard Mode

In Standard Mode the application of ADA Group Objects is defined by engineering. Therefore the support of multiple dedicated Group Objects for Fresh Air, Supply Air, Discharge Air and Extract Air is not meaningful. Parameter "DamperMode" is not relevant in Standard Mode.

3.3.2.2 Air Damper control

If the implementation of the ADA supports both Air Damper and VAV control applications, the standardized ADA parameter "ADAType" shall be set to the configuration value 'Air Damper'.

FB ADA may be implemented in different types of networked peripheral devices. E.g. in:

- smart actuators that combine the KNX interface, control electronics and electro mechanic parts of the air damper in one product, or
- I/O devices that provide various hardware outputs to connect conventional air damper actuators
  - proportional control via a 0-10V analog output or
  - 3-state motorized actuator to be controlled via two interlocked binary hardware outputs to open or close the air damper.

Some of the optional ADA process signals and configuration parameters are only meaningful for specific types of air damper actuators.

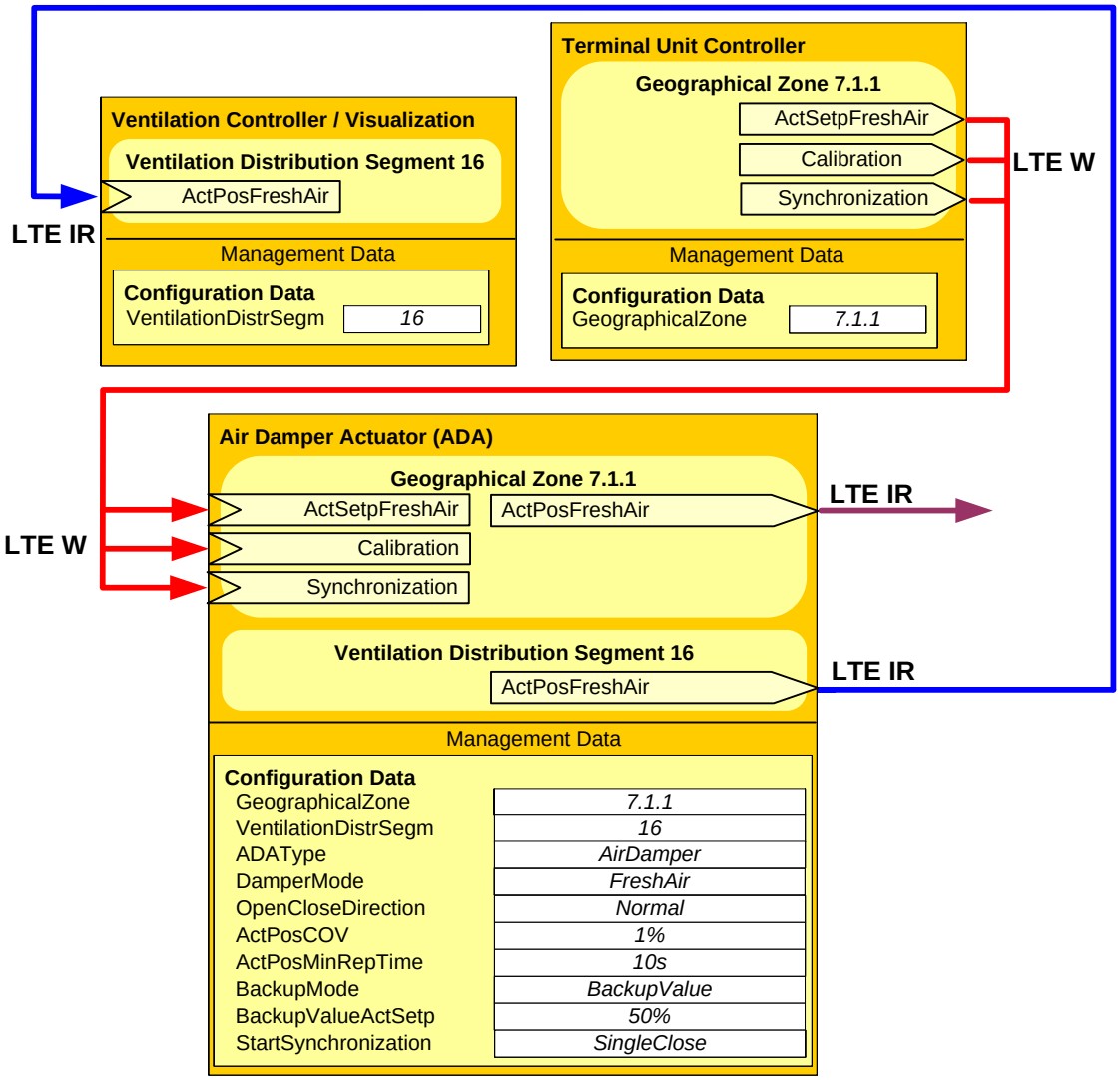


Figure 1 – Air Damper application (LTE-Model)

Inputs

FB ADA provides the following LTE input process signals to control the damper position.

- ActSetpFreshAir setpoint (%) to control the position of a Fresh Air damper
- ActSetpSupplyAir setpoint (%) to control the position of a Supply Air damper
- ActSetpDischargeAir setpoint (%) to control the position of a Discharge Air damper
- ActSetpExtractAir setpoint (%) to control the position of a Extract Air damper

Only one of these Inputs shall be activated at runtime, dependent on parameter “DamperMode”.

Please note that these process signals are re-used for VAV control. For this reason the naming of the signals must be generic to cover the control of a damper position (%) or an air volume flow (%).

In Standard Mode the actuator setpoint is represented by one input Group Object “ActSetp”.

3-state Air Damper Actuators may in addition optionally support dedicated control commands to trigger actuator specific procedures:

- Calibration trigger to start self calibration of the actuator (automatically detect fully open and fully closed position of the damper)
- Synchronization trigger to initiate either one single-open or single-close synchronization of the internal stroke-model.

Outputs

FB ADA provides the following LTE output process signals containing the actual damper position and further status attributes.

- ActPosFreshAir position (%) and status of Fresh Air damper actuator
- ActPosSupplyAir position (%) and status of Supply Air damper actuator
- ActPosDischargeAir position (%) and status of Discharge Air damper actuator
- ActPosExtractAir position (%) and status of Extract Air damper actuator

Only one of these Outputs may be activated at runtime, dependent on parameter “DamperMode”. This feedback information is mainly needed for visualization of the current damper position and status of the actuator.

In Standard Mode the following actuator status information will be represented as separate output Group-Objects.

- ActPos actual damper position (%)
- Fault binary signal to indicate a failure of the actuator
- Overridden binary signal to indicate that the actuator setpoint is currently locally overridden
- CalibrationMode binary signal to indicate that the actuator is currently executing a self-calibration
- SynchronizationMode binary signal to indicate that the actuator is currently executing a synchronization of the stroke model

Supported LTE runtime interface

The activated ADA input and output process signals are dependent on parameter “DamperMode”.

with parameter ADAType = AirDamper		**DamperMode**			
		FreshAir	SupplyAir	DischargeAir	ExtractAir
Inputs	ActSetpFreshAir	M			
	ActSetpSupplyAir		M		
	ActSetpDischargeAir			M	
	ActSetpExtractAir				M
	Calibration	O	O	O	O
	Synchronization	O	O	O	O
Outputs	ActPosFreshAir	O			
	ActPosSupplyAir		O		
	ActPosDischargeAir			O	
	ActPosExtractAir				O

Supported runtime interface in Standard Mode

with parameter ADAType = AirDamper		Support
Input	ActSetp	GO
	Calibration	(GO)
	Synchronization	(GO)
Outputs	ActPos	(GO)
	Fault	(GO)
	Overridden	(GO)
	CalibrationMode	(GO)
	SynchronizationMode	(GO)

Power-return and restart behaviour

After power-return or an application restart the ADA shall always be in a defined state. The behaviour may be manufacturer specific (fixed or according to proprietary parameters) or can be defined via configuration parameter "StartSynchronization" (position unchanged / single close / single open).

Backup behaviour

ADA may detect a communication failure or a breakdown of the connected controller after a defined receive-timeout on "ActSetp…" input. The backup behaviour may be manufacturer specific (fixed or according to proprietary parameters) or can be defined via configuration parameters "BackupMode" ('BackupValue' / 'KeepLastState') and "BackupValueActSetp" (%).

Actuator specific parameters

Actuator specific features are usually configured via manufacturer specific parameters. The following optional parameters are of common interest and are standardized.

- OpenCloseDirection — parameter to define the open / close logic of the outputs to control the air damper position (normal / inverted)
- ActPosCOV — COV condition for spontaneous transmission "ActPos…" outputs
- ActPosMinRepTime — minimum wait time between two updates of "ActPos…" outputs

3.3.2.3 VAV control

If the implementation of the ADA supports both Air Damper and VAV control applications, the standardized ADA parameter "ADAType" shall be set to the configuration value 'VAV'.

A networked VAV actuator combines functionality to measure the current air flow and to control an air damper with the purpose to directly control the resulting air flow [m^3/h]. Measurement of the air flow is usually based on a differential air pressure sensor.

FB ADA may be implemented in different types of networked peripheral devices. E.g. in:

- smart VAV actuators which combine the KNX interface, control electronics, air flow sensor and electro mechanic parts of the air damper in one product.
- networked I/O devices which provide various hardware inputs and outputs to connect conventional air flow sensors and air damper actuators.

Some of the optional ADA process signals and configuration parameters are only meaningful for specific types of VAV actuators.

Autonomous VAV mode

Figure 2 illustrates a simple VAV application with one Discharge Air actuator that is controlled individually by a Terminal Unit Controller. An additional Extract Air actuator in the same LTE Zone would be controlled separately by the Terminal Unit Controller. This is the standard behaviour. In addition the ADA may optionally support VAV Master-Slave Application (Figure 3).

In Autonomous VAV mode the parameter "MasterSlaveMode" shall be set to the value 'Autonomous'.

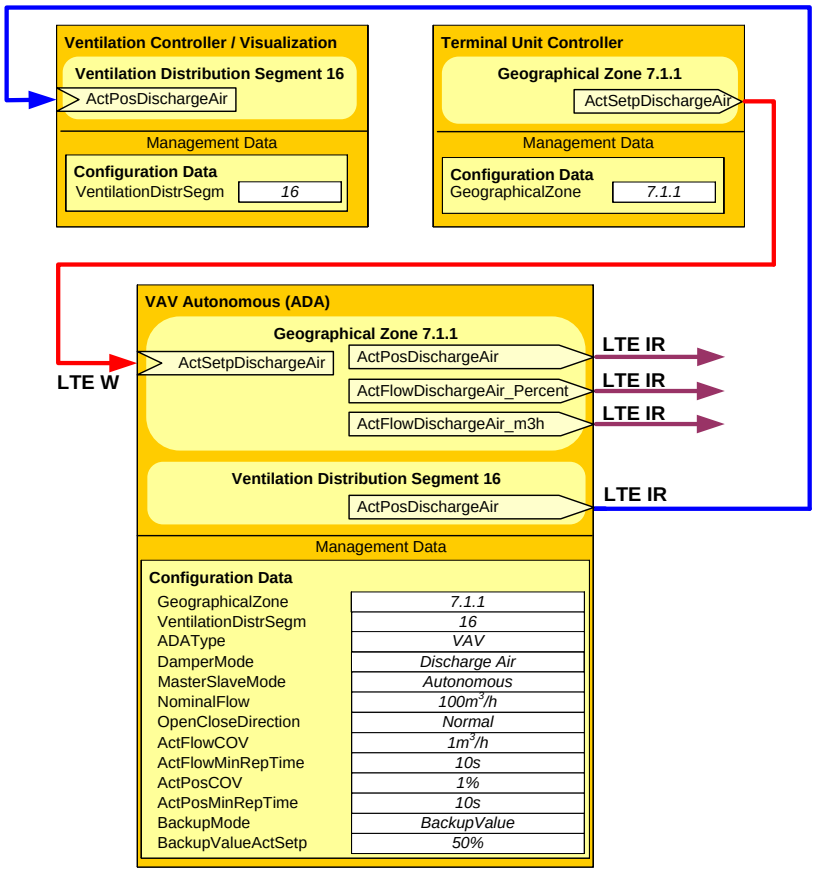


Figure 2 – Autonomous VAV application (LTE-Model)

Master-Slave VAV mode

Figure 3 illustrates the interworking mechanisms of a Master-Slave VAV application.

A Discharge Air actuator ("MasterSlaveMode" = 'Master') is controlled individually by the Terminal Unit Controller. A parallel Extract Air actuator ("MasterSlaveMode" = 'Slave') in the same LTE zone is connected to the Discharge Air actuator.

The Master VAV actuator generates the "ActSetpExtracAir" setpoint for the Slave actuator, i.e. the air volume flow of the Slave follows the air volume flow of the Master.

VAV Master-Slave application is defined for the combination of Discharge and Extract Air actuator in the LTE-model only. This is the typical use case. Other combinations are not meaningful.

The optional parameter "MasterSlaveMode" shall be implemented if the ADA supports Master-Slave VAV mode besides standard Autonomous VAV mode; details see Figure 2 and Figure 3

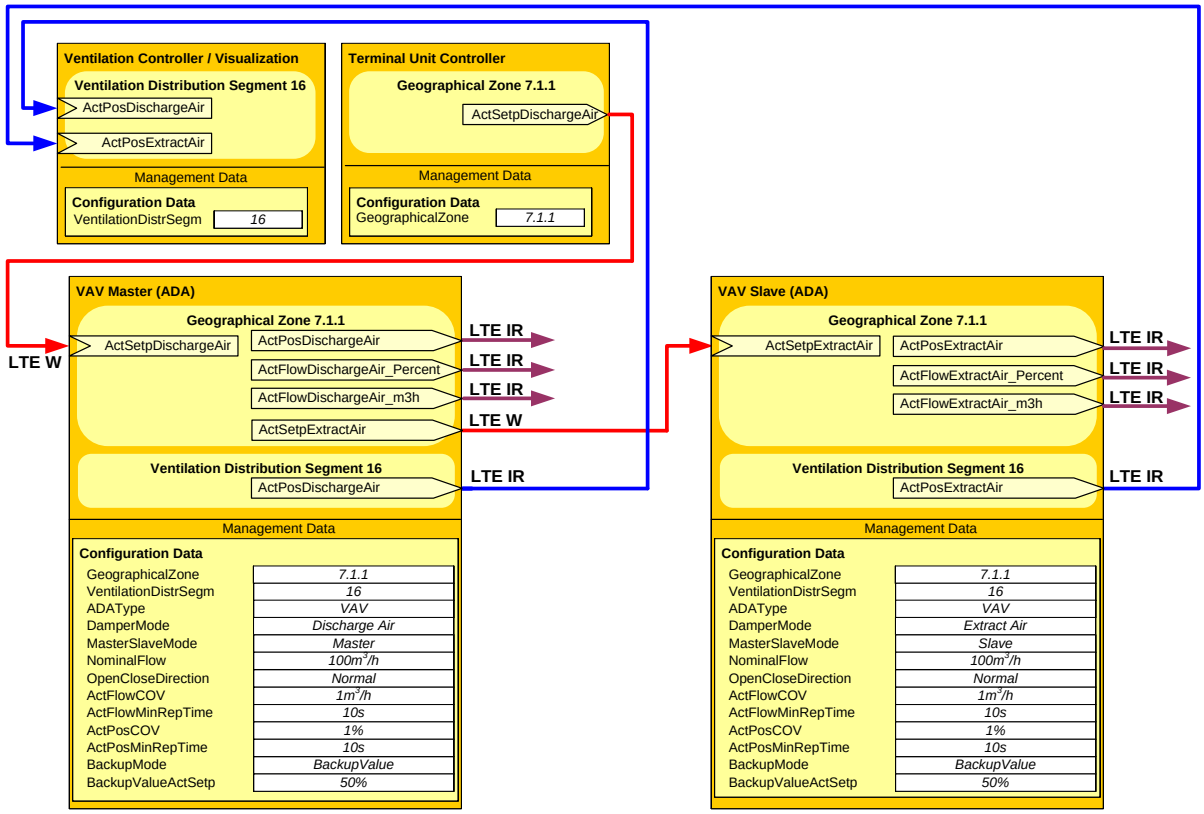


Figure 3 – VAV Master-Slave application (LTE-Model)

In Standard Mode the VAV Master-Slave application is defined by engineering. Therefore the support of ActSetp output Group Object by FB ADA is not meaningful. Parameter “MasterSlaveMode” is not relevant in Standard Mode.

Inputs

FB ADA contains local control loop functionality to control the current air volume flow according to the actual Air Flow Setpoint.

Air Flow Setpoint is derived from a configurable VAV parameter “NominalFlow” [m^3/h] and “ActPos…” process input value representing the present VAV setpoint (% of the “NominalFlow”)

FB ADA provides the following LTE input process signals to control the air volume flow:

- ActSetpFreshAir % setpoint value to control the Fresh Air volume
- ActSetpSupplyAir % setpoint value to control the Supply Air volume
- ActSetpDischargeAir % setpoint value to control the Discharge Air volume
- ActSetpExtractAir % setpoint value to control the Extract Air volume

Only one of these inputs shall be activated at runtime, dependent on parameter “DamperMode”.

In Standard Mode the actuator setpoint is represented by one input Group Object “ActSetp”.

Support of the optional ADA air damper input signals “Calibration” and “Synchronization” is not meaningful in VAV mode.

Outputs

FB ADA provides the following LTE output process signals containing the actual damper position and further status attributes (same functionality as for Air Damper actuator).

- ActPosFreshAir position (%) and status of Fresh Air damper actuator
- ActPosSupplyAir position (%) and status of Supply Air damper actuator
- ActPosDischargeAir position (%) and status of Discharge Air damper actuator
- ActPosExtractAir position (%) and status of Extract Air damper actuator

Only one of these outputs may be activated at runtime, dependent on parameter "DamperMode". This feedback information is mainly needed for visualization of the current damper position and status of the actuator.

If the ADA is configured as VAV Master with "DamperMode" = 'DischargeAir' (see Figure 3) the following additional LTE output signal is generated.

- ActSetpExtractAir setpoint (%) value to control the Extract Air volume of the corresponding VAV Slave in the same zone

The following additional LTE output signals contain the actual, measured air volume flow (percentage of the "NominalFlow") and further status attributes.

- ActFlowFreshAir_Percent Fresh Air volume flow (%)
- ActFlowSupplyAir_Percent Supply Air volume flow (%)
- ActFlowDischargeAir_Percent Discharge Air volume flow (%)
- ActFlowExtractAir_Percent Extract Air volume flow (%)

Only one of these outputs shall be activated at runtime, dependent on parameter "DamperMode". This feedback information is mainly needed for visualization of the current relative air volume flow.

Presence of "ActFlow…" process information indicates that FB ADA has the functionality of a VAV actuator.

The following additional LTE output signals represent the measured absolute air volume flow [m3/h]:

- ActFlowFreshAir_m3h Fresh Air volume flow (m^3/h)
- ActFlowSupplyAir_m3h Supply Air volume flow (m^3/h)
- ActFlowDischargeAir_m3h Supply Air volume flow (m^3/h)
- ActFlowExtractAir_m3h Supply Air volume flow (m^3/h)

Only one of these outputs may be activated at runtime, dependent on parameter "DamperMode". This feedback information is mainly needed for visualization of the current absolute air volume flow.

In Standard Mode the following actuator status information may be represented as separate output Group Objects:

- ActDamperPos actual damper position (%)
- ActAirFlow_Percent actual volume flow (percentage of "NominalFlow")
- ActAirFlow_m3h actual volume flow (m3/h)
- Fault binary signal to indicate a failure of the actuator
- Overridden binary signal to indicate that the actuator setpoint is currently locally overridden

Supported LTE runtime interface

The activated ADA input and output process signals are dependent on parameter "DamperMode".

with parameter ADAType = VAV		**DamperMode**			
		FreshAir	SupplyAir	DischargeAir	ExtractAir
Inputs	ActSetpFreshAir	M			
	ActSetpSupplyAir		M		
	ActSetpDischargeAir			M	
	ActSetpExtractAir				M
Outputs	ActPosFreshAir	O			
	ActPosSupplyAir		O		
	ActPosDischargeAir			O	
	ActPosExtractAir				O
	ActFlowFreshAir_Percent	M			
	ActFlowSupplyAir_Percent		M		
	ActFlowDischargeAir_Percent			M	
	ActFlowExtractAir_Percent				M
	ActFlowFreshAir_m3h	O			
	ActFlowSupplyAir_m3h		O		
	ActFlowDischargeAir_m3h			O	
	ActFlowExtractAir_m3h				O
	ActSetpExtractAir *)			O	

***)** *Only active if parameter "MasterSlaveMode" has the value 'Master', otherwise the output "ActPosExtractAir" is inactive.*

Supported runtime interface in Standard Mode

with parameter ADAType = VAV		Support
Inputs	ActSetp	GO
Outputs	ActDamperPos	(GO)
	ActAirFlow_Percent	GO
	ActAirFlow_m3h	(GO)
	Fault	(GO)
	Overridden	(GO)

Power-return and restart behaviour

After power-return or an application restart the ADA shall always be in a defined state. The behaviour is manufacturer specific (fixed or according to proprietary parameters).

Recommended autonomous start-up behaviour: the ADA will automatically close the damper

– Default value of input "ActSetp…" = 0%

Backup behaviour

ADA may detect a communication failure or a breakdown of the connected controller after a defined receive timeout on "ActSetp…" input. The backup behaviour may be manufacturer specific (fixed or according to proprietary parameters) or can be defined via configuration parameters "BackupMode" ('BackupValue' / 'KeepLastState') and "BackupValueActSetp" (%).

Actuator specific parameters

VAV actuator specific features are usually configured via manufacturer specific parameters. The following optional parameters are of common interest and are standardized.

- OpenCloseDirection — parameter to define the open / close logic of the outputs to control the air damper position (normal / inverted)
- NominalFlow — parameter to define the nominal flow of the VAV in m^3/h

  The value of "NominalFlow" corresponds to "ActSetp…" = 100%
- ActPosCOV — COV condition for spontaneous transmission "ActPos…" outputs
- ActPosMinRepTime — minimum wait time between two updates of "ActPos…" outputs
- ActFlowCOV — COV condition [m^3/h] for spontaneous transmission "ActFlow…" outputs.

  Based on "ActFlowCOV" and "NominalFlow" the corresponding COV [%] can be derived.
- ActFlowMinRepTime — minimum wait time between two updates of "ActFlow…" outputs

3.3.3 Functional Block diagram for Air Damper control

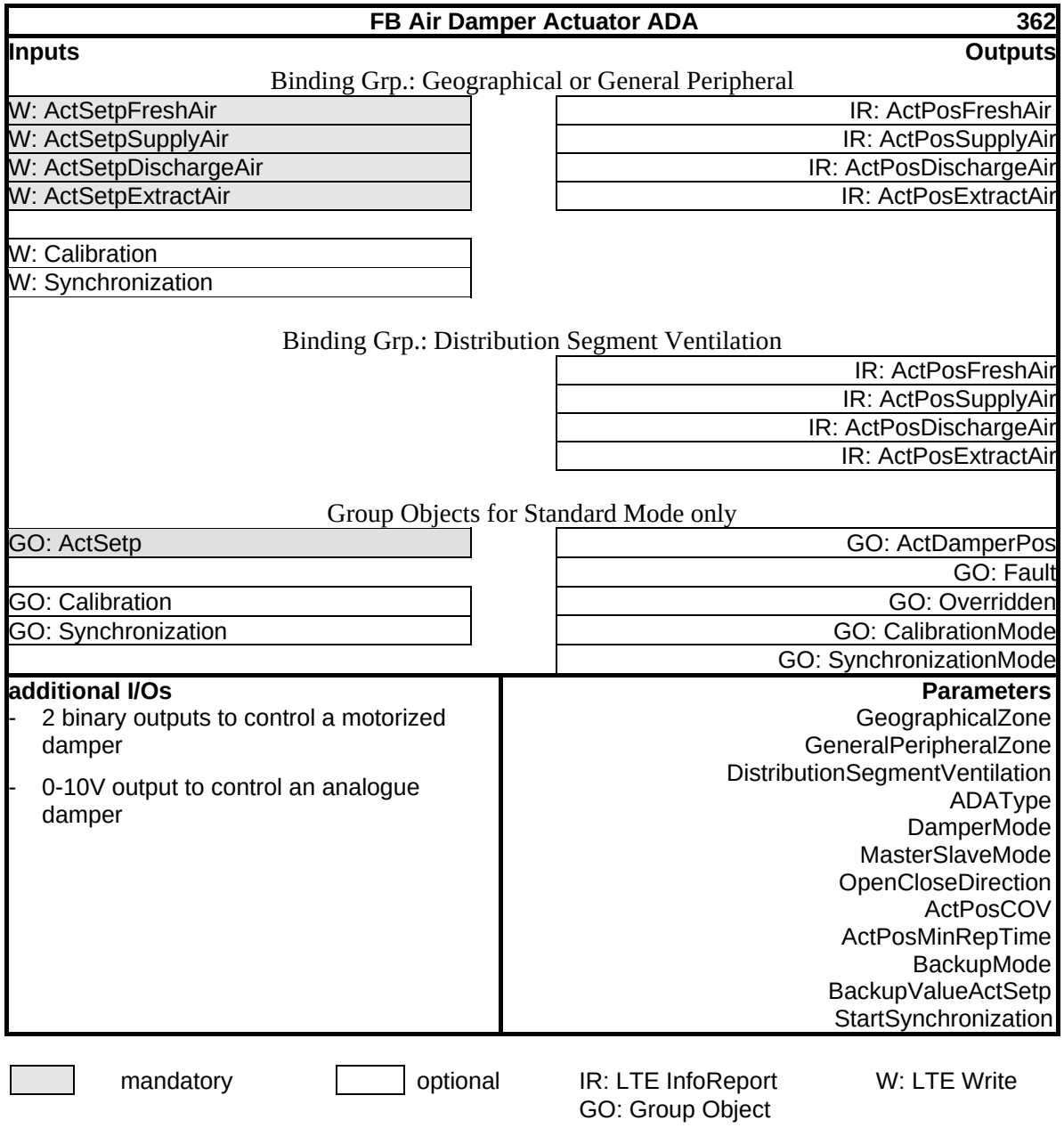


Figure 4 – Functional Block Diagram ADA for Air Damper control

3.3.4 Functional Block diagram for VAV Control

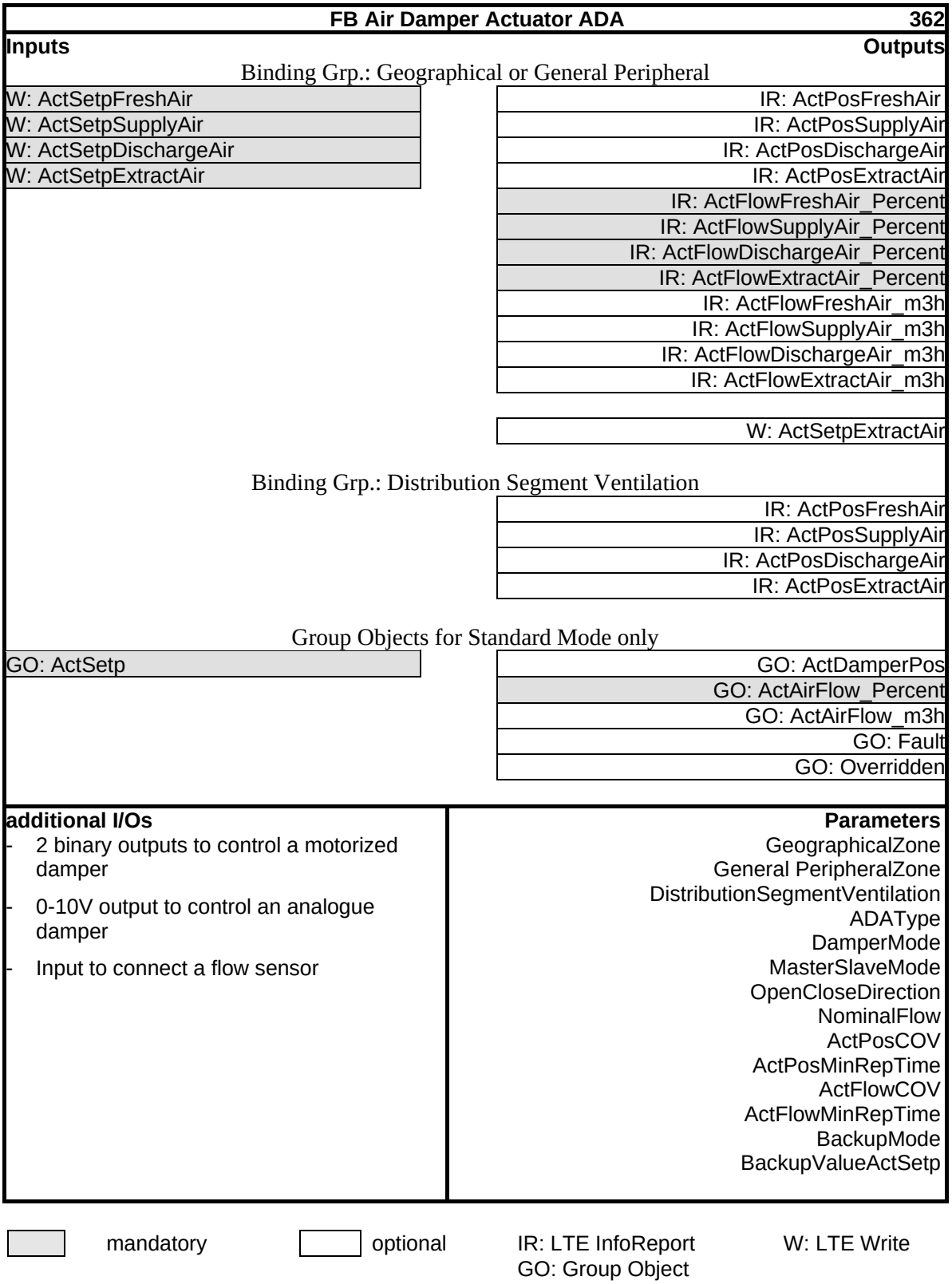


Figure 5 – Functional Block Diagram ADA for VAV control

3.3.5 Datapoints

Inputs		
Datapoint	**Description**	**Datapoint Type**
ActSetpFreshAir	Setpoint for Fresh Air actuator control, representing – the damper position in case of Air Damper control – the relative air flow volume in case of VAV control Resolution of the setpoint: 1% This input is active if “DamperMode” = ‘Fresh Air’	**LTE-Mode** DPT_RelValue_Z (202.001) **Standard Mode** not available
ActSetpSupplyAir	Setpoint for Supply Air actuator control, representing – the damper position in case of Air Damper control – the relative air flow volume in case of VAV control Resolution of the setpoint: 1% This input is active if “DamperMode” = ‘Supply Air’	**LTE-Mode** DPT_RelValue_Z (202.001) **Standard Mode** not available
ActSetpDischargeAir	Setpoint for Discharge Air actuator control, representing – the damper position in case of Air Damper control – the relative air flow volume in case of VAV control Resolution of the setpoint: 1% This input is active if “DamperMode” = ‘Discharge Air’	**LTE-Mode** DPT_RelValue_Z (202.001) **Standard Mode** not available
ActSetpExtractAir	Setpoint for Extract Air actuator control, representing – the damper position in case of Air Damper control – the relative air flow volume in case of VAV control Resolution of the setpoint: 1% This input is active if “DamperMode” = ‘Extract Air’	**LTE-Mode** DPT_RelValue_Z (202.001) **Standard Mode** not available
ActSetp	Setpoint for actuator control, representing – the damper position in case of Air Damper control – the relative air flow volume in case of VAV control Resolution of the setpoint: ~0.4%	**Standard Mode** **DPT_Scaling (5.001)** **LTE-Mode** n.a.
Calibration	Control command to start self calibration of the actuator. Support of this input is usually only meaningful for 3-state motorized air dampers	DPT_Trigger (1.017)
Synchronization	Control command to initiate either one single-open or single-close synchronization of the internal stroke-model. Support of this input is usually only meaningful for 3-state motorized air dampers	DPT_Trigger (1.017)

Outputs		
Datapoint	**Description**	**Datapoint Type**
ActPosFreshAir	Actuator status information representing the effective damper position and further status attributes of the Fresh Air damper. Resolution of the damper position: 1% This output is active if “DamperMode” = ‘Fresh Air’	**LTE-Mode** DPT_StatusAct (207.105) **Standard Mode** not available
ActPosSupplyAir	Actuator status information representing the effective damper position and further status attributes of the Supply Air damper. Resolution of the damper position: 1% This output is active if “DamperMode” = ‘Supply Air’	**LTE-Mode** DPT_StatusAct (207.105) **Standard Mode** not available

Outputs		
Datapoint	**Description**	**Datapoint Type**
ActPosFreshAir	Actuator status information representing the effective damper position and further status attributes of the Fresh Air damper. Resolution of the damper position: 1% This output is active if “DamperMode” = ‘Fresh Air’	**LTE-Mode** DPT_StatusAct (207.105) **Standard Mode** not available
ActPosDischargeAir	Actuator status information representing the effective damper position and further status attributes of the Discharge Air damper. Resolution of the damper position: 1% This output is active if “DamperMode” = ‘Discharge Air’	**LTE-Mode** DPT_StatusAct (207.105) **Standard Mode** not available
ActPosExtractAir	Actuator status information representing the effective damper position and further status attributes of the Extract Air damper. Resolution of the damper position: 1% This output is active if “DamperMode” = ‘Extract Air’	**LTE-Mode** DPT_StatusAct (207.105) **Standard Mode** not available
ActDamperPos	Actuator status information representing the effective air damper position. Resolution of the damper position: ~0.4%	**Standard Mode** **DPT_Scaling (5.001)** **LTE-Mode** n.a.
Fault	Binary status information to indicate a failure of the actuator	**Standard Mode** **DPT_Bool (1.002)** **LTE-Mode** n.a.
Overridden	Binary status information to indicate that the actuator setpoint is currently locally overridden	**Standard Mode** **DPT_Bool (1.002)** **LTE-Mode** n.a.
CalibrationMode	Binary status information to indicate that the actuator is currently executing a self-calibration	**Standard Mode** **DPT_State (1.011)** **LTE-Mode** n.a.
SynchronizationMode	Binary status information to indicate that the actuator is currently executing a synchronization of the stroke model	**Standard Mode** **DPT_State (1.011)** **LTE-Mode** n.a.
ActFlowFreshAir_Percent	VAV status information representing the measured volumetric Fresh Air flow in percent of the configured nominal flow. Resolution of the air flow value: 0.01% This output is active if - “ADAType” = ‘VAV’ - “DamperMode” = ‘Fresh Air’	**LTE-Mode** DPT_Percent_V16_Z (205.017) **Standard Mode** not available
ActFlowSupplyAir_Percent	VAV status information representing the measured volumetric Supply Air flow in percent of the configured nominal flow. Resolution of the air flow value: 0.01% This output is active if - “ADAType” = ‘VAV’ - “DamperMode” = ‘Supply Air’	**LTE-Mode** DPT_Percent_V16_Z (205.017) **Standard Mode** not available

Outputs		
Datapoint	**Description**	**Datapoint Type**
ActPosFreshAir	Actuator status information representing the effective damper position and further status attributes of the Fresh Air damper. Resolution of the damper position: 1% This output is active if “DamperMode” = ‘Fresh Air’	**LTE-Mode** DPT_StatusAct (207.105) **Standard Mode** not available
ActFlowDischargeAir_Percent	VAV status information representing the measured volumetric Discharge Air flow in percent of the configured nominal flow. Resolution of the air flow value: 0.01% This output is active if - “ADAType” = ‘VAV’ - “DamperMode” = ‘Discharge Air’	**LTE-Mode** DPT_Percent_V16_Z (205.017) **Standard Mode** not available
ActFlowExtractAir_Percent	VAV status information representing the measured volumetric Extrac Air flow in percent of the configured nominal flow. Resolution of the air flow value: 0.01% This output is active if - “ADAType” = ‘VAV’ - “DamperMode” = ‘Extract Air’	**LTE-Mode** DPT_Percent_V16_Z (205.017) **Standard Mode** not available
ActAirFlow_Percent	VAV status information representing the measured volumetric air flow in percent of the configured nominal flow. Resolution of the air flow value: 0.01% This output is only available if - “ADAType” = ‘VAV’	**Standard Mode** **DPT_Percent_V16 (8.010)** **LTE-Mode** n.a.
ActFlowFreshAir_m3h	VAV status information representing the measured volumetric Fresh Air flow in m^3/h. Resolution of the air flow value: 0.0001 m^3/h This output is active if - “ADAType” = ‘VAV’ - “DamperMode” = ‘Fresh Air’	**LTE-Mode** DPT_FlowRate_m3/h_Z (218.002) **Standard Mode** not available
ActFlowSupplyAir_m3h	VAV status information representing the measured volumetric Supply Air flow in m^3/h. Resolution of the air flow value: 0.0001 m^3/h This output is active if - “ADAType” = ‘VAV’ - “DamperMode” = ‘Supply Air’	**LTE-Mode** DPT_FlowRate_m3/h_Z (218.002) **Standard Mode** not available
ActFlowDischargeAir_m3h	VAV status information representing the measured volumetric Discharge Air flow in m^3/h. Resolution of the air flow value: 0.0001 m^3/h This output is active if - “ADAType” = ‘VAV’ - “DamperMode” = ‘Discharge Air’	**LTE-Mode** DPT_FlowRate_m3/h_Z (218.002) **Standard Mode** not available
ActFlowExtractAir_m3h	VAV status information representing the measured volumetric Extract Air flow in m^3/h. Resolution of the air flow value: 0.0001 m^3/h This output is active if - “ADAType” = ‘VAV’ - “DamperMode” = ‘Extract Air’	**LTE-Mode** DPT_FlowRate_m3/h_Z (218.002) **Standard Mode** not available

Outputs		
Datapoint	**Description**	**Datapoint Type**
ActPosFreshAir	Actuator status information representing the effective damper position and further status attributes of the Fresh Air damper. Resolution of the damper position: 1% This output is active if “DamperMode” = ‘Fresh Air’	**LTE-Mode** DPT_StatusAct (207.105) **Standard Mode** not available
ActAirFlow_m3h	VAV status information representing the measured volumetric air flow in m^3/h. Resolution: IEEE floating point, unit m^3/s This output is only available if - “ADAType” = ‘VAV’	**Standard Mode** **DPT_Value_Volume_Flux (14.077)** **LTE-Mode** n.a.
ActSetpExtractAir	Output of the VAV Master to control the Extract Air volume setpoint (%) of the VAV Slave Resolution of the setpoint: 1% This input is only active if - “ADAType” = ‘VAV’ - “DamperMode” = ‘Discharge Air’ - “MasterSlaveMode” = ‘Master’	**LTE-Mode** DPT_RelValue_Z (202.001) **Standard Mode** not available

Parameters		
Datapoint	**Description**	**Datapoint Type**
GeneralPeripheralZone	LTE General Peripheral Zone	DPT_UcountValue16_Z (203.012)
DistributionSegmentVentilation	LTE Ventilation Distribution Segment	DPT_UCountValue8_Z (202.002)
ADAType	Parameter to select the effective air damper or VAV functionality and the runtime interworking interface of FB ADA. - 1: ‘Air Damper’ (default) - 2: ‘VAV’	DPT_ADAType (20.120)
DamperMode	This parameter is used to select the ventilation application and the runtime interworking interface, if ADA supports more than one application scheme. - 1: Fresh Air (default for fan coil applications) - 2: Supply Air - 3: Discharge Air (default for VAV applications) - 4: Extract Air	DPT_DamperMode (20.109)
MasterSlaveMode	VAV mode: - 0: Autonomous (default) - 1: Master - 2: Slave	DPT_MasterSlaveMode (20.112)
OpenCloseDirection	Parameter to select the drive direction of the actuator: - 0: Normal - 1: Inverted	DPT_Invert (1.012)
NominalFlow	Nominal Flow of the VAV actuator in m3/h with a resolution of $0.0001m^3/h$	DPT_FlowRate_m3/h (13.002)
ActPosCOV	COV condition for spontaneous transmission “ActPos…” outputs	DPT_Percent_U8 (5.004)
ActPosMinRepTime	Minimum wait time between two updates of “ActPos…” outputs	DPT_TimePeriodSec (7.005)

Parameters		
Datapoint	**Description**	**Datapoint Type**
ActFlowCOV	COV condition [m^3/h] for spontaneous transmission “ActFlow…” outputs. Based on “ActFlowCOV” and “NominalFlow” the corresponding COV [%] can be derived	DPT_FlowRate_m3/h (13.002)
ActFlowMinRepTime	Minimum wait time between two updates of “ActFlow…” outputs	DPT_TimePeriodSec (7.005)
BackupMode	Parameter to define the behaviour during communication failure - 0: BackupValue => see parameter “BackupValue” - 1: KeepLastState	DPT_BackupMode (20.121)
BackupValueActSetp	Defines the default actuator setpoint in case of communication failure if “BackupMode” = ‘BackupValue’	DPT_Percent_U8 (5.004)
StartSynchronization	Parameter to define the behaviour of a 3-state Air Damper actuator after power-return or an application restart: 0: position unchanged 1: single close 2: single open	DPT_StartSynchronization (20.122)

ADA Runtime Interworking - Dependence on Configuration Modes

			STANDARD MODE	EXTENDED MODE	
		Basic FB	S-Mode	Standard Mode Interface	LTE
Inputs	ActSetpFreshAir	**NA**	NA	NA	**M**
	ActSetpSupplyAir	**NA**	NA	NA	**M**
	ActSetpDischargeAir	**NA**	NA	NA	**M**
	ActSetpExtractAir	**NA**	NA	NA	**M**
	ActSetp	**GO_b**	GO	GO	**NA**
	Calibration	**$(GO)_b$**	(GO)	(GO)	**O**
	Synchronization	**$(GO)_b$**	(GO)	(GO)	**O**
Outputs	ActPosFreshAir	**NA**	NA	NA	**O**
	ActPosSupplyAir	**NA**	NA	NA	**O**
	ActPosDischargeAir	**NA**	NA	NA	**O**
	ActPosExtractAir	**NA**	NA	NA	**O**
	ActPos	**$(GO)_b$**	(GO)	(GO)	**NA**
	ActFlowFreshAir_Percent	**NA**	NA	NA	**M**
	ActFlowSupplyAir_Percent	**NA**	NA	NA	**M**
	ActFlowDischargeAir_Percent	**NA**	NA	NA	**M**
	ActFlowExtractAir_Percent	**NA**	NA	NA	**M**
	ActFlow_Percent	**GO_b**	GO	GO	**NA**
	ActFlowFreshAir_m3h	**NA**	NA	NA	**O**
	ActFlowSupplyAir_m3h	**NA**	NA	NA	**O**
	ActFlowDischargeAir_m3h	**NA**	NA	NA	**O**
	ActFlowExtractAir_m3h	**NA**	NA	NA	**O**
	ActFlow_m3h	**$(GO)_b$**	(GO)	(GO)	**NA**
	ActSetpExtractAir	**NA**	NA	NA	**O**
	Fault	**$(GO)_b$**	(GO)	(GO)	**NA**
	Overridden	**$(GO)_b$**	(GO)	(GO)	**NA**
	CalibrationMode	**$(GO)_b$**	(GO)	(GO)	**NA**
	SynchronizationMode	**$(GO)_b$**	(GO)	(GO)	**NA**

Details of ADA runtime interworking for Air Damper and VAV: see 3.3.2.2 and 3.3.2.3

ADA LTE specific Properties

		Support
Parameter	GeographicalZone	M
	GeneralPeripheralZone	O
	DistributionSegmentVentilation	O
	DamperMode	O
	MasterSlaveMode	O

ADA Standard Properties of Interface Objects (or memory mapped DP)

		Support
Parameter	ADAType	O
	OpenCloseDirection	O
	NominalFlow	M *)
	ActPosCOV	O
	ActPosMinRepTime	O
	ActFlowCOV	O
	ActFlowMinRepTime	O
	BackupMode	O
	BackupValueActSetp	O
	StartSynchronization	O
Diagnostic Data	--	

*) for VAV mode only

3.3.6 Detailed specification of the Datapoints

3.3.6.1 Input ActSetp

Standard Mode

DP Name:	ActSetp	Abbr.:	---	Mandatory	☒
FB Name:	ADA			Can be internal	☐

Description

Input to control the Air Damper / VAV actuator. The signal represents the setpoint of:
- the damper position in case of Air Damper control
- the relative air flow volume in case of VAV control

Resolution of the setpoint: ~0.4%

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0...100 [1]	%	[2]

Access Type

♦ Input

N → this	☐	1 → this	☒			
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (recommended)	
Request	☐	Polling:	☐	Period:		

Communication Type

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

Dynamics

Power down:	Save:	☒ [3]			
Power up:	Value:	No initialisation:	☐	Default value:	☒ [2]
		Saved value:	☒ [3]		☐
			☐	Read from bus:	☐

Exception Handling

See backup behaviour in 3.3.2.2 and 3.3.2.3

Special Features

[1] The coding of the actuator setpoint value is: 0% → 0 100% → 255
[2] See Power-return and restart behaviour in 3.3.2.2 and 3.3.2.3
[3] Optional, manufacturer specific behaviour, see Power-return and restart behaviour in 3.3.2.2 and 3.3.2.3

This Group Object may be mapped internally to any of the four ActSetp… LTE-Input Properties

LTE-Mode

See 3.3.6.2 - 3.3.6.5

3.3.6.2 Input ActSetpFreshAir

LTE-Mode only

FB: ADA	**LTE Server Input Name:** ActSetpFreshAir	Mandatory ☒ Optional ☐

Description:

Setpoint (%) for Fresh Air actuator control, representing
- the damper position in case of Air Damper control
- the relative air flow volume in case of VAV control

Resolution of the setpoint: 1%

This input is active if “DamperMode” = ‘Fresh Air’

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Actuator setpoint	Percent value of the actuator setpoint	M	%	[2]
STATUS	For Read Service only		Bitset	
- Overridden	The setpoint is temporarily overridden	O	Bit 2	false
- all other attributes	fixed to '0'	NA		false
COMMAND	For Write Service only		enum.	
- NormalWrite	Used for normal runtime communication (LTE Write Service)	M	0	
- Override / Release	Used for temporary override / release of the input (mainly by a tool using Property Write access with individual addressing)	O	1 / 2	
- all other commands	not applicable	NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☐		
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID):	362 (ADA)	Property ID:	51
LTE-Service (event): Write ☒	Timeout: [1]	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up:	Default Value ☒ [2]	Stored Value ☒ [3]
Exception Handling:		Save at Power-down ☒ [3]

[1] See backup behaviour in 3.3.2.2 and 3.3.2.3

Special Features:

[2] See Power-return and restart behaviour in 3.3.2.2 and 3.3.2.3

[3] Optional, manufacturer specific behaviour, see Power-return and restart behaviour in 3.3.2.2 and 3.3.2.3

3.3.6.3 Input ActSetpSupplyAir

LTE-Mode only

FB: ADA	**LTE Server Input Name:** ActSetpSupplyAir	Mandatory ☒ Optional ☐

Description:

Setpoint (%) for Supply Air actuator control, representing
- the damper position in case of Air Damper control
- the relative air flow volume in case of VAV control

Resolution of the setpoint: 1%

This input is active if “DamperMode” = ‘Supply Air’

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Actuator setpoint	Percent value of the actuator setpoint	M	%	[2]
STATUS	For Read Service only		Bitset	
- Overridden	The setpoint is temporarily overridden	O	Bit 2	false
- all other attributes	fixed to '0'	NA		false
COMMAND	For Write Service only		enum.	
- NormalWrite	Used for normal runtime communication (LTE Write Service)	M	0	
- Override / Release	Used for temporary override / release of the input (mainly by a tool using Property Write access with individual addressing)	O	1 / 2	
- all other commands	not applicable	NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☐		
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID):	362 (ADA)	Property ID:	52
LTE-Service (event): Write ☒	Timeout: [1]	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up:	Default Value ☒ [2]	Stored Value ☒ [3]
Exception Handling:		Save at Power-down ☒ [3]

[1] See backup behaviour in 3.3.2.2 and 3.3.2.3

Special Features:

[2] See Power-return and restart behaviour in 3.3.2.2 and 3.3.2.3

[3] Optional, manufacturer specific behaviour, see Power-return and restart behaviour in 3.3.2.2 and 3.3.2.3

3.3.6.4 Input ActSetpDischargeAir

LTE-Mode only

FB: ADA	**LTE Server Input Name:** ActSetpDischargeAir	Mandatory ☒ Optional ☐

Description:

Setpoint (%) for Discharge Air actuator control, representing
- the damper position in case of Air Damper control
- the relative air flow volume in case of VAV control

Resolution of the setpoint: 1%

This input is active if “DamperMode” = ‘Discharge Air’

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Actuator setpoint	Percent value of the actuator setpoint	M	%	[2]
STATUS	For Read Service only		Bitset	
- Overridden	The setpoint is temporarily overridden	O	Bit 2	false
- all other attributes	fixed to '0'	NA		false
COMMAND	For Write Service only		enum.	
- NormalWrite	Used for normal runtime communication (LTE Write Service)	M	0	
- Override / Release	Used for temporary override / release of the input (mainly by a tool using Property Write access with individual addressing)	O	1 / 2	
- all other commands	not applicable	NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☐		
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID):	362 (ADA)	Property ID:	53
LTE-Service (event): Write ☒	Timeout: [1]	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up:	Default Value ☒ [2]	Stored Value ☒ [3]
Exception Handling:		Save at Power-down ☒ [3]

[1] See backup behaviour in 3.3.2.2 and 3.3.2.3

Special Features:

[2] See Power-return and restart behaviour in 3.3.2.2 and 3.3.2.3

[3] Optional, manufacturer specific behaviour, see Power-return and restart behaviour in 3.3.2.2 and 3.3.2.3

3.3.6.5 Input ActSetpExtractAir

LTE-Mode only

FB: ADA	**LTE Server Input Name:** ActSetpExtractAir	Mandatory ☒ Optional ☐

Description:

Setpoint (%) for Extract Air actuator control, representing
- the damper position in case of Air Damper control
- the relative air flow volume in case of VAV control

Resolution of the setpoint: 1%

This input is active if “DamperMode” = ‘Extract Air’

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Actuator setpoint	Percent value of the actuator setpoint	M	%	[2]
STATUS	For Read Service only		Bitset	
- Overridden	The setpoint is temporarily overridden	O	Bit 2	false
- all other attributes	fixed to '0'	NA		false
COMMAND	For Write Service only		enum.	
- NormalWrite	Used for normal runtime communication (LTE Write Service)	M	0	
- Override / Release	Used for temporary override / release of the input (mainly by a tool using Property Write access with individual addressing)	O	1 / 2	
- all other commands	not applicable	NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☐		
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID):	362 (ADA)	Property ID:	54
LTE-Service (event): Write ☒	Timeout: [1]	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up:	Default Value ☒ [2]	Stored Value ☒ [3]
Exception Handling:		Save at Power-down ☒ [3]

[1] See backup behaviour in 3.3.2.2 and 3.3.2.3

Special Features:

[2] See Power-return and restart behaviour in 3.3.2.2 and 3.3.2.3

[3] Optional, manufacturer specific behaviour, see Power-return and restart behaviour in 3.3.2.2 and 3.3.2.3

3.3.6.6 Input Calibration

Standard Mode

DP Name:	Calibration	Abbr.:	---	Mandatory	☐
FB Name:	ADA			Can be internal	☐

Description

Control command to start self calibration of the actuator.
Support of this input is usually only meaningful for 3-state motorized air dampers

Datapoint Type

DPT_Name:	DPT_Trigger				
DPT Format:	B_1	DPT_ID:	1.017		
Field	Description	Supp.	Range	Unit	Default
b	Both binary values trigger the start a self calibration of the actuator			--	--

Access Type

♦ Input

N → this	☒	1 → this	☐			
Spontaneous	☒	Cyclically:	☐	Time-out:	--	
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

--

Special Features

--

LTE-Mode

FB: **ADA**	**LTE Server Input Name:** **Calibration**			Mandatory ☐ Optional ☒
Description:				
Control command to start self calibration of the actuator. Support of this input is usually only meaningful for 3-state motorized air dampers				
DPT: Name	DPT_Trigger	DPT ID	1.017	Datatype format B_1

Field	Description	Sup.	Unit	Default
b	Both binary values trigger the start a self calibration of the actuator	M	--	--

Communication:			
Binding Group:			
Class	Type	Default	
Geographical ☒	BuildingZone.Room.Subzone	1.1.1	
Application Specific ☐			
Unassigned ☒	Broadcast ☐ Configurable ☒	OSV	
DP Address:	IO Type(ID): 362 (ADA)	Property ID: 70	
LTE-Service (event): Write ☒	Timeout: --	Min	
Property-Service (individual access):	Read only ☐ Read/Write ☒ read access is however not meaningful		
Value after Power-up:	Default Value ☐	Stored Value ☐	
Exception Handling:		Save at Power-down ☐	
--			
Special Features:			
--			

3.3.6.7 Input Synchronization

Standard Mode

DP Name:	Synchronization	Abbr.:	---	Mandatory	☐
FB Name:	ADA			Can be internal	☐

Description

Control command to initiate either one single-open or single-close synchronization of the internal stroke-model. Support of this input is usually only meaningful for 3-state motorized air dampers

Datapoint Type

DPT_Name:	DPT_Trigger				
DPT Format:	B_1	DPT_ID:	1.017		
Field	Description	Supp.	Range	Unit	Default
b	Both binary values trigger the start a synchronization of the stroke model			--	--

Access Type

♦ Input

N → this	☒	1 → this	☐	
Spontaneous	☒	Cyclically:	☐	Time-out: --
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

--

Special Features

--

LTE-Mode

FB: **ADA**	**LTE Server Input Name:** **Synchronization**			Mandatory ☐ Optional ☒
Description:				
Control command to initiate either one single-open or single-close synchronization of the internal stroke-model. Support of this input is usually only meaningful for 3-state motorized air dampers				
DPT: Name DPT_Trigger	DPT ID 1.017	Datatype format B_1		
Field	Description	Sup.	Unit	Default
b	Both binary values trigger the start a synchronization of the stroke model	M	--	--

Communication:			
Binding Group:			
Class	Type	Default	
Geographical ☒	BuildingZone.Room.Subzone	1.1.1	
Application Specific ☐			
Unassigned ☒	Broadcast ☐ Configurable ☒	OSV	
DP Address:	IO Type(ID): 362 (ADA)	Property ID: 71	
LTE-Service (event): Write ☒	Timeout: --	Min	
Property-Service (individual access):	Read only ☐ Read/Write ☒ read access is however not meaningful		
Value after Power-up:	Default Value ☐	Stored Value ☐	
Exception Handling:		Save at Power-down ☐	
--			
Special Features:			
--			

3.3.6.8 Output ActDamperPos

Standard Mode

DP Name:	ActDamperPos	Abbr.:	---	Mandatory	☐
FB Name:	ADA			Can be internal	☐

Description

Actuator status information representing the effective air damper position (%).

Resolution of the position information: ~0.4%

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0...100 [1)]	%	cs

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:	[2)]	MinRepTime:	[3)]
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

[1)] The coding of the actuator setpoint value is: 0% → 0 100% → 255
[2)] COV is either fixed or configurable via parameter “ActPosCOV”
[3)] MinRepTime is either fixed or configurable via parameter “ActPosMinRepTime”

This Group Object may be mapped internally to any of the four ActPos… LTE-Output Properties

LTE-Mode

See 3.3.6.13 - 3.3.6.16

3.3.6.9 Output Fault

Standard Mode

DP Name:	Fault			Abbr.:	---			Mandatory	☐		
FB Name:	ADA							Can be internal	☐		
Description											
Binary status information to indicate a failure of the actuator, see also “ActPos.....” outputs											
Datapoint Type											
DPT_Name:	DPT_Bool										
DPT Format:	B_1					DPT_ID:		1.002			
Field	Description					Supp.		Range		Unit	Default
								true/false		bool	false
Access Type											
♦ Output											
this → M	☒		this → 1	☐							
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	[1)]				
		Cyclic	☒	Period:	15 min (recommended value)						
Request	☒										
Communication Type											
♦ Group Object Datapoint								Mandatory:	☐		
Default Group Address:	---										
Dynamics											
Power down:	Save:	☐									
Power up:	Value:	No initialisation:	☐			Default value:	☐				
		Saved value:	☐			Actual value:	☒				
	Transmit on bus:	☒					☐				
Exception Handling											

Special Features											
[1)] MinRepTime is either fixed or configurable, the recommended value is 10s											

LTE-Mode

See 3.3.6.13 - 3.3.6.16.

3.3.6.10 Output Overridden

Standard Mode

DP Name:	Overridden	Abbr.:	---	Mandatory	☐
FB Name:	ADA			Can be internal	☐

Description

Binary status information to indicate that the actuator setpoint is currently locally overridden, see also "ActPos....." outputs

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	false

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	1)
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐				
Power up:	Value:	No initialisation:	☐	Default value:	☐	
		Saved value:	☐	Actual value:	☒	
	Transmit on bus:	☒			☐	

Exception Handling

Special Features

1) MinRepTime is either fixed or configurable, the recommended value is 10s

LTE-Mode

See 3.3.6.13 - 3.3.6.16.

3.3.6.11 Output CalibrationMode

Standard Mode

DP Name:	CalibrationMode	Abbr.:	---	Mandatory	☐
FB Name:	ADA			Can be internal	☐

Description

Binary status information to indicate that the actuator is currently executing a self-calibration, see also "ActPos....." outputs

Datapoint Type

DPT_Name:	DPT_State				
DPT Format:	B_1	DPT_ID:	1.011		
Field	Description	Supp.	Range	Unit	Default
State	0 = Inactive 1 = Active				Inactive

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	1)
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

1) MinRepTime is either fixed or configurable, the recommended value is 10s

LTE-Mode

See 3.3.6.13 - 3.3.6.16.

3.3.6.12 Output SynchronizationMode

Standard Mode

DP Name:	SynchronizationMode	Abbr.:	---	Mandatory	☐
FB Name:	ADA			Can be internal	☐

Description

Binary status information to indicate that the actuator is currently executing a synchronization of the stroke model, see also “ActPos.....” outputs

Datapoint Type

DPT_Name:	DPT_State				
DPT Format:	B_1	DPT_ID:	1.011		
Field	Description	Supp.	Range	Unit	Default
State	0 = Inactive 1 = Active				Inactive

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	[1]
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

[1] MinRepTime is either fixed or configurable, the recommended value is 10s

LTE-Mode

See 3.3.6.13 - 3.3.6.16.

3.3.6.13 Output ActPosFreshAir

LTE-Mode only

FB: ADA	**LTE Server Output Name: ActPosFreshAir**	Mandatory ☐ Optional ☒

Description:

Actuator status information representing the effective damper position and further status attributes of the Fresh Air damper.
This output is active if “DamperMode” = ‘Fresh Air’

DPT:	Name	DPT_StatusAct	DPT ID	207.105	Datatype format	U_8B_8

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	actual damper position	M	full range	%	[1]	cs
STATUS				bitset		
- Failure	indicates that the actuator has a failure	O	true/false	Bit 0	Y	false
- ManualOverride	indicates that the actuator setpoint is currently locally overridden	O	true/false	Bit 1	Y	false
- CalibrationMode	indicates that the actuator is currently executing a self-calibration	O	0 = inactive 1 = active	Bit 2	Y	inactive
- ValveKick	not meaningful for ADA	NA	--	Bit 3	--	0
- SynchronizationMode	indicates that the actuator is currently executing a synchronization of the stroke model	O	0 = inactive 1 = active	Bit 4	Y	inactive
	all other attributes	NA				0

Communication:

Binding Group:

Class		Type	Default
Geographical	☒	BuildingZone.Room.Subzone	1.1.1
Application Specific	☒	DistributionSegmentVentilation	OutOfService
Unassigned	☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address: IO Type(ID): 362 (ADA) Property ID: 55

LTE-Services (event):
InfoReport ☒

(LTE Read-Response polling of the output shall always be supported)

COV ☒ MinRepTime: [2] sec Heartbeat: 15 min
Output per default communicating ☐ Binding Group Wildcard allowed ☐
Tx Prio: High ☐ Normal ☒ Low ☐
Transm after Power-up: Stored Value ☐ Act Value ☒ Default Value ☐

Property-Service (individual access): Read only ☒ Read/Write ☐

Exception Handling: Save at Powerdown ☐

Special Features:

[1] COV is either fixed or configurable via parameter “ActPosCOV”
[2] MinRepTime is either fixed or configurable via parameter “ActPosMinRepTime”

3.3.6.14 Output ActPosSupplyAir

LTE-Mode only

FB: ADA	**LTE Server Output Name: ActPosSupplyAir**	Mandatory ☐ Optional ☒

Description:

Actuator status information representing the effective damper position and further status attributes of the Supply Air damper.
This output is active if "DamperMode" = 'Supply Air'

DPT:	Name	DPT_StatusAct	DPT ID	207.105	Datatype format	U_8B_8

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	actual damper position	M	full range	%	1)	cs
STATUS				bitset		
- Failure	indicates that the actuator has a failure	O	true/false	Bit 0	Y	false
- ManualOverride	indicates that the actuator setpoint is currently locally overridden	O	true/false	Bit 1	Y	false
- CalibrationMode	indicates that the actuator is currently executing a self-calibration	O	0 = inactive 1 = active	Bit 2	Y	inactive
- ValveKick	not meaningful for ADA	NA	--	Bit 3	--	0
- SynchronizationMode	indicates that the actuator is currently executing a synchronization of the stroke model	O	0 = inactive 1 = active	Bit 4	Y	inactive
	all other attributes	NA				0

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☒	DistributionSegmentVentilation	OutOfService
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID): 362 (ADA)	Property ID: 56
LTE-Services (event):	COV ☒ MinRepTime: 2) sec	Heartbeat: 15 min
InfoReport ☒	Output per default communicating ☐	Binding Group Wildcard allowed ☐
	Tx Prio: High ☐ Normal ☒ Low ☐	
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐ Act Value ☒ Default Value ☐	
Property-Service (individual access):	Read only ☒ Read/Write ☐	

Exception Handling: Save at Powerdown ☐

Special Features:

1) COV is either fixed or configurable via parameter "ActPosCOV"
2) MinRepTime is either fixed or configurable via parameter "ActPosMinRepTime"

3.3.6.15 Output ActPosDischargeAir

LTE-Mode only

FB: ADA	**LTE Server Output Name: ActPosDischargeAir**	Mandatory ☐ Optional ☒

Description:

Actuator status information representing the effective damper position and further status attributes of the Discharge Air damper.
This output is active if "DamperMode" = 'Discharge Air'

DPT:	Name	DPT_StatusAct	DPT ID	207.105	Datatype format	U_8B_8

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	actual damper position	M	full range	%	1)	cs
STATUS				bitset		
- Failure	indicates that the actuator has a failure	O	true/false	Bit 0	Y	false
- ManualOverride	indicates that the actuator setpoint is currently locally overridden	O	true/false	Bit 1	Y	false
- CalibrationMode	indicates that the actuator is currently executing a self-calibration	O	0 = inactive 1 = active	Bit 2	Y	inactive
- ValveKick	not meaningful for ADA	NA	--	Bit 3	--	0
- SynchronizationMode	indicates that the actuator is currently executing a synchronization of the stroke model	O	0 = inactive 1 = active	Bit 4	Y	inactive
	all other attributes	NA				0

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☒	DistributionSegmentVentilation	OutOfService
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID): 362 (ADA)	Property ID: 57
LTE-Services (event):	COV ☒ MinRepTime: 2) sec	Heartbeat: 15 min
InfoReport ☒	Output per default communicating ☐	Binding Group Wildcard allowed ☐
	Tx Prio: High ☐ Normal ☒ Low ☐	
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐ Act Value ☒ Default Value ☐	
Property-Service (individual access):	Read only ☒ Read/Write ☐	

Exception Handling: Save at Powerdown ☐

Special Features:

1) COV is either fixed or configurable via parameter "ActPosCOV"
2) MinRepTime is either fixed or configurable via parameter "ActPosMinRepTime"

3.3.6.16 Output ActPosExtractAir

LTE-Mode only

FB: ADA	LTE Server Output Name: ActPosExtractAir	Mandatory ☐ Optional ☒

Description:

Actuator status information representing the effective damper position and further status attributes of the Extract Air damper.
This output is active if “DamperMode” = ‘Extract Air’

DPT:	Name	DPT_StatusAct	DPT ID	207.105	Datatype format	U_8B_8

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	Actual damper position	M	full range	%	1)	cs
STATUS				bitset		
- Failure	indicates that the actuator has a failure	O	true/false	Bit 0	Y	false
- ManualOverride	indicates that the actuator setpoint is currently locally overridden	O	true/false	Bit 1	Y	false
- CalibrationMode	indicates that the actuator is currently executing a self-calibration	O	0 = inactive 1 = active	Bit 2	Y	inactive
- ValveKick	not meaningful for ADA	NA	--	Bit 3	--	0
- SynchronizationMode	indicates that the actuator is currently executing a synchronization of the stroke model	O	0 = inactive 1 = active	Bit 4	Y	inactive
	all other attributes	NA				0

Communication:

Binding Group:

Class		Type	Default
Geographical	☒	BuildingZone.Room.Subzone	1.1.1
Application Specific	☒	DistributionSegmentVentilation	OutOfService
Unassigned	☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address: IO Type(ID): 362 (ADA) Property ID: 58

LTE-Services (event):
InfoReport ☒

(LTE Read-Response polling of the output shall always be supported)

COV ☒ MinRepTime: 2) sec Heartbeat: 15 min
Output per default communicating ☐ Binding Group Wildcard allowed ☐
Tx Prio: High ☐ Normal ☒ Low ☐
Transm after Power-up: Stored Value ☐ Act Value ☒ Default Value ☐

Property-Service (individual access): Read only ☒ Read/Write ☐

Exception Handling: Save at Powerdown ☐

Special Features:

1) COV is either fixed or configurable via parameter “ActPosCOV”
2) MinRepTime is either fixed or configurable via parameter “ActPosMinRepTime”

3.3.6.17 Output ActAirFlow_Percent

Standard Mode

DP Name:	ActAirFlow_Percent	Abbr.:	---	Mandatory	☒
FB Name:	ADA			Can be internal	☐

Description

VAV status information representing the measured volumetric air flow in percent of the configured nominal flow.
Resolution of the air flow value: 0.01%
This output is only available if “ADAType” = ‘VAV’

Datapoint Type

DPT_Name:	DPT_Percent_V16				
DPT Format:	V_{16}	DPT_ID:	8.010		
Field	Description	Supp.	Range	Unit	Default
			cs [1]	%	cs

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:	[2]	MinRepTime:	[3]
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

[1] negative values and values > 100% are allowed; typical range 0% … +120%
[2] COV is either fixed or can be calculated from parameter “ActFlowCOV”
[3] MinRepTime is either fixed or configurable via parameter “ActFlowMinRepTime”

LTE-Mode

See 3.3.6.18 - 3.3.6.21.

3.3.6.18 Output ActFlowFreshAir_Percent

LTE-Mode only

FB: ADA	**LTE Server Output Name: ActFlowFreshAir_Percent**	Mandatory ☒ Optional ☐

Description:

VAV status information representing the measured volumetric Fresh Air flow in percent of the configured nominal flow.
Resolution of the air flow value: 0.01%
This output is active if
- "ADAType" = 'VAV'
- "DamperMode" = 'Fresh Air'

DPT:	Name	DPT_Percent_V16_Z	DPT ID	205.017	Datatype format	V_8Z_8

Field	Description	Sup.	Range	Unit	COV	Default
Value_Percent	Actual air flow value (%)	M	cs [1]	%	[2]	cs
STATUS				bitset		
- Fault	Flow measurement fault	O	true/false	Bit 1	Y	false
- Overridden	indicates that the sensor value is currently locally overridden	O	true/false	Bit 2	Y	false
	all other attributes	NA				0

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☐		
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID):	362 (ADA)	Property ID:	59
LTE-Services (event): InfoReport ☒	COV ☒	MinRepTime: [3] sec	Heartbeat:	15 min
	Output per default communicating ☐		Binding Group Wildcard allowed ☐	
	Tx Prio:	High ☐	Normal ☒	Low ☐
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☐	Read/Write ☒ (sensor Override)		

Exception Handling: Save at Powerdown ☐

Special Features:

[1] negative values and values > 100% are allowed; typical range 0% … +120%
[2] COV is either fixed or can be calculated from parameter "ActFlowCOV"
[3] MinRepTime is either fixed or configurable via parameter "ActFlowMinRepTime"

3.3.6.19 Output ActFlowSupplyAir_Percent

LTE-Mode only

FB: ADA	**LTE Server Output Name: ActFlowSupplyAir_Percent**	Mandatory ☒ Optional ☐

Description:

VAV status information representing the measured volumetric Supply Air flow in percent of the configured nominal flow.
Resolution of the air flow value: 0.01%
This output is active if
- "ADAType" = 'VAV'
- "DamperMode" = 'Supply Air'

DPT:	Name	DPT_Percent_V16_Z	DPT ID	205.017	Datatype format	V_8Z_8

Field	Description	Sup.	Range	Unit	COV	Default
Value_Percent	Actual air flow value (%)	M	cs [1]	%	[2]	cs
STATUS				bitset		
- Fault	Flow measurement fault	O	true/false	Bit 1	Y	false
- Overridden	indicates that the sensor value is currently locally overridden	O	true/false	Bit 2	Y	false
	all other attributes	NA				0

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☐		
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID): 362 (ADA)	Property ID: 60
LTE-Services (event):	COV ☒ MinRepTime: [3] sec	Heartbeat: 15 min
InfoReport ☒	Output per default communicating ☐	Binding Group Wildcard allowed ☐
	Tx Prio: High ☐ Normal ☒ Low ☐	
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐ Act Value ☒ Default Value ☐	
Property-Service (individual access):	Read only ☐ Read/Write ☒ (sensor Override)	

Exception Handling: Save at Powerdown ☐

Special Features:

[1] negative values and values > 100% are allowed; typical range 0% … +120%
[2] COV is either fixed or can be calculated from parameter "ActFlowCOV"
[3] MinRepTime is either fixed or configurable via parameter "ActFlowMinRepTime"

3.3.6.20 Output ActFlowDischargeAir_Percent

LTE-Mode only

FB: ADA	LTE Server Output Name: ActFlowDischargeAir_Percent	Mandatory ☒	Optional ☐

Description:

VAV status information representing the measured volumetric Discharge Air flow in percent of the configured nominal flow.
Resolution of the air flow value: 0.01%
This output is active if
- "ADAType" = 'VAV'
- "DamperMode" = 'Discharge Air'

DPT:	Name	DPT_Percent_V16_Z	DPT ID	205.017	Datatype format	V_8Z_8

Field	Description	Sup.	Range	Unit	COV	Default
Value_Percent	Actual air flow value (%)	M	cs [1]	%	[2]	cs
STATUS				bitset		
- Fault	Flow measurement fault	O	true/false	Bit 1	Y	false
- Overridden	indicates that the sensor value is currently locally overridden	O	true/false	Bit 2	Y	false
	all other attributes	NA				0

Communication:

Binding Group:

Class		Type	Default
Geographical	☒	BuildingZone.Room.Subzone	1.1.1
Application Specific	☐		
Unassigned	☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID): 362 (ADA)	Property ID: 61
LTE-Services (event):	COV ☒ MinRepTime: [3] sec	Heartbeat: 15 min
InfoReport ☒	Output per default communicating ☐	Binding Group Wildcard allowed ☐
	Tx Prio: High ☐ Normal ☒ Low ☐	
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐ Act Value ☒ Default Value ☐	
Property-Service (individual access):	Read only ☐ Read/Write ☒ (sensor Override)	

Exception Handling: Save at Powerdown ☐

Special Features:

[1] negative values and values > 100% are allowed; typical range 0% … +120%
[2] COV is either fixed or can be calculated from parameter "ActFlowCOV"
[3] MinRepTime is either fixed or configurable via parameter "ActFlowMinRepTime"

3.3.6.21 Output ActFlowExtractAir_Percent

LTE-Mode only

FB: ADA	**LTE Server Output Name: ActFlowExtractAir_Percent**	Mandatory ☒ Optional ☐

Description:

VAV status information representing the measured volumetric Extract Air flow in percent of the configured nominal flow.
Resolution of the air flow value: 0.01%
This output is active if
- "ADAType" = 'VAV'
- "DamperMode" = 'Extract Air'

DPT:	Name	DPT_Percent_V16_Z	DPT ID	205.017	Datatype format	V_8Z_8

Field	Description	Sup.	Range	Unit	COV	Default
Value_Percent	Actual air flow value (%)	M	cs [1]	%	[2]	cs
STATUS				bitset		
- Fault	Flow measurement fault	O	true/false	Bit 1	Y	false
- Overridden	indicates that the sensor value is currently locally overridden	O	true/false	Bit 2	Y	false
	all other attributes	NA				0

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☐		
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID): 362 (ADA)	Property ID: 62
LTE-Services (event): InfoReport ☒	COV ☒ MinRepTime: [3] sec	Heartbeat: 15 min
	Output per default communicating ☐	Binding Group Wildcard allowed ☐
(LTE Read-Response polling of the output shall always be supported)	Tx Prio: High ☐ Normal ☒ Low ☐	
	Transm after Power-up: Stored Value ☐ Act Value ☒ Default Value ☐	
Property-Service (individual access):	Read only ☐ Read/Write ☒ (sensor Override)	

Exception Handling: Save at Powerdown ☐

Special Features:

[1] negative values and values > 100% are allowed; typical range 0% … +120%
[2] COV is either fixed or can be calculated from parameter "ActFlowCOV"
[3] MinRepTime is either fixed or configurable via parameter "ActFlowMinRepTime"

3.3.6.22 Output ActAirFlow_m3h

Standard Mode

DP Name:	ActAirFlow_m3h	Abbr.:	---	Mandatory	☐
FB Name:	ADA			Can be internal	☐

Description

VAV status information representing the measured volumetric air flow in m^3/h.

This output is only available if “ADAType” = ‘VAV’

Datapoint Type

DPT_Name:	DPT_Value_Volume_Flux				
DPT Format:	F_{32}	DPT_ID:	14.077		
Field	Description	Supp.	Range	Unit	Default
			cs [1)]	%	cs

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:	[2)]	MinRepTime:	[3)]
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

[1)] according to the VAV characteristics
[2)] COV is either fixed or can be configured via parameter “ActFlowCOV”
[3)] MinRepTime is either fixed or configurable via parameter “ActFlowMinRepTime”

LTE-Mode

See 3.3.6.23 - 3.3.6.26.

3.3.6.23 Output ActFlowFreshAir_m3h

LTE-Mode only

FB: ADA	**LTE Server Output Name: ActFlowFreshAir_m3h**	Mandatory ☐ Optional ☒

Description:

VAV status information representing the measured volumetric Fresh Air flow in m^3/h.
Resolution of the air flow value: 0.0001 m^3/h
This output is active if
- "ADAType" = 'VAV'
- "DamperMode" = 'Fresh Air'

DPT:	Name	DPT_FlowRate_m3/h_Z	DPT ID	218.002	Datatype format	$V_{32}Z_8$

Field	Description	Sup.	Range	Unit	COV	Default
Value	Actual air flow value	M	cs [1]	m^3/h	[2]	cs
STATUS				bitset		
- Fault	Flow measurement fault	O	true/false	Bit 1	Y	false
- Overridden	indicates that the sensor value is currently locally overridden	O	true/false	Bit 2	Y	false
	all other attributes	NA				0

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☐		
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID): 362 (ADA)	Property ID: 63		
LTE-Services (event): InfoReport ☒	COV ☒	MinRepTime: [3] sec	Heartbeat: 15 min	
	Output per default communicating ☐	Binding Group Wildcard allowed ☐		
	Tx Prio: High ☐	Normal ☒	Low ☐	
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☐	Read/Write ☒ (sensor Override)		

Exception Handling: Save at Powerdown ☐

Special Features:

[1] according to the VAV characteristics
[2] COV is either fixed or can be configured via parameter "ActFlowCOV"
[3] MinRepTime is either fixed or configurable via parameter "ActFlowMinRepTime"

3.3.6.24 Output ActFlowSupplyAir_m3h

LTE-Mode only

FB: ADA	**LTE Server Output Name: ActFlowSupplyAir_m3h**	Mandatory ☐ Optional ☒

Description:

VAV status information representing the measured volumetric Supply Air flow in m^3/h.
Resolution of the air flow value: 0.0001 m^3/h
This output is active if
- "ADAType" = 'VAV'
- "DamperMode" = 'Supply Air'

DPT:	Name	DPT_FlowRate_m3/h_Z	DPT ID	218.002	Datatype format	$V_{32}Z_8$

Field	Description	Sup.	Range	Unit	COV	Default
Value	Actual air flow value	M	cs [1]	m^3/h	[2]	cs
STATUS				bitset		
- Fault	Flow measurement fault	O	true/false	Bit 1	Y	false
- Overridden	indicates that the sensor value is currently locally overridden	O	true/false	Bit 2	Y	false
	all other attributes	NA				0

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☐		
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID): 362 (ADA)	Property ID: 64		
LTE-Services (event): InfoReport ☒	COV ☒	MinRepTime: [3] sec	Heartbeat: 15 min	
	Output per default communicating ☐	Binding Group Wildcard allowed ☐		
	Tx Prio: High ☐	Normal ☒	Low ☐	
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☐	Read/Write ☒ (sensor Override)		

Exception Handling: Save at Powerdown ☐

Special Features:

[1] according to the VAV characteristics
[2] COV is either fixed or can be configured via parameter "ActFlowCOV"
[3] MinRepTime is either fixed or configurable via parameter "ActFlowMinRepTime"

3.3.6.25 Output ActFlowDischargeAir_m3h

LTE-Mode only

FB: ADA	**LTE Server Output Name: ActFlowDischargeAir_m3h**	Mandatory ☐	Optional ☒

Description:

VAV status information representing the measured volumetric Discharge Air flow in m^3/h.
Resolution of the air flow value: 0.0001 m^3/h
This output is active if
- "ADAType" = 'VAV'
- "DamperMode" = 'Discharge Air'

DPT:	Name	DPT_FlowRate_m3/h_Z	DPT ID	218.002	Datatype format	$V_{32}Z_8$

Field	Description	Sup.	Range	Unit	COV	Default
Value	Actual air flow value	M	cs [1]	m^3/h	[2]	cs
STATUS				bitset		
- Fault	Flow measurement fault	O	true/false	Bit 1	Y	false
- Overridden	indicates that the sensor value is currently locally overridden	O	true/false	Bit 2	Y	false
	all other attributes	NA				0

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☐		
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID): 362 (ADA)	Property ID: 65		
LTE-Services (event): InfoReport ☒	COV ☒	MinRepTime: [3] sec	Heartbeat: 15 min	
	Output per default communicating ☐	Binding Group Wildcard allowed ☐		
	Tx Prio: High ☐	Normal ☒	Low ☐	
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☐	Read/Write ☒ (sensor Override)		

Exception Handling: Save at Powerdown ☐

Special Features:

[1] according to the VAV characteristics
[2] COV is either fixed or can be configured via parameter "ActFlowCOV"
[3] MinRepTime is either fixed or configurable via parameter "ActFlowMinRepTime"

3.3.6.26 Output ActFlowExtractAir_m3h

LTE-Mode only

FB: ADA	LTE Server Output Name: ActFlowExtractAir_m3h	Mandatory ☐ Optional ☒

Description:

VAV status information representing the measured volumetric Extract Air flow in m^3/h.
Resolution of the air flow value: 0.0001 m^3/h
This output is active if
- "ADAType" = 'VAV'
- "DamperMode" = 'Extract Air'

DPT:	Name	DPT_FlowRate_m3/h_Z	DPT ID	218.002	Datatype format	$V_{32}Z_8$

Field	Description	Sup.	Range	Unit	COV	Default
Value	Actual air flow value	M	cs [1]	m^3/h	[2]	cs
STATUS				bitset		
- Fault	Flow measurement fault	O	true/false	Bit 1	Y	false
- Overridden	indicates that the sensor value is currently locally overridden	O	true/false	Bit 2	Y	false
	all other attributes	NA				0

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☐		
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID):	362 (ADA)	Property ID:	66
LTE-Services (event): InfoReport ☒	COV ☒	MinRepTime: [3] sec	Heartbeat:	15 min
	Output per default communicating ☐		Binding Group Wildcard allowed ☐	
	Tx Prio:	High ☐	Normal ☒	Low ☐
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☐	Read/Write ☒ (sensor Override)		

Exception Handling: Save at Powerdown ☐

Special Features:

[1] according to the VAV characteristics
[2] COV is either fixed or can be configured via parameter "ActFlowCOV"
[3] MinRepTime is either fixed or configurable via parameter "ActFlowMinRepTime"

3.3.6.27 Output ActSetpExtractAir

LTE-Mode only

FB: ADA	LTE Client Output Name: ActSetpExtractAir	Mandatory ☐ Optional ☒

Description:

Output of the VAV Master to control the Extract Air volume setpoint (%) of the VAV Slave
Resolution of the setpoint: 1%
This input is only active if
- “ADAType” = ‘VAV’
- “DamperMode” = ‘Discharge Air’
- “MasterSlaveMode” = ‘Master’

The value of output ActSetpExtractAir follows the effective current value of the discharge air flow.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	COV	Default
Value	Extract air flow setpoint value for the connected VAV slave	M	full range	%	[1)]	cs
COMMAND - NormalWrite - all other commands	 Used for normal runtime communication not applicable	 M NA	 0	enum		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	BuildingZone.Room.Subzone	1.1.1
Application Specific ☐		
Unassigned ☒	Broadcast ☐ Configurable ☒	OutOfService

DP Address:	IO Type(ID): 362 (ADA)	Property ID: 53
LTE-Services (event):	COV ☒ MinRepTime: -- sec	Heartbeat: 15 min
Write ☒	Output per default communicating ☐	Binding Group Wildcard allowed ☐
	Tx Prio: High ☐ Normal ☒ Low ☐	
	Transm after Power-up: Stored Value ☐ Act Value ☒ Default Value ☐	

Exception Handling: Save at Powerdown ☐

Special Features:

[1)] COV is either fixed or can be calculated from parameter “ActFlowCOV”

3.3.6.28 Parameter-set GeographicalZone

LTE GeographicalZone consists of 3 properties belonging together.

3.3.6.28.1 Parameter BuildingZone

FB: ADA	**Property Name (Server): BuildingZone**	Mandatory ☒ Optional ☐

Description:

Part of LTE GeographicalZone parameter -> BuildingEntity (Floor, Apartment, Building section etc.)

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
CounterValue	Number of the BuildingZone	M	1..126	--	1
STATUS				Bitset	
- OutOfService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			0
COMMAND				enum	
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address:	IO Type(ID):	362 (ADA)	Property ID:	101
(in the server)	Start-Index:	1	N° of elements	1
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:

ADA is not LTE communicating in the GeographicalZone if zone is 'OutOfService'. If parameter BuildingZone is 'OutOfService' also the corresponding Room and Subzone parameters are 'OutOfService' (common flag)

3.3.6.28.2 Parameter Room

FB: ADA	**Property Name (Server): Room**	Mandatory ☒ Optional ☐

Description:

Part of LTE GeographicalZone parameter -> Room within BuildingZone

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
CounterValue	Room number	M	1..63	--	1
STATUS				Bitset	
- OutOfService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			0
COMMAND				enum	
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address:	IO Type(ID):	362 (ADA)	Property ID:	102
(in the server)	Start-Index:	1	N° of elements	1
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:

ADA is not LTE communicating in the GeographicalZone if zone is 'OutOfService'. If parameter BuildingZone is 'OutOfService' also the corresponding Room and Subzone parameters are 'OutOfService' (common flag)

3.3.6.28.3 Parameter Subzone

FB: ADA	Property Name (Server): Subzone	Mandatory ☒ Optional ☐

Description:

Part of LTE GeographicalZone parameter -> Subzone within BuildingZone.Room

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
CounterValue	Subzone number	M	1..15	--	1
STATUS				Bitset	
- OutOfService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			0
COMMAND				enum	
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address:	IO Type(ID):	362 (ADA)	Property ID:	103
(in the server)	Start-Index:	1	N° of elements	1
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:

ADA is not LTE communicating in the GeographicalZone if zone is 'OutOfService'. If parameter BuildingZone is 'OutOfService' also the corresponding Room and Subzone parameters are 'OutOfService' (common flag)

3.3.6.29 Parameter GeneralPeripheralZone

FB: ADA	Property Name (Server): GeneralPeripheralZone	Mandatory ☐ Optional ☒

Description:

LTE general peripheral zoning information

DPT:	Name	DPT_UcountValue16_Z	DPT ID	203.012	Datatype format	$U_{16}Z_8$

Field	Description	Sup.	Range	Unit	Default
CounterValue	number of general peripheral zone	M	full range	--	--
STATUS				Bitset	
- OutOfService	zone active / inactive	O	true/false	Bit 0	true
- all other bits	not supported, fixed to '0'	NA			0
COMMAND				enum	
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address:	IO Type(ID):	362 (ADA)	Property ID:	104
(in the server)	Start-Index:	1	N° of elements	1
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:

ADA is not LTE communicating in the General Peripheral Zone if zone is 'OutOfService'.

3.3.6.30 Parameter DistributionSegmentVentilation

FB: ADA	Property Name (Server): DistributionSegmentVentilation	Mandatory ☐ Optional ☒

Description:

LTE zoning information Ventilation Distribution Segment

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
CounterValue	Segment number	M	1..31	--	--
STATUS				Bitset	
- OutOfService	zone active / inactive	O	true/false	Bit 0	true
- all other bits	not supported, fixed to '0'	NA			0
COMMAND				enum	
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address:	IO Type(ID):	362 (ADA)	Property ID:	105
(in the server)	Start-Index:	1	N° of elements	1
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:

ADA is not LTE communicating in the Distribution Segment Ventilation if zone is 'OutOfService'.

3.3.6.31 Parameter DamperMode

FB: ADA	Property Name (Server): DamperMode	Mandatory ☐ Optional ☒

Description:

This parameter is used to select the ventilation application and the runtime interworking interface, if ADA supports more than one application scheme.

DPT:	Name	DPT_DamperMode	DPT ID	20.109	Datatype format	N_8

Field	Description	Sup.	Range	Unit	Default
	- 1: Fresh Air [1)]	O	1..4	enum	1 or 4
	- 2: Supply Air	O			
	- 3: Discharge Air [2)]	O			
	- 4: Extract Air	O			

Communication:

DP Address:	IO Type(ID):	362 (ADA)	Property ID:	111
(in the server)	Start-Index:	1	N° of elements	1
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:

[1)] default for fan coil applications
[2)] default for VAV applications

3.3.6.32 Parameter ADAType

FB: ADA	Property Name (Server): ADAType				Mandatory ☐ Optional ☒	
Description:						
This parameter is used to select the effective air damper or VAV functionality and the runtime interworking interface of FB ADA.						
DPT: Name	DPT_ADAType	DPT ID	20.120	Datatype format	N_8	
Field	Description		Sup.	Range	Unit	Default
	- 0: reserved		NA	1..2	enum	1
	- 1: 'Air Damper' (default)		O			
	- 2: 'VAV'		O			
	- 3 ... 255: reserved		NA			
Communication:						
DP Address: (in the server)	IO Type(ID):	362 (ADA)	Property ID:	112		
	Start-Index:	1	N° of elements	1		
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:						

3.3.6.33 Parameter MasterSlaveMode

FB: ADA	Property Name (Server): MasterSlaveMode				Mandatory ☐ Optional ☒	
Description:						
This parameter is used to select the VAV mode.						
DPT: Name	DPT_MasterSlaveMode	DPT ID	20.112	Datatype format	N_8	
Field	Description		Sup.	Range	Unit	Default
	- 0: Autonomous (default)		O	0..2	enum	0
	- 1: Master		O			
	- 2: Slave		O			
Communication:						
DP Address: (in the server)	IO Type(ID):	362 (ADA)	Property ID:	113		
	Start-Index:	1	N° of elements	1		
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:						

3.3.6.34 Parameter NominalFlow

FB: ADA	Property Name (Server): NominalFlow				Mandatory ☒ 1) Optional ☐		
Description:							
Nominal Flow of the VAV actuator in m^3/h with a resolution of 0.0001m^3/h							
DPT: Name	DPT_FlowRate_m3/h	DPT ID	13.002	Datatype format	V_{32}		
Field	Description			Sup.	Range	Unit	Default
Flow value					cs	m^3/h	cs
Communication:							
DP Address: (in the server)	IO Type(ID):	362 (ADA)		Property ID:	114		
	Start-Index:	1		N° of elements	1		
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:							
1) mandatory for VAV applications; not applicable for air dampers							

3.3.6.35 Parameter OpenCloseDirection

FB: ADA	Property Name (Server): OpenCloseDirection				Mandatory ☐ Optional ☒		
Description:							
Parameter to select the drive direction of the actuator							
DPT: Name	DPT_Invert	DPT ID	1.012	Datatype format	B_1		
Field	Description			Sup.	Range	Unit	Default
	- 0: Normal - 1: Inverted						0
Communication:							
DP Address: (in the server)	IO Type(ID):	362 (ADA)		Property ID:	115		
	Start-Index:	1		N° of elements	1		
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:							

3.3.6.36 Parameter ActPosCOV

FB: ADA	Property Name (Server): ActPosCOV				Mandatory ☐ Optional ☒		
Description:							
Parameter to define the COV condition for spontaneous transmission “ActPos…” outputs							
DPT: Name	DPT_Percent_U8	DPT ID	5.004	Datatype format	U_8		
Field	Description			Sup.	Range	Unit	Default
	COV with 1% resolution				cs	%	1%
Communication:							
DP Address: (in the server)	IO Type(ID):	362 (ADA)		Property ID:	116		
	Start-Index:	1		N° of elements	1		
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:							

3.3.6.37 Parameter ActPosMinRepTime

FB: ADA	Property Name (Server): ActPosMinRepTime				Mandatory ☐ Optional ☒
Description:					
Parameter to define the minimum wait time between two updates of "ActPos…" outputs					
DPT: Name	DPT_TimePeriodSec	DPT ID	7.005	Datatype format	U_{16}

Field	Description	Sup.	Range	Unit	Default
	MinRepTime with 1s resolution		cs	s	10s

Communication:				
DP Address: (in the server)	IO Type(ID):	362 (ADA)	Property ID:	117
	Start-Index:	1	N° of elements	1
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:				

3.3.6.38 Parameter ActFlowCOV

FB: ADA	Property Name (Server): ActFlowCOV				Mandatory ☐ Optional ☒
Description:					
Parameter to define the COV condition [m^3/h] for spontaneous transmission "ActFlow…_m3h" outputs. Based on "ActFlowCOV" and "NominalFlow" the corresponding COV [%] can be derived for the "ActFlow…_Percent" outputs					
DPT: Name	DPT_FlowRate_m3/h	DPT ID	13.002	Datatype format	V_{32}

Field	Description	Sup.	Range	Unit	Default
Flow COV value	Resolution of 0.0001m^3/h			m^3/h	cs

Communication:				
DP Address: (in the server)	IO Type(ID):	362 (ADA)	Property ID:	118
	Start-Index:	1	N° of elements	1
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:				

3.3.6.39 Parameter ActFlowMinRepTime

FB: ADA	Property Name (Server): ActFlowMinRepTime				Mandatory ☐ Optional ☒
Description:					
Parameter to define the minimum wait time between two updates of "ActFlow…" outputs					
DPT: Name: DPT_TimePeriodSec	DPT ID: 7.005	Datatype format: U_{16}			
Field	Description	Sup.	Range	Unit	Default
	MinRepTime with 1s resolution		cs	s	10s
Communication:					
DP Address: (in the server)	IO Type(ID): 362 (ADA) Start-Index: 1	Property ID: 119 N° of elements 1			
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:					

3.3.6.40 Parameter BackupMode

FB: ADA	Property Name (Server): BackupMode				Mandatory ☐ Optional ☒
Description:					
This parameter is used to define the behaviour of the actuator during communication failure					
DPT: Name: DPT_BackupMode	DPT ID: 20.121	Datatype format: N_8			
Field	Description	Sup.	Range	Unit	Default
	- 0: BackupValue(default) Setpoint is set to a predefined value according to parameter BackupValueActPos - 1: KeepLastState - 2..255: reserved	M M	0..1	enum	0
Communication:					
DP Address: (in the server)	IO Type(ID): 362 (ADA) Start-Index: 1	Property ID: 120 N° of elements 1			
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:					

3.3.6.41 Parameter BackupValueActSetp

FB: ADA	Property Name (Server): BackupValueActSetp				Mandatory ☐ 1) optional ☒
Description:					
Parameter to define the default actuator setpoint in case of communication failure if "BackupMode" = 'BackupValue'					
DPT: Name	DPT_Percent_U8	DPT ID	5.004	Datatype format	U_8

Field	Description	Sup.	Range	Unit	Default
	Backup setpoint		cs	%	cs

Communication:				
DP Address: (in the server)	IO Type(ID):	362 (ADA)	Property ID:	121
	Start-Index:	1	N° of elements	1
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:				
1) This parameters shall be implemented together with parameter "BackupMode"				

3.3.6.42 Parameter StartSynchronization

FB: ADA	Property Name (Server): StartSynchronization				Mandatory ☐ Optional ☒
Description:					
This parameter is used to define the behaviour of a 3-state Air Damper actuator after power-return or an application restart					
DPT: Name	DPT_StartSynchronization	DPT ID	20.122	Datatype format	N_8

Field	Description	Sup.	Range	Unit	Default
	- 0: position unchanged - 1: single close - 2: single open - 3..255: reserved	M M M	0..2	enum	cs

Communication:				
DP Address: (in the server)	IO Type(ID):	362 (ADA)	Property ID:	122
	Start-Index:	1	N° of elements	1
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:				

3.4 Fan Speed Actuator (FSA)

3.4.1 Aims and objectives

The Functional Block 'Fan Speed Actuator' is designed for simple fan speed actuators as e.g. in fancoils and translates the fan speed information which is in percent to the fan step. The Functional Block also provides a feedback with the active fan speed (in percent and as step).

3.4.2 Functional Specifications

The percent input value is translated to the fan speed step (100% divided by the number of steps gives the switch points). The real step position again is translated to a percent output value.
This offers a wide flexibility and even works if two devices with different step size are connected (0% always corresponds to no fan and 100% corresponds to full speed).

The 'Fan Speed Actuator' supports the following LTE zoning:
- "Apartment . Room . SubZone"
- "General Peripheral Tag"

Optional function:
- Faults in the fan speed actuator device may be detected and reported in the FanSpeed.
- The FanSpeedSetp may temporary be overridden by means of a tool for service purpose.
  The ‘Overridden’ condition must be reported.

Behaviour of the actuator if no valid setpoint is available (company specific):
- stop the fan
- leave speed unchanged

Inputs

• FanSpeedSetp	This is the fan speed setpoint given by a controller.
• DisableFan	There are situations, especially together with direct electric heating, where the fan has to be switched off, although the controller demands it. (see also 3.6 Electrical Heating Element Actuator)

Outputs

• FanSpeed	This information contains the feedback of the active fan speed in percent.
• FanStep	This information contains the feedback of the active fan speed as step.
• Fault	Fault indication in S-Mode
• Overridden	Overridden indication in S-Mode

Binding Group (LTE)

• Apartment . Room . SubZone General Peripheral	This actuator can be used in different applications. For this reason different binding possibilities are offered. The binding group that shall not be active has to be set to out of service. It is possible to realise only one of the possibilities.

3.4.3 Constraints

For more sophisticated fan speed actuators for large fans (e.g. variable speed drives etc.) another Functional Block has to be designed.

Interworking of devices with different number of steps

With the coding below combinations of devices with different number of steps is possible. The stop of the actuator is defined and the highest speed of the controller always results in highest speed of the actuator. Steps in between are interpreted to the best.

Sender (Controller)

Single-Speed

Speed	Value
0	**0**
I	**255**

2-Speed

Speed	Value
0	**0**
I	**128**
II	**255**

3-Speed

Speed	Value
0	**0**
I	**85**
II	**170**
III	**255**

4-Speed

Speed	Value
0	**0**
I	**64**
II	**128**
III	**192**
IV	**255**

5-Speed

Speed	Value
0	**0**
I	**51**
II	**102**
III	**153**
IV	**204**
V	**255**

Receiver (Actuator)

Single-Speed

Value	Speed
0	**0**
1 - 255	**I**

2-Speed

Value	Speed
0	**0**
1 - 128	**I**
129 - 255	**II**

3-Speed

Value	Speed
0	**0**
1 - 85	**I**
86 - 170	**II**
171 - 255	**III**

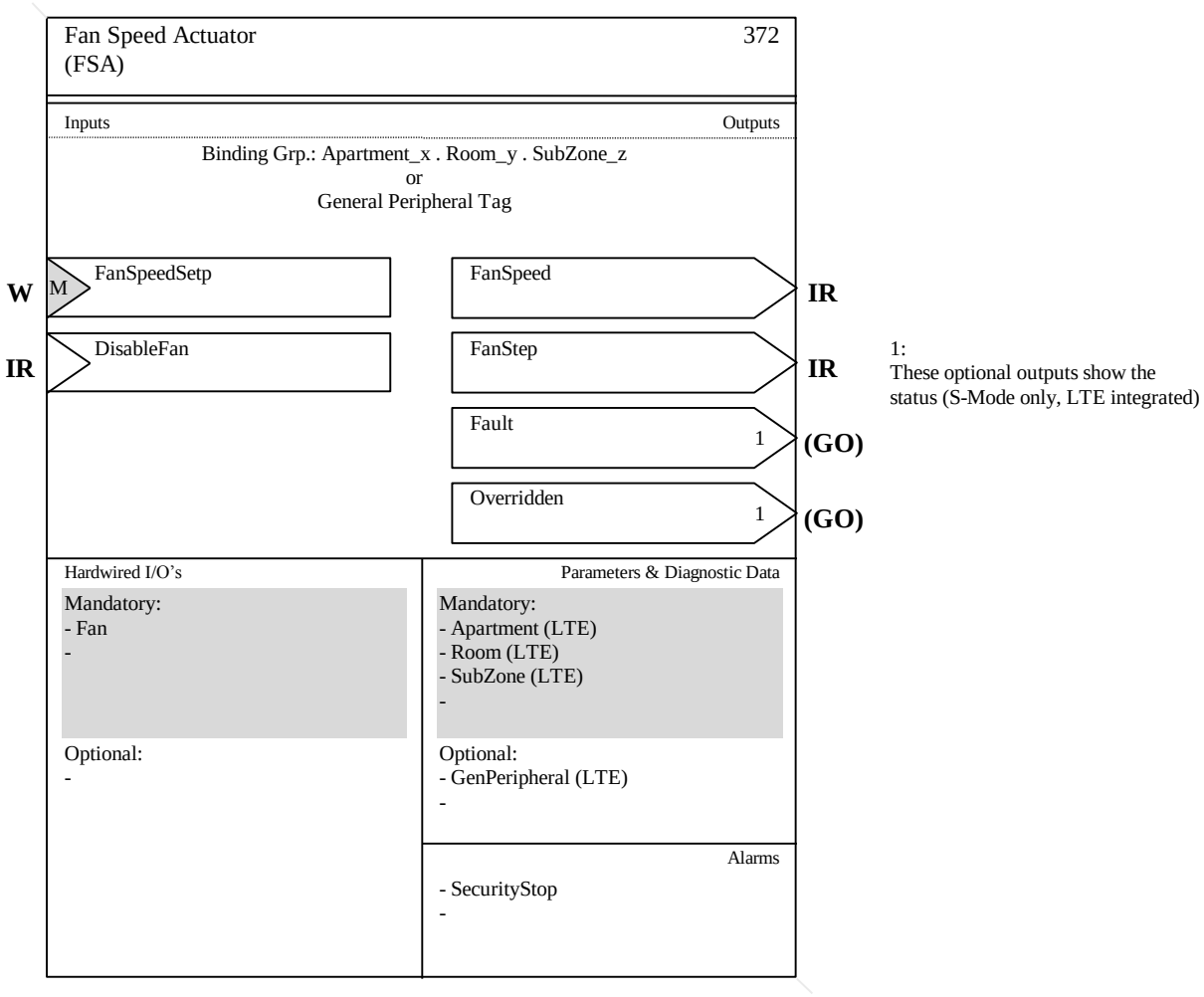
4-Speed

Value	Speed
0	**0**
1 - 64	**I**
65 - 128	**II**
129 - 192	**III**
193 - 255	**IV**

5-Speed

Value	Speed
0	**0**
1 - 51	**I**
52 - 102	**II**
103 - 153	**III**
154 - 204	**IV**
205 - 255	**V**

3.4.4 Functional Block Diagram



3.4.5 Datapoints Description

3.4.5.1 Overview

Datapoints	Description / Remarks	Data Point Type	Additional Info
Inputs			
FanSpeedSetp	Setpoint value in percent to control the fan actuator with: - COV and RepPer - Z_8 STATUS and - Z_8 COMMAND supported from FB various controller	LTE: 202.001 DPT_RelValue_Z U_8Z_8 S: 5.001 DPT_Scaling U_8	LTE: M S: GO %
DisableFan	Disable fan with: - COV and RepPer from FB supervisor	LTE: 1.003 DPT_Enable B_1 S: 1.003 DPT_Enable B_1	LTE: O S: (GO)

Datapoints	Description / Remarks	Data Point Type	Additional Info
Outputs			
FanSpeed	Active fan speed in percent with: - COV and RepPer - Z_8 STATUS supported to FB 'MMI or BMS'	LTE: 202.001 DPT_RelValue_Z U_8Z_8 S: 5.001 DPT_Scaling U_8	LTE: O S: (GO)
FanStep	Active fan speed step with: - COV and RepPer - Z_8 STATUS supported to FB 'MMI or BMS'	LTE: 202.002 DPT_UcountValue8_Z U_8Z_8 S: 5.010 DPT_Value_1_Ucount U_8	LTE: O S: (GO)
Fault	The actuator has a fault detected	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA S: (GO) true/false
Overridden	The actuator is overridden (manually)	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA S: (GO) true/false

Datapoints	Description / Remarks	Data Point Type	Additional Info
Parameters			
Apartment	LTE zoning number for Apartment	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
Room	LTE zoning number for Room	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
SubZone	LTE zoning number for SubZone	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
Gen Peripheral	LTE zoning number for general peripheral	203.012 DPT_UcountValue16_Z $U_{16}Z_8$	O 1

Alarm	Description / Remarks	Error		Additional Info
		Code	Prio	
SecurityStop	Alarm for security stop e.g. open fan coil			

3.4.5.2 FSA Runtime Interworking - Dependence on Configuration Modes

			STANDARD MODE	EXTENDED MODE	
		Basic FB	**S-Mode**	**Standard Mode Interface**	**LTE-MODE**
Inputs	FanSpeedSetp	**GO_b**	GO	GO	**M**
	DisableFan	**(GO_b)**		(GO)	**O**
Outputs	FanSpeed	**(GO_b)**		(GO)	**O**
	FanStep	**(GO_b)**		(GO)	**O**
	Fault	**$(GO)_b$**		(GO)	**NA**
	Overridden	**$(GO)_b$**		(GO)	**NA**

3.4.5.3 FSA LTE specific Properties

		Support
Parameter	Apartment_x	**M**
	Room_y	**M**
	SubZone_z	**M**
	GenPeripheral	**O**

3.4.5.4 FSA Standard Properties of Interface Objects (or memory mapped DP)

		Support
Parameter		

3.4.6 Detailed Specification of the Datapoints

3.4.6.1 Input FanSpeedSetp

Standard Mode

DP Name:	FanSpeedSetp	Abbr.:	---	Mandatory	☒
FB Name:	FSA			Can be internal	☐

Description

This input signal contains the percent setpoint value for the fan speed step.

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0...100*)	%	cs

Access Type

♦ Input

N → this	☐	1 → this	☒			
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)	
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

Special Features

*) The coding of the actuator setpoint value is: 0% → 0 100% → 255

LTE-Mode

FB: FSA	**LTE Server Input Name:** FanSpeedSetp	Mandatory ☒ Optional ☐

Description:

This input signal contains the percent setpoint value for the fan speed step with a STATUS information. The input may be overridden by means of COMMAND.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Fan Speed	Percent value of the fan speed step	M	%	0
STATUS	For Read Service only		Bitset	
- OutOfService	Input out of service	O	Bit 0	false
- Overridden	Input is temporarily overridden	O	Bit 2	false
- all other bits	fixed to '0'	NA		false
COMMAND	For Write Service only		enum.	
- NormalWrite	Used for normal runtime communication (LTE Write Service)	M	0	
- Override / Release	Used for temporary override / release of the input (mainly by a tool using Property Write access with individual addressing)	O	1 / 2	
- all other commands		NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	372 (FSA)	Property ID:	51
LTE-Service (event): Write ☒	Timeout:	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Power-down ☐

Special Features:

3.4.6.2 Input DisableFan

Standard Mode

DP Name:	DisableFan	Abbr.:	---	Mandatory	☐
FB Name:	FSA			Can be internal	☐

Description

This information may be provided by a supervisor and may disable the fan.

Datapoint Type

DPT_Name:	DPT_Enable				
DPT Format:	B_1	DPT_ID:	1.003		
Field	Description	Supp.	Range	Unit	Default
	0 = disabled, 1 = enabled		1	Bit	1

Access Type

♦ Input

N → this	☐	1 → this	☒		
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

Special Features

LTE-Mode

FB:	**FSA**	**LTE Client Input Name:**	**DisableFan**	Mandatory ☐ Optional ☒	

Description:

This information may be provided by a supervisor and may disable the fan.

DPT:	Name	DPT_Enable	DPT ID	1.003	Datatype format	B_1	
Field		Description			Sup.	Unit	Default
		0 = disabled, 1 = enabled				Bit	1

Communication:

Binding Group:

Class		Type	Default
Geographical	☒	Apartment . Room . SubZone	1.1.1
Application Specific	☒	GenPeripheral	1
Unassigned	☐	Broadcast ☐ Configurable ☐	
DP Address:		IO Type(ID): 369 (EHEA) Property ID: 54	
LTE-Service (event):		InfoReport Sniffer on Binding Group: --	
InfoReport	☒	Timeout: 31 Min	
LTE-Service (polling):		Read Wildcard / Resp Sniffer on Binding Group: --	
Read – Response	☐		

Value after Power-up:	Default Value ☒		Stored Value ☐
Exception Handling:		Save at Powerdown	☐

Special Features:

3.4.6.3 Output FanSpeed

Standard Mode

DP Name:	FanSpeed			Abbr.:	---			Mandatory	☐
FB Name:	FSA							Can be internal	☐
Description									
This datapoint contains the percent value of the actual fan speed.									
Datapoint Type									
DPT_Name:	DPT_Scaling								
DPT Format:	U_8					DPT_ID:	5.001		
Field	Description					Supp.	Range	Unit	Default
							0...100*)	%	cs
Access Type									
♦ Output									
this → M	☒	this → 1	☐						
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec		
		Cyclic	☒	Period:	15 min (recommended value)				
Request	☒								
Communication Type									
♦ Group Object Datapoint								Mandatory:	☐
Default Group Address:	---								
Dynamics									
Power down:	Save:	☐							
Power up:	Value:	No initialisation:	☐			Default value:	☐		
		Saved value:	☐			Actual value:	☒		
	Transmit on bus:	☒					☐		
Exception Handling									

Special Features									
*) The coding of the actuator setpoint value is: 0% → 0 100% → 255									

LTE-Mode

FB: FSA	**LTE Server Output Name:** FanSpeed	Mandatory ☐ Optional ☒

Description:

This output contains the percent value of the actual fan speed.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	COV	Default
FanSpeed	Actual fan speed in percent	O	0...100	%	1	cs
STATUS	For LTE-Service InfoReport and Property-Service Response only			bitset		
- OutOfService		NA		Bit 0		
- Fault	Actuator fault	O	true/false	Bit 1	Y	false
- Overridden	Actuator is temp. overridden	O	true/false	Bit 2	Y	false
- InAlarm	Actuator is in alarm	O	true/false	Bit 3	Y	false
- AlarmUnAck	Alarm unacknowledged	O	true/false	Bit 4	Y	false
	all other bits	NA		Bit 5.7		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	372 (FSA)	Property ID:	55
LTE-Services (event):	COV ☒	MinRepTime: 10 sec	Heartbeat: 15 min	
InfoReport ☒	Output per default communicating ☐		Binding Group Wildcard allowed ☐	
	Tx Prio:	High ☐	Normal ☒	Low ☐
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☒	Read/Write ☐		

Exception Handling: Save at Powerdown ☐

Special Features:

3.4.6.4 Output FanStep

Standard Mode

DP Name:	FanStep			Abbr.:	---			Mandatory	☐		
FB Name:	FSA							Can be internal	☐		
Description											
This datapoint contains the step value of the actual fan speed.											
Datapoint Type											
DPT_Name:	DPT_Value_1_Ucount										
DPT Format:	U_8					DPT_ID:	5.010				
Field	Description					Supp.	Range		Unit	Default	
							0...n			cs	
Access Type											
♦ Output											
this → M	☒	this → 1	☐								
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec				
		Cyclic	☒	Period:	15 min (recommended value)						
Request	☒										
Communication Type											
♦ Group Object Datapoint								Mandatory:	☐		
Default Group Address:	---										
Dynamics											
Power down:	Save:	☐									
Power up:	Value:	No initialisation:	☐	Default value:	☐						
		Saved value:	☐	Actual value:	☒						
	Transmit on bus:	☒			☐						
Exception Handling											

Special Features											

LTE-Mode

FB: FSA	**LTE Server Output Name:** FanStep	Mandatory ☐ Optional ☒

Description:

This output contains the step value of the actual fan speed.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	COV	Default
FanStep	Actual fan speed step	O	0...n		1	cs
STATUS	For LTE-Service InfoReport and Property-Service Response only			bitset		
- OutOfService		NA				
- Fault	Actuator fault	O	true/false		Y	false
- Overridden	Actuator is temp. overridden	O	true/false		Y	false
- InAlarm	Actuator is in alarm	O	true/false		Y	false
- AlarmUnAck	Alarm unacknowledged	O	true/false		Y	false

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	372 (FSA)	Property ID:	56
LTE-Services (event): InfoReport ☒	COV ☒	MinRepTime: 10 sec	Heartbeat: 15 min	
	Output per default communicating ☐		Binding Group Wildcard allowed ☐	
(LTE Read-Response polling of the output shall always be supported)	Tx Prio:	High ☐	Normal ☒	Low ☐
	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☒	Read/Write ☐		

Exception Handling: Save at Powerdown ☐

Special Features:

3.4.6.5 Output Fault

LTE-Mode

Not available.

Standard Mode

DP Name:	Fault	Abbr.:	---	Mandatory	☐
FB Name:	FSA			Can be internal	☐

Description

This datapoint may indicate a fault in the actuator (S-Mode only) see also FanSpeed

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

3.4.6.6 Output Overridden

LTE-Mode

Not available.

Standard Mode

DP Name:	Overridden	Abbr.:	---	Mandatory	☐
FB Name:	FSA			Can be internal	☐

Description

This datapoint may indicate that the actuator is overridden (S-Mode only) see also FanSpeed

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

3.4.6.7 Parameter Apartment

FB: FSA	Property Name (Server): Apartment	Mandatory ☒ Optional ☐

Description:

Number of the apartment zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the apartment zone	M	(0) 1...126		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address:	IO Type(ID):	372 (FSA)	Property ID:	101
(in the server)	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
If Apartment is 'OutOfService' Room and SubZone automatically are 'OutOfService'

3.4.6.8 Parameter Room

FB: FSA	Property Name (Server): Room	Mandatory ☒ Optional ☐

Description:

Number of the room zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the room zone	M	(0) 1...63		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address:	IO Type(ID):	372 (FSA)	Property ID:	102
(in the server)	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
'OutOfService' is taken over from Apartment

3.4.6.9 Parameter SubZone

FB: FSA	Property Name (Server): SubZone	Mandatory ☒ Optional ☐

Description:

Number of the sub zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the SubZone	M	(0) 1...15		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	372 (FSA)	Property ID:	103
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
'OutOfService' is taken over from Apartment

3.4.6.10 Parameter GenPeripheral

FB: FSA	Property Name (Server): GenPeripheral	Mandatory ☐ Optional ☒

Description:

Number of the general peripheral tag.

DPT:	Name	DPT_UcountValue16_Z	DPT ID	203.012	Datatype format	$U_{16}Z_8$

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the SubZone	M	full		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	372 (FSA)	Property ID:	104
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'

3.5 Compressor Actuator (CPA)

3.5.1 Aims and objectives

The Functional Block ‘Compressor Actuator’ translates the bus information to the compressor control signal and eventually provides the system with the actual compressor status as feedback. The HeatCool information is used in thermodynamic machines which offer reversed process.

3.5.2 Functional Specifications

As the distribution of the setpoint information in the system is event-driven (COV-condition, change of value) and in addition repeated periodically, the input has a timeout.

The 'Compressor Actuator' supports the following LTE zoning:
- "Apartment . Room . SubZone"
- "General Peripheral Tag".

Optional function:
- Faults in the actuator device may be detected and reported in the CompressorPosEff.
- The CompressorPosSetp may temporary be overridden by means of a tool for service purpose.
  The ‘Overridden’ condition must be reported.

Behaviour of the actuator if no valid setpoint is available (company specific):
- stop the compressor
- leave unchanged

Inputs

• CompressorPosSetp	This is the actuator setpoint given by a controller.
• HeatCoolMode	This is the mode given by the controller.
• ElectricalPowerLimitation	Percentage value form a supervisor or a loadshedder to limit the electrical power (percent of max power).
• DisableElPowerLim	For disabling the above limitation.

Outputs

• CompressorPosEff	This is the effective percentage of energy applied to the resistor, in LTE together with attribute Z8.
• Fault	Fault indication in S-Mode
• Overridden	Overridden indication in S-Mode

Binding Group (LTE)

• Apartment . Room . SubZone General Peripheral t.b.d.	This actuator can be used in different applications. For this reason different binding possibilities are offered. The binding group that shall not be active has to be set to out of service. It is possible to realise only one of the possibilities.

Parameters

• MinRunTime	This parameter defines the minimum run time for the compressor.
• MinDwellTime	This parameter defines the minimum dwell time for the compressor.

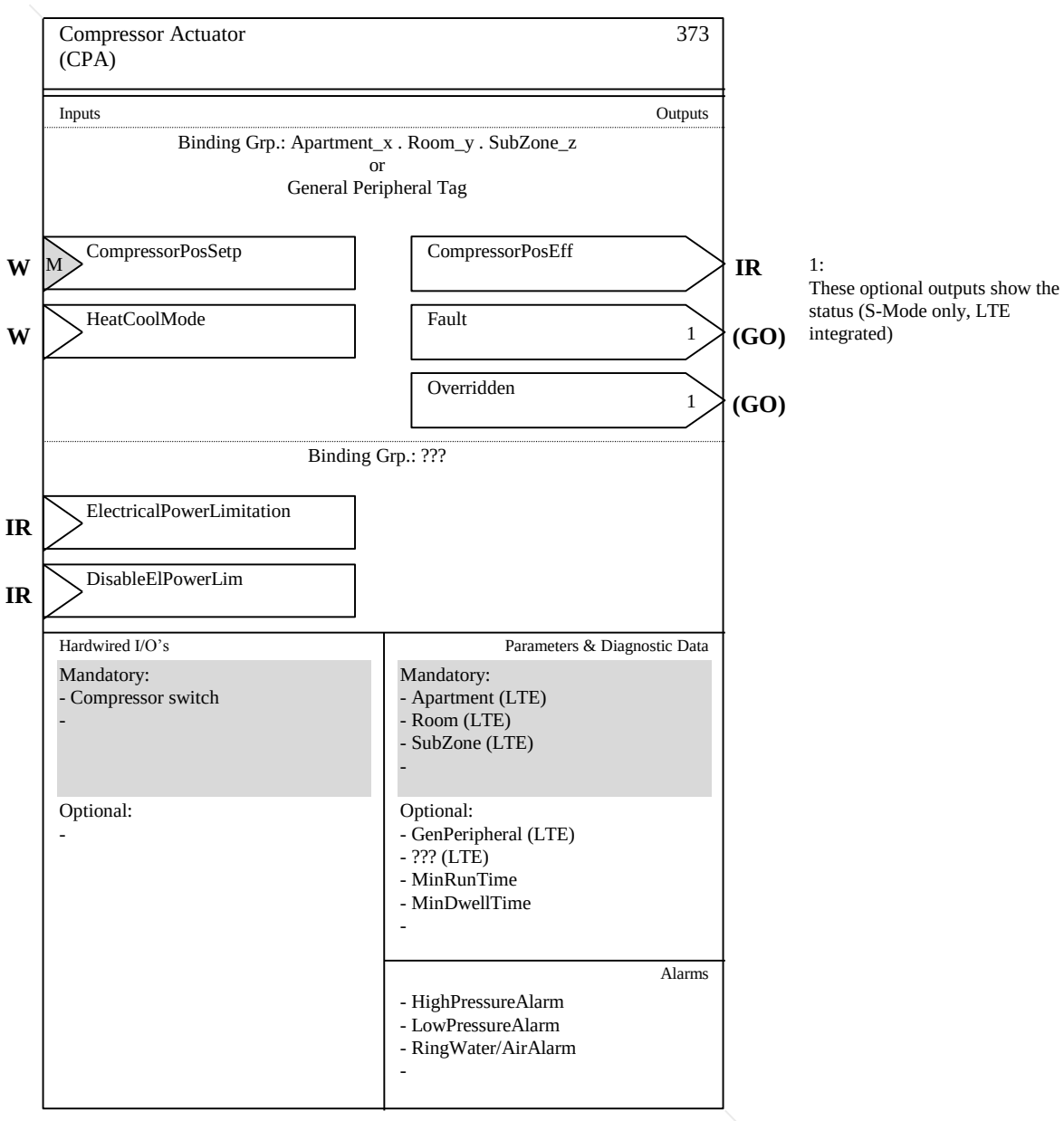
Alarms

- HighPressureAlarm Alarm from the compressor.
- LowPressureAlarm Alarm from the compressor.
- RingWater/AirAlarm Alarm if medium is too hot or too cold.

3.5.3 Constraints

None.

3.5.4 Functional Block Diagram



3.5.5 Datapoint Description

Overview

Datapoints	Description / Remarks	Data Point Type	Additional Info
Inputs			
Compressor Pos Setp	Position value for the compressor actuator with: - COV and RepPer - Z_8 STATUS and - Z_8 COMMAND supported from FB various controller	LTE: 202.001 DPT_RelValue_Z U_8Z_8 S: 5.001 DPT_Scaling U_8	LTE: M S: GO %
Heat Cool Mode	Status heating or cooling with: - COV and RepPer from FB: various controller	LTE: 1.100 DPT_Heat/Cool B_1 S: 1.100 DPT_Heat/Cool B_1	LTE: O S: (GO) 0 = cooling 1 = heating
Electrical Power Limitation	t.b.d by DEH	LTE: 202.001 DPT_RelValue_Z U_8Z_8 S: 5.001 DPT_Scaling U_8	LTE: O S: (GO) %
Disable ElPower Lim	t.b.d by DEH	LTE: 1.003 DPT_Enable B_1 S: 1.003 DPT_Enable B_1	LTE: O S: (GO) enable / disable

Datapoints	Description / Remarks	Data Point Type	Additional Info
Outputs			
Compressor Pos Eff	Position value of the compressor with - COV and RepPer - Status Z_8 mainly to FB 'HMI' or supervisor	LTE: 202.001 DPT_RelValue_Z U_8Z_8 S: 5.001 DPT_Scaling U_8	LTE: O S: (GO) %
Fault	The actuator has a fault detected	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA S: (GO) true/false
Overridden	The actuator is overridden (manually)	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA S: (GO) true/false

Datapoints	Description / Remarks	Data Point Type	Additional Info
Parameters			
Apartment	LTE zoning number for Apartment	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
Room	LTE zoning number for Room	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
SubZone	LTE zoning number for SubZone	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
Gen Peripheral	LTE zoning number for general peripheral	203.012 DPT_UcountValue16_Z $U_{16}Z_8$	O 1
t.b.d.	To be defined by DEH		
Min Run Time	Minimum run time for the compressor.	7.005 DPT_TimePeriodSec U_{16}	O cs
Min Dwell Time	Minimum dwell time for the compressor.	7.005 DPT_TimePeriodSec U_{16}	O cs

Alarm	Description / Remarks	Error		Additional Info
		Code	Prio	
High Pressure Alarm				
Low Pressure Alarm				
RingWater Air Alarm				

CPA Runtime Interworking - Dependence on Configuration Modes

			STANDARD MODE	EXTENDED MODE	
		Basic FB	S-Mode	Standard Mode Interface	LTE-MODE
Inputs	CompressorPosSetp	**GO_b**	GO	GO	**M**
	ElectricalPowerLimitation	**(GO)**		(GO)	**O**
	DisableElPowerLim	**(GO)**		(GO)	**O**
Outputs	CompressorPosEff	**$(GO)_b$**		(GO)	**O**
	Fault	**$(GO)_b$**		(GO)	**NA**
	Overridden	**$(GO)_b$**		(GO)	**NA**

CPA LTE specific Properties

		Support
Parameter	Apartment	**M**
	Room	**M**
	SubZone	**M**
	GenPeripheral	**O**
	t.b.d. *)	**O**

*) ev. Distribution Segment t.b.d. by DEH

CPA Standard Properties of Interface Objects (or memory mapped DP)

		Support
Parameter	MinRunTime	**O**
	MinDwellTime	**O**

3.5.6 Detailed Specification of the Datapoints

3.5.6.1 Input CompressorPosSetp

Standard Mode

DP Name:	CompressorPosSetp			Abbr.:	---		Mandatory	☒	
FB Name:	CPA						Can be internal	☐	
Description									
This input signal contains the percent setpoint value for the compressor actuator.									
Datapoint Type									
DPT_Name:	DPT_Scaling								
DPT Format:	U_8					DPT_ID:	5.001		
Field	Description					Supp.	Range	Unit	Default
							0...100*)	%	cs
Access Type									
♦ Input									
	N → this	☐	1 → this	☒					
	Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)			
	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:	☐		☐			
				☐	Read from bus:	☐			
Exception Handling									

Special Features									
*) The coding of the actuator setpoint value is: 0% → 0 100% → 255									

LTE-Mode

FB: CPA	**LTE Server Input Name:** CompressorPosSetp	Mandatory ☒ Optional ☐

Description:

This input signal contains the percent setpoint value for the compressor actuator with a STATUS information. The input may be overridden by means of COMMAND.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Actuator position	Percent value of the actuator position	M	%	0
STATUS	For Read Service only		Bitset	
- OutOfService	Input out of service	O	Bit 0	false
- Overridden	Input is temporarily overridden	O	Bit 2	false
- all other bits	fixed to '0'	NA		false
COMMAND	For Write Service only		enum.	
- NormalWrite	Used for normal runtime communication (LTE Write Service)	M	0	
- Override / Release	Used for temporary override / release of the input (mainly by a tool using Property Write access with individual addressing)	O	1 / 2	
- all other commands		NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	373 (CPA)	Property ID:	51
LTE-Service (event): Write ☒	Timeout:	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Power-down ☐

Special Features:

3.5.6.2 Input HeatCoolMode

Standard Mode

DP Name:	HeatCoolMode	Abbr.:	---	Mandatory	☐
FB Name:	CPA			Can be internal	☐

Description

This information may be provided by the controller and defines heating or cooling.

Datapoint Type

DPT_Name:	DPT_Heat/Cool				
DPT Format:	B_1	DPT_ID:	1.100		
Field	Description	Supp.	Range	Unit	Default
	0 = cooling, 1 = heating	O	0 / 1	Bit	cs

Access Type

♦ Input

N → this	☐	1 → this	☒		
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

Special Features

LTE-Mode

FB: **CPA**	**LTE Server Input Name:** **HeatCoolMode**		Mandatory ☐ Optional ☒

Description:

This information may be provided by the controller and defines heating or cooling.

DPT:	Name	DPT_Heat/Cool	DPT ID	1.100	Datatype format	B_1	
Field		Description			Sup.	Unit	Default
		0 = cooling, 1 = heating			O	Bit	1

Communication:

Binding Group:

Class		Type	Default
Geographical	☒	Apartment . Room . SubZone	1.1.1
Application Specific	☒	GenPeripheral	1
Unassigned	☐	Broadcast ☐ Configurable ☐	
DP Address:		IO Type(ID): 373 (CPA)	Property ID: 52
LTE-Service (event): Write	☒	Timeout: 31	Min
Property-Service (individual access):		Read only ☐	Read/Write ☒

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Power-down ☐

Special Features:

3.5.6.3 Input ElectricalPowerLimitation

Standard Mode

DP Name:	ElectricalPowerLimitation	Abbr.:	---	Mandatory	☐
FB Name:	CPA			Can be internal	☐

Description

This information may be provided by t.b.d.

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
		O	0... 100 *)	Bit	cs

Access Type

♦ Input

N → this	☐	1 → this	☒			
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)	
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

Special Features

*) The encoding of the limitation is: 0% → 0 100% → 255

LTE-Mode

FB: **CPA**	**LTE Client Input Name:** **ElectricalPowerLimitation**	Mandatory ☐ Optional ☒

Description:

This information may be provided by t.b.d.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Limitation	Percent value of limitation	O	%	cs
STATUS		M	Bitset	
Bit 0 - OutOfService	Function out of service	O	t/f	false
Bit 1 - Fault	Information is corrupted	O	t/f	false
Bit 2 - Overridden	Information is temporarily overridden	O	t/f	false
Bit 3 - InAlarm	Information with alarm	O	t/f	false
Bit 4 - AlarmUnAck	Acknowledgement of alarm	O	t/f	false
all other bits	reserved	NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	t.b.d.	Property ID:	t.b.d.
LTE-Service (event): InfoReport ☒	InfoReport Sniffer on Binding Group:		--	
	Timeout:	31 Min		
LTE-Service (polling): Read – Response ☐	Read Wildcard / Resp Sniffer on Binding Group:		--	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Powerdown ☐

Special Features:

3.5.6.4 Input DisableElPowerLim

Standard Mode

DP Name:	DisableElPowerLim	Abbr.:	---	Mandatory	☐
FB Name:	CPA			Can be internal	☐

Description

This information may be provided by t.b.d.

Datapoint Type

DPT_Name:	DPT_Enable				
DPT Format:	B_1	DPT_ID:	1.003		
Field	Description	Supp.	Range	Unit	Default
	0 = disable, 1 = enable	O	0 / 1	Bit	cs

Access Type

♦ Input

N → this	☐	1 → this	☒		
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

Special Features

LTE-Mode

FB:	**CPA**	**LTE Client Input Name:**	**DisableElPowerLim**	Mandatory ☐ Optional ☒	

Description:

This information may be provided by t.b.d.

DPT:	Name	DPT_Enable	DPT ID	1.003	Datatype format	B_1	
Field		Description			Sup.	Unit	Default
		0 = disable, 1 = enable			O	Bit	1

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	t.b.d.	Property ID:	t.b.d.
LTE-Service (event):	InfoReport Sniffer on Binding Group:		--	
InfoReport ☒	Timeout:	31	Min	
LTE-Service (polling): Read – Response ☐	Read Wildcard / Resp Sniffer on Binding Group:		--	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Powerdown ☐

Special Features:

3.5.6.5 Output CompressorPosEff

Standard Mode

DP Name:	CompressorPosEff			Abbr.:	---			Mandatory	☐		
FB Name:	CPA							Can be internal	☐		
Description											
This datapoint contains the percent value of the actual compressor actuator position.											
Datapoint Type											
DPT_Name:	DPT_Scaling										
DPT Format:	U_8					DPT_ID:	5.001				
Field	Description					Supp.	Range		Unit	Default	
							0...100*)		%	cs	
Access Type											
♦ Output											
this → M	☒	this → 1	☐								
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec				
		Cyclic	☒	Period:	15 min (recommended value)						
Request	☒										
Communication Type											
♦ Group Object Datapoint								Mandatory:	☐		
Default Group Address:	---										
Dynamics											
Power down:	Save:	☐									
Power up:	Value:	No initialisation:	☐			Default value:	☐				
		Saved value:	☐			Actual value:	☒				
	Transmit on bus:	☒					☐				
Exception Handling											

Special Features											
*) The coding of the actuator setpoint value is: 0% → 0 100% → 255											

LTE-Mode

FB: CPA	**LTE Server Output Name:** CompressorPosEff	Mandatory ☐ Optional ☒

Description:

This output contains the value of the actual compressor actuator position as well as a STATUS information.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	Actual actuator position	M	0...100	%	1	cs
STATUS	For LTE-Service InfoReport and Property-Service Response only			bitset		
- OutOfService		NA		Bit 0		
- Fault	Actuator fault	O	true/false	Bit 1	Y	false
- Overridden	Actuator is temp. overridden	O	true/false	Bit 2	Y	false
- InAlarm	Actuator is in alarm	O	true/false	Bit 3	Y	false
- AlarmUnAck	Alarm unacknowledged	O	true/false	Bit 4	Y	false
	all other bits	NA		Bit 5-7		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	373 (CPA)	Property ID:	55		
LTE-Services (event): InfoReport ☒	COV ☒	MinRepTime:	10	sec	Heartbeat:	15 min
	Output per default communicating ☐		Binding Group Wildcard allowed ☐			
	Tx Prio:	High ☐	Normal ☒	Low ☐		
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐			
Property-Service (individual access):	Read only ☒	Read/Write ☐				

Exception Handling: Save at Powerdown ☐

Special Features:

3.5.6.6 Output Fault

LTE-Mode

Not available.

Standard Mode

DP Name:	Fault	Abbr.:	---	Mandatory	☐
FB Name:	CPA			Can be internal	☐

Description

This datapoint may indicate a fault in the actuator (S-Mode only) see also CompressorPosEff

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

3.5.6.7 Output Overridden

LTE-Mode

Not available.

Standard Mode

DP Name:	Overridden	Abbr.:	---	Mandatory	☐
FB Name:	CPA			Can be internal	☐

Description

This datapoint may indicate that the actuator is overridden (S-Mode only) see also CompressorPosEff

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

3.5.6.8 Parameter Apartment

FB: CPA	Property Name (Server): Apartment	Mandatory ☒ Optional ☐

Description:

Number of the apartment zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the apartment zone	M	(0) 1...126		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address:	IO Type(ID):	373 (CPA)	Property ID:	101
(in the server)	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
If Apartment is 'OutOfService' Room and SubZone automatically are 'OutOfService'

3.5.6.9 Parameter Room

FB: CPA	Property Name (Server): Room	Mandatory ☒ Optional ☐

Description:

Number of the room zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the room zone	M	(0) 1...63		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address:	IO Type(ID):	373 (CPA)	Property ID:	102
(in the server)	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
'OutOfService' is taken over from Apartment

3.5.6.10 Parameter SubZone

FB: CPA	Property Name (Server): SubZone	Mandatory ☒ Optional ☐

Description:

Number of the sub zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the SubZone	M	(0) 1...15		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address:	IO Type(ID):	373 (CPA)	Property ID:	103
(in the server)	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
'OutOfService' is taken over from Apartment

3.5.6.11 Parameter GenPeripheral

FB: CPA	Property Name (Server): GenPeripheral	Mandatory ☐ Optional ☒

Description:

Number of the general peripheral tag.

DPT:	Name	DPT_UcountValue16_Z	DPT ID	203.012	Datatype format	$U_{16}Z_8$

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the SubZone	M	full		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address:	IO Type(ID):	373 (CPA)	Property ID:	104
(in the server)	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'

3.5.6.12 Zone t.b.d.

ev. Distribution Segment

3.5.6.13 Parameter MinRunTime

FB: CPA	Property Name (Server): MinRunTime	Mandatory ☐ Optional ☒

Description:

Minimum run time of the compressor.

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

Field	Description	Sup.	Range	Unit	Default
			full	sec.	cs

Communication:

DP Address:	IO Type(ID):	373 (CPA)	Property ID:	111
(in the server)	Start-Index:	1	N° of elements	1
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:

3.5.6.14 Parameter MinDwellTime

FB: CPA	Property Name (Server): MinDwellTime	Mandatory ☐ Optional ☒

Description:

Minimum dwell time of the compressor.

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

Field	Description	Sup.	Range	Unit	Default
			full	sec.	cs

Communication:

DP Address:	IO Type(ID):	373 (CPA)	Property ID:	112
(in the server)	Start-Index:	1	N° of elements	1
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:

3.6 Electrical Heating Element Actuator (EHEA)

3.6.1 Aims and objectives

The Functional Block ‘Electrical Heating Element Actuator’ contains the functionality for the following "elements":
- Heat Stage A ON/OFF
- Heat Stage A Proportional
- Heat Stage B Proportional

It is possible to implement only part of this functions.

The Functional Block translates the actuator setpoint information to the heating element control signal and eventually provides the system with the actual heating element status as feedback.

3.6.2 Functional Specifications

As the distribution of the setpoint information in the system is event-driven
(COV-condition, change of value) and in addition repeated periodically, the input has a timeout.

The 'Electrical Heating Element Actuator' supports the following LTE zoning:
- "Apartment . Room . SubZone"
- "General Peripheral Tag".

Optional function:
- Faults in the actuator device may be detected and reported in the ActPosHeatStageA etc.
- The ActPosSetpHeatStageA etc. may temporary be overridden by means of a tool for service purpose.
  The ‘Overridden’ condition must be reported.

Behaviour of the actuator if no valid setpoint is available (company specific):
- stop the heater
- leave unchanged

Inputs

• ON/OFFHeatStageA	This is the ON/OFF input for the heater.
• ActPosSetpHeatStageA	This is the actuator setpoint given by a controller.
• ActPosSetpHeatStageB	ditto
• ElectricalPowerLimitation	Percentage value form a supervisor or a loadshedder to limit the electrical power (percent of max power).
• DisableElPowerLim	For disabling the above limitation.
• LoadSheddingLimitation	This percentage value limits the output to a max value given by a loadshedder.
• DisableLoadShedding	For disabling the above limitation.

Outputs

- ON/OFFHeatStageAEff — This is the effective ON/OFF position of the actuator.
- ActPosHeatStageA — This is the effective percentage of energy applied to the resistor, in LTE together with attributes.
- ActPosHeatStageB — ditto
- DisableFan — This output is used to disable the fan in case of power limitation to zero.
- Fault — Fault indication in S-Mode
- Overridden — Overridden indication in S-Mode

Binding Group (LTE)

- Apartment . Room . SubZone
  General Peripheral
  t.b.d. *)

  This actuator can be used in different applications.
  For this reason different binding possibilities are offered.
  The binding group that shall not be active has to be set to out of service.
  It is possible to realise only one of the possibilities.

*) eventually distribution segment

Parameters

- HeaterMode — This parameter is used when a device contains more than one actuator function. The following table shows the modes and the corresponding implementation of the inputs / outputs:

		Implementation of							
		Inputs			Outputs				
HeaterMode		ON/OFF HeatStageA	ActPosSetp HeatStageA	ActPosSetp HeatStageB	ON/OFF HeatStagAEff	ActPos HeatStagA	ActPos HeatStagB	Fault	Overridden
1	Heat Stage A ON/OFF	M			O			(GO)	(GO)
2	Heat Stage A Proportional	M	M			O		(GO)	(GO)
3	Heat Stage B Proportional			M			O	(GO)	(GO)

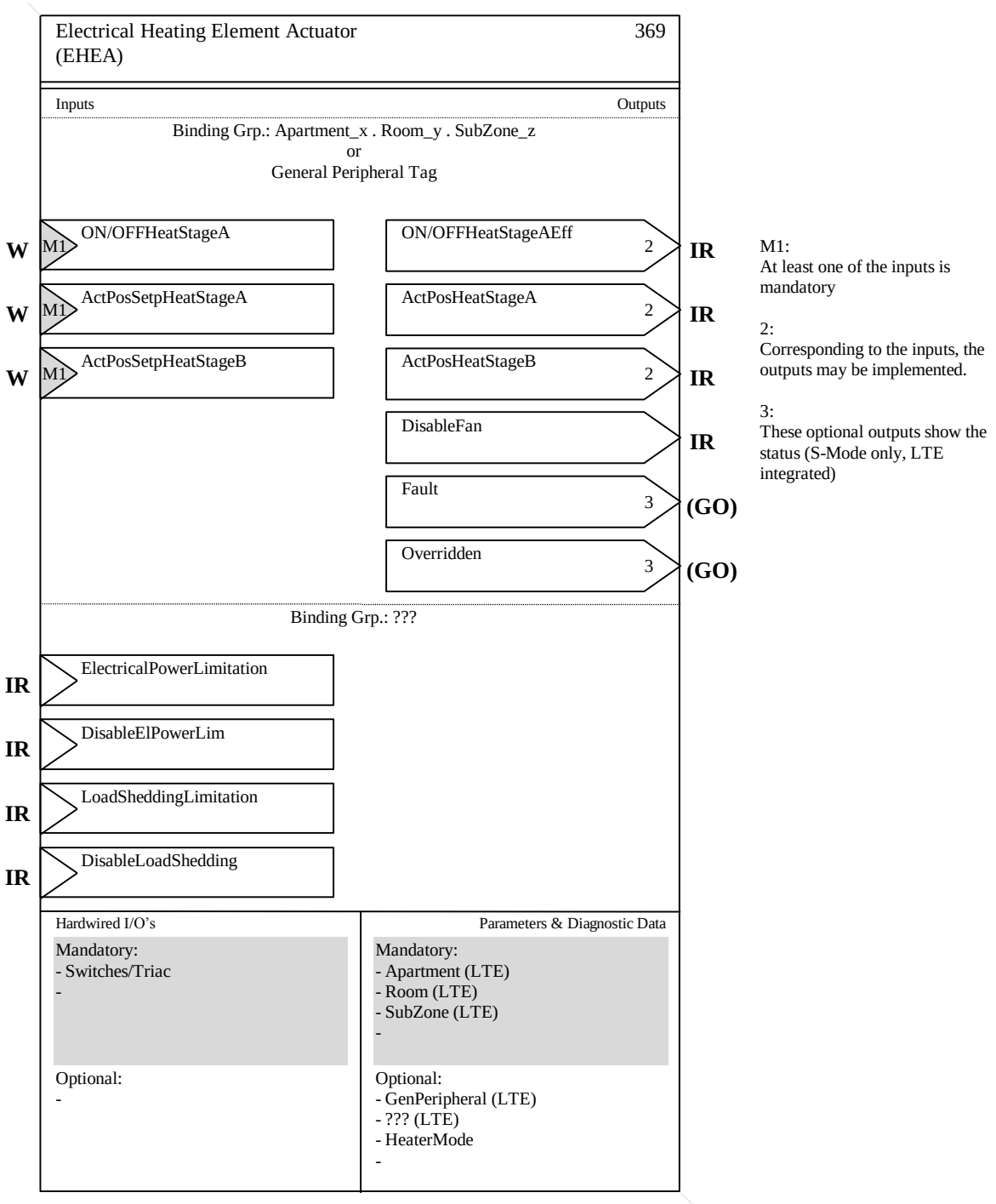
So if a device shall contain the functionality of
a Heating Actuator Stage A and a Heating Actuator Stage B
the parameter ActuatorMode is necessary and can be 2 or 3 and
the following inputs are mandatory:
- ActPosSetpHeatStageA
- ActPosSetpHeatStageB

The corresponding outputs are optional.

3.6.3 Constraints

None.

3.6.4 Functional Block Diagram



3.6.5 Datapoint Description

Overview

Datapoints	Description / Remarks	Data Point Type	Additional Info
Inputs			
ON/OFF Heat StageA	ON/OFF for the heating actuator stage A with: - COV and RepPer - Z_8 not supported from FB various controller	LTE: 1.001 DPT_Switch B_1 S: 1.001 DPT_Switch B_1	LTE: M1 1) S: GO ON/OFF
Act Pos Setp Heat StageA	Position value for the heating actuator stage A with: - COV and RepPer - Z_8 STATUS and - Z_8 COMMAND supported from FB various controller	LTE: 202.001 DPT_RelValue_Z U_8Z_8 S: 5.001 DPT_Scaling U_8	LTE: M1 1) S: GO %
Act Pos Setp Heat StageB	Position value for the heating actuator stage B with: - COV and RepPer - Z_8 STATUS and - Z_8 COMMAND supported from FB various controller	LTE: 202.001 DPT_RelValue_Z U_8Z_8 S: 5.001 DPT_Scaling U_8	LTE: M1 1) S: GO %
Electrical Power Limitation	t.b.d by DEH	LTE: 202.001 DPT_RelValue_Z U_8Z_8 S: 5.001 DPT_Scaling U_8	LTE: O S: (GO) %
Disable ElPower Lim	t.b.d by DEH	LTE: 1.003 DPT_Enable B_1 S: 1.003 DPT_Enable B_1	LTE: O S: (GO) enable / disable
Load Shedding Limitation	t.b.d by DEH	LTE: 202.001 DPT_RelValue_Z U_8Z_8 S: 5.001 DPT_Scaling U_8	LTE: O S: (GO) %
Disable Load Shedding	t.b.d by DEH	LTE: 1.003 DPT_Enable B_1 S: 1.003 DPT_Enable B_1	LTE: O S: (GO) enable / disable

1) See Aims and objectives in clause 3.6.1.

Datapoints	Description / Remarks	Data Point Type	Additional Info
Outputs			
ON/OFF Heat StageA Eff	Status of ON/OFF heating actuator stage A with - COV and RepPer mainly to FB 'HMI' or supervisor	LTE: 1.001 DPT_Switch B_1 S: 1.001 DPT_Switch B_1	LTE: O2 1) S: (GO) ON / OFF
Act Pos Heat StageA	Position value of heating valve stage A with - COV and RepPer - Status B_8 mainly to FB 'HMI' or supervisor	LTE: 207.105 DPT_StatusAct U_8B_8 S: 5.001 DPT_Scaling U_8	LTE: O2 1) S: (GO) %
Act Pos Heat StageB	Position value of heating valve stage B with - COV and RepPer - Status B_8 mainly to FB 'HMI or supervisor	LTE: 207.105 DPT_StatusAct U_8B_8 S: 5.001 DPT_Scaling U_8	LTE: O2 1) S: (GO) %
Disable Fan	Disable fan in case of limitation to zero with - COV and RepPer mainly to FB Fan Speed Actuator	LTE: 1.003 DPT_Disable U_8B_8 S: 1.003 DPT_Disable B_1	LTE: O S: (GO) enable / disable
Fault	The actuator has a fault detected	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA 1) S: (GO) true/false
Overridden	The actuator is overridden (manually)	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA 1) S: (GO) true/false

1) See Aims and objectives in clause 3.6.1.

Datapoints	Description / Remarks	Data Point Type	Additional Info
Parameters			
Apartment	LTE zoning number for Apartment	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
Room	LTE zoning number for Room	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
SubZone	LTE zoning number for SubZone	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
Gen Peripheral	LTE zoning number for general peripheral	203.012 DPT_UcountValue16_Z $U_{16}Z_8$	O 1
t.b.d.	Zoning to be defined by DEH		
Heater Mode	Heater Mode: Defining the usage of the actuator	20.110 2) DPT_HeaterMode N_8	O 1

2) Implementation of Properties using standard DPT see clause 1.3.2

EHEA Runtime Interworking - Dependence on Configuration Modes

			STANDARD MODE	EXTENDED MODE	
		Basic FB	**S-Mode**	**Standard Mode Interface**	**LTE-MODE**
Inputs	ON/OFFHeatStageA	**GO_b**	GO	GO	**M** 1)
	ActPosSetpHeatStageA	**GO_b**	GO	GO	**M** 1)
	ActPosSetpHeatStageB	**GO_b**	GO	GO	**M** 1)
	ElectricalPowerLimitation	**(GO)**		(GO)	**O**
	DisableElPowerLim	**(GO)**		(GO)	**O**
	LoadSheddingLimitation	**(GO)**		(GO)	**O**
	DisableLoadShedding	**(GO)**		(GO)	**O**
Outputs	ON/OFFHeatStageAEff	**$(GO)_b$**		(GO)	**O**
	ActPosHeatStageA	**$(GO)_b$**		(GO)	**O**
	ActPosHeatStageB	**$(GO)_b$**		(GO)	**O**
	DisableFan	**$(GO)_b$**		(GO)	**O**
	Fault	**$(GO)_b$**		(GO)	**NA**
	Overridden	**$(GO)_b$**		(GO)	**NA**

1) See Aims and objectives in clause 3.6.1.

EHEA LTE specific Properties

		Support
Parameter	Apartment	**M**
	Room	**M**
	SubZone	**M**
	GenPeripheral	**O**
	t.b.d. *)	**O**

*) ev. Distribution Segment

EHEA Standard Properties of Interface Objects (or memory mapped DP)

		Support
Parameter	HeaterMode	**O**

3.6.6 Detailed Specification of the Datapoints

3.6.6.1 Input ON/OFFHeatStageA

Standard Mode

DP Name:	ON/OFFHeatStageA	Abbr.:	---	Mandatory	☒
FB Name:	EHEA			Can be internal	☐
Description					
This input signal contains the ON/OFF for the actuator.					
Datapoint Type					
DPT_Name:	DPT_Switch				
DPT Format:	B_1	DPT_ID:	1.001		
Field	Description	Supp.	Range	Unit	Default
			ON/OFF	Bit	cs
Access Type					
♦ Input					
N → this	☐	1 → this	☒		
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)
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:	☐		☐
			☐	Read from bus:	☐
Exception Handling					

Special Features					

LTE-Mode

FB: EHEA	LTE Server Input Name: ON/OFFHeatStageA	Mandatory ☒ Optional ☐

Description:

This input signal contains the ON/OFF for the actuator.

DPT:	Name	DPT_Switch	DPT ID	1.001	Datatype format	B_1

Field	Description	Sup.	Unit	Default
			Bit	cs

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	
DP Address:	IO Type(ID): 369 (EHEA)	Property ID: 51
LTE-Service (event): Write ☒	Timeout: 31	Min
Property-Service (individual access):	Read only ☐	Read/Write ☒

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Power-down ☐

Special Features:

3.6.6.2 Input ActPosSetpHeatStageA

Standard Mode

DP Name:	ActPosSetpHeatStageA	Abbr.:	---	Mandatory	☒
FB Name:	EHEA			Can be internal	☐

Description

This input signal contains the percent setpoint value for the actuator.

Datapoint Type

DPT_Name:	DPT_Scaling		
DPT Format:	U_8	DPT_ID:	5.001

Field	Description	Supp.	Range	Unit	Default
			0...100*)	%	cs

Access Type

♦ Input

N → this	☐	1 → this	☒		
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

Special Features

*) The coding of the actuator setpoint value is: 0% → 0 100% → 255

LTE-Mode

FB: EHEA	**LTE Server Input Name:** ActPosSetpHeatStageA	Mandatory ☒ Optional ☐

Description:

This input signal contains the percent setpoint value for the actuator with a STATUS information. The input may be overridden by means of COMMAND.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Actuator position	Percent value of the actuator position	M	%	0
STATUS	For Read Service only		Bitset	
- OutOfService	Input out of service	O	Bit 0	false
- Overridden	Input is temporarily overridden	O	Bit 2	false
- all other bits	fixed to '0'	NA		false
COMMAND	For Write Service only		enum.	
- NormalWrite	Used for normal runtime communication (LTE Write Service)	M	0	
- Override / Release	Used for temporary override / release of the input (mainly by a tool using Property Write access with individual addressing)	O	1 / 2	
- all other commands		NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	369 (EHEA)	Property ID:	52
LTE-Service (event): Write ☒	Timeout:	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Power-down ☐

Special Features:

3.6.6.3 Input ActPosSetpHeatStageB

Standard Mode

DP Name:	ActPosSetpHeatStageB	Abbr.:	---	Mandatory	☒
FB Name:	EHEA			Can be internal	☐

Description

This input signal contains the percent setpoint value for the actuator.

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0...100*)	%	cs

Access Type

♦ Input

N → this	☐	1 → this	☒			
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)	
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:	☐		☐	
			☐	Read from bus:	☐	

Exception Handling

Special Features

*) The coding of the actuator setpoint value is: 0% → 0 100% → 255

LTE-Mode

FB: EHEA	**LTE Server Input Name:** ActPosSetpHeatStageB	Mandatory ☒ Optional ☐

Description:

This input signal contains the percent setpoint value for the actuator with a STATUS information. The input may be overridden by means of COMMAND.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Actuator position	Percent value of the actuator position	M	%	0
STATUS	For Read Service only		Bitset	
- OutOfService	Input out of service	O	Bit 0	false
- Overridden	Input is temporarily overridden	O	Bit 2	false
- all other bits	fixed to '0'	NA		false
COMMAND	For Write Service only		enum.	
- NormalWrite	Used for normal runtime communication (LTE Write Service)	M	0	
- Override / Release	Used for temporary override / release of the input (mainly by a tool using Property Write access with individual addressing)	O	1 / 2	
- all other commands		NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	369 (EHEA)	Property ID:	53
LTE-Service (event): Write ☒	Timeout:	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Power-down ☐

Special Features:

3.6.6.4 Input ElectricalPowerLimitation

Standard Mode

DP Name:	ElectricalPowerLimitation	Abbr.:	---	Mandatory	☐
FB Name:	EHEA			Can be internal	☐

Description

This information may be provided by t.b.d.

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
		O	0... 100 *)	Bit	cs

Access Type

♦ Input

N → this	☐	1 → this	☒			
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)	
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:	☐		☐	
			☐	Read from bus:	☐	

Exception Handling

Special Features

*) The encoding of the limitation is: 0% → 0 100% → 255

LTE-Mode

FB: EHEA	**LTE Client Input Name:**	**ElectricalPowerLimitation**	Mandatory ☐ Optional ☒

Description:

This information may be provided by t.b.d.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Limitation	Percent value of limitation	O	%	cs
STATUS		M	Bitset	
Bit 0 - OutOfService	Function out of service	O	t/f	false
Bit 1 - Fault	Information is corrupted	O	t/f	false
Bit 2 - Overridden	Information is temporarily overridden	O	t/f	false
Bit 3 - InAlarm	Information with alarm	O	t/f	false
Bit 4 - AlarmUnAck	Acknowledgement of alarm	O	t/f	false
all other bits	reserved	NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	t.b.d.	Property ID:	t.b.d.
LTE-Service (event): InfoReport ☒	InfoReport Sniffer on Binding Group:		--	
	Timeout:	31	Min	
LTE-Service (polling): Read – Response ☐	Read Wildcard / Resp Sniffer on Binding Group:		--	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Powerdown ☐

Special Features:

3.6.6.5 Input DisableElPowerLim

Standard Mode

DP Name:	DisableElPowerLim	Abbr.:	---	Mandatory	☐
FB Name:	EHEA			Can be internal	☐

Description

This information may be provided by t.b.d.

Datapoint Type

DPT_Name:	DPT_Enable				
DPT Format:	B_1	DPT_ID:	1.003		
Field	Description	Supp.	Range	Unit	Default
	0 = disable, 1 = enable	O	0 / 1	Bit	cs

Access Type

♦ Input

N → this	☐	1 → this	☒		
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

Special Features

LTE-Mode

FB:	**EHEA**	**LTE Client Input Name:**	**DisableElPowerLim**	Mandatory ☐ Optional ☒	

Description:

This information may be provided by t.b.d.

DPT:	Name	DPT_Enable	DPT ID	1.003	Datatype format	B_1	
Field		Description			Sup.	Unit	Default
		0 = disable, 1 = enable			O	Bit	1

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	t.b.d.	Property ID:	t.b.d.
LTE-Service (event):	InfoReport Sniffer on Binding Group:		--	
InfoReport ☒	Timeout:	31	Min	
LTE-Service (polling): Read – Response ☐	Read Wildcard / Resp Sniffer on Binding Group:		--	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Powerdown ☐

Special Features:

3.6.6.6 Input LoadSheddingLimitation

Standard Mode

DP Name:	LoadSheddingLimitation	Abbr.:	---	Mandatory	☐
FB Name:	EHEA			Can be internal	☐

Description

This information may be provided by t.b.d.

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
		O	0... 100 *)	Bit	cs

Access Type

♦ Input

N → this	☐	1 → this	☒			
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)	
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:	☐		☐	
			☐	Read from bus:	☐	

Exception Handling

Special Features

*) The encoding of the limitation is: 0% → 0 100% → 255

LTE-Mode

FB: EHEA	**LTE Client Input Name:** **LoadSheddingLimitation**	Mandatory ☐ Optional ☒

Description:

This information may be provided by t.b.d.

DPT:	Name	DPT_RelValue_Z	DPT ID	202.001	Datatype format	U_8Z_8

Field	Description	Sup.	Unit	Default
Limitation	Percent value of limitation	O	%	cs
STATUS		M	Bitset	
Bit 0 - OutOfService	Function out of service	O	t/f	false
Bit 1 - Fault	Information is corrupted	O	t/f	false
Bit 2 - Overridden	Information is temporarily overridden	O	t/f	false
Bit 3 - InAlarm	Information with alarm	O	t/f	false
Bit 4 - AlarmUnAck	Acknowledgement of alarm	O	t/f	false
all other bits	reserved	NA		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	t.b.d.	Property ID:	t.b.d.
LTE-Service (event): InfoReport ☒	InfoReport Sniffer on Binding Group:		--	
	Timeout:	31	Min	
LTE-Service (polling): Read – Response ☐	Read Wildcard / Resp Sniffer on Binding Group:		--	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Powerdown ☐

Special Features:

3.6.6.7 Input DisableLoadShedding

Standard Mode

DP Name:	DisableLoadShedding	Abbr.:	---	Mandatory	☐
FB Name:	EHEA			Can be internal	☐

Description

This information may be provided by t.b.d.

Datapoint Type

DPT_Name:	DPT_Enable				
DPT Format:	B_1	DPT_ID:	1.003		
Field	Description	Supp.	Range	Unit	Default
	0 = disable, 1 = enable	O	0 / 1	Bit	cs

Access Type

♦ Input

N → this	☐	1 → this	☒		
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

Special Features

LTE-Mode

FB:	**EHEA**	**LTE Client Input Name:**	**DisableLoadShedding**	Mandatory ☐ Optional ☒	

Description:

This information may be provided by t.b.d.

DPT:	Name	DPT_Enable	DPT ID	1.003	Datatype format	B_1	
Field		Description			Sup.	Unit	Default
		0 = disable, 1 = enable			O	Bit	1

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	t.b.d.	Property ID:	t.b.d.
LTE-Service (event):	InfoReport Sniffer on Binding Group:		--	
InfoReport ☒	Timeout:	31	Min	
LTE-Service (polling): Read – Response ☐	Read Wildcard / Resp Sniffer on Binding Group:		--	

Value after Power-up:	Default Value ☒	Stored Value ☐
Exception Handling:		Save at Powerdown ☐

Special Features:

3.6.6.8 Output ON/OFFHeatStageAEff

Standard Mode

DP Name:	ON/OFFHeatStageAEff			Abbr.:	---			Mandatory	☐		
FB Name:	EHEA							Can be internal	☐		
Description											
This datapoint contains the actual ON/OFF actuator position.											
Datapoint Type											
DPT_Name:	DPT_Switch										
DPT Format:	B_1					DPT_ID:	1.001				
Field	Description					Supp.	Range		Unit	Default	
							ON/OFF		Bit	cs	
Access Type											
♦ Output											
this → M	☒	this → 1	☐								
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec				
		Cyclic	☒	Period:	15 min (recommended value)						
Request	☒										
Communication Type											
♦ Group Object Datapoint								Mandatory:	☐		
Default Group Address:	---										
Dynamics											
Power down:	Save:	☐									
Power up:	Value:	No initialisation:	☐	Default value:	☐						
		Saved value:	☐	Actual value:	☒						
	Transmit on bus:	☒			☐						
Exception Handling											

Special Features											

LTE-Mode

FB: EHEA	**LTE Server Output Name: ON/OFFHeatStageAEff**	Mandatory ☐ Optional ☒

Description:

This datapoint contains the actual ON/OFF actuator position.

DPT:	Name	DPT_Switch	DPT ID	1.001	Datatype format	B_1

Field	Description	Sup.	Range	Unit	COV	Default
				Bit	Y	cs

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	369 (EHEA)	Property ID:	55
LTE-Services (event): InfoReport ☒	COV ☒	MinRepTime: 10 sec	Heartbeat: 15 min	
	Output per default communicating ☐	Binding Group Wildcard allowed ☐		
	Tx Prio:	High ☐	Normal ☒	Low ☐
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☒	Read/Write ☐		

Exception Handling: Save at Powerdown ☐

Special Features:

3.6.6.9 Output ActPosHeatStageA

Standard Mode

DP Name:	ActPosHeatStageA			Abbr.:	---			Mandatory	☐		
FB Name:	EHEA							Can be internal	☐		
Description											
This datapoint contains the percent value of the actual actuator position (HeatStageA).											
Datapoint Type											
DPT_Name:	DPT_Scaling										
DPT Format:	U_8					DPT_ID:		5.001			
Field	Description					Supp.		Range		Unit	Default
								0...100*)		%	cs
Access Type											
♦ Output											
this → M	☒		this → 1	☐							
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec				
		Cyclic	☒	Period:	15 min (recommended value)						
Request	☒										
Communication Type											
♦ Group Object Datapoint								Mandatory:	☐		
Default Group Address:	---										
Dynamics											
Power down:	Save:	☐									
Power up:	Value:	No initialisation:	☐	Default value:	☐						
		Saved value:	☐	Actual value:	☒						
	Transmit on bus:	☒			☐						
Exception Handling											

Special Features											
*) The coding of the actuator setpoint value is: 0% → 0 100% → 255											

LTE-Mode

FB: EHEA	**LTE Server Output Name:** ActPosHeatStageA	Mandatory ☐ Optional ☒

Description:

This output contains the value of the actual actuator position (HeatStageA) as well as a STATUS information.

DPT:	Name	DPT_StatusAct	DPT ID	207.105	Datatype format	U_8B_8

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	Actual actuator position	M	Full Range	%	1	cs
STATUS	For LTE-Service InfoReport and Property-Service Response only			bitset		
- Fault	Actuator fault	O	true/false	Bit 0	Y	false
- Overridden	Actuator is temp. overridden	O	true/false	Bit 1	Y	false
- CalibrationMode	Actuator is in calibration mode	NA		Bit 2		false
- ValveKick	Actuator is in valve kick mode	NA		Bit 3		false
	all other bits	NA		Bit 4-7		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID): 369 (EHEA)	Property ID: 56		
LTE-Services (event):	COV ☒	MinRepTime: 10 sec	Heartbeat: 15 min	
InfoReport ☒	Output per default communicating ☐	Binding Group Wildcard allowed ☐		
	Tx Prio:	High ☐	Normal ☒	Low ☐
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☒	Read/Write ☐		

Exception Handling: Save at Powerdown ☐

Special Features:

3.6.6.10 Output ActPosHeatStageB

Standard Mode

DP Name:	ActPosHeatStageB	Abbr.:	---	Mandatory	☐
FB Name:	EHEA			Can be internal	☐

Description

This datapoint contains the percent value of the actual actuator position (HeatStageB).

Datapoint Type

DPT_Name:	DPT_Scaling				
DPT Format:	U_8	DPT_ID:	5.001		
Field	Description	Supp.	Range	Unit	Default
			0...100*)	%	cs

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

*) The coding of the actuator setpoint value is: 0% → 0 100% → 255

LTE-Mode

FB: EHEA	**LTE Server Output Name:** ActPosHeatStageB	Mandatory ☐ Optional ☒

Description:

This output contains the value of the actual actuator position (HeatStageB) as well as a STATUS information.

DPT:	Name	DPT_StatusAct	DPT ID	207.105	Datatype format	U_8B_8

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	Actual actuator position	M	Full Range	%	1	cs
STATUS	For LTE-Service InfoReport and Property-Service Response only			bitset		
- Fault	Actuator fault	O	true/false	Bit 0	Y	false
- Overridden	Actuator is temp. overridden	O	true/false	Bit 1	Y	false
- CalibrationMode	Actuator is in calibration mode	NA		Bit 2		false
- ValveKick	Actuator is in valve kick mode	NA		Bit 3		false
	all other bits	NA		Bit 4-7		

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID): 369 (EHEA)	Property ID: 57
LTE-Services (event):	COV ☒ MinRepTime: 10 sec	Heartbeat: 15 min
InfoReport ☒	Output per default communicating ☐	Binding Group Wildcard allowed ☐
	Tx Prio: High ☐ Normal ☒ Low ☐	
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐ Act Value ☒ Default Value ☐	
Property-Service (individual access):	Read only ☒ Read/Write ☐	

Exception Handling: Save at Powerdown ☐

Special Features:

3.6.6.11 Output DisableFan

Standard Mode

DP Name:	DisdableFan			Abbr.:	---			Mandatory	☐		
FB Name:	EHEA							Can be internal	☐		
Description											
This datapoint contains the disabling information for the fan in case of limitation to zero.											
Datapoint Type											
DPT_Name:	DPT_Enable										
DPT Format:	B_1						DPT_ID:	1.003			
Field	Description						Supp.	Range		Unit	Default
	enable / disable									Bit	cs
Access Type											
♦ Output											
this → M	☒	this → 1	☐								
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec				
		Cyclic	☒	Period:	15 min (recommended value)						
Request	☒										
Communication Type											
♦ Group Object Datapoint								Mandatory:	☐		
Default Group Address:	---										
Dynamics											
Power down:	Save:	☐									
Power up:	Value:	No initialisation:	☐	Default value:	☐						
		Saved value:	☐	Actual value:	☒						
	Transmit on bus:	☒			☐						
Exception Handling											

Special Features											

LTE-Mode

FB: **EHEA**	**LTE Server Output Name:** **DisableFan**	Mandatory ☐ Optional ☒

Description:

This datapoint contains the disabling information for the fan in case of limitation to zero.

DPT:	Name	DPT_Enable	DPT ID	1.003	Datatype format	B_1

Field	Description	Sup.	Range	Unit	COV	Default
				Bit	Y	cs

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	369 (EHEA)	Property ID:	58
LTE-Services (event):	COV ☒	MinRepTime: 10 sec	Heartbeat: 15 min	
InfoReport ☒	Output per default communicating ☐	Binding Group Wildcard allowed ☐		
	Tx Prio:	High ☐	Normal ☒	Low ☐
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☒	Read/Write ☐		

Exception Handling: Save at Powerdown ☐

Special Features:

3.6.6.12 Output Fault

LTE-Mode

Not available.

Standard Mode

DP Name:	Fault	Abbr.:	---	Mandatory	☐
FB Name:	EHEA			Can be internal	☐

Description

This datapoint may indicate a fault in the actuator (S-Mode only) see also ActPos.....

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

3.6.6.13 Output Overridden

LTE-Mode

Not available.

Standard Mode

DP Name:	Overridden	Abbr.:	---	Mandatory	☐
FB Name:	EHEA			Can be internal	☐

Description

This datapoint may indicate that the actuator is overridden (S-Mode only) see also ActPos.....

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

3.6.6.14 Parameter Apartment

FB: EHEA	Property Name (Server): Apartment	Mandatory ☒ Optional ☐

Description:

Number of the apartment zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the apartment zone	M	(0) 1...126		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	369 (EHEA)	Property ID:	101
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
If Apartment is 'OutOfService' Room and SubZone automatically are 'OutOfService'

3.6.6.15 Parameter Room

FB: EHEA	Property Name (Server): Room	Mandatory ☒ Optional ☐

Description:

Number of the room zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the room zone	M	(0) 1...63		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	369 (EHEA)	Property ID:	102
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
'OutOfService' is taken over from Apartment

3.6.6.16 Parameter SubZone

FB: EHEA	Property Name (Server): SubZone	Mandatory ☒ Optional ☐

Description:

Number of the sub zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the SubZone	M	(0) 1...15		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	369 (EHEA)	Property ID:	103
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
'OutOfService' is taken over from Apartment

3.6.6.17 Parameter GenPeripheral

FB: EHEA	Property Name (Server): GenPeripheral	Mandatory ☐ Optional ☒

Description:

Number of the general peripheral tag.

DPT:	Name	DPT_UcountValue16_Z	DPT ID	203.012	Datatype format	$U_{16}Z_8$

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the SubZone	M	full		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	369 (EHEA)	Property ID:	104
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'

3.6.6.18 Zone t.b.d.

ev. Distribution Segment

3.6.6.19 Parameter HeaterMode

FB: EHEA	Property Name (Server): HeaterMode	Mandatory ☐ Optional ☒

Description:

Selection of the actuator function.

DPT:	Name	DPT_HeaterMode	DPT ID	20.110	Datatype format	N_8

Field	Description	Sup.	Range	Unit	Default
ActuatorMode	Definition of the actuator functionality	M	1...3	enum	1
ON/OFF Heat stage A	for ON/OFF heating	O	1		
Heat stage A	for normal heating	O	2		
Heat stage B	for heating with two stages	O	3		

Communication:

DP Address: (in the server)	IO Type(ID):	369 (EHEA)	Property ID:	111
	Start-Index:	1	N° of elements	1
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:

3.7 HVAC ON/OFF Actuator (HOOA)

3.7.1 Aims and objectives

The Functional Block ‘HVAC ON/OFF Actuator’ contains the functionality for the following "ON/OFF valves":
- Heating ON/OFF Stage A
- Heating ON/OFF Stage B
- Cooling ON/OFF Stage A
- Cooling ON/OFF Stage B
- Heating / Cooling ON/OFF for changeover applications

It is possible to implement only part of this functionality.

The Functional Block translates the ON/OFF value information to the electrical output and eventually provides the system with the actual feedback value.

3.7.2 Functional Specifications

As the distribution of the information in the system is event-driven
(COV-condition, change of value) and in addition repeated periodically, the input has a timeout.

The 'HVAC ON/OFF Actuator' supports the following LTE zoning:
- "Apartment . Room . SubZone"
- "General Peripheral Tag".

Optional function:
- Faults in the valve actuator device may be detected and reported in the ActStatHeatStageA etc.
- The ActStatSetpHeatStageA etc. may temporary be overridden by means of a tool for service purpose.
  The ‘Overridden’ condition must be reported.

Behaviour of the valve if no valid position setpoint is available (company specific):
- close the valve
- open the valve
- leave position unchanged

Inputs

- ActStatSetpHeatStageA — This is the actuator status setpoint given by a controller.
- ActStatSetpHeatStageB — ditto
- ActStatSetpCoolStageA — ditto
- ActStatSetpCoolStageB — ditto

Outputs

- ActStatHeatStageA — This is the effective status of the valve, in LTE together with attributes to define special situations.
- ActStatHeatStageB — ditto
- ActStatCoolStageA — ditto
- ActStatCoolStageB — ditto
- ActStatHeatCool — ditto
- Fault — Fault indication in S-Mode
- Overridden — Overridden indication in S-Mode
- CalibrationMode — CalibrationMode indication in S-Mode
- ValveKick — ValveKick indication in S-Mode

Binding Group (LTE)

- Apartment . Room . SubZone General Peripheral — This valve can be used in different applications. For this reason different binding possibilities are offered. The binding group that shall not be active has to be set to out of service. It is possible to realise only one of the possibilities.

Parameters

- ValveMode — This parameter is used when a device contains more than one valve actuator functionality. The following table shows the modes and the corresponding implementation of the inputs / outputs:

		Implementation of												
		Inputs				Outputs								
ValveMode		ActStatSetp HeatStageA	ActStatSetp HeatStageB	ActStatSetp CoolStageA	ActStatSetp CoolStageB	ActStat HeatStagA	ActStat HeatStagB	ActStat CoolStagA	ActStat CoolStagB	ActStat HeatCool	Fault	Overridden	CalobrationMode	ValveKick
1	Heating ON/OFF Stage A	M				O					(GO)	(GO)	(GO)	(GO)
2	Heating ON/OFF Stage B		M				O				(GO)	(GO)	(GO)	(GO)
3	Cooling ON/OFF Stage A			M				O			(GO)	(GO)	(GO)	(GO)
4	Cooling ON/OFF Stage B				M				O		(GO)	(GO)	(GO)	(GO)
5	Heat Cool ON/OFF (for changeover)	M		M						O	(GO)	(GO)	(GO)	(GO)

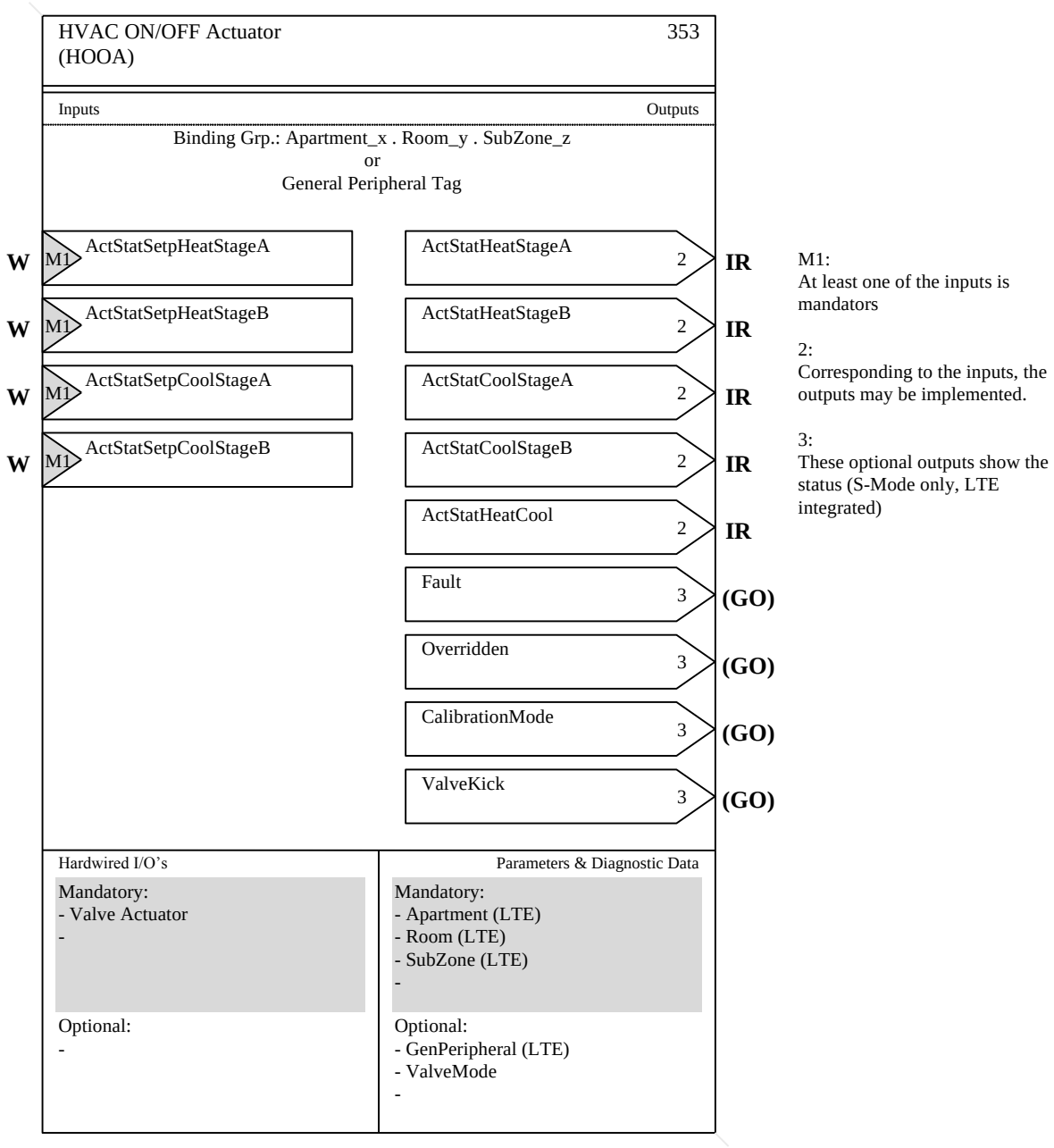
So if a device shall contain the functionality of
a Heating ON/OFF Stage A and a Cooling ON/OFF Stage A
the parameter ValveMode is necessary and can be 1 or 3 and
the following inputs are mandatory:
- ActStatSetpHeatStageA
- ActStatSetpCoolStageA

The corresponding outputs are optional.

3.7.3 Constraints

None.

3.7.4 Functional Block Diagram



3.7.5 Datapoint Description

Overview

Datapoints	Description / Remarks	Data Point Type	Additional Info
Inputs			
Act Stat Setp Heat StageA	Status value for the heating actuator stage A with: - COV and RepPer from FB Position to ON/OFF converter or various controller	LTE: 1.001 DPT_Switch B_1 S: 1.001 DPT_Switch B_1	LTE: M1 1) S: GO
Act Stat Setp Heat StageB	Status value for the heating actuator stage B with: - COV and RepPer from FB Position to ON/OFF converter or various controller	LTE: 1.001 DPT_Switch B_1 S: 1.001 DPT_Switch B_1	LTE: M1 1) S: GO
Act Stat Setp Cool StageA	Status value for the cooling actuator stage A with: - COV and RepPer from FB Position to ON/OFF converter or various controller	LTE: 1.001 DPT_Switch B_1 S: 1.001 DPT_Switch B_1	LTE: M1 1) S: GO
Act Stat Setp Cool StageB	Status value for the cooling actuator stage B with: - COV and RepPer from FB Position to ON/OFF converter or various controller	LTE: 1.001 DPT_Switch B_1 S: 1.001 DPT_Switch B_1	LTE: M1 1) S: GO

1) See Aims and objectives in clause 3.7.1.

Datapoints	Description / Remarks	Data Point Type	Additional Info
Outputs			
Act Stat Heat StageA	Status value of heating valve stage A with - COV and RepPer mainly to FB 'HMI' or supervisor	LTE: 1.001 DPT_Switch B_1 S: 1.001 DPT_Switch B_1	LTE: O2 1) S: (GO)
Act Stat Heat StageB	Status value of heating valve stage B with - COV and RepPer mainly to FB 'HMI or supervisor	LTE: 1.001 DPT_Switch B_1 S: 1.001 DPT_Switch B_1	LTE: O2 1) S: (GO)
Act Stat Cool StageA	Status value of cooling valve stage A with - COV and RepPer mainly to FB 'HMI' or supervisor	LTE: 1.001 DPT_Switch B_1 S: 1.001 DPT_Switch B_1	LTE: O2 1) S: (GO)

Datapoints	Description / Remarks	Data Point Type	Additional Info
Outputs			
Act Stat Cool StageB	Status value of cooling valve stage B with - COV and RepPer - Status B_8 'HMI' or supervisor	LTE: 1.001 DPT_Switch B_1 S: 1.001 DPT_Switch B_1	LTE: O2 1) S: (GO)
Act Stat Heat Cool	Status value of heat/cool valve (ChangeOver) with - COV and RepPer - Status B_8 'HMI' or supervisor	LTE: 1.001 DPT_Switch B_1 S: 1.001 DPT_Switch B_1	LTE: O2 1) S: (GO)
Fault	The actuator has a fault detected	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA 1) S: (GO) true/false
Overridden	The actuator is overridden (manually)	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA 1) S: (GO) true/false
CalibrationMode	The actuator is in the calibration Mode	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA 1) S: (GO) true/false
ValveKick	The valve is executing a valve kick	LTE: NA S: 1.002 DPT_Bool B_1	LTE: NA 1) S: (GO) true/false

1) See Aims and objectives in clause 3.7.1.

Datapoints	Description / Remarks	Data Point Type	Additional Info
Parameters			
Apartment	LTE zoning number for Apartment	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
Room	LTE zoning number for Room	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
SubZone	LTE zoning number for SubZone	202.002 DPT_UcountValue8_Z U_8Z_8	M 1
Gen Peripheral	LTE zoning number for general peripheral	203.012 DPT_UcountValue16_Z $U_{16}Z_8$	O 1
Valve Mode	Valve Mode: Defining the usage of the valve	20.107 2) DPT_ValveMode N_8	O 1

2) Implementation of Properties using standard DPT see clause 1.3.2

HVA Runtime Interworking - Dependence on Configuration Modes

			STANDARD MODE	EXTENDED MODE	
		Basic FB	S-Mode	Standard Mode Interface	LTE-MODE
Inputs	ActStatSetpHeatStageA	**GO_b** [1]	GO [1]	GO [1]	**M** [1]
	ActStatSetpHeatStageB	**GO_b** [1]	GO [1]	GO [1]	**M** [1]
	ActStatSetpCoolStageA	**GO_b** [1]	GO [1]	GO [1]	**M** [1]
	ActStatSetpCoolStageA	**GO_b** [1]	GO [1]	GO [1]	**M** [1]
Outputs	ActStatHeatStageA	**$(GO)_b$**		(GO)	**O**
	ActStatHeatStageB	**$(GO)_b$**		(GO)	**O**
	ActStatCoolStageA	**$(GO)_b$**		(GO)	**O**
	ActStatCoolStageB	**$(GO)_b$**		(GO)	**O**
	ActStatHeatCool	**$(GO)_b$**		(GO)	**O**
	Fault	**$(GO)_b$**		(GO)	**NA**
	Overridden	**$(GO)_b$**		(GO)	**NA**
	CalibrationMode	**$(GO)_b$**		(GO)	**NA**
	ValveKick	**$(GO)_b$**		(GO)	**NA**

[1] See Aims and objectives 3.2.1

HVA LTE specific Properties

		Support
Parameter	Apartment	**M**
	Room	**M**
	SubZone	**M**
	GenPeripheral	**O**

HVA Standard Properties of Interface Objects (or memory mapped DP)

		Support
Parameter	ValveMode	**O**

3.7.6 Detailed Specification of the Datapoints

3.7.6.1 Input ActStatSetpHeatStageA

Standard Mode

DP Name:	ActStatSetpHeatStageA	Abbr.:	---	Mandatory	☒
FB Name:	HOOA			Can be internal	☐

Description

This input signal contains the ON/OFF setpoint value for the valve position (HeatStageA).

Datapoint Type

DPT_Name:	DPT_Switch				
DPT Format:	B_1	DPT_ID:	1.001		
Field	Description	Supp.	Range	Unit	Default
			ON/OFF		cs

Access Type

♦ Input

N → this	☐	1 → this	☒			
Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)	
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

Special Features

LTE-Mode

FB: HOOA	LTE Server Input Name: ActStatSetpHeatStageA	Mandatory ☒ Optional ☐

Description:

This input receives the ON/OFF setpoint value for the valve position (HeatStageA).

DPT:	Name	DPT_Switch	DPT ID	1.001	Datatype format	B_1

Field	Description	Sup.	Unit	Default
Actuator position	ON/OFF	M		0

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	353 (HOOA)	Property ID:	51
LTE-Service (event): Write ☒	Timeout:	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up:	Default Value ☒	Stored Value ☐
Exception Handling:		Save at Power-down ☐

Special Features:

3.7.6.2 Input ActStatSetpHeatStageB

Standard Mode

DP Name:	ActStatSetpHeatStageB	Abbr.:	---	Mandatory	☒
FB Name:	HOOA			Can be internal	☐

Description

This input signal contains the ON/OFF setpoint value for the valve position (HeatStageB).

Datapoint Type

DPT_Name:	DPT_Switch		
DPT Format:	B_1	DPT_ID:	1.001

Field	Description	Supp.	Range	Unit	Default
			ON/OFF		cs

Access Type

♦ Input

N → this	☐	1 → this	☒

Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

Special Features

LTE-Mode

FB: HOOA	LTE Server Input Name: ActPosSetpHeatStageB	Mandatory ☒ Optional ☐

Description:

This input receives the ON/OFF setpoint value for the valve position (HeatStageB).

DPT:	Name	DPT_Switch	DPT ID	1.001	Datatype format	B_1

Field	Description	Sup.	Unit	Default
Actuator position	ON/OFF	M		0

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	353 (HOOA)	Property ID:	52
LTE-Service (event): Write ☒	Timeout:	31	Min	
Property-Service (individual access):	Read only ☐	Read/Write ☒		

Value after Power-up:	Default Value ☒	Stored Value ☐
Exception Handling:		Save at Power-down ☐

Special Features:

3.7.6.3 Input ActStatSetpCoolStageA

Standard Mode

DP Name:	ActStatSetpCoolStageA	Abbr.:	---	Mandatory	☒
FB Name:	HOOA			Can be internal	☐

Description

This input signal contains the ON/OFF setpoint value for the valve position (CoolStageA).

Datapoint Type

DPT_Name:	DPT_Switch		
DPT Format:	B_1	DPT_ID:	1.001

Field	Description	Supp.	Range	Unit	Default
			ON/OFF		cs

Access Type

♦ Input

N → this	☐	1 → this	☒

Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

Special Features

LTE-Mode

FB: HOOA	LTE Server Input Name: ActStatSetpCoolStageA	Mandatory ☒ Optional ☐

Description:

This input receives the ON/OFF setpoint value for the valve position (CoolStageA).

DPT:	Name	DPT_Switch	DPT ID	1.001	Datatype format	B_1

Field	Description	Sup.	Unit	Default
Actuator position	ON/OFF	M		0

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	353 (HOOA)	Property ID:	53
LTE-Service (event): Write ☒	Timeout:	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up:	Default Value ☒	Stored Value ☐
Exception Handling:		Save at Power-down ☐

Special Features:

3.7.6.4 Input ActStatSetpCoolStageB

Standard Mode

DP Name:	ActStatSetpCoolStageB	Abbr.:	---	Mandatory	☒
FB Name:	HOOA			Can be internal	☐

Description

This input signal contains the ON/OFF setpoint value for the valve position (CoolStageB).

Datapoint Type

DPT_Name:	DPT_Switch		
DPT Format:	B_1	DPT_ID:	1.001

Field	Description	Supp.	Range	Unit	Default
			ON/OFF		cs

Access Type

♦ Input

N → this	☐	1 → this	☒

Spontaneous	☒	Cyclically:	☒	Time-out:	31 min (rec.)
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:	☐		☐
			☐	Read from bus:	☐

Exception Handling

Special Features

LTE-Mode

FB: HOOA	LTE Server Input Name: ActPosSetpCoolStageB	Mandatory ☒ Optional ☐

Description:

This input receives the ON/OFF setpoint value for the valve position (CoolStageB).

DPT:	Name	DPT_Switch	DPT ID	1.001	Datatype format	B_1

Field	Description	Sup.	Unit	Default
Actuator position	ON/OFF	M		0

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	353 (HOOA)	Property ID:	54
LTE-Service (event): Write ☒	Timeout:	31	Min	
Property-Service (individual access):	Read only ☐		Read/Write ☒	

Value after Power-up: Default Value ☒ Stored Value ☐

Exception Handling: Save at Power-down ☐

Special Features:

3.7.6.5 Output ActStatHeatStageA

Standard Mode

DP Name:	ActStatHeatStageA	Abbr.:	---	Mandatory	☐
FB Name:	HOOA			Can be internal	☐

Description

This datapoint contains the ON/OFF value of the actual actuator position (HeatStageA).

Datapoint Type

DPT_Name:	DPT_Switch		
DPT Format:	B_1	DPT_ID:	1.001

Field	Description	Supp.	Range	Unit	Default
			ON/OFF		cs

Access Type

♦ Output

this → M	☒	this → 1	☐

Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

♦ Group Object Datapoint Mandatory: ☐

Default Group Address: ---

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

LTE-Mode

FB: **HOOA**	**LTE Server Output Name:** **ActStatHeatStageA**	Mandatory ☐ Optional ☒

Description:

This output contains the ON/OFF value of the actual actuator position (HeatStageA).

DPT:	Name	DPT_Switch	DPT ID	1.001	Datatype format	B_1

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	Actual actuator position	M	ON/OFF		Y	cs

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	353 (HOOA)	Property ID:	55
LTE-Services (event):	COV ☒	MinRepTime: 10 sec	Heartbeat: 15 min	
InfoReport ☒	Output per default communicating ☐		Binding Group Wildcard allowed ☐	
	Tx Prio:	High ☐	Normal ☒	Low ☐
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☒	Read/Write ☐		

Exception Handling: Save at Powerdown ☐

Special Features:

3.7.6.6 Output ActStatHeatStageB

Standard Mode

DP Name:	ActStatHeatStageB	Abbr.:	---	Mandatory	☐
FB Name:	HOOA			Can be internal	☐

Description

This datapoint contains the ON/OFF value of the actual actuator position (HeatStageB).

Datapoint Type

DPT_Name:	DPT_Switch				
DPT Format:	B_1	DPT_ID:	1.001		
Field	Description	Supp.	Range	Unit	Default
			ON/OFF		cs

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

LTE-Mode

FB: **HOOA**	**LTE Server Output Name:** **ActStatHeatStageB**	Mandatory ☐ Optional ☒

Description:

This output contains the ON/OFF value of the actual actuator position (HeatStageB).

DPT:	Name	DPT_Switch	DPT ID	1.001	Datatype format	B_1

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	Actual actuator position	M	ON/OFF		Y	cs

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID): 353 (HOOA)	Property ID: 56		
LTE-Services (event):	COV ☒	MinRepTime: 10 sec	Heartbeat: 15 min	
InfoReport ☒	Output per default communicating ☐	Binding Group Wildcard allowed ☐		
	Tx Prio:	High ☐	Normal ☒	Low ☐
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☒	Read/Write ☐		

Exception Handling: Save at Powerdown ☐

Special Features:

3.7.6.7 Output ActStatCoolStageA

Standard Mode

DP Name:	ActStatCoolStageA	Abbr.:	---	Mandatory	☐
FB Name:	HOOA			Can be internal	☐

Description

This datapoint contains the ON/OFF value of the actual actuator position (CoolStageA).

Datapoint Type

DPT_Name:	DPT_Switch				
DPT Format:	B_1	DPT_ID:	1.001		
Field	Description	Supp.	Range	Unit	Default
			ON/OFF		cs

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

LTE-Mode

FB: **HOOA**	**LTE Server Output Name:** **ActStatCoolStageA**	Mandatory ☐ Optional ☒

Description:

This output contains the ON/OFF value of the actual actuator position (CoolStageA).

DPT:	Name	DPT_Switch	DPT ID	1.001	Datatype format	B_1

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	Actual actuator position	M	ON/OFF		Y	cs

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID):	353 (HOOA)	Property ID:	57	
LTE-Services (event):	COV ☒	MinRepTime:	10 sec	Heartbeat:	15 min
InfoReport ☒	Output per default communicating ☐		Binding Group Wildcard allowed ☐		
	Tx Prio:	High ☐	Normal ☒	Low ☐	
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐		Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☒		Read/Write ☐		

Exception Handling:	Save at Powerdown ☐

Special Features:

3.7.6.8 Output ActStatCoolStageB

Standard Mode

DP Name:	ActStatCoolStageB	Abbr.:	---	Mandatory	☐
FB Name:	HOOA			Can be internal	☐

Description

This datapoint contains the ON/OFF value of the actual actuator position (CoolStageB).

Datapoint Type

DPT_Name:	DPT_Switch				
DPT Format:	B_1	DPT_ID:	1.001		
Field	Description	Supp.	Range	Unit	Default
			ON/OFF		cs

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

LTE-Mode

FB: **HOOA**	**LTE Server Output Name:** **ActStatCoolStageB**	Mandatory ☐ Optional ☒

Description:

This output contains the ON/OFF value of the actual actuator position (CoolStageB).

DPT:	Name	DPT_Switch	DPT ID	1.001	Datatype format	B_1

Field	Description	Sup.	Range	Unit	COV	Default
ActPos	Actual actuator position	M	ON/OFF		Y	cs

Communication:

Binding Group:

Class	Type	Default
Geographical ☒	Apartment . Room . SubZone	1.1.1
Application Specific ☒	GenPeripheral	1
Unassigned ☐	Broadcast ☐ Configurable ☐	

DP Address:	IO Type(ID): 353 (HOOA)	Property ID: 58		
LTE-Services (event):	COV ☒	MinRepTime: 10 sec	Heartbeat: 15 min	
InfoReport ☒	Output per default communicating ☐	Binding Group Wildcard allowed ☐		
	Tx Prio:	High ☐	Normal ☒	Low ☐
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐	Act Value ☒	Default Value ☐	
Property-Service (individual access):	Read only ☒	Read/Write ☐		

Exception Handling: Save at Powerdown ☐

Special Features:

3.7.6.9 Output ActStatHeatCool

Standard Mode

DP Name:	ActStatHeatCool			Abbr.:	---			Mandatory	☐		
FB Name:	HOOA							Can be internal	☐		
Description											
This datapoint contains the ON/OFF value of the actual actuator position (HeatCool).											
Datapoint Type											
DPT_Name:	DPT_Switch										
DPT Format:	B_1					DPT_ID:	1.001				
Field	Description					Supp.	Range		Unit	Default	
							ON/OFF			cs	
Access Type											
♦ Output											
this → M	☒	this → 1	☐								
Spontaneous	☒	COV:	☒	Delta-Value:	1	MinRepTime:	10 sec				
		Cyclic	☒	Period:	15 min (recommended value)						
Request	☒										
Communication Type											
♦ Group Object Datapoint								Mandatory:	☐		
Default Group Address:	---										
Dynamics											
Power down:	Save:	☐									
Power up:	Value:	No initialisation:	☐			Default value:	☐				
		Saved value:	☐			Actual value:	☒				
	Transmit on bus:	☒					☐				
Exception Handling											

Special Features											

LTE-Mode

FB: **HOOA**	**LTE Server Output Name:** **ActStatHeatCool**					Mandatory ☐ Optional ☒	
Description:							
This output contains the ON/OFF value of the actual actuator position (HeatCool).							
DPT: Name	DPT_Switch	DPT ID	1.001	Datatype format	B_1		
Field	Description	Sup.	Range	Unit	COV	Default	
ActPos	Actual actuator position	M	ON/OFF		Y	cs	

Communication:			
Binding Group:			
Class	Type	Default	
Geographical ☒	Apartment . Room . SubZone	1.1.1	
Application Specific ☒	GenPeripheral	1	
Unassigned ☐	Broadcast ☐ Configurable ☐		
DP Address:	IO Type(ID): 353 (HOOA) Property ID: 59		
LTE-Services (event):	COV ☒ MinRepTime: 10 sec Heartbeat: 15 min		
InfoReport ☒	Output per default communicating ☐ Binding Group Wildcard allowed ☐		
	Tx Prio: High ☐ Normal ☒ Low ☐		
(LTE Read-Response polling of the output shall always be supported)	Transm after Power-up: Stored Value ☐ Act Value ☒ Default Value ☐		
Property-Service (individual access):	Read only ☒ Read/Write ☐		
Exception Handling:			Save at Powerdown ☐

Special Features:			

3.7.6.10 Output Fault

LTE-Mode

Not available.

Standard Mode

DP Name:	Fault	Abbr.:	---	Mandatory	☐
FB Name:	HOOA			Can be internal	☐

Description

This datapoint may indicate a fault in the actuator (S-Mode only) see also ActStat.....

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

3.7.6.11 Output Overridden

LTE-Mode

Not available.

Standard Mode

DP Name:	Overridden	Abbr.:	---	Mandatory	☐
FB Name:	HOOA			Can be internal	☐

Description

This datapoint may indicate that the actuator is overridden (S-Mode only) see also ActStat.....

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			True/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐					
Power up:	Value:	No initialisation:	☐		Default value:		☐
		Saved value:	☐		Actual value:		☒
	Transmit on bus:		☒				☐

Exception Handling

Special Features

3.7.6.12 Output CalibrationMode

LTE-Mode

Not available.

Standard Mode

DP Name:	CalibrationMode	Abbr.:	---	Mandatory	☐
FB Name:	HOOA			Can be internal	☐

Description

This datapoint may indicate that the actuator is in the calibration mode (S-Mode only) see also ActStat.....

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

3.7.6.13 Output ValveKick

LTE-Mode

Not available.

Standard Mode

DP Name:	ValveKick	Abbr.:	---	Mandatory	☐
FB Name:	HOOA			Can be internal	☐

Description

This datapoint may indicate a valve kick (S-Mode only) see also ActPStat.....

Datapoint Type

DPT_Name:	DPT_Bool				
DPT Format:	B_1	DPT_ID:	1.002		
Field	Description	Supp.	Range	Unit	Default
			true/false	bool	0

Access Type

♦ Output

this → M	☒	this → 1	☐				
Spontaneous	☒	COV:	☒	Delta-Value:		MinRepTime:	10 sec
		Cyclic	☒	Period:	15 min (recommended value)		
Request	☒						

Communication Type

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

Dynamics

Power down:	Save:	☐			
Power up:	Value:	No initialisation:	☐	Default value:	☐
		Saved value:	☐	Actual value:	☒
	Transmit on bus:	☒			☐

Exception Handling

Special Features

3.7.6.14 Parameter Apartment

FB: HOOA	Property Name (Server): Apartment	Mandatory ☒ Optional ☐

Description:

Number of the apartment zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the apartment zone	M	(0) 1...126		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	353 (HOOA)	Property ID:	101
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
If Apartment is 'OutOfService' Room and SubZone automatically are 'OutOfService'

3.7.6.15 Parameter Room

FB: HOOA	Property Name (Server): Room	Mandatory ☒ Optional ☐

Description:

Number of the room zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the room zone	M	(0) 1...63		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	353 (HOOA)	Property ID:	102
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
'OutOfService' is taken over from Apartment

3.7.6.16 Parameter SubZone

FB: HOOA	Property Name (Server): SubZone	Mandatory ☒ Optional ☐

Description:

Number of the sub zone.

DPT:	Name	DPT_UcountValue8_Z	DPT ID	202.002	Datatype format	U_8Z_8

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the SubZone	M	(0) 1...15		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	353 (HOOA)	Property ID:	103
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'
'OutOfService' is taken over from Apartment

3.7.6.17 Parameter GenPeripheral

FB: HOOA	Property Name (Server): GenPeripheral	Mandatory ☐ Optional ☒

Description:

Number of the general peripheral tag.

DPT:	Name	DPT_UcountValue16_Z	DPT ID	203.012	Datatype format	$U_{16}Z_8$

Field	Description	Sup.	Range	Unit	Default
Zone	Number of the SubZone	M	full		1
STATUS				Bitset	
- OutofService	zone active / inactive	O	true/false	Bit 0	false
- all other bits	not supported, fixed to '0'	NA			false
COMMAND			enum		cs
- NormalWrite		M	0		
- SetOSV & ResetOSV	Set zone inactive / active	O	3 / 4		
- all other commands	not supported	NA			

Communication:

DP Address: (in the server)	IO Type(ID):	353 (HOOA)	Property ID:	104
	Start-Index:	1	N° of elements	1
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:

Zone = 0 (wildcard): Sends to all listeners
The device is not LTE communicating in this zone if it is 'OutOfService'

3.7.6.18 Parameter ValveMode

FB: HOOA	Property Name (Server): ValveMode	Mandatory ☐ Optional ☒

Description:

Selection of the valve function.

DPT:	Name	DPT_ValveMode	DPT ID	20.108	Datatype format	N_8

Field	Description	Sup.	Range	Unit	Default
ValveMode	Definition of the valve functionality	M	1...5	enum	1
Heat stage A	for normal heating	O	1		
Heat stage B	for heating with two stages	O	2		
Cool stage A	for normal cooling	O	3		
Cool stage B	for cooling with two stages	O	4		
HeatCool	for changeover applications	O	5		

Communication:

DP Address:	IO Type(ID):	353 (HOOA)	Property ID:	111
(in the server)	Start-Index:	1	N° of elements	1
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:
