Träum Deutsche Elektronik GmbH

UA.2416.01

24 Fold - 16A Switch, Shutter, FanCoil, Heating Actuator and Universal Interface, 2 Fold

TECHNICAL AND APPLICATION DESCRIPTION

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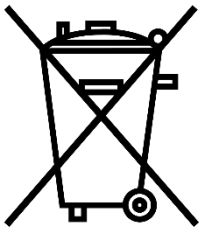
Contents

Important Safety, Installation and Maintenance

Important Safety Notes

- Installation and commissioning of the device only to be carried out by authorized electricians /engineers. The relevant standards, directives, regulations and instructions must be observed
- For planning and construction of electric installations the appropriate specifications, guidelines and regulations in force of the respective country have to be complied.
- After Installation and connecting mains power supply the outputs can be alive. Terminals and connections under current must be covered completely against touching.
- Disconnect the mains power supply prior to installation or disassembly.
- Danger High Voltage, screw terminals can support 230VAC x 16A loads.
- Do not connect the mains voltage nor any other external voltage to any point of the KNX bus and Universal Input ports.
- Connect the KNX bus line as for common KNX bus connections with a KNX TP bus cable, to be stripped and plugged into a KNX TP connector.
- Terminals and connections under current must be covered completely against touching.
- Installation only in dry and clean locations.
- Designed only for use in distribution boards and enclosed housings.
- Keep the device away from water and do not cover it with clothes, paper or any other material while in use.
- This device must not be used with devices, which serve directly or indirectly the purpose of human, health- or lifesaving and must not be used if their usage can occur danger for humans, animals or material assets.
- Do not let the packaging lying around careless, plastic foil/ -bags etc. can be a dangerous toy for kids.
- Do not open the device and do not operate it outside the scope of the technical specifications.



Recycling

WEEE - This Product falls within the scope of the Waste Electrical & Electronic Equipment Directive 2002/96 EC (WEEE).

This product should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority for recycling advice.

Please note:

This device is **not suitable for** and is **not intended for** and is **not allowed for** sell and install in **USA** and **CANADA**!

Installation and Maintenance Notes

- Electrical shock when live parts are touched. Electrical shocks can be fatal.
- Terminals and connections under current must be covered completely against touching.
- Accessibility of the device for operation and visual inspection must be provided.
- The housing must not be opened
- Protect the device from moisture, dirt and damage
- The device needs no maintenance
- If necessary, the device can be cleaned with a dry cloth
- In the case of damage, no repairs may be carried out by unauthorized personnel
- Do not throw the waste equipment in the household rubbish. The device contains electrical devices, which must be disposed as electronic scrap. The casing contains of recyclable synthetic material.
- Before working on the device or before replacing any connected loads, disconnect the supply voltage (by cutting out the circuit breaker) to avoid the risk of an electric shock.
- Failure to observe any of the installation instructions may cause damage to the device and result in fire and other hazards.
- Electrical shock on all SELV/PELV circuits when loads for mains voltage and SELV/PELV are both connected to an actuator.
- Electrical shocks can be fatal. Danger of destruction of all devices connected to the SELV/PELV.
- Do not connect any loads for SELV/PELV/FELV!
- For mounting and dismounting only use an appropriate rail equipment according to IEC60715
-
- For parallel connection of several shutter/blind drives to an output it is indispensable to observe the corresponding instructions of the manufacturers. There is otherwise risk of irreparable damage to the drives.
- Do not connect any three-phase shutter/blind motors.
- Use only drive shutter/blind motors with mechanical or electronic limit switches. Check the limit switches for correct adjustment. Observe the specifications of the motor manufacturers.
- Danger of destruction if several shutter/blind motors or fan coils are connected in parallel to one output.
- Observe the manufacturer's instructions. Use cutoff relay if necessary!
- Incorrect control of the load in case of incorrect device configuration in the ETS!
- Danger of destruction of the connected fan coils units.
- Adapt the device configuration (output assignment) in the ETS to the connected load! When commissioning the actuator, switch the mains voltage supply for the loads on only after the ETS commissioning has been performed!
- Risk of death from electric shock.Mishandling of the device may causedamage. Safety clearance must beadhered to in accordance with IEC 60664-1. There must be at least4 mm between the individual cores ofthe 230 V supply cable and the KNX bus cable.

1 Overview

1.1 General

Whether in a single-family house or in an office complex, the demand for comfort and versatility in the management of air-conditioning, lighting and access control systems is growing. At the same time, the efficient use of energy is becoming increasingly important. These requirements can be met cost-effectively with minimal planning and installation effort using the KNX. Furthermore, flexible room usage and continuous adaptation to changing requirements are simple to implement.
TDE Ultra Actuators fulfill individual requirements in industrial, commercial and public buildings as well as in the private sector for controlling:

- Switch (illumination)
- Shutter/Blind
- FanCoil
- Heating Actuator
- Dry contact as Universal Interface

TDE Ultra Actuator has 24 outputs with 16A bistable relays. The device provides the traditional switch functions additional functions for opening and closing shutters, adjusting blinds, monitoring valves and controlling 3-speed FanCoil devices with 2 pipes. A manual control of each output can be used to control its output also status of outputs shows on their LED.
Additionally, it has 2 Universal Interface for converting any conventional push-button panels into a KNX signal source.

1.2 Functions

UA.2416.01

Ultra Actuator UA.2416.01 from TDE is a versatile KNX actuators:

- 24 independent 16A output can be configured as:
  - Up to 24 switch outputs
  - Up to 12 shutter/Blind channels
  - Up to 24 Heating outputs
  - Up to 6 FanCoil 2 pipes control

With functions:

- 12 customizable, multi-operation logic functions
- 12 customizable, multi-operation converter functions
- Scene-triggered action control for switch and shutter/blind actuator
- Push Button and LED indicator for each output
- Time functions switch-on, switch-off, switch on/off delay
- Staircase light function
- Programmable behavior in case of bus voltage failure or return
- Status response for each output
- Control of 3-speed fans convectors
- Control heating, cooling or heating/cooling FanCoil systems
- Output objects to control valves
- Shutter or Blind operation mode
- Separate travel time for up and down adjustable
- Separate objects for accurate positioning of shutter and/or slats
- Behavior after alarms and lock separately adjustable

- 2 Universal Interface channels:

  With functions:
  - To connect push-buttons or window/auxiliary contacts
  - NO or NC contact operation, adjustable length of button push
  - Locking function for each output
  - Operation with short/long button push and 2 objects

1.3 Technical data

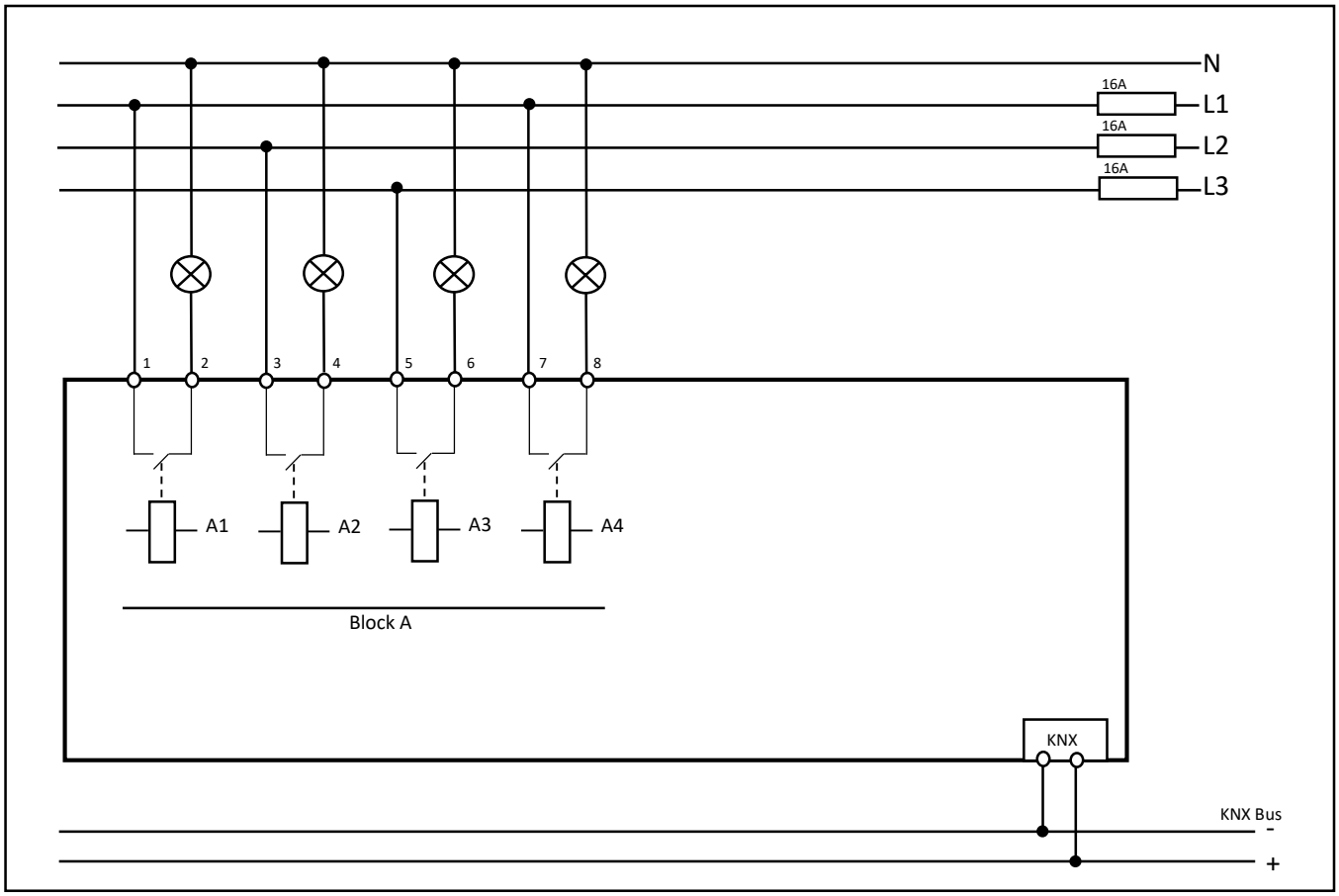
Ultra Actuator UA.2416.01		
Outputs	Number of outputs	24
	Operating & display elements	individual LED and push button for each output
	Output switching ratings: Ohmic load	16A
	Output switching ratings: Capacitive load	max. 140uF at 16A
	Output switching ratings: Voltage	230VAC
	Maximum inrush current	600A/150µs 250A/600µs
	Output life expectancy (mechanical)	1.000.000
	Permitted screw terminal	1 x 0,2 - 4,0mm² solid core 1 x 0,2 - 2,5mm² finely stranded
	Torque screw terminal	0,5Nm
Inputs*	Number of inputs	2
	Permitted input cable length	5m
	Permitted Screw terminal	1 x 0,14 - 0,5mm² solid core / finely stranded
KNX	Power supply	KNX bus, No external power supply require
	KNX supply bus voltage (typical)	29VDC SELV
	KNX supply bus voltage range	21….31 VDC
	Bus connection	Typical bus connector TP1 for rigid cable 0,8mm Ø, solid core
	Available application software	ETS4/5
Other	Operation temperature range	0 to + 45°C
	Enclosure	IP 20, clean environment
	Dimensions MDRC (Space Units)	12SU
	Dimensions	94 x 216 x 71 mm (H x W x D)
	Mounting	On 35 mm mounting rail, DIN EN 60715
	Weight	500 gram

Table 1-Technical data

* Inputs may not to be connected to 230V, any 230V cables are in the vicinity, make sure to maintain the distances to them specified as in the applicable standards and regulations.

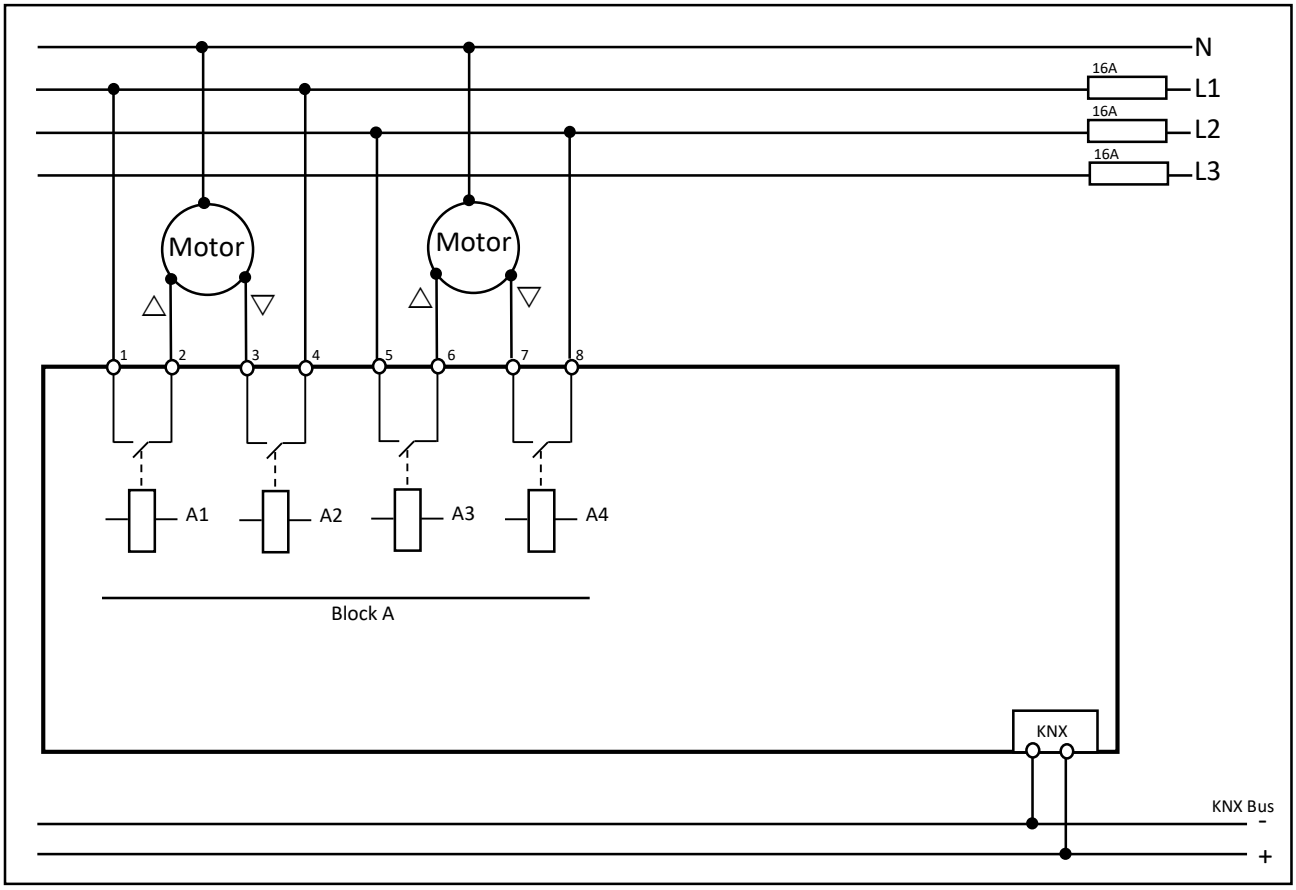
1.4 Circuit Diagram

1.4.1 Switch Actuator circuit diagram



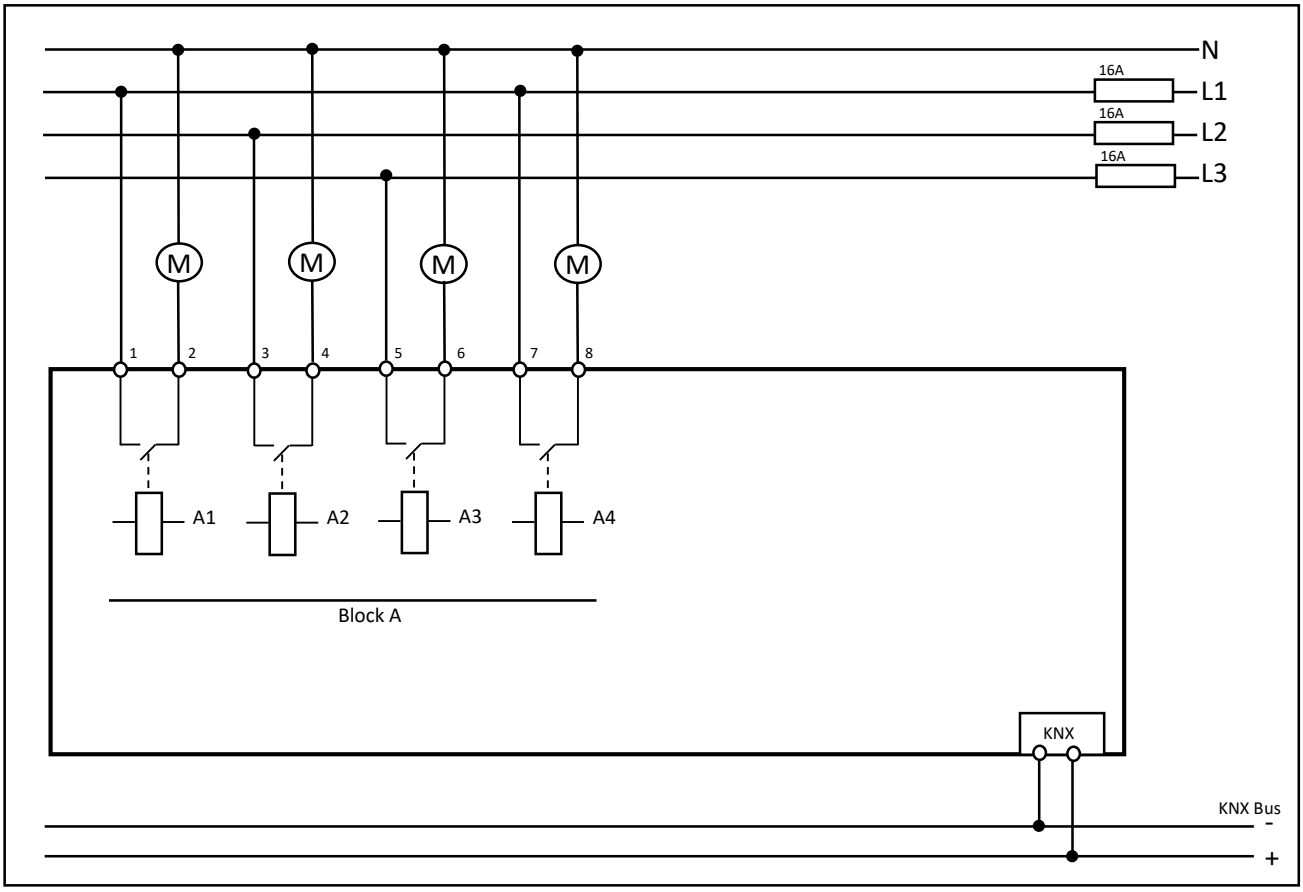
Picture 1-Switch Actuator circuit diagram

1.4.2 Shutter / Blind Actuator function circuit diagram



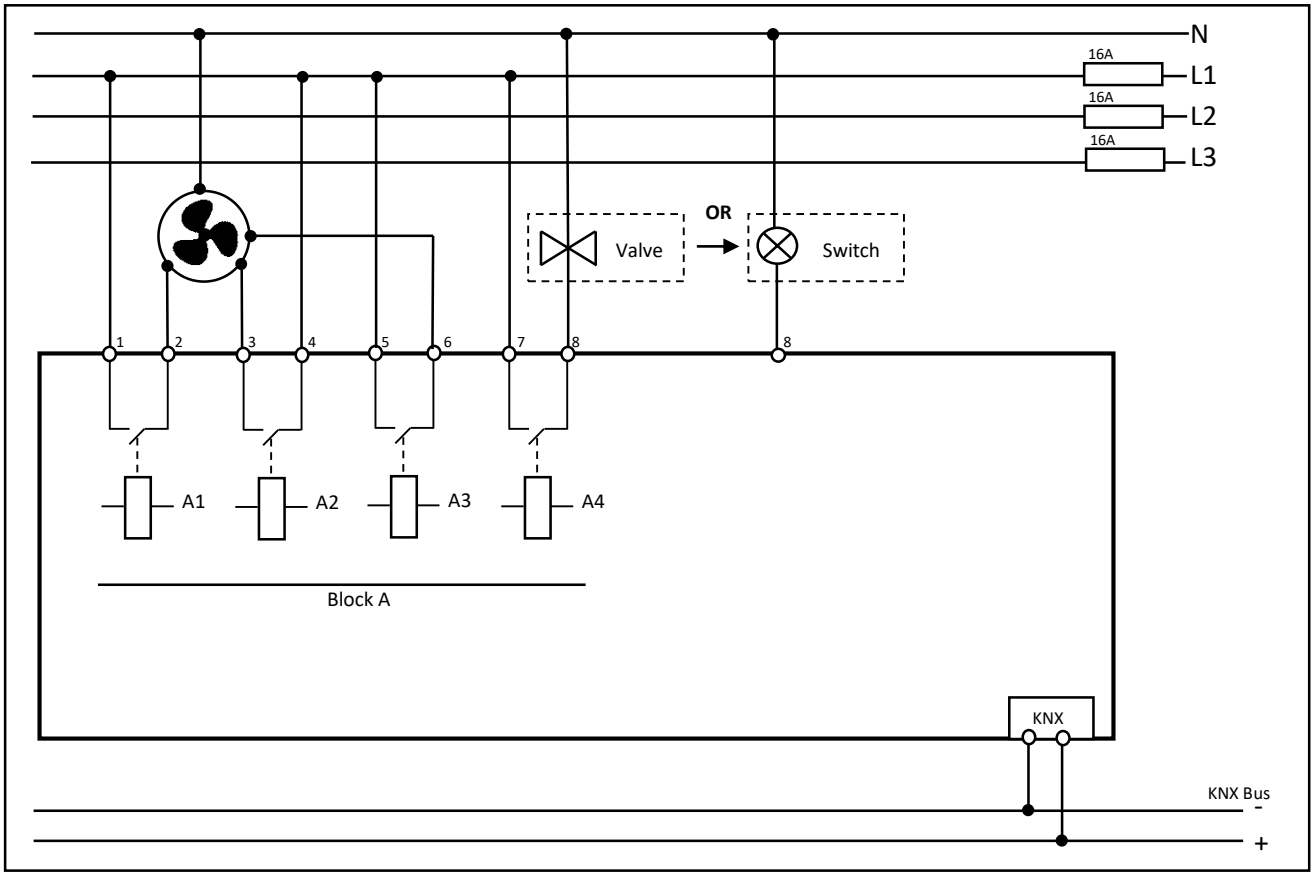
Picture 2-Shutter / Blind Actuator function circuit diagram

1.4.3 Heating Actuator function circuit diagram



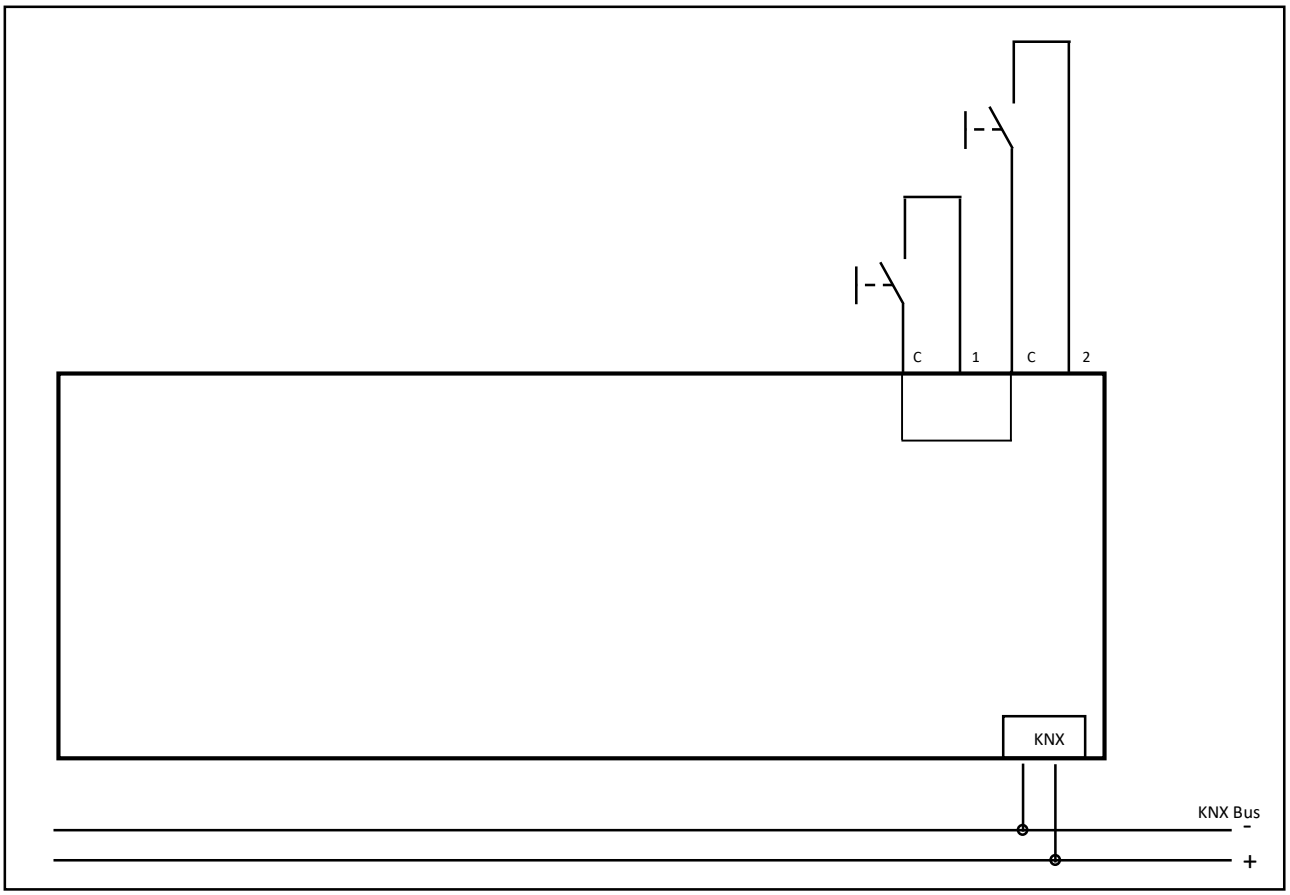
Picture 3-Heating Actuator function circuit diagram

1.4.4 FanCoil Actuator function circuit diagram



Picture 4- FanCoil Actuator function circuit diagram

1.4.5 Universal Interface function circuit diagram



Picture 5- Universal Interface function circuit diagram

1.5 Assembly and installation

TDE Ultra Actuators are modular installation devices for installation in the distribution board on 35 mm EN 60 715 mounting rails. The mounting position can be selected as required.
The electrical connection is implemented using screw terminals. The connection to the bus is implemented using the supplied bus connection terminal. The terminal designations are located on the housing.
The device is ready for operation after connection to the bus voltage.

1.5.1 Commissioning requirements

To commission the Ultra Actuators, a PC with ETS4/5 and an interface, e.g. USB or IP, are required. The device is ready for operation after connection to the bus voltage. Once the device is provided with power from the KNX bus, both the individual address and the associated application program may be downloaded.
The installation and commissioning may only be carried out by electrical specialists. The appropriate standards, guidelines, regulations and specifications should be observed when planning and setting up electrical installations.

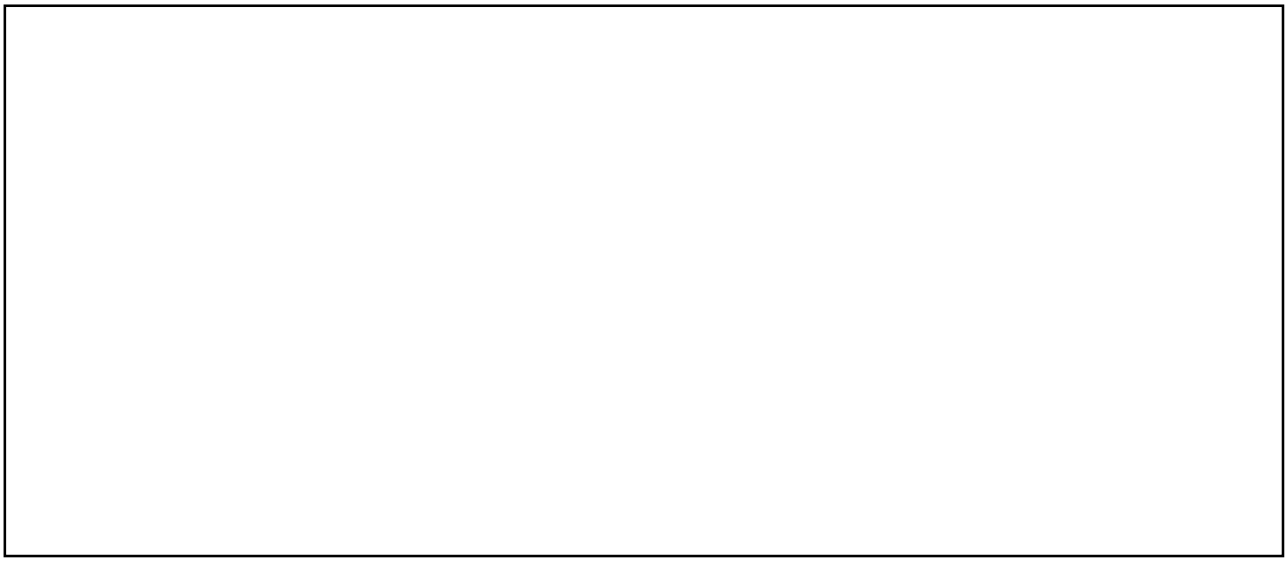
- Protect the device from damp, dirt and damage during transport, storage and operation.
- Only operate the device within the specified technical data!
- The device should only be operated in an enclosed housing (distribution board).

This device does not need any additional external power since it is entirely powered through the KNX bus.

1.5.2 Manual operation

With the exception of TDE UA.2416.01 variant, each outputs can be manually operated. They can be switched on or off with a button on the actuator. Every output of the device contains of a status-LEDs. Also it contains of a programming button as well as a programming-LED, which shows an activated programming button.

1.6 Hardware overview



Picture 6-Hardware Overview UA.2416.01

1. Upper Outputs
2. Lower Outputs
3. Universal Interface Inputs
4. Block name
5. Program Button
6. Program LED
7. KNX Bus Connection
8. Manual Control Pushbutton
9. Output Status LED Indicator
10. Physical Address Label

1.7 Functions

TDE UA.2416.01 have 6 same block as output and 2 Universal Interface as input. Block names are A, B, C, D, E and F. The functionally is same for all blocks. Each block has four independent 16A bistable relays. Relays in each output named 1, 2, 3 and 4. For example in Block A we have A1, A2, A3 and A4 relays. This is same for all other outputs. Universal Interface named 1 and 2 with same functionally to each other.

At the first step, every output can be selected as not active, Switch/Heating, Shutter/Blind or FanCoil

Relays Functions:

- **Disable**

  The output becomes no more functions allocated. There are no more opportunities to parameterize the relays in block.

- **Switch**

  Operating mode normally closed/normally open
  Locking function
  Timer with staircase, OFF, ON, OFF/ON delay
  Flashing timer
  Up to 8 scenes per output
  State and invertible state
  Behavior at bus power failure and bus power return adjustable

- **Heating**

  Three possibilities to control the heating valve
  Control two types of valve
  Ability to switch between summer and winter mode
  Locking function
  An automatic valve protection function
  Behavior at bus power failure and bus power return adjustable

- **Shutter/Blind**

  Controlling shutters and blinds
  Time delay for direction inversion
  Shutter/slat position indication
  Locking function

Alarm function
Up to 8 scenes per output
Ability to set the position of shutter/blind after bus power return

➘ **FanCoil**

Controlling 2 pipes FanCoil system with 3 Fan speeds
Controlling heating, cooling or heating/cooling FanCoil systems
Two fan operation mode
Automatic mode via control values come from thermostat or temperature sensor
Behavior at bus power failure and bus power return adjustable
Manually controlling the fan speed by three different ways
Air recirculation mode
Optional valve

Universal Interface Functions:

➘ **No**

There are no more opportunities to parameterize the Universal Interface.

➘ **Yes**

You will be able to parameterize each output for itself as switch, switch short/long button press and scene.
Switching function
Toggle function
Status function
Time functions: switch on/off delay
Edge evaluation
Lock object
Sending of byte-values
Scene function with save ability

Converter Functions:

➘ **No**

There are no more opportunities to parameterize the converter gates.

➘ **Yes**

Up to 12 converters
8 different types of data input
4 different types of data output

Logic Functions:

➘ **No**

There are no more opportunities to parameterize the Logic gates.

➘ **Yes**

12 individually switchable and parameterize able logic blocks

3 different logic gate operations (AND, OR, XOR)

Each logic block containing of up to 4 additional input objects

2 Communication Objects:

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
3	General Object	Lock Manual Control	1,011	1 Bit	×		×		
4	General Object	Operation	1,001	1 Bit	×	×		×	
5	Switch A1	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating A1	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	FanCoil A1,A2,A3	Fan Speed 1 (0=OFF;1=ON)	1,001	1 Bit	×		×		
6	Switch A1	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch A1	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating A1	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter A1,A2	Rising Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil A1,A2,A3	Fan Speed 1 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
7	Switch A1	Lock	1,011	1 Bit	×		×		
	Heating A1	Lock	1,011	1 Bit	×		×		
	Shutter A1,A2	Lock	1,011	1 Bit	×		×		
	Fancoil A1,A2,A3	Heating/Cooling Exchange	1,100	1 Bit	×		×		
8	Switch A1	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating A1	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Shutter A1,A2	Alarm (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Fancoil A1,A2,A3	Automatic ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
9	Switch A1	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Fancoil A1,A2,A3	Air Recirculation (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
10	Switch A1	Scene	18,001	1 Byte	×		×		×
	Heating A1	Control Value	5,001	1 Byte	×		×		
	Shutter A1,A2	Scene	18,001	1 Byte	×		×		×
11	Switch A2	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating A2	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil A1,A2,A3	Fan Speed 2 (0=OFF;1=ON)	1,001	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
12	Switch A2	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch A2	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating A2	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter A1,A2	Falling Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
13	Switch A2	Lock	1,011	1 Bit	×		×		
	Heating A2	Lock	1,011	1 Bit	×		×		
14	Switch A2	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating A2	Summer/Winter Exchange	1,001	1 Bit	×		×		
15	Switch A2	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
16	Switch A2	Scene	18,001	1 Byte	×		×		×
	Heating A2	Control Value	5,001	1 Byte	×		×		
17	Shutter A1,A2	Up/Down (0=Up;1=Down)	1,008	1 Bit	×		×		
18	Shutter A1,A2	Stop/Step (0=1=Stop/0=Step Up;1=Step Down)	1,007	1 Bit	×		×		
19	Shutter A1,A2	Shutter Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
20	Shutter A1,A2	Shutter Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
21	Shutter A1,A2	Slat Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
22	Shutter A1,A2	Slat Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
23	Shutter A1,A2	Drive to Position	1,001	1 Bit	×		×		
24	Switch A3	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating A3	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil A1,A2,A3	Fan Speed 3 (0=OFF;1=ON)	1,001	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
25	Switch A3	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch A3	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating A3	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter A3,A4	Rising Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil A1,A2,A3	Fan Speed 3 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
26	Switch A3	Lock	1,011	1 Bit	×		×		
	Heating A3	Lock	1,011	1 Bit	×		×		
	Shutter A3,A4	Lock	1,011	1 Bit	×		×		
27	Switch A3	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating A3	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Shutter A3,A4	Alarm (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
28	Switch A3	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
29	Switch A3	Scene	18,001	1 Byte	×		×		×
	Heating A3	Control Value	5,001	1 Byte	×		×		
	Shutter A3,A4	Scene	18,001	1 Byte	×		×		×
30	Fancoil A1,A2,A3	Fan Speed Status (0=OFF;1=S1;2=S2;3=S3)	5,010	1 Byte	×	×		×	
31	Fancoil A1,A2,A3	Fan Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
32	Fancoil A1,A2,A3	Fan Speed Up/Down (0=Down;1=Up)	1,007	1 Bit	×		×		
33	Fancoil A1,A2,A3	Fan Speed Switch (0=OFF;1=S1;2=S2;3=S3)	5,010	1 Byte	×		×		
34	Fancoil A1,A2,A3	Control Value (Heating)	5,001	1 Byte	×		×		
35	Fancoil A1,A2,A3	Control Value (Cooling)	5,001	1 Byte	×		×		
36	Fancoil A1,A2,A3	Valve Status (0=Closed;1=Open)	1,019	1 Bit	×	×		×	

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
37	Fancoil A1,A2,A3	Setpoint Adjustment	9,001	2 Bytes	×		×		
38	Fancoil A1,A2,A3	Temperature Value	9,001	2 Bytes	×		×		
39	Fancoil A1,A2,A3	Setpoint Offset (0=Deacrese;1=Increase)	1,007	1 Bit	×		×		
40	Fancoil A1,A2,A3	Setpoint Status	1,001	2 Bytes	×	×		×	
41	Switch A4	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Valve A4	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Heating A4	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
42	Switch A4	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch A4	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Valve A4	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Heating A4	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter A3,A4	Falling Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
43	Switch A4	Lock	1,011	1 Bit	×		×		
	Valve A4	Lock	1,011	1 Bit	×		×		
	Heating A4	Lock	1,011	1 Bit	×		×		
44	Switch A4	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Valve A4	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Heating A4	Summer/Winter Exchange	1,001	1 Bit	×		×		
45	Switch A4	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
46	Switch A4	Scene	18,001	1 Byte	×		×		×
	Valve A4	Control Value	5,001	1 Byte	×		×		
	Heating A4	Control Value	5,001	1 Byte	×		×		
47	Shutter A3,A4	Up/Down (0=Up;1=Down)	1,008	1 Bit	×		×		
48	Shutter A3,A4	Stop/Step (0=1=Stop/0=Step Up;1=Step Down)	1,007	1 Bit	×		×		
49	Shutter A3,A4	Shutter Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
50	Shutter A3,A4	Shutter Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
51	Shutter A3,A4	Slat Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
52	Shutter A3,A4	Slat Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
53	Shutter A3,A4	Drive to Position	1,001	1 Bit	×		×		
54	Switch B1	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating B1	Control Value	1,001	1 Bit	×		×		
	Fancoil B1,B2,B3	Fan Speed 1 (0=OFF;1=ON)	1,001	1 Bit	×		×		
55	Switch B1	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch B1	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating B1	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter B1,B2	Rising Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil B1,B2,B3	Fan Speed 1 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
56	Switch B1	Lock	1,011	1 Bit	×		×		
	Heating B1	Lock	1,011	1 Bit	×		×		
	Shutter B1,B2	Lock	1,011	1 Bit	×		×		
	Fancoil B1,B2,B3	Heating/Cooling Exchange	1,100	1 Bit	×		×		
57	Switch B1	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating B1	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Shutter B1,B2	Alarm (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Fancoil B1,B2,B3	Automatic ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
58	Switch B1	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Fancoil B1,B2,B3	Air Recirculation (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
59	Switch B1	Scene	18,001	1 Byte	×		×		×
	Heating B1	Control Value	5,001	1 Byte	×		×		
	Shutter B1,B2	Scene	18,001	1 Byte	×		×		×

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
60	Switch B2	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating B2	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil B1,B2,B3	Fan Speed 2 (0=OFF;1=ON)	1,001	1 Bit	×		×		
61	Switch B2	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch B2	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating B2	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter B1,B2	Falling Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil B1,B2,B3	Fan Speed 2 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
62	Switch B2	Lock	1,011	1 Bit	×		×		
	Heating B2	Lock	1,011	1 Bit	×		×		
63	Switch B2	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating B2	Summer/Winter Exchange	1,001	1 Bit	×		×		
64	Switch B2	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
65	Switch B2	Scene	18,001	1 Byte	×		×		×
	Heating B2	Control Value	5,001	1 Byte	×		×		
66	Shutter B1,B2	Up/Down (0=Up;1=Down)	1,008	1 Bit	×		×		
67	Shutter B1,B2	Stop/Step (0=1=Stop/0=Step Up;1=Step Down)	1,007	1 Bit	×		×		
68	Shutter B1,B2	Shutter Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
69	Shutter B1,B2	Shutter Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
70	Shutter B1,B2	Slat Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
71	Shutter B1,B2	Slat Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
72	Shutter B1,B2	Drive to Position	1,001	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
73	Switch B3	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating B3	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil B1,B2,B3	Fan Speed 3 (0=OFF;1=ON)	1,001	1 Bit	×		×		
74	Switch B3	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch B3	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating B3	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter B3,B4	Rising Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil B1,B2,B3	Fan Speed 3 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
75	Switch B3	Lock	1,011	1 Bit	×		×		
	Heating B3	Lock	1,011	1 Bit	×		×		
	Shutter B3,B4	Lock	1,011	1 Bit	×		×		
76	Switch B3	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating B3	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Shutter B3,B4	Alarm (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
77	Switch B3	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
78	Switch B3	Scene	18,001	1 Byte	×		×		×
	Heating B3	Control Value	5,001	1 Byte	×		×		
	Shutter B3,B4	Scene	18,001	1 Byte	×		×		×
79	Fancoil B1,B2,B3	Fan Speed Status (0=OFF;1=S1;2=S2;3=S3)	5,010	1 Byte	×	×		×	
80	Fancoil B1,B2,B3	Fan Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
81	Fancoil B1,B2,B3	Fan Speed Up/Down (0=Down;1=Up)	1,007	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
82	Fancoil B1,B2,B3	Fan Speed Switch (0=OFF;1=S1;2=S2;3=S3)	5,010	1 Byte	×		×		
83	Fancoil B1,B2,B3	Control Value (Heating)	5,001	1 Byte	×		×		
84	Fancoil B1,B2,B3	Control Value (Cooling)	5,001	1 Byte	×		×		
85	Fancoil B1,B2,B3	Valve Status (0=Closed;1=Open)	1,019	1 Bit	×	×		×	
86	Fancoil B1,B2,B3	Setpoint Adjustment	9,001	2 Bytes	×		×		
87	Fancoil B1,B2,B3	Temperature Value	9,001	2 Bytes	×		×		
88	Fancoil B1,B2,B3	Setpoint Offset (0=Deacrese;1=Increase)	1,007	1 Bit	×		×		
89	Fancoil B1,B2,B3	Setpoint Status	1,001	2 Bytes	×	×		×	
90	Switch B4	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating B4	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Valve B4	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
91	Switch B4	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch B4	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating B4	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Valve B4	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter B3,B4	Falling Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
92	Switch B4	Lock	1,011	1 Bit	×		×		
	Heating B4	Lock	1,011	1 Bit	×		×		
	Valve B4	Lock	1,011	1 Bit	×		×		
93	Switch B4	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating B4	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Valve B4	Summer/Winter Exchange	1,001	1 Bit	×		×		
94	Switch B4	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
95	Switch B4	Scene	18,001	1 Byte	×		×		×
	Heating B4	Control Value	5,001	1 Byte	×		×		
	Valve B4	Control Value	5,001	1 Byte	×		×		
96	Shutter B3,B4	Up/Down (0=Up;1=Down)	1,008	1 Bit	×		×		
97	Shutter B3,B4	Stop/Step (0=1=Stop/0=Step Up;1=Step Down)	1,007	1 Bit	×		×		
98	Shutter B3,B4	Shutter Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
99	Shutter B3,B4	Shutter Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
100	Shutter B3,B4	Slat Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
101	Shutter B3,B4	Slat Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
102	Shutter B3,B4	Drive to Position	1,001	1 Bit	×		×		
103	Switch C1	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating C1	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil C1,C2,C3	Fan Speed 1 (0=OFF;1=ON)	1,001	1 Bit	×		×		
104	Switch C1	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch C1	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating C1	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter C1,C2	Rising Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil C1,C2,C3	Fan Speed 1 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
105	Switch C1	Lock	1,011	1 Bit	×		×		
	Heating C1	Lock	1,011	1 Bit	×		×		
	Shutter C1,C2	Lock	1,011	1 Bit	×		×		
	Fancoil C1,C2,C3	Heating/Cooling Exchange	1,100	1 Bit	×		×		
106	Switch C1	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating C1	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Shutter C1,C2	Alarm (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Fancoil C1,C2,C3	Automatic ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
107	Switch C1	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Fancoil C1,C2,C3	Air Recirculation (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
108	Switch C1	Scene	18,001	1 Byte	×		×		×
	Heating C1	Control Value	5,001	1 Byte	×		×		
	Shutter C1,C2	Scene	18,001	1 Byte	×		×		×

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
109	Switch C2	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating C2	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil C1,C2,C3	Fan Speed 2 (0=OFF;1=ON)	1,001	1 Bit	×		×		
110	Switch C2	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch C2	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating C2	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter C1,C2	Falling Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil C1,C2,C3	Fan Speed 2 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
111	Switch C2	Lock	1,011	1 Bit	×		×		
	Heating C2	Lock	1,011	1 Bit	×		×		
112	Switch C2	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating C2	Summer/Winter Exchange	1,001	1 Bit	×		×		
113	Switch C2	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
114	Switch C2	Scene	18,001	1 Byte	×		×		×
	Heating C2	Control Value	5,001	1 Byte	×		×		
115	Shutter C1,C2	Up/Down (0=Up;1=Down)	1,008	1 Bit	×		×		
116	Shutter C1,C2	Stop/Step (0=1=Stop/0=Step Up;1=Step Down)	1,007	1 Bit	×		×		
117	Shutter C1,C2	Shutter Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
118	Shutter C1,C2	Shutter Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
119	Shutter C1,C2	Slat Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
120	Shutter C1,C2	Slat Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
121	Shutter C1,C2	Drive to Position	1,001	1 Bit	×		×		
122	Switch C3	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating C3	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil C1,C2,C3	Fan Speed 3 (0=OFF;1=ON)	1,001	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
123	Switch C3	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch C3	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating C3	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter C3,C4	Rising Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil C1,C2,C3	Fan Speed 3 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
124	Switch C3	Lock	1,011	1 Bit	×		×		
	Heating C3	Lock	1,011	1 Bit	×		×		
	Shutter C3,C4	Lock	1,011	1 Bit	×		×		
125	Switch C3	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating C3	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Shutter C3,C4	Alarm (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
126	Switch C3	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
127	Switch C3	Scene	18,001	1 Byte	×		×		×
	Heating C3	Control Value	5,001	1 Byte	×		×		
	Shutter C3,C4	Scene	18,001	1 Byte	×		×		×
128	Fancoil C1,C2,C3	Fan Speed Status (0=OFF;1=S1;2=S2;3=S3)	5,010	1 Byte	×	×		×	
129	Fancoil C1,C2,C3	Fan Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
130	Fancoil C1,C2,C3	Fan Speed Up/Down (0=Down;1=Up)	1,007	1 Bit	×		×		
131	Fancoil C1,C2,C3	Fan Speed Switch (0=OFF;1=S1;2=S2;3=S3)	5,010	1 Byte	×		×		
132	Fancoil C1,C2,C3	Control Value (Heating)	5,001	1 Byte	×		×		
133	Fancoil C1,C2,C3	Control Value (Cooling)	5,001	1 Byte	×		×		
134	Fancoil C1,C2,C3	Valve Status (0=Closed;1=Open)	1,019	1 Bit	×	×		×	
135	Fancoil C1,C2,C3	Setpoint Adjustment	9,001	2 Bytes	×		×		
136	Fancoil C1,C2,C3	Temperature Value	9,001	2 Bytes	×		×		
137	Fancoil C1,C2,C3	Setpoint Offset (0=Deacrese;1=Increase)	1,007	1 Bit	×		×		
138	Fancoil C1,C2,C3	Setpoint Status	1,001	2 Bytes	×	×		×	

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
139	Switch C4	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating C4	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
140	Switch C4	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch C4	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating C4	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Valve C4	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter C3,C4	Falling Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
141	Switch C4	Lock	1,011	1 Bit	×		×		
	Heating C4	Lock	1,011	1 Bit	×		×		
	Valve C4	Lock	1,011	1 Bit	×		×		
142	Switch C4	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating C4	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Valve C4	Summer/Winter Exchange	1,001	1 Bit	×		×		
143	Switch C4	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
144	Switch C4	Scene	18,001	1 Byte	×		×		×
	Heating C4	Control Value	5,001	1 Byte	×		×		
	Valve C4	Control Value	5,001	1 Byte	×		×		
145	Shutter C3,C4	Up/Down (0=Up;1=Down)	1,008	1 Bit	×		×		
146	Shutter C3,C4	Stop/Step (0=1=Stop/0=Step Up;1=Step Down)	1,007	1 Bit	×		×		
147	Shutter C3,C4	Shutter Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
148	Shutter C3,C4	Shutter Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
149	Shutter C3,C4	Slat Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
150	Shutter C3,C4	Slat Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
151	Shutter C3,C4	Drive to Position	1,001	1 Bit	×		×		
152	Switch D1	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating D1	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil D1,D2,D3	Fan Speed 1 (0=OFF;1=ON)	1,001	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
153	Switch D1	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch D1	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating D1	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter D1,D2	Rising Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil D1,D2,D3	Fan Speed 1 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
154	Switch D1	Lock	1,011	1 Bit	×		×		
	Heating D1	Lock	1,011	1 Bit	×		×		
	Shutter D1,D2	Lock	1,011	1 Bit	×		×		
	Fancoil D1,D2,D3	Heating/Cooling Exchange	1,100	1 Bit	×		×		
155	Switch D1	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating D1	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Shutter D1,D2	Alarm (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Fancoil D1,D2,D3	Automatic ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
156	Switch D1	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Fancoil D1,D2,D3	Air Recirculation (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
156	Switch D1	Scene	18,001	1 Byte	×		×		×
	Heating D1	Control Value	5,001	1 Byte	×		×		
	Shutter D1,D2	Scene	18,001	1 Byte	×		×		×
157	Switch D2	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating D2	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
158	Switch D2	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch D2	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating D2	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter D1,D2	Falling Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil D1,D2,D3	Fan Speed 2 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
159	Switch D2	Lock	1,011	1 Bit	×		×		
	Heating D2	Lock	1,011	1 Bit	×		×		
160	Switch D2	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating D2	Summer/Winter Exchange	1,001	1 Bit	×		×		
161	Switch D2	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
162	Switch D2	Scene	18,001	1 Byte	×		×		×
	Heating D2	Control Value	5,001	1 Byte	×		×		
163	Switch D3	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating D3	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil D1,D2,D3	Fan Speed 3 (0=OFF;1=ON)	1,001	1 Bit	×		×		
164	Shutter D1,D2	Up/Down (0=Up;1=Down)	1,008	1 Bit	×		×		
165	Shutter D1,D2	Stop/Step (0=1=Stop/0=Step Up;1=Step Down)	1,007	1 Bit	×		×		
166	Shutter D1,D2	Shutter Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
167	Shutter D1,D2	Shutter Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
168	Shutter D1,D2	Slat Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
169	Shutter D1,D2	Slat Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
170	Shutter D1,D2	Drive to Position	1,001	1 Bit	×	×		×	
171	Switch D3	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating D3	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil D1,D2,D3	Fan Speed 3 (0=OFF;1=ON)	1,001	1 Bit	×		×		
172	Switch D3	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch D3	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating D3	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter D3,D4	Rising Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil D1,D2,D3	Fan Speed 3 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
173	Switch D3	Lock	1,011	1 Bit	×		×		
	Heating D3	Lock	1,011	1 Bit	×		×		
	Shutter D3,D4	Lock	1,011	1 Bit	×		×		
174	Switch D3	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating D3	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Shutter D3,D4	Alarm (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
175	Switch D3	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
176	Switch D3	Scene	18,001	1 Byte	×		×		×
	Heating D3	Control Value	5,001	1 Byte	×		×		
	Shutter D3,D4	Scene	18,001	1 Byte	×		×		×
177	Fancoil D1,D2,D3	Fan Speed Status (0=OFF;1=S1;2=S2;3=S3)	5,010	1 Byte	×	×		×	
178	Fancoil D1,D2,D3	Fan Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
179	Fancoil D1,D2,D3	Fan Speed Up/Down (0=Down;1=Up)	1,007	1 Bit	×		×		
180	Fancoil D1,D2,D3	Fan Speed Switch (0=OFF;1=S1;2=S2;3=S3)	5,010	1 Byte	×		×		
181	Fancoil D1,D2,D3	Control Value (Heating)	5,001	1 Byte	×		×		
182	Fancoil D1,D2,D3	Control Value (Cooling)	5,001	1 Byte	×		×		
183	Fancoil D1,D2,D3	Valve Status (0=Closed;1=Open)	1,019	1 Bit	×	×		×	
184	Fancoil D1,D2,D3	Setpoint Adjustment	9,001	2 Bytes	×		×		
185	Fancoil D1,D2,D3	Temperature Value	9,001	2 Bytes	×		×		
186	Fancoil D1,D2,D3	Setpoint Offset (0=Deacrese;1=Increase)	1,007	1 Bit	×		×		
187	Fancoil D1,D2,D3	Setpoint Status	1,001	2 Bytes	×	×		×	
188	Switch D4	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating D4	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Valve D4	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
189	Switch D4	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch D4	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating D4	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Valve D4	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter D3,D4	Falling Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
190	Switch D4	Lock	1,011	1 Bit	×		×		
	Heating D4	Lock	1,011	1 Bit	×		×		
	Valve D4	Lock	1,011	1 Bit	×		×		
191	Switch D4	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating D4	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Valve D4	Summer/Winter Exchange	1,001	1 Bit	×		×		
192	Switch D4	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
193	Switch D4	Scene	18,001	1 Byte	×		×		×
	Heating D4	Control Value	5,001	1 Byte	×		×		
	Valve D4	Control Value	5,001	1 Byte	×		×		
194	Shutter D3,D4	Up/Down (0=Up;1=Down)	1,008	1 Bit	×		×		
195	Shutter D3,D4	Stop/Step (0=1=Stop/0=Step Up;1=Step Down)	1,007	1 Bit	×		×		
196	Shutter D3,D4	Shutter Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
197	Shutter D3,D4	Shutter Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
198	Shutter D3,D4	Slat Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
199	Shutter D3,D4	Slat Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
200	Shutter D3,D4	Drive to Position	1,001	1 Bit	×		×		
201	Switch E1	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating E1	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil E1,E2,E3	Fan Speed 1 (0=OFF;1=ON)	1,001	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
202	Switch E1	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch E1	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating E1	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter E1,E2	Rising Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil E1,E2,E3	Fan Speed 1 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
203	Switch E1	Lock	1,011	1 Bit	×		×		
	Heating E1	Lock	1,011	1 Bit	×		×		
	Shutter E1,E2	Lock	1,011	1 Bit	×		×		
	Fancoil E1,E2,E3	Heating/Cooling Exchange	1,100	1 Bit	×		×		
204	Switch E1	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating E1	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Shutter E1,A2	Alarm (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Fancoil E1,A2,E3	Automatic ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
205	Switch E1	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Fancoil E1,E2,E3	Air Recirculation (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
206	Switch E1	Scene	18,001	1 Byte	×		×		×
	Heating E1	Control Value	5,001	1 Byte	×		×		
	Shutter E1,E2	Scene	18,001	1 Byte	×		×		×
207	Switch E2	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating E2	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil E1,E2,E3	Fan Speed 2 (0=OFF;1=ON)	1,001	1 Bit	×		×		
208	Switch E2	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch E2	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating E2	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter E1,E2	Falling Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil E1,E2,E3	Fan Speed 2 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
209	Switch E2	Lock	1,011	1 Bit	×		×		
	Heating E2	Lock	1,011	1 Bit	×		×		
210	Switch E2	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating E2	Summer/Winter Exchange	1,001	1 Bit	×		×		
211	Switch E2	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
212	Switch E2	Scene	18,001	1 Byte	×		×		×
	Heating E2	Control Value	5,001	1 Byte	×		×		
213	Shutter E1,E2	Up/Down (0=Up;1=Down)	1,008	1 Bit	×		×		
214	Shutter E1,E2	Stop/Step (0=1=Stop/0=Step Up;1=Step Down)	1,007	1 Bit	×		×		
215	Shutter E1,E2	Shutter Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
216	Shutter E1,E2	Shutter Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
217	Shutter E1,E2	Slat Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
218	Shutter E1,E2	Slat Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
219	Shutter E1,E2	Drive to Position	1,001	1 Bit	×		×		
220	Switch E3	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating E3	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil E1,E2,E3	Fan Speed 3 (0=OFF;1=ON)	1,001	1 Bit	×		×		
221	Switch E3	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch E3	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating E3	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter E3,E4	Rising Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil E1,E2,E3	Fan Speed 3 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
222	Switch E3	Lock	1,011	1 Bit	×		×		
	Heating E3	Lock	1,011	1 Bit	×		×		
	Shutter E3,E4	Lock	1,011	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
223	Switch E3	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating E3	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Shutter E3,E4	Alarm (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
224	Switch E3	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
225	Switch E3	Scene	18,001	1 Byte	×		×		×
	Heating E3	Control Value	5,001	1 Byte	×		×		
	Shutter E3,E4	Scene	18,001	1 Byte	×		×		×
226	Fancoil E1,E2,E3	Fan Speed Status (0=OFF;1=S1;2=S2;3=S3)	5,010	1 Byte	×	×		×	
227	Fancoil E1,E2,E3	Fan Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
228	Fancoil E1,E2,E3	Fan Speed Up/Down (0=Down;1=Up)	1,007	1 Bit	×		×		
229	Fancoil E1,E2,E3	Fan Speed Switch (0=OFF;1=S1;2=S2;3=S3)	5,010	1 Byte	×		×		
230	Fancoil E1,E2,E3	Control Value (Heating)	5,001	1 Byte	×		×		
231	Fancoil E1,E2,E3	Control Value (Cooling)	5,001	1 Byte	×		×		
232	Fancoil E1,E2,E3	Valve Status (0=Closed;1=Open)	1,019	1 Bit	×	×		×	
233	Fancoil E1,E2,E3	Setpoint Adjustment	9,001	2 Bytes	×		×		
234	Fancoil E1,E2,E3	Temperature Value	9,001	2 Bytes	×		×		
235	Fancoil E1,E2,E3	Setpoint Offset (0=Deacrese;1=Increase)	1,007	1 Bit	×		×		
236	Fancoil E1,E2,E3	Setpoint Status	1,001	2 Bytes	×	×		×	
237	Switch E4	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating E4	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Valve E4	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
238	Switch E4	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch E4	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating E4	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Valve E4	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter E3,E4	Falling Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
239	Switch E4	Lock	1,011	1 Bit	×		×		
	Heating E4	Lock	1,011	1 Bit	×		×		
	Valve E4	Lock	1,011	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
240	Switch E4	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating E4	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Valve E4	Summer/Winter Exchange	1,001	1 Bit	×		×		
241	Switch E4	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
242	Switch E4	Scene	18,001	1 Byte	×		×		×
	Heating E4	Control Value	5,001	1 Byte	×		×		
	Valve E4	Control Value	5,001	1 Byte	×		×		
243	Shutter E3,E4	Up/Down (0=Up;1=Down)	1,008	1 Bit	×		×		
244	Shutter E3,E4	Stop/Step (0=1=Stop/0=Step Up;1=Step Down)	1,007	1 Bit	×		×		
245	Shutter E3,E4	Shutter Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
246	Shutter E3,E4	Shutter Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
247	Shutter E3,E4	Slat Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
248	Shutter E3,E4	Slat Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
249	Shutter E3,E4	Drive to Position	1,001	1 Bit	×		×		
250	Switch F1	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating F1	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil F1,F2,F3	Fan Speed 1 (0=OFF;1=ON)	1,001	1 Bit	×		×		
251	Switch F1	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch F1	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating F1	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter F1,F2	Rising Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil F1,F2,F3	Fan Speed 1 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
252	Switch F1	Lock	1,011	1 Bit	×		×		
	Heating F1	Lock	1,011	1 Bit	×		×		
	Shutter F1,F2	Lock	1,011	1 Bit	×		×		
	Fancoil F1,F2,F3	Heating/Cooling Exchange	1,100	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
253	Switch F1	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating F1	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Shutter F1,F2	Alarm (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Fancoil F1,F2,F3	Automatic ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
254	Switch F1	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Fancoil F1,F2,F3	Air Recirculation (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
255	Switch F1	Scene	18,001	1 Byte	×		×		×
	Heating F1	Control Value	5,001	1 Byte	×		×		×
	Shutter F1,F2	Scene	18,001	1 Byte	×		×		×
256	Switch F2	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating F2	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil F1,F2,F3	Fan Speed 2 (0=OFF;1=ON)	1,001	1 Bit	×		×		
257	Switch F2	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch F2	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating F2	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter F1,F2	Falling Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil F1,F2,F3	Fan Speed 2 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
258	Switch F2	Lock	1,011	1 Bit	×		×		
	Heating F2	Lock	1,011	1 Bit	×		×		
259	Switch F2	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating F2	Summer/Winter Exchange	1,001	1 Bit	×		×		
260	Switch F2	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
261	Switch F2	Scene	18,001	1 Byte	×		×		×
	Heating F2	Control Value	5,001	1 Byte	×		×		
262	Shutter F1,F2	Up/Down (0=Up;1=Down)	1,008	1 Bit	×		×		
263	Shutter F1,F2	Stop/Step (0=1=Stop/0=Step Up;1=Step Down)	1,007	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
264	Shutter F1,F2	Shutter Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
265	Shutter F1,F2	Shutter Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
266	Shutter F1,F2	Slat Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
267	Shutter F1,F2	Slat Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
268	Shutter F1,F2	Drive to Position	1,001	1 Bit	×		×		
269	Switch F3	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating F3	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Fancoil F1,F2,F3	Fan Speed 3 (0=OFF;1=ON)	1,001	1 Bit	×		×		
270	Switch F3	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch F3	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating F3	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter F3,F4	Rising Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
	Fancoil F1,F2,F3	Fan Speed 3 Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
271	Switch F3	Lock	1,011	1 Bit	×		×		
	Heating F3	Lock	1,011	1 Bit	×		×		
	Shutter F3,F4	Lock	1,011	1 Bit	×		×		
272	Switch F3	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating F3	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Shutter F3,F4	Alarm (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
273	Switch F3	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
274	Switch F3	Scene	18,001	1 Byte	×		×		×
	Heating F3	Control Value	5,001	1 Byte	×		×		
	Shutter F3,F4	Scene	18,001	1 Byte	×		×		×
275	Fancoil F1,F2,F3	Fan Speed Status (0=OFF;1=S1;2=S2;3=S3)	5,010	1 Byte	×	×		×	
276	Fancoil F1,F2,F3	Fan Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
277	Fancoil F1,F2,F3	Fan Speed Up/Down (0=Down;1=Up)	1,007	1 Bit	×		×		
278	Fancoil F1,F2,F3	Fan Speed Switch (0=OFF;1=S1;2=S2;3=S3)	5,010	1 Byte	×		×		
279	Fancoil F1,F2,F3	Control Value (Heating)	5,001	1 Byte	×		×		
280	Fancoil F1,F2,F3	Control Value (Cooling)	5,001	1 Byte	×		×		
281	Fancoil F1,F2,F3	Valve Status (0=Closed;1=Open)	1,019	1 Bit	×	×		×	
282	Fancoil F1,F2,F3	Setpoint Adjustment	9,001	2 Bytes	×		×		
283	Fancoil F1,F2,F3	Temperature Value	9,001	2 Bytes	×		×		
284	Fancoil F1,F2,F3	Setpoint Offset (0=Deacrese;1=Increase)	1,007	1 Bit	×		×		
285	Fancoil F1,F2,F3	Setpoint Status	1,001	2 Bytes	×	×		×	
286	Switch F4	ON/OFF (0=OFF;1=ON)	1,001	1 Bit	×		×		
	Heating F4	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
	Valve F4	Control Value (0=Close Valve;1=Open Valve)	1,019	1 Bit	×		×		
287	Switch F4	Status (0=OFF;1=ON)	1,001	1 Bit	×	×		×	
	Switch F4	Status (0=ON;1=OFF)	1,001	1 Bit	×	×		×	
	Heating F4	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Valve F4	Status (0=Valve Closed;1=Valve Open)	1,019	1 Bit	×	×		×	
	Shutter F3,F4	Falling Edge Relay Status (0=Open;1=Closed)	1,001	1 Bit	×	×		×	
288	Switch F4	Lock	1,011	1 Bit	×		×		
	Heating F4	Lock	1,011	1 Bit	×		×		
	Valve F4	Lock	1,011	1 Bit	×		×		
289	Switch F4	Simple Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
	Heating F4	Summer/Winter Exchange	1,001	1 Bit	×		×		
	Valve F4	Summer/Winter Exchange	1,001	1 Bit	×		×		
290	Switch F4	Flashing Timer (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
291	Switch F4	Scene	18,001	1 Byte	×		×		×
	Heating F4	Control Value	5,001	1 Byte	×		×		
	Valve F4	Control Value	5,001	1 Byte	×		×		
292	Shutter F3,F4	Up/Down (0=Up;1=Down)	1,008	1 Bit	×		×		
293	Shutter F3,F4	Stop/Step (0=1=Stop/0=Step Up;1=Step Down)	1,007	1 Bit	×		×		
294	Shutter F3,F4	Shutter Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
295	Shutter F3,F4	Shutter Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
296	Shutter F3,F4	Slat Position Status (0%=Up;100%=Down)	5,001	1 Byte	×	×		×	
297	Shutter F3,F4	Slat Positioning (0%=Up;100%=Down)	5,001	1 Byte	×		×		
298	Shutter F3,F4	Drive to Position	1,001	1 Bit	×	×		×	
299	Universal Interface1	Output-Switch	1,001	1 Bit	×	×		×	
	Universal Interface1	Output-Short button push	1,001	1 Bit	×	×		×	
300	Universal Interface1	Output-Switch	5,010	1 Byte	×	×		×	
	Universal Interface1	Output-Scene	18,001	1 Byte	×	×		×	×
	Universal Interface1	Output-Short button push	5,010	1 Byte	×	×		×	
301	Universal Interface1	Value for Toggle	1,001	1 Bit	×		×		×
302	Universal Interface1	Value for Toggle Short	1,001	1 Bit	×		×		×
303	Universal Interface1	Value for Toggle Long	1,001	1 Bit	×		×		×
304	Universal Interface1	Output-Long button push	1,001	1 Bit	×	×		×	
305	Universal Interface1	Output-Long button push	5,010	1 Byte	×	×		×	
306	Universal Interface1	Lock (0=Deactivated;1=Active)	1,011	1 Bit	×		×		
307	Universal Interface2	Output-Switch	1,001	1 Bit	×	×		×	
	Universal Interface2	Output-Short button push	1,001	1 Bit	×	×		×	
308	Universal Interface2	Output-Switch	5,010	1 Byte	×	×		×	
	Universal Interface2	Output-Scene	18,001	1 Byte	×	×		×	×
	Universal Interface2	Output-Short button push	5,010	1 Byte	×	×		×	
309	Universal Interface2	Value for Toggle	1,001	1 Bit	×		×		×
310	Universal Interface2	Value for Toggle Short	1,001	1 Bit	×		×		×
311	Universal Interface2	Value for Toggle Long	1,001	1 Bit	×		×		×
312	Universal Interface2	Output-Long button push	1,001	1 Bit	×	×		×	
313	Universal Interface2	Output-Long button push	5,010	1 Byte	×	×		×	
314	Universal Interface2	Lock (0=Deactivated;1=Active)	1,011	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
315	Converter1	Input	1,001	1 Bit	×		×		
316	Converter1	Input	2,001	2 Bit	×		×		
317	Converter1	Input	5,010	1 Byte	×		×		
318	Converter1	Input	7,001	2 Bytes	×		×		
319	Converter1	Output	1,001	1 Bit	×	×		×	
320	Converter1	Output	2,001	2 Bit	×	×		×	
321	Converter1	Output	5,010	1 Byte	×	×		×	
322	Converter1	Output	7,001	2 Bytes	×	×		×	
323	Converter2	Input	1,001	1 Bit	×		×		
324	Converter2	Input	2,001	2 Bit	×		×		
325	Converter2	Input	5,010	1 Byte	×		×		
326	Converter2	Input	7,001	2 Bytes	×		×		
327	Converter2	Output	1,001	1 Bit	×	×		×	
328	Converter2	Output	2,001	2 Bit	×	×		×	
329	Converter2	Output	5,010	1 Byte	×	×		×	
330	Converter2	Output	7,001	2 Bytes	×	×		×	
331	Converter3	Input	1,001	1 Bit	×		×		
332	Converter3	Input	2,001	2 Bit	×		×		
333	Converter3	Input	5,010	1 Byte	×		×		
334	Converter3	Input	7,001	2 Bytes	×		×		
335	Converter3	Output	1,001	1 Bit	×	×		×	
336	Converter3	Output	2,001	2 Bit	×	×		×	
337	Converter3	Output	5,010	1 Byte	×	×		×	
338	Converter3	Output	7,001	2 Bytes	×	×		×	
339	Converter4	Input	1,001	1 Bit	×		×		
340	Converter4	Input	2,001	2 Bit	×		×		
341	Converter4	Input	5,010	1 Byte	×		×		
342	Converter4	Input	7,001	2 Bytes	×		×		
343	Converter4	Output	1,001	1 Bit	×	×		×	
344	Converter4	Output	2,001	2 Bit	×	×		×	
345	Converter4	Output	5,010	1 Byte	×	×		×	

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
346	Converter4	Output	7,001	2 Bytes	×	×		×	
347	Converter5	Input	1,001	1 Bit	×		×		
348	Converter5	Input	2,001	2 Bit	×		×		
349	Converter5	Input	5,010	1 Byte	×		×		
350	Converter5	Input	7,001	2 Bytes	×		×		
351	Converter5	Output	1,001	1 Bit	×	×		×	
352	Converter5	Output	2,001	2 Bit	×	×		×	
353	Converter5	Output	5,010	1 Byte	×	×		×	
354	Converter5	Output	7,001	2 Bytes	×	×		×	
355	Converter6	Input	1,001	1 Bit	×		×		
356	Converter6	Input	2,001	2 Bit	×		×		
357	Converter6	Input	5,010	1 Byte	×		×		
358	Converter6	Input	7,001	2 Bytes	×		×		
359	Converter6	Output	1,001	1 Bit	×	×		×	
360	Converter6	Output	2,001	2 Bit	×	×		×	
361	Converter6	Output	5,010	1 Byte	×	×		×	
362	Converter6	Output	7,001	2 Bytes	×	×		×	
363	Converter7	Input	1,001	1 Bit	×		×		
364	Converter7	Input	2,001	2 Bit	×		×		
365	Converter7	Input	5,010	1 Byte	×		×		
366	Converter7	Input	7,001	2 Bytes	×		×		
367	Converter7	Output	1,001	1 Bit	×	×		×	
368	Converter7	Output	2,001	2 Bit	×	×		×	
369	Converter7	Output	5,010	1 Byte	×	×		×	
370	Converter7	Output	7,001	2 Bytes	×	×		×	
371	Converter8	Input	1,001	1 Bit	×		×		
372	Converter8	Input	2,001	2 Bit	×		×		
373	Converter8	Input	5,010	1 Byte	×		×		
374	Converter8	Input	7,001	2 Bytes	×		×		
375	Converter8	Output	1,001	1 Bit	×	×		×	
376	Converter8	Output	2,001	2 Bit	×	×		×	
377	Converter8	Output	5,010	1 Byte	×	×		×	

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
378	Converter8	Output	7,001	2 Bytes	×	×		×	
379	Converter9	Input	1,001	1 Bit	×		×		
380	Converter9	Input	2,001	2 Bit	×		×		
381	Converter9	Input	5,010	1 Byte	×		×		
382	Converter9	Input	7,001	2 Bytes	×		×		
383	Converter9	Output	1,001	1 Bit	×	×		×	
384	Converter9	Output	2,001	2 Bit	×	×		×	
385	Converter9	Output	5,010	1 Byte	×	×		×	
386	Converter9	Output	7,001	2 Bytes	×	×		×	
387	Converter10	Input	1,001	1 Bit	×		×		
388	Converter10	Input	2,001	2 Bit	×		×		
389	Converter10	Input	5,010	1 Byte	×		×		
390	Converter10	Input	7,001	2 Bytes	×		×		
391	Converter10	Output	1,001	1 Bit	×	×		×	
392	Converter10	Output	2,001	2 Bit	×	×		×	
393	Converter10	Output	5,010	1 Byte	×	×		×	
394	Converter10	Output	7,001	2 Bytes	×	×		×	
395	Converter11	Input	1,001	1 Bit	×		×		
396	Converter11	Input	2,001	2 Bit	×		×		
397	Converter11	Input	5,010	1 Byte	×		×		
398	Converter11	Input	7,001	2 Bytes	×		×		
399	Converter11	Output	1,001	1 Bit	×	×		×	
400	Converter11	Output	2,001	2 Bit	×	×		×	
401	Converter11	Output	5,010	1 Byte	×	×		×	
402	Converter11	Output	7,001	2 Bytes	×	×		×	
403	Converter12	Input	1,001	1 Bit	×		×		
404	Converter12	Input	2,001	2 Bit	×		×		
405	Converter12	Input	5,010	1 Byte	×		×		
406	Converter12	Input	7,001	2 Bytes	×		×		
407	Converter12	Output	1,001	1 Bit	×	×		×	

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
408	Converter12	Output	2,001	2 Bit	×	×		×	
409	Converter12	Output	5,010	1 Byte	×	×		×	
410	Converter12	Output	7,001	2 Bytes	×	×		×	
411	Logic Gate1	Output	1,001	1 Bit	×	×		×	
412	Logic Gate1	Input 1	1,001	1 Bit	×		×		
413	Logic Gate1	Input 2	1,001	1 Bit	×		×		
414	Logic Gate1	Input 3	1,001	1 Bit	×		×		
415	Logic Gate1	Input 4	1,001	1 Bit	×		×		
416	Logic Gate2	Output	1,001	1 Bit	×	×		×	
417	Logic Gate2	Input 1	1,001	1 Bit	×		×		
418	Logic Gate2	Input 2	1,001	1 Bit	×		×		
419	Logic Gate2	Input 3	1,001	1 Bit	×		×		
420	Logic Gate2	Input 4	1,001	1 Bit	×		×		
421	Logic Gate3	Output	1,001	1 Bit	×	×		×	
422	Logic Gate3	Input 1	1,001	1 Bit	×		×		
423	Logic Gate3	Input 2	1,001	1 Bit	×		×		
424	Logic Gate3	Input 3	1,001	1 Bit	×		×		
425	Logic Gate3	Input 4	1,001	1 Bit	×		×		
426	Logic Gate4	Output	1,001	1 Bit	×	×		×	
427	Logic Gate4	Input 1	1,001	1 Bit	×		×		
428	Logic Gate4	Input 2	1,001	1 Bit	×		×		
429	Logic Gate4	Input 3	1,001	1 Bit	×		×		
430	Logic Gate4	Input 4	1,001	1 Bit	×		×		
431	Logic Gate5	Output	1,001	1 Bit	×	×		×	
432	Logic Gate5	Input 1	1,001	1 Bit	×		×		
433	Logic Gate5	Input 2	1,001	1 Bit	×		×		
434	Logic Gate5	Input 3	1,001	1 Bit	×		×		
435	Logic Gate5	Input 4	1,001	1 Bit	×		×		
436	Logic Gate6	Output	1,001	1 Bit	×	×		×	
437	Logic Gate6	Input 1	1,001	1 Bit	×		×		
438	Logic Gate6	Input 2	1,001	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
439	Logic Gate6	Input 3	1,001	1 Bit	×		×		
440	Logic Gate6	Input 4	1,001	1 Bit	×		×		
441	Logic Gate7	Output	1,001	1 Bit	×	×		×	
442	Logic Gate7	Input 1	1,001	1 Bit	×		×		
443	Logic Gate7	Input 2	1,001	1 Bit	×		×		
444	Logic Gate7	Input 3	1,001	1 Bit	×		×		
445	Logic Gate7	Input 4	1,001	1 Bit	×		×		
446	Logic Gate8	Output	1,001	1 Bit	×	×		×	
447	Logic Gate8	Input 1	1,001	1 Bit	×		×		
448	Logic Gate8	Input 2	1,001	1 Bit	×		×		
449	Logic Gate8	Input 3	1,001	1 Bit	×		×		
450	Logic Gate8	Input 4	1,001	1 Bit	×		×		
451	Logic Gate9	Output	1,001	1 Bit	×	×		×	
452	Logic Gate9	Input 1	1,001	1 Bit	×		×		
453	Logic Gate9	Input 2	1,001	1 Bit	×		×		
454	Logic Gate9	Input 3	1,001	1 Bit	×		×		
455	Logic Gate9	Input 4	1,001	1 Bit	×		×		
456	Logic Gate10	Output	1,001	1 Bit	×	×		×	
457	Logic Gate10	Input 1	1,001	1 Bit	×		×		
458	Logic Gate10	Input 2	1,001	1 Bit	×		×		
459	Logic Gate10	Input 3	1,001	1 Bit	×		×		
460	Logic Gate10	Input 4	1,001	1 Bit	×		×		
461	Logic Gate11	Output	1,001	1 Bit	×	×		×	
462	Logic Gate11	Input 1	1,001	1 Bit	×		×		
463	Logic Gate11	Input 2	1,001	1 Bit	×		×		
464	Logic Gate11	Input 3	1,001	1 Bit	×		×		

CO No.	Name	Function	Data Point Type (DPT)	Length	Flags				
					C	R	W	T	U
465	Logic Gate11	Input 4	1,001	1 Bit	×		×		
466	Logic Gate12	Output	1,001	1 Bit	×	×		×	
467	Logic Gate12	Input 1	1,001	1 Bit	×		×		
468	Logic Gate12	Input 2	1,001	1 Bit	×		×		
469	Logic Gate12	Input 3	1,001	1 Bit	×		×		
470	Logic Gate12	Input 4	1,001	1 Bit	×		×		

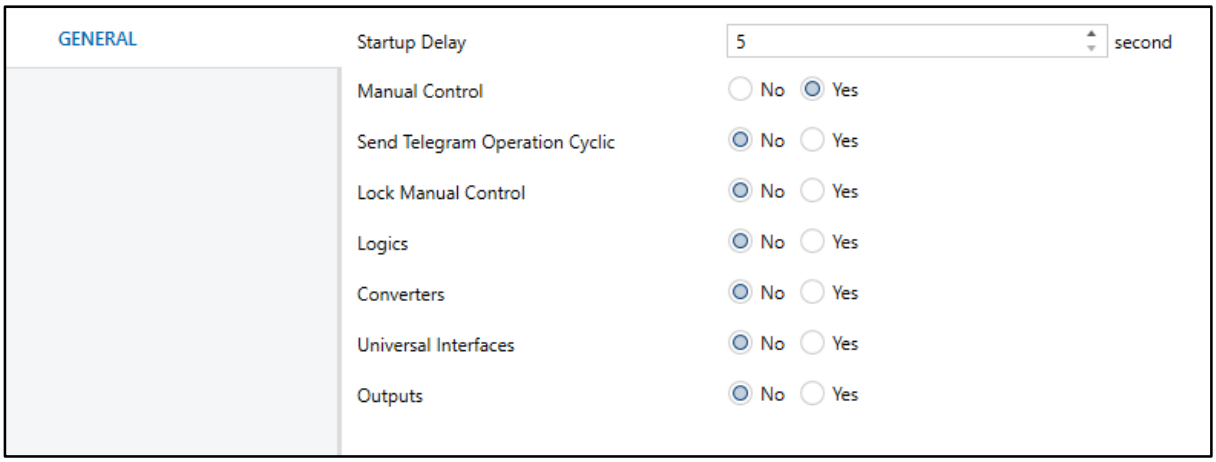
3 ETS Parameterization

After importing the corresponding database in ETS and adding the device into the topology of the desired project, the configuration process begins by left-clicking into the device and selecting parameter tab.

3.1 General Settings

The manual control can be enabled in this section. The UA outputs can be controlled through the push buttons on the device when this option is enabled. The manual control can be also Lock/unlock by separate object with different values when the lock manual control option is enabled

Enabling the “Send Operation Telegram Cyclic” parameter it is possible to know whether the device is working correctly. Via the object “Operation” the value 0/1 is sent with a preconfigured period. The receipt of this telegram periodically means that the device is working properly. Furthermore, the logics, converters and the Universal Interface settings pages can be shown if the relevant option is set to Yes. The following picture shows the menu GENERAL settings:



Picture 7-GENERAL settings menu

The following table show the GENERAL settings:

ETS text	Dynamic Range	Comment
Startup Delay	5...120 s **[5]**	Time which elapses between a restart of the device and the functional start
Manual Control	No **Yes**	Enables or disables the manual control
Send Telegram Operation Cyclic	**No** Yes	Activates a cyclic “operation” object
Value	*Sending 0* *Sending 1*	*Determines the value of “operation” object*
Sending Delay	*1…3600 s* ***[5]***	*Delay betw0een sending the “operation” telegram*
Lock Manual Control	**No** Yes	Enables a specific binary object for locking and unlocking the manual control
Value	***0=Lock;1=Unlock*** *1=Lock;0=Unlock*	*Defines the manual control lock/unlock values*
Logics	**No** Yes	Activates the page of logic gates settings
Converters	**No** Yes	Activates the page of converter settings
Universal Interface	**No** Yes	Activates the page of converter settings
Outputs	**No** Yes	Activates the page of outputs settings

Table 2-GENERAL settings

The following table shows the GENERAL communication objects:

Object Name	Function	Size	Flags	Usage
General Object	Lock Manual Control	1bit	CW	Locking the manual control
General Object	Operation	1bit	CRT	Sending the value 0/1 while the module is running

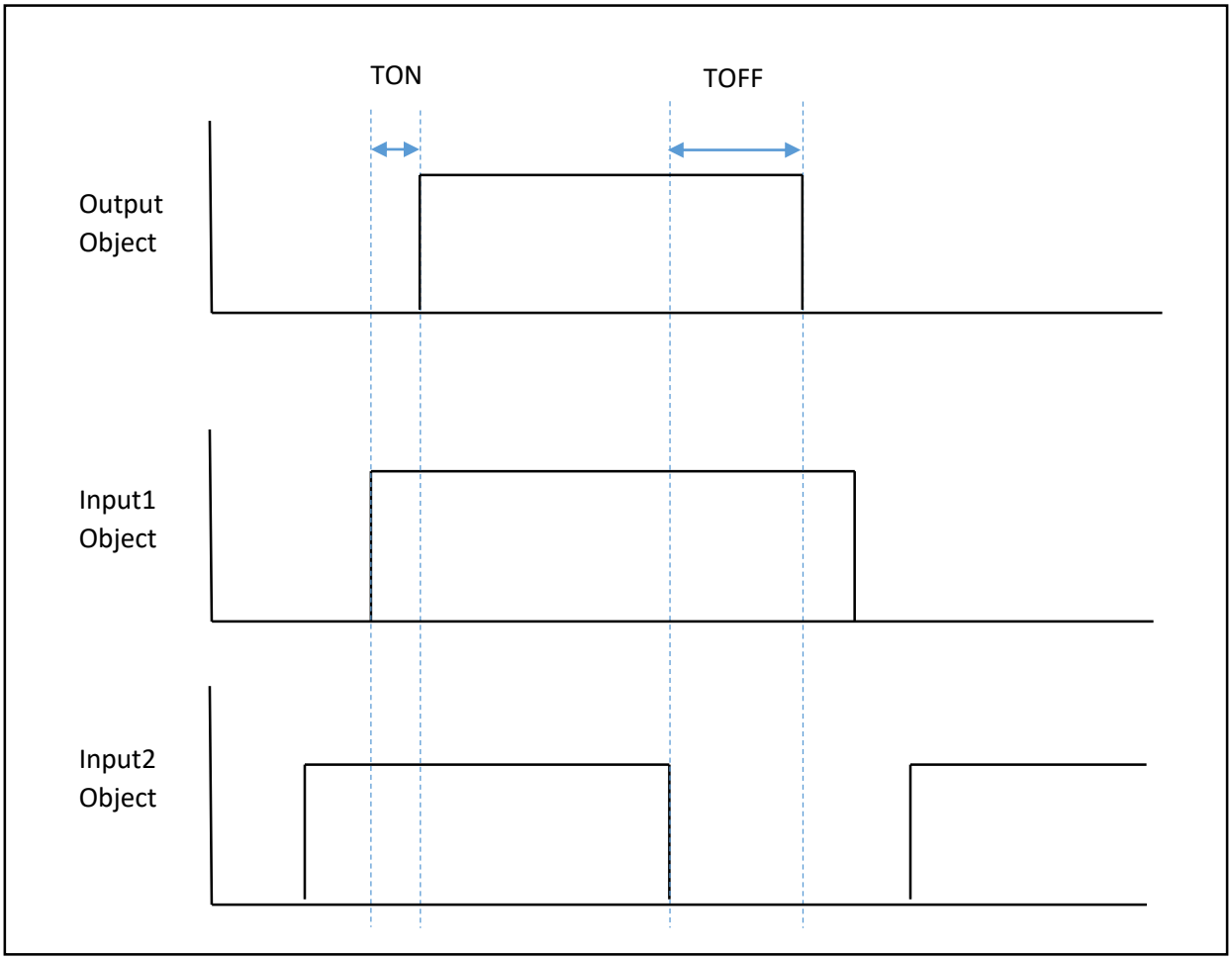
Table 3-GENERAL communication objects

3.2 Logics

Up to 12 logic gates can be used with the UA device. In addition, each logic gate allows the use of up to 4 inputs. The standard logic operations AND, OR and XOR are available.

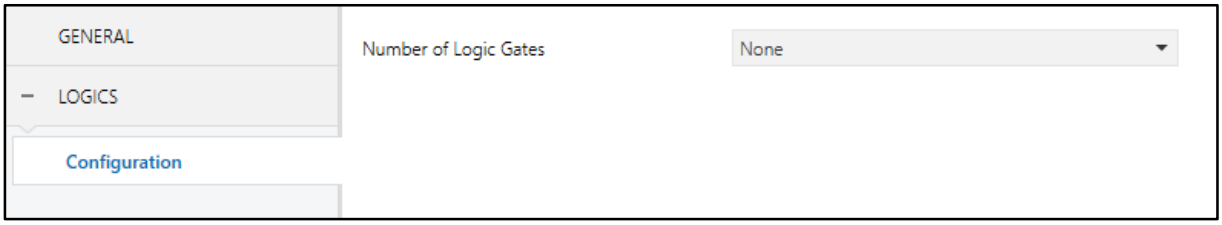
The status of the output can be shown normally or inverted. This configuration can be done via the parameter “Output Behavior” and when it is parameterized as inverted, the status of the output is shown inversely. Through the parameter “Send Feedback On”, the type of feedback can be defined. The combo actuator allows sending the result of logic gates when the logic output is changed or conversely when one of the logic inputs is modified. Additionally, the logic output can take the values ON and OFF delays. Depending of the switch delay parameters configuration, it is possible to set an ON delay (TON), an OFF delay (TOFF) or both at the same time.

The following diagram describe the combination of ON and OFF delay in the AND logic gate with 2 inputs:



Picture 8-combination of ON and OFF delay in the AND logic gate

The following picture shows the menu LOGICS -> Configuration settings:



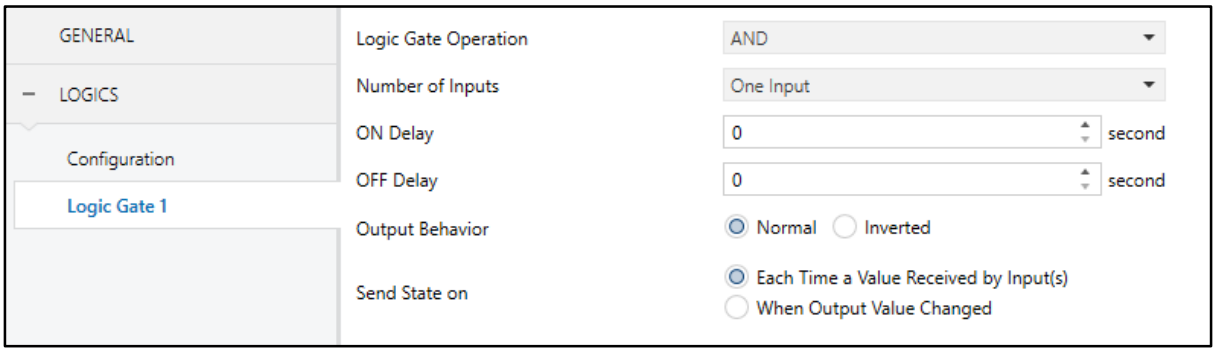
Picture 9-LOGICS: Configuration settings

The following table shows the menu LOGICS -> Configuration Parameters:

ETS text	Dynamic Range	Comment
Number of Logic Gates	**None** One Logic Gate Two Logic Gates Three Logic Gates Four Logic Gates Five Logic Gates Six Logic Gates Seven Logic Gates Eight Logic Gates Nine Logic Gates Ten Logic Gates Eleven Logic Gates Twelve Logic Gates	Determines the number of logic Gates to use.

Table 4-LOGICS: Configuration Parameters

The following picture shows the menu LOGICS -> Logic Gate x settings:



Picture 10-LOGICS: Logic Gate x settings

Note:

The logics (AND; OR; XOR) with “One Input” do not perform any function on the input and send the same to the output.

The following table show the LOGICS -> Logic Gate x settings:

ETS text	Dynamic Range	Comment
Logic Gate Operation	**AND** OR XOR	This parameter determines the logic gate type. The output will be true or false depending on the result of this logic
Number of Inputs	**One Input** Two Inputs Three Inputs Four Inputs	This parameter determines the number of inputs for logic gate
ON Delay	0…3600 s **[0]**	The output takes the value on after a delay configured in this parameter
OFF Delay	0…3600 s **[0]**	The output takes the value off after a delay configured in this parameter
Output Behavior	**Normal** Inverted	This parameter defines the behavior of the logic output.
Send State on	**Each Time a Value Received by Input(s)** When Output Value Changed	This parameter determines when the status of the output is sent

Table 5-LOGICS: Logic Gate x settings

- ✓ Logic Gate Operation:
  - See Appendix A.
- ✓ Output Behavior:
  - **Normal**: The real status of the output is shown via the corresponding object.
  - **Inverted**: The inverted status of the output is shown via the corresponding object.
- ✓ Send State on:
  - **Each Time a Value Received by Input(s)**: Every time an input value is modified.
  - **When Output Value Changed**: Every time the output is modified.

The following table shows the LOGICS -> Logic Gate x communication objects:

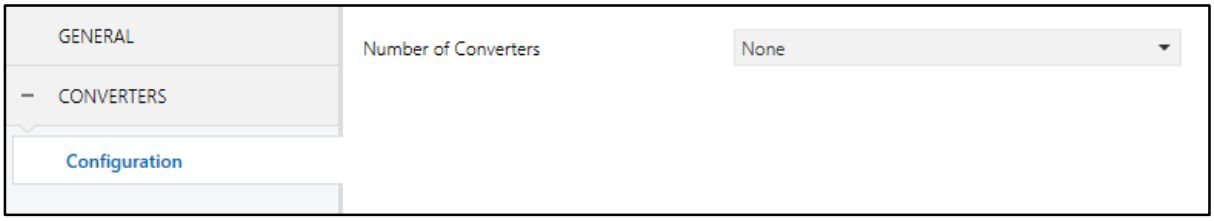
Object Name	Function	Size	Flags	Usage
Logic Gate x (1…12)	Output	1bit	CRT	Shows the current value of logic output
Logic Gate x (1…12)	Input x (1…4)	1bit	CW	Sets the value of the logic inputs

Table 6-LOGICS communication objects

3.3 Converters:

Up to 12 converters are available with the combo device. They allow the output converter to take a configured value depending on the input value. There are 8 different types of data input which can be converted to 4 different data values.

The following picture shows the menu CONVERTERS -> Configuration settings:



Picture 11-CONVERTERS: Configuration settings

The following table shows the menu CONVERTERS -> Configuration Parameters:

ETS text	Dynamic Range	Comment
Number of Converters	**None** One Converter Two Converters Three Converters Four Converters Five Converters Six Converters Seven Converters Eight Converters Nine Converters Ten Converters Eleven Converters Twelve Converters	determines the number of converters to use

Table 7-CONVERTERS: Configuration Parameters

The following picture shows the menu CONVERTERS -> Converter x settings:

Picture 12-CONVERTERS: Converter x settings

The following table show the CONVERTERS -> Converter x settings:

ETS text	Dynamic Range	Comment
Input Type	**1 Bit** 2 Bit 1 Byte 2 Bytes 1 Byte Logic 2 Bytes Logic 1 Byte Threshold 2 Bytes Threshold	Sets the type of the converter input.
Input Value	1 Bit: **0**/1 2 Bit: **0**...3 1 Byte: **0**…255 2 Bytes: **0**…65535	Sets the value of the converter input.
Output Type	**1 Bit** 2 Bit 1 Byte 2 Bytes	Sets the type of the converter output.
Input Value	1 Bit: **0**/1 2 Bit: **0**...3 1 Byte: **0**…255 2 Bytes: **0**…65535	Sets the value of the converter output.
Lower Threshold Value	1 Byte Threshold: **0**…255 **[10]** 2 Bytes Threshold: **0**…65535 **[10]**	Sets the low threshold value for the input when it is configured as 1 Byte or 2 Bytes Threshold.
Upper Threshold Value	1 Byte Threshold: **0**…255 **[20]** 2 Bytes Threshold: **0**…65535 **[20]**	Sets the high threshold value for the input when it is configured as 1 Byte or 2 Bytes Threshold.

Table 8- CONVERTERS: Converter x settings

Note:

-When the input type is configured as 1 byte or 2 Bytes logic, the output data is 1 bit and it will take the value 1 if the entry is not 0.

The following table shows the CONVERTERS -> Converter x Communication objects:

Object Name	Function	Size	Flags	Usage
Converter x (1…12)	Input	1bit	CW	Sends values for the converter input
Converter x (1…12)	Input	2bit	CW	Sends values for the converter input
Converter x (1…12)	Input	1byte	CW	Sends values for the converter input
Converter x (1…12)	Input	2bytes	CW	Sends values for the converter input
Converter x (1…12)	Output	1bit	CRT	Shows the current output of the converter
Converter x (1…12)	Output	2bit	CRT	Shows the current output of the converter
Converter x (1…12)	Output	1byte	CRT	Shows the current output of the converter
Converter x (1…12)	Output	2bytes	CRT	Shows the current output of the converter

Table 9- CONVERTERS Communication objects

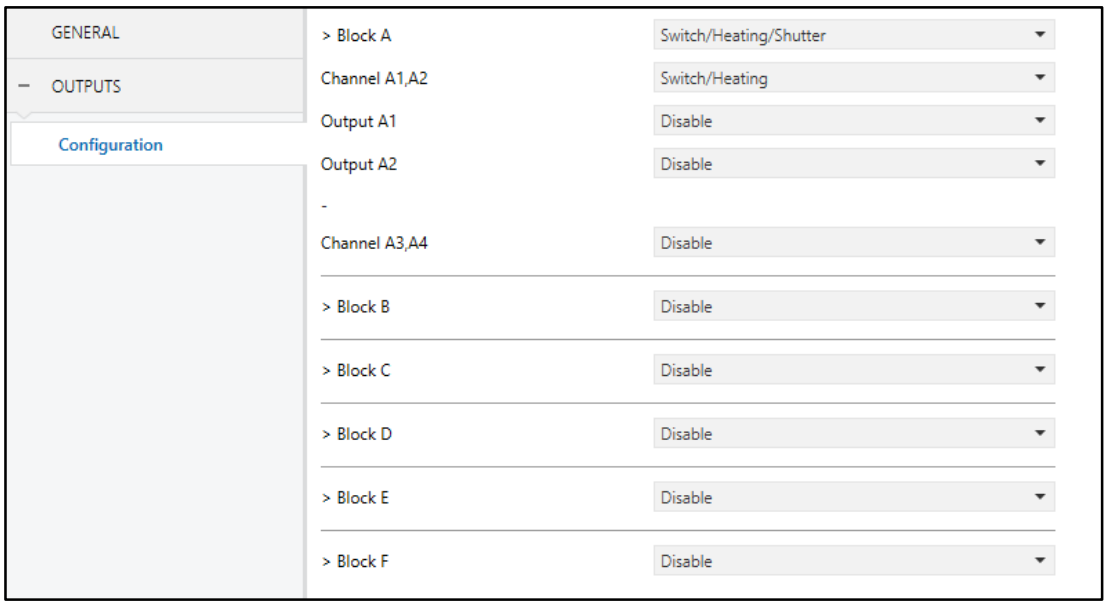
3.4 Outputs

Each output can be enabled or disabled in parameters independently, to perform different functions.

The outputs can be configured as: Switch, Heating, Shutter/Blind and FanCoil.

The application program will typically provide one slide per block, one slide per output and one slide per output so it is possible to enable them as you want. Each block, channel and output containing 4, 2 and 1 relay respectively.

The following picture shows the menu OUTPUTS -> Configuration settings:



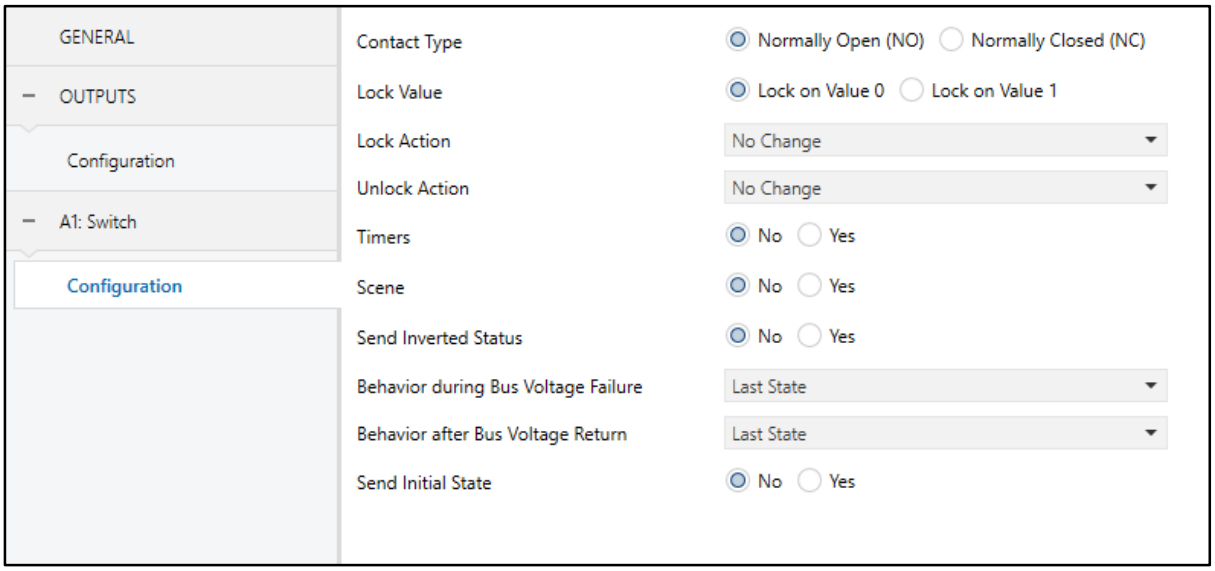
Picture 13-OUTPUTS: Configuration settings

3.5 Switch

The total number of device outputs can be used for direct connection of lighting circuits.

The output type can be configured as normally open (i.e., switching on the output makes the relay close) or normally closed (i.e., switching on the output makes the relay open).

A specific parameter screen per individual output will be included in the menu on the left after such output has been enabled. This picture contains the following parameters:



Picture 14-Switch: Configuration parameters

The following table show the x: Switch -> Configuration settings:

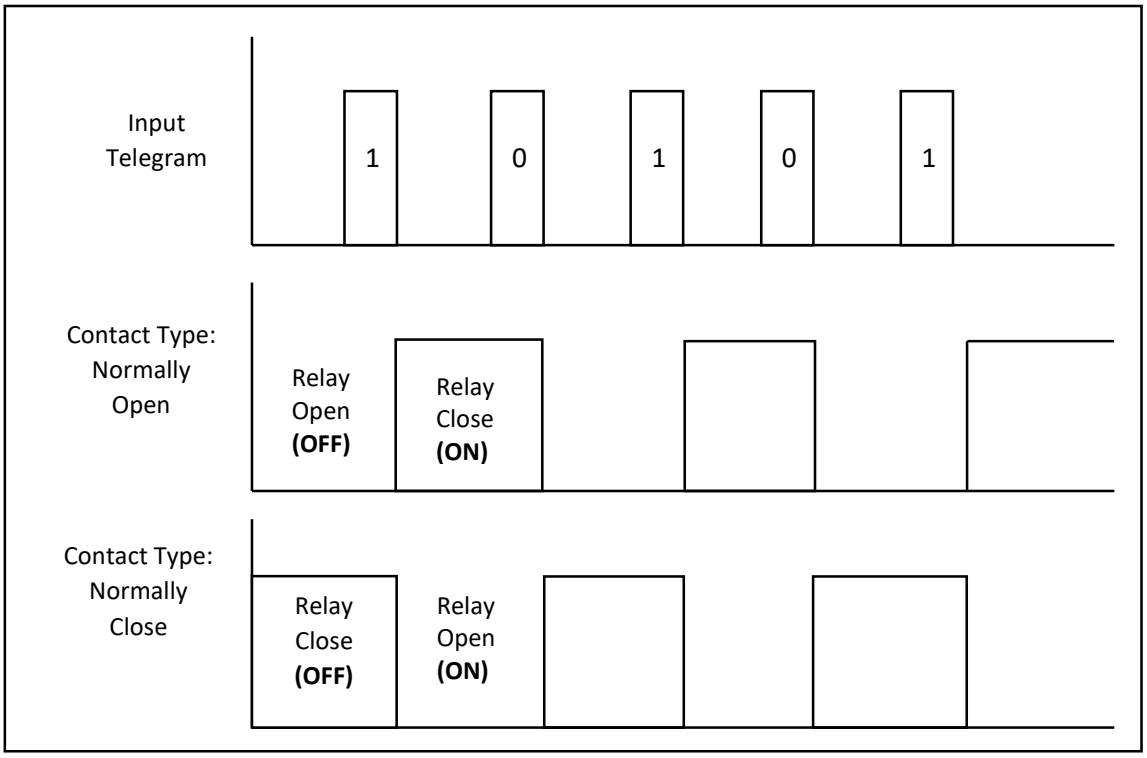
ETS text	Dynamic Range	Comment
Contact Type	**Normally Open (NO)** Normally Close (NC)	Operating mode of the output
Lock Value	**Lock on Value 0** Lock on Value 1	Sets the value which the output should be locked
Lock Action	**No change** OFF ON	Determines the behavior of the switch at the beginning of locking
Unlock Action	**No change** OFF ON	Determines the behavior of the switch at the end of locking
Timers	**No** Yes	Activates or deactivates the timers settings page

Scene	**No** Yes	Activates or deactivates the scene settings page
Send Inverted Status	**No** Yes	Sets whether send the inverted status of the output or not
Behavior during Bus Voltage Failure	**Last State** OFF ON	Determines the behavior of the output during a bus voltage failure
Behavior After Bus Voltage Return	**Last State** OFF ON	Determines the behavior of the output after a bus voltage return
Send Initial State	**No** Yes	Sets whether send the output status at the startup or not

Table 10- Switch: Configuration settings

- ✓ Contact Type:
  - **Normally Open (NO):** The relay works as a normally open contact. It means the relay will be open if you send 0 and it will be close if you send 1.
  - **Normally Close (NC):** The relay works as a normally close contact. It means the relay will be open if you send the 1 and it will be close if you send 0.

The following diagram shows the relays operation in different contact type:



Picture 15-Relays operation in different contact type

✓ Lock Value

- **Lock on Value 0:** When the locking communication object takes the value 0, further control is no longer available as long as the output is locked.
- **Lock on Value 1:** When the locking communication object takes the value 1, further control is no longer available as long as the output is locked.

Note:

-The locking function remains active even after bus voltage failure.

-The Locking function has priority over other orders, however it does not effect on the “Behavior after Bus Voltage Return”, “Behavior during Bus Voltage Failure” functions.

✓ Lock Action:

It is possible to define the light status during the locking and the value that the output take after the locking.

- **No Change:** The output stays in the current state.
- **OFF:** The output is switched off.
- **ON:** The output is switched on.

✓ Unlock Action:

It is possible to define the light status after the unlocking and the value that the output take after the unlocking.

- **No Change:** The output stays in the current state.
- **OFF:** The output is switched off.
- **ON:** The output is switched on.

✓ Behavior during Bus Voltage Failure:

Sets whether to leave the relay as is , to switch it off or to switch it on in the event of a shutdown of the device.

- **Last State:** The output stays in the current state.
- **OFF:** The output is switched off.
- **ON:** The output is switched on.

✓ Behavior after Bus Voltage Return:

Sets whether to leave the relay as is , to switch it off or to switch it on during the device startup.

- **Last State:** The output stays in the last state.
- **OFF:** The output is switched off.
- **ON:** The output is switched on.

✓ Send Initial State:

If yes is selected, the device will send the switch state at the moment it is turned on.

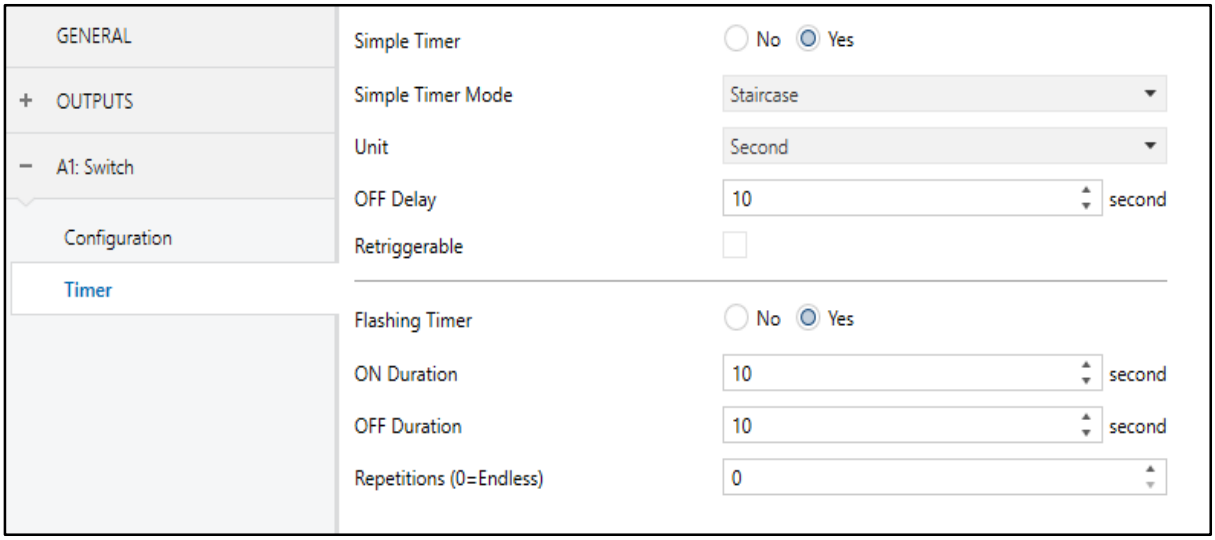
✓ Timers:

The Timers permit performing timed actions over the outputs. On the first hand, the “Flashing” function consists in performing a continuous, timed on/off sequence when a specific trigger object (Falshing Timer) is received. On the other hand, the “Simple Timer” function consists in performing a single, timed switch-on / switch-off when 1 or 0 is received through a specific object (Simple Timer). Depending on whether the order is a switch-on or a switch-off, a certain delay will apply. These delays are parameterisable.
For Flashing Timer, an “ON Duration” and “OFF Duration” must be defined. This is the time the output will remain on or off once the on Delay or off delay has expired and therefore the output has finally switched on or off.

Note:

- The “Simple Timer” and “Flashing Timer” is cancelled as soon as a switch order is received through the general (ON/OFF) object. The output will switch to the state specified in the order.

The following picture shows the menu Switch -> Timer settings:



Picture 16-Switch: Timer settings

The following table show the x: Switch -> Timer settings:

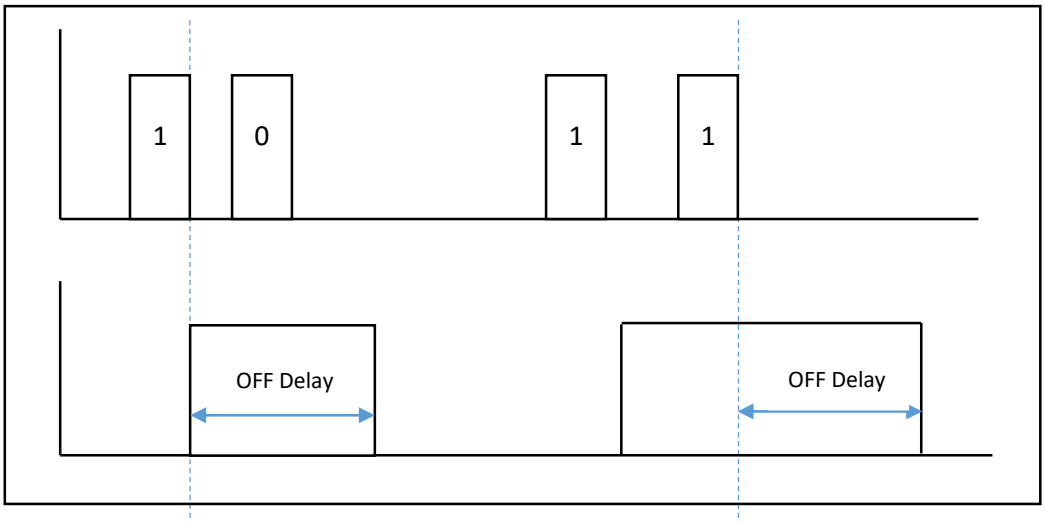
ETS text	Dynamic Range	Comment
Simple Timer	**No** Yes	Activates or deactivates the simple timer
Simple Timer Mode	***Staircase*** *OFF Delay* *ON Delay* *OFF/ON Delay*	*Sets the simple timer mode*
Unit	***Second*** *Minute* *Hour*	*Determines the unit of simple timer*
OFF Delay	*Second: 1…3600 s* ***[10]*** *Minute: 1…1440 min* ***[10]*** *Hour: 1…24 h* ***[1]***	*Sets whether the off action should be executed immediately after receiving 0 through relevant object, or if it should be delayed by a certain time*
ON Delay	*Second: 1…3600 s* ***[10]*** *Minute: 1…1440 min* ***[10]*** *Hour: 1…24 h* ***[1]***	*Sets whether the on action should be executed immediately after receiving 1 through relevant object, or if it should be delayed by a certain time*
Retriggerable	☐ ☑	*It will be possible to progressively multiply the preset on or off Delay*

Flashing Timer	**No** Yes	Activates or deactivates the Flashing timer
ON Duration	*3…3600 s* ***[10]***	*Determines the duration that the output is remain in on state*
OFF Duration	*3…3600 s* ***[10]***	*Determines the duration that the output is remain in off state*
Repetitions (0=Endless)	*0…255* ***[0]***	*If set to "0", the intermittence will only stop when one 0 is received through Flashing Timer or a 0/1 is received through ON/OFF object.*

Table 11-Switch: Timer settings

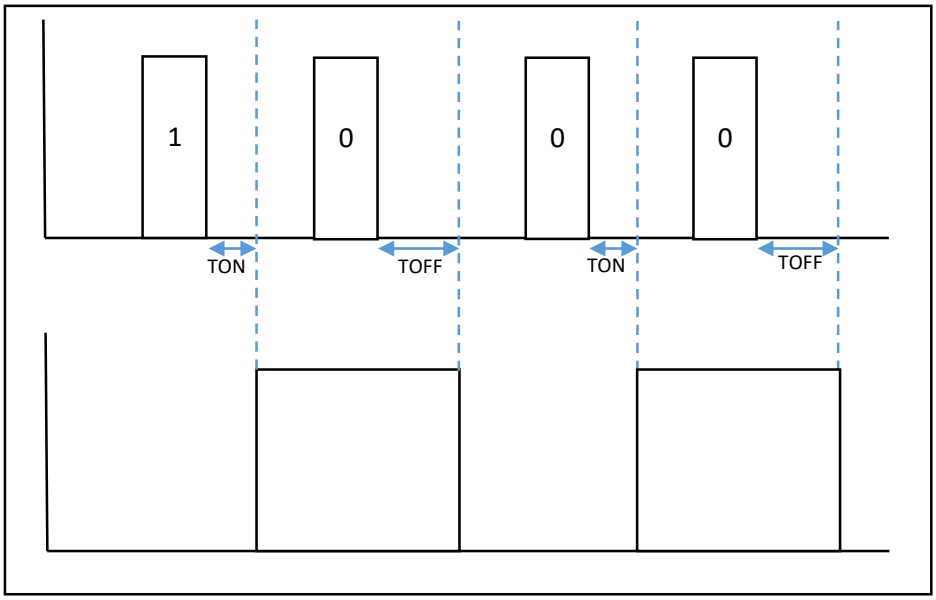
- ✓ Simple Timer Mode:
  - **Staircase:** The staircase light function enables automatic off-switching of the output after a parameterized time. In this case, sending an off-signal to the "simple timer" object has no effect.
  - **OFF Delay:** The off delay causes a delayed switch of the output. At sending an off-signal, first the adjusted off delay time expires and afterwards the output will be switched off.
  - **ON Delay:** The on-delay works on the same principle. At sending an on-signal to the output, first the adjusted on delay time expires and afterwards the output will be switched on.
  - **OFF/ON Delay:** It Combined the ON and OFF delay and it makes possible to use both of delay Simultaneously.
- ✓ Retriggerable:
  - **No:** The staircase time cannot be extended. It is only possible to restart the staircase time after it runs out.
  - **Yes:** The staircase time is restarted by sending an on signal to the "Simple Timer" object.

The following diagram shows the behavior of the “Retriggerable” option in “Staircase” timer:



Picture 17-Behavior of the “Retriggerable” option in “Staircase” timer

The following diagrams describes the combination of ON and OFF delay:



Picture 18-Combination of ON and OFF delay

Sending 1 through “Flashing Timer” object triggers the intermittence of the output, while one 0 will stop it. This intermittence will be subject to the “ON Duration” and “OFF Duration”.

✓ Repetition:

Number of times the on-off sequence will take place. If set to zero, the intermittence will only stop when value 0 is received through “Flashing Timer” object.

✓ Scene:

When functions of different groups (e.g. switch and shutter) shall be changed simultaneously with only one button push, it is practical to use the scene function. By calling a scene, you can switch the lights to a specific value, drive the shutter to an absolute position. The telegrams of these functions can have as well different formats as different values with different meaning. If there were no scene function, you would have to send a single telegram for every actuator to get the same function. The scene function of the switch actuator enable you to connect the outputs of the switch actuator to a scene control. It is possible to program up to 8 scenes per switching output. When you activate the scene function at the switching output, a new sub menu for the scenes appears at the left drop down menu. There are settings to activate single scenes, set values and scene numbers and switch the save function on/off at this sub menu.

Scenes are activated by receiving their scene numbers at the communication object for the scenes. If the save function of the scenes is activated, the current value of the output will be saved. For save the scene, the value send through “Scene”object should be (Scene Number + 128).

Note:

-When a scene is configured with a number, the value to send for calling that scene must be that (Scene Number – 1). For example, if a scene is configured with the number 52, the number to be sent via the object “Scene” must be 51. On the other hand, the value 179 (51+128) must be sent for storage the scene number 52.

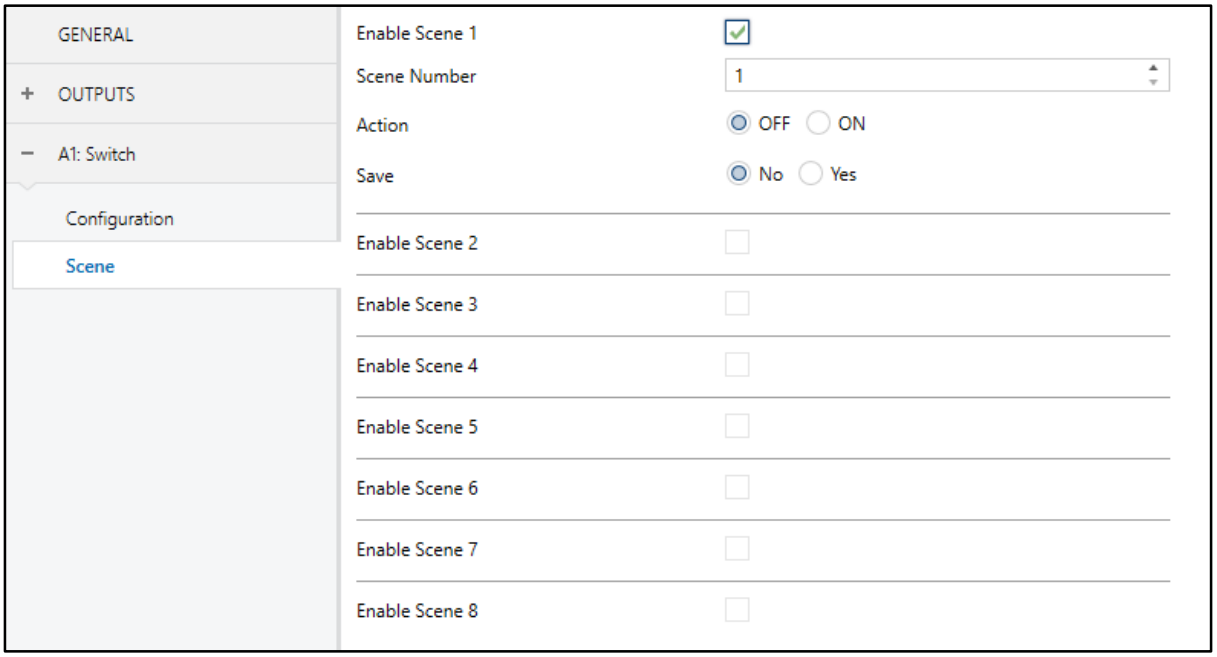
- After ETS programming, the scene values parameterized for the output concerned will be overwritten into the actuator. It means that any change made by the user (by “save” function) will be deleted.

The following table shows the examples of calling and saving the scene number:

Scene Number	Calling		Saving	
	Hex	Dec	Hex	Dec
1	0x00	0	0x80	128
2	0x01	1	0x81	129
3	0x02	2	0x82	130
. . .	. . .	. . .	. . .	. . .
62	0x3D	61	0xBD	189
63	0x3E	62	0xBE	190
64	0x3F	63	0xBF	191

Table 12- Examples of calling and saving the scene number

The following picture shows the menu Switch -> Scene settings



Picture 19-Switch: Scene settings

The following table show the x: Switch -> Scene settings:

ETS text	Dynamic Range	Comment
Enable Scene x	☐ ☑	Activates or deactivates the scene x
Scene Number	*1…64* ***[x]***	*Define the scene number. The scene number, is used to recall the scene via the relevant object*
Action	***OFF*** *ON*	*Define the scene function*
Save	***No*** *Yes*	*Activates or deactivates the save function*

Table 13-Switch: Scene settings

The following table shows the x: Switch communication objects:

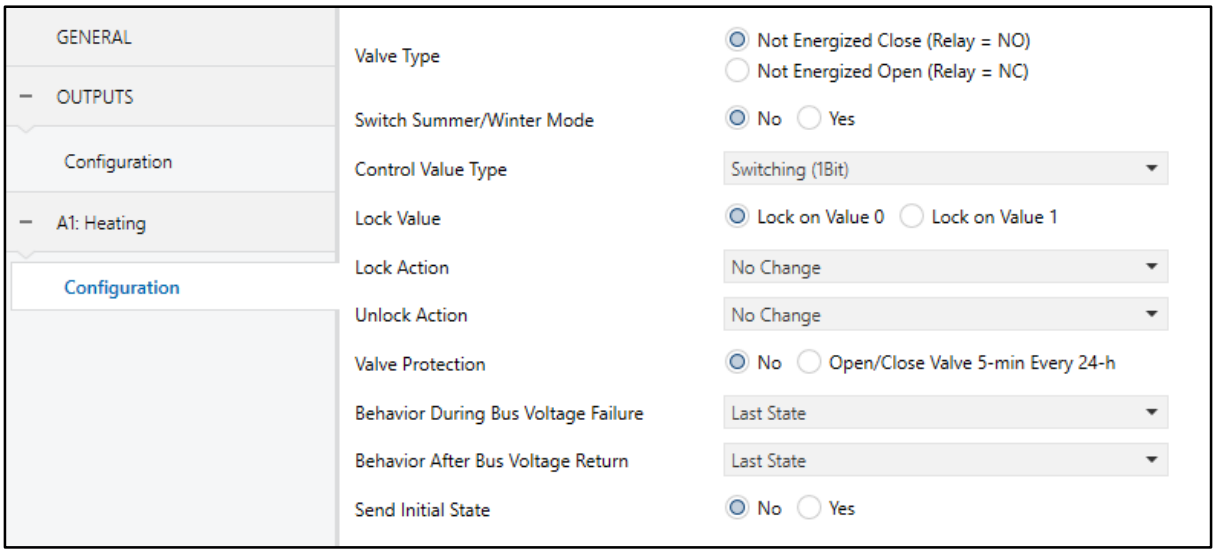
Object Name	Function	Size	Flags	Usage
Switch x	ON/OFF (0=OFF;1=ON)	1bit	CW	Allows switching the output on/off
Switch x	Status (0=OFF;1=ON)	1bit	CRT	Sends the state of the output (0=OFF;1=ON)
Switch x	Lock	1bit	CW	Allows locking the output
Switch x	Simple Timer (0=Deactivated;1=Active)	1bit	CW	Allows switching the output for the adjusted on/off delay time
Switch x	Flashing Timer (0=Deactivated;1=Active)	1bit	CW	Allows switching the output for the adjusted on-duration/off-duration
Switch x	Scene	1byte	CRTU	This object calls the scenes

Table 14-Switch communication objects

3.6 Heating

The outputs of the UA actuator can be configured to control up to 24 heating system. It basically consists of one valve which controls the flow of the warm water. The actuator can be controlled as well by a 1 Bit object as by a 1 Byte object (Continuous or PWM).

The x: Heating -> Configuration settings are shown at the picture below. These settings are valid for all heating outputs.



Picture 20-Heating: Configuration settings

The following table show the x: Heating -> Configuration settings:

ETS text	Dynamic Range	Comment
Valve Type	**Not Energized Close (Relay=NO)** Not Energized Open (Relay=NC)	Adjustment of the valve type
Switch Summer/Winter Mode	**No** Yes	For switchover between summer and winter mode
Summer/Winter Pol. (Normal: 0=Winter;1=Summer)	***Normal*** *Inverted*	*Determines the set value for each mode*
Mode at Startup	***No Reaction/Last Mode*** *Winter Mode* *Summer Mode*	*Defines the operating mode at startup*
Control Value Type	**Switching (1Bit)** Continuous (1Byte) PWM (1Byte)	Determines the type of data used for the control of the valve
Lower Limit	*0…100 %* ***[20]***	*Sets the value for the output to go back to off (valve Close)*
Upper Limit	*0…100 %* ***[70]***	*Sets the value for the output to be on (valve Open)*
Unit	***Minute*** *Hour*	*Determines the unit of PWM timer*

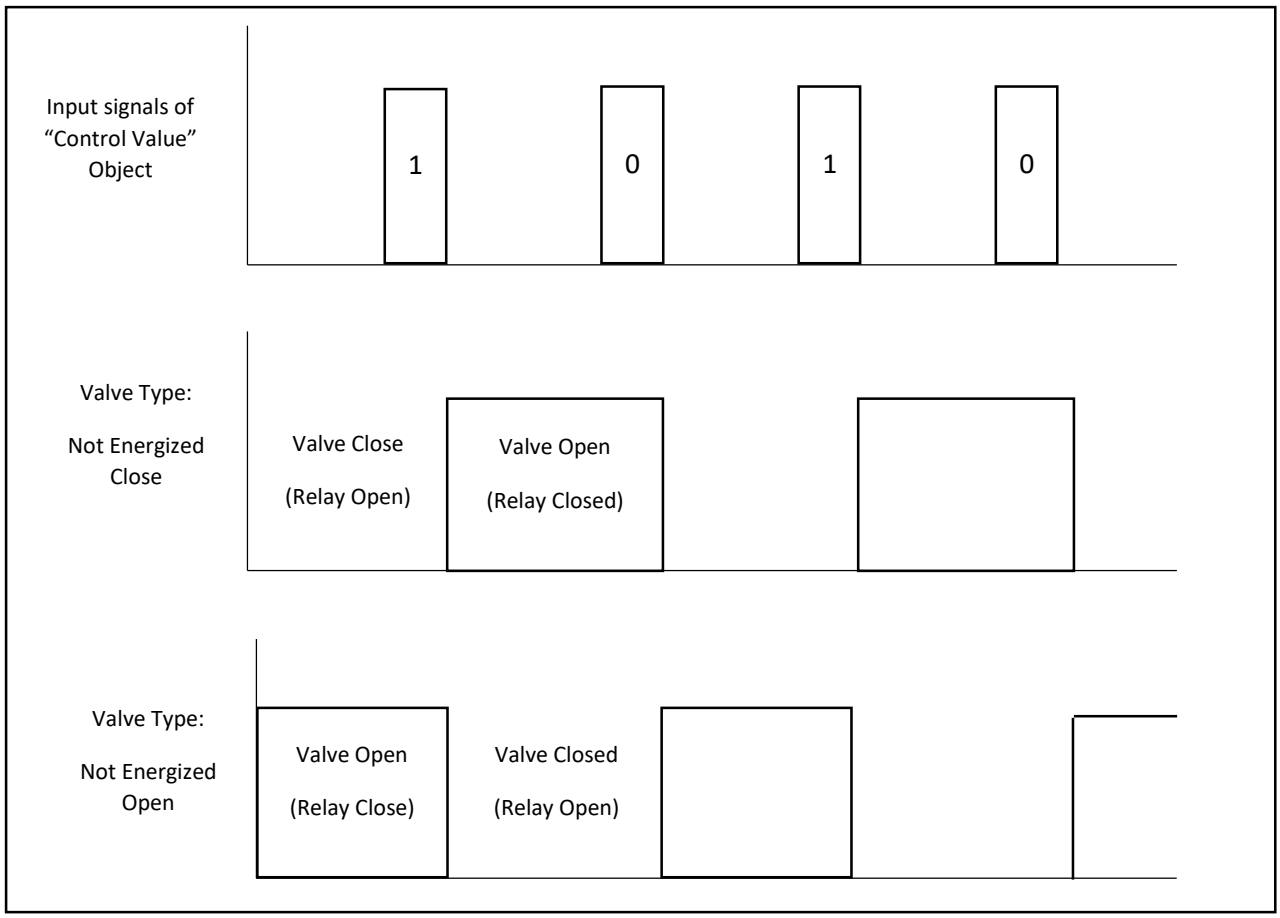
PWM Period	*Minute: 20…1440* ***[20]*** *Hour: 1…24* ***[1]***	*Determines the PWM cycle time*
Lock Value	**Lock on Value 0** Lock on Value 1	Sets the value which the output should be locked
Lock Action	**No Change** OFF ON	Determines the behavior of the switch at the beginning of locking.
Unlock Action	**No Change** OFF ON	Determines the behavior of the switch at the end of locking
Valve Protection	**No** Open/Close Valve 5min Every 24h	Allows the valve to open/close automatically for 5 min every 24 hour when the valve is closed/opened
Behavior during Bus Voltage Failure	**Last State** OFF ON	Determines the behavior of the output during a bus voltage failure
Behavior after Bus Voltage Return	**Last State** OFF ON	Determines the behavior of the output after a bus voltage return
Send Initial State	**NO** Yes	Sets whether send the output status at the startup or not

Table 15-Heating: Configuration settings

✓ Valve Type:

This setting is to conpicture the output, that it can transmit the right switching state to the output according to the given signal. This is only an adaption to normally closed or normally opened contacts of the valves.

The following diagram shows the valve types operations if the “Control Value Type” parameter sets to “Switching (1Bit)”:



Picture 21-Valve types operations for "switching(1Bit)" control mode

- ✓ Swithcing Summer/Winter Mode:

The heating actuator can be set in a summer or winter mode. While the winter mode is activated, the valve is controlled taking the control values into account. However, during summer mode, the valve remains closed and no value is taken into consideration.

- ✓ Mode at Startup:

This parameter defines the operating mode at startup.

- **No Reaction/Last Mode:** The system remains the last operating mode received.
- **Summer Mode:** The operation mode is summer at startup.
- **Winter Mode:** The operation mode is winter at startup.

Note:

The operation mode configured at startup has priority over the behavior after bus voltage return. For example If the parameter "Operation mode at startup" is set as summer and the "Behaviour After Bus Voltage Return" is set as ON, the output will be OFF at startup because the summer mode has priority.

✓ Summer/Winter Pol. (Normal: 0=Winter;1=Summer)

The polarity of the “Summer/Winter Exchange” object can be adjusted. When “Normal” is selected, value 0 represents the winter mode and value 1 represents the summer mode. This is opposite for “Inverted”.

✓ Contorl Value Type

There are 3 possibilities to control the valve as follows:

- **Switching (1Bit):**

It is provided a 1 bit object named “Control Value”. When the value on is received via this object, the valve is opened. Otherwise, the value off closes the valve.

- **Continuous (1Byte):**

The valve control is performed by percentages. When this option is enabled, it is necessary to conpicture 2 parameters (Lower Limit and Upper Limit) that define the hysteresis value.

Note:

-The “Lower Limit” always must be set to smaller value than the upper limit.

- **PWM (1Byte):**

The PWM period is used for calculating the on and off pulses of the control value. This calculation is based on the incoming control value. A PWM period includes the whole time which elapses from one switch-on pulse to the next.

Example:

If a control value of 20% is calculated and PWM period of 30min is adjusted, the control value will be switched on for 6min and switched off for 24min.

✓ Valve Protection:

This option prevents the valves from remaining at a still position, open or closed, for more than 24 hours. Every time this time period expires, the valve will automatically switch to the inverse position, remaining at it for 5 minute. after that, the valve will recover the previous state.

Note:

-The valve protection period count (24 hour) is restarted every time the valve performs an opening/closing. This count may result delayed in the case of temporary KNX bus voltage failures.

Note:

-The locking function remains active even after bus voltage failure.

-The Locking function has priority over other orders (e.g. summer operation mode), however it does not effect on the “Behavior after Bus Voltage Return”, “Behavior during Bus Voltage Failure” functions.

➘ The “Lock Value”, “Lock Action”, “Unlock Action”, “Behavior during Bus Voltage Failure”, “Behavior after Bus Voltage Return” and “Send Initial State” settings are the same as “switch”.

The following table shows the x: Heating communication objects:

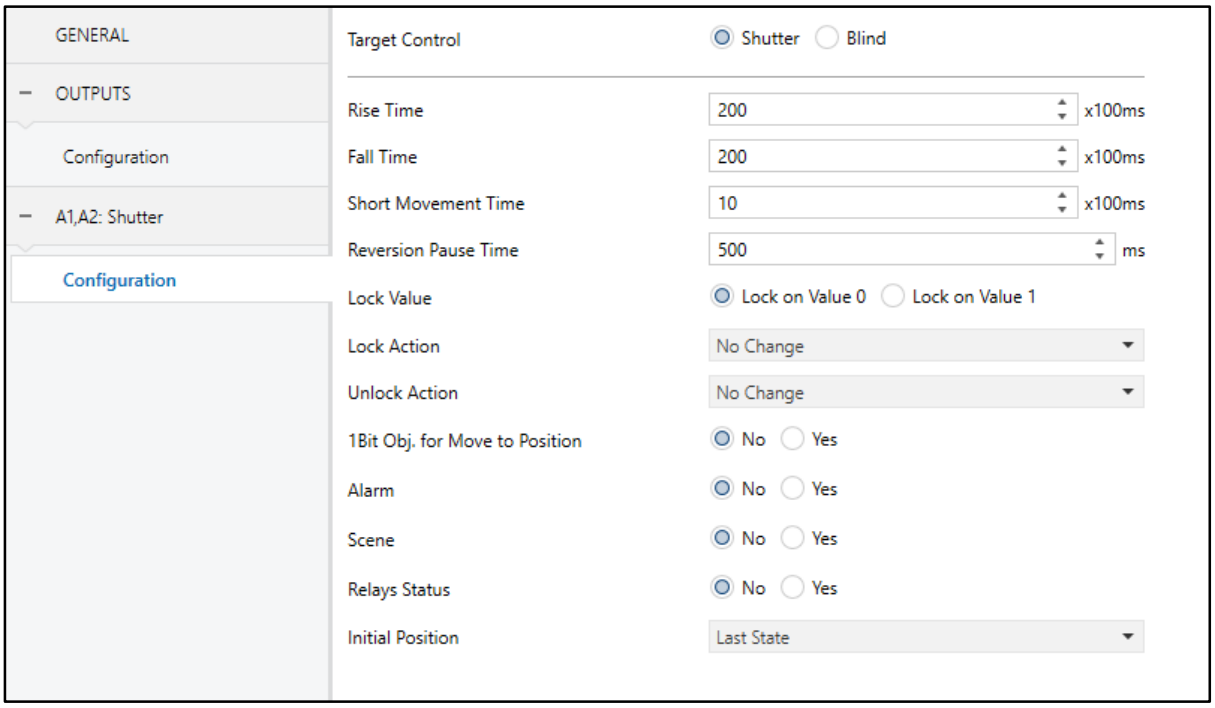
Object Name	Function	Size	Flags	Usage
Heating x	Control Value (0=Close Valve;1=Open Valve)	1bit	CW	Via this object, the valve is controlled with 1 bit telegrams
Heating x	Status (0=Valve Closed;1=Valve Open)	1bit	CRT	Sends the state of the valve
Heating x	Lock	1bit	CW	Allows locking the valve
Heating x	Summer/Winter Exchange	1bit	CW	For switchover between summer and winter mode
Heating x	Control Value	1byte	CW	Via this object, the valve is controlled with percentages value

Table 16-Heating communication objects

3.7 Shutter/Blind

The UA 24-fold actuator can control up to 12, 230 V AC drive motors of shutters or blinds. Each shutter channel consists of two consecutive relay outputs (i.e., Shutter A1A2 is formed by outputs A1 and A2; etc.). The first output of each channel will send electric signals to raise the shutter, whereas the second output will send the signal to lower the shutter/blind. The cables from the motor of the shutter/blind drive should be connected to the actuator in accordance to the above.

The xy: Shutter-> Configuration settings are shown at the picture below:



Picture 22-Shutter: Configuration settings

The following table show the xy: Shutter settings:

ETS text	Dynamic Range	Comment
Target Control	**Shutter** Blind	Determines if a pair of channels shall operate as blind or shutter actuator
Rise Time	0…6000 (*100 ms) **[200]**	Sets the duration for an up movement
Fall Time	0…6000 (*100 ms) **[200]**	Sets the duration for a down movement
Short Movement Time	0…255 **[10]**	Sets the time for the short movements when the shutter is stopped or the duration of the one slat step

Number of Steps	*1…60* ***[5]***	*Number of steps required to move the slats from 0% to 100%*
Reversion Pause Time	0…10000 ms **[5]**	Sets the pause time between an up and down movement
Lock Value	**Lock on Value 0** Lock on Value 1	Sets the value which the channel should be locked
Lock Action	**No Change** Down Up	Determines the behavior of the channel at the beginning of locking
Unlock Action	**No Change** Down Up	Determines the behavior of the channel at the end of locking
1Bit Obj. for Move to Position	**No** Yes	Enables driving to absolute positions via 1 Bit object
Action at Value One	***Always*** *Only if Shutter/Blind is Up* *Only if Shutter/Blind is Down*	*Function for sending a logical 1*
Shutter Position	***0****…100 %*	*Position, which shall be activated at sending a logical 1*
Action at Value Zero (Only if Position is Valid)	***No Function*** *Move Up* *Move Down*	*Action at the deactivation of the position start up, via logical 0*
Alarm	**No** Yes	Activates or deactivates the alarm function
Alarm Action	***No Change*** *Down* *Up* *Specific Position*	*Determines the behavior of the channel at the beginning of alarm*
Action at Alarm Reset	***No Change*** *Down* *Up* *Specific Position*	*Determines the behavior of the channel at the end of alarm*
Shutter Position	***0****…100 %*	*Define the specific target position of the shutter/blind*
Slat Position	***0****…100 %*	*Define the specific target position of the slats (only in blind)*
Scene	**No** Yes	Determines the behavior of the output during a bus voltage failure
Relays Status	**No** Yes	Determines the behavior of the output after a bus voltage return
Initial Position	**Last State** Down Up Specific Position	Determines the behavior of the shutter/blind after a bus voltage return

Table 17-Shutter: Configuration settings

The shutter function and the blind function are almost identical, but there are no options to parameterize or move the slats (i.e,“Number of Steps”) at the blind function.

✓ Target Control:

- **Shutter:** The drive moves UP/DOWN. There is not possibility of moving slats with this option. Via the object “Up/Down” the motion telegrams are sent. If a telegram with the value 0 is received, the shutter moves UP while the value 1 moves the shutter DOWN. Otherwise, through the object “Slat Angle/Stop”, it is possible to stop the movement of the shutter when it is moving or execute short movements when it is stopped.
- **Blind:** The behaviour is the same as for shutter but with this option the movement of slats is available. In contrast to the shutter function, when the blind is at rest, the telegrams received via the object “Stop/Step” allow the positioning of the slats.

Note:

-When the positioning of the slats reaches its maximum or minimum, the following telegrams received via this object will execute short movements of the blind.

✓ Rise Time:

Total time the shutter/blind needs to move to the top (0%) from the bottom (100%). This value is a factor of 100ms.

✓ Fall Time:

Total time the shutter/blind needs to move to the top (100%) from the bottom (0%). This value is a factor of 100ms.

✓ Short Movement Time:

This time represent the time of one step for moving the slats in blinds. In the other way, the short movement time helps you to drive the shutter to a certain position. With small steps, the shutter can be driven to every possible position. It is often useful to set the short movement time as a multiple of the rise or fall time. So the shutter can be driven from the bottom to the top, or the other way around, in a certain number of steps.

✓ Number of Steps:

This parameter determines the number of steps required to move the slats from the 0% position to the 100% position. The time of these steps is configured through the parameter “Short Movement Time”.

✓ Reversion Pause Time:

Sets the time to prevent mechanical and electrical issues due to a sudden direction change when the shutter/blind was already in motion.

✓ 1Bit Obj. for Move to Position

The function position starts up via 1 Bit object enables driving to absolute positions via 1 Bit object. On this, additional conditions can be parameterized when the channel shall drive to the adjusted functions.

The Parameter “Action at Value One” defines whether the position start up shall occur in every position or only at the end positions.
The “Action at Value Zero” will only be done, if the current position is still the same as the adjusted one. If the shutter/blind driven to another position before sending a logical 0, the channel will not drive.

- ✓ Locking:

1-bit object for externally locking or unlocking the shutter/blind. When the lock trigger is received, the actuator will stop any action being performed and will ignore further orders received from the bus until the unlock trigger is received. It is possible to define the value during the locking and the value that the shutter/blind takes after unlocking.

- **Last State:** The shutter/blind remains in its position.
- **Down:** The shutter/blind starts to go up.
- **Up:** The shutter/blind starts to go down.

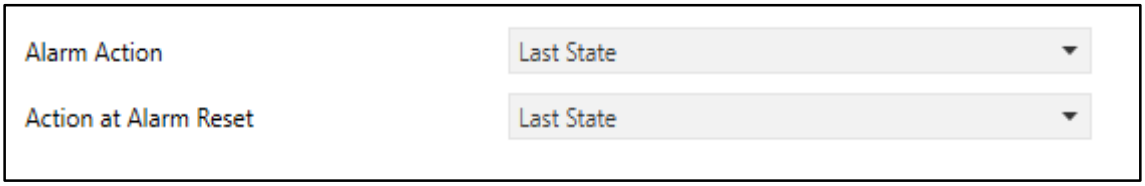
Note:

- The locking function remains active even after bus voltage failure.
- The locking function always prevail over any other function, but the locking function does not effect on the “Behavior after Bus Voltage Return”, “Behavior during Bus Voltage Failure” functions.

- ✓ Alarm:

Every channel of shutter/blind has a 1-bit alarm object which can be used to protect shutters and buildings from strong wind or rain or frost etc. the value 1 is actives the alarm function and value 0 is deactives it.

The following picture shows the xy: Shutter -> Alarm settings:



Picture 23-Shutter: Alarm settings

The reaction of the shutter when one alarm occurs and at the end of it can be configured via the window parameters.

- **No Change:** The shutter/blind remain in its Position.
- **Down:** The shutter/blind starts to go down.
- **Up:** The shutter/blind starts to go up.

- **Specefic position:** Define, in terms of percentage, a specific target position the shutter and the slats will move to when the alarm is triggered.

Note:

During the time that alarm is running, all other commands are ignored except locking function (e.g.: up/down orders during the alarm running will be ignored; lock orders during the alarm running will not).

✓ Relay Status:

enables two 1-bit objects (“Rising Edge Relay Status” and “Falling Edge Relay Status”) which will reflect, respectively, the status of the rising relay and the lowering relay. 0 means that the relay is open and 1 means that the relay is closed.

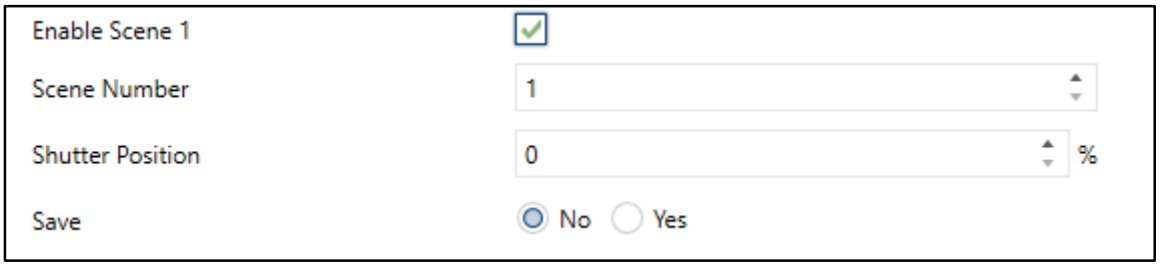
✓ Initial Position:

Only the behaviour of the shutter/blind after bus voltage return can be parameterized. With this parameter you can define that the shutter/blind dose not move, goes down or goes up after the bus voltage returned. For safety reasons, all shutter channels will be stopped (the relays will open) if a power loss takes place.

✓ Scene:

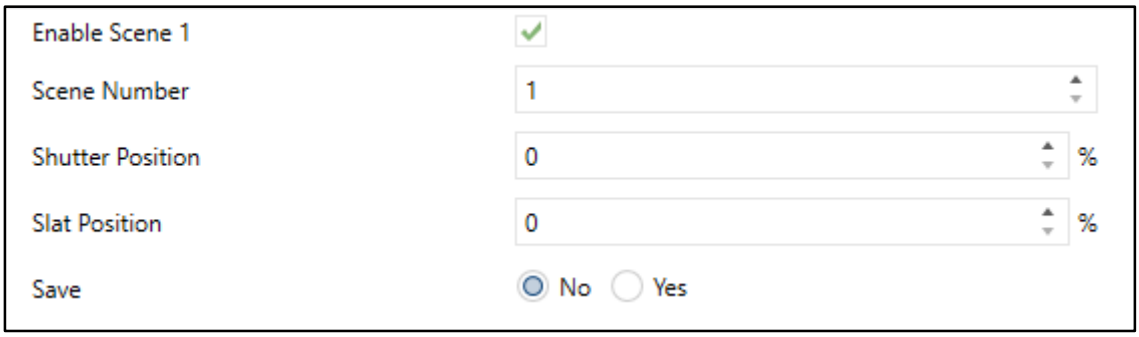
The Scenes function allows setting the shutter (or the slats) to a certain position on the reception of a scene object. For each scene the shutter position and slat position (only for blind) apear to set a position for the shutter and slats.

The xy: Shutter-> Scene settings for “Shutter” are shown at the picture below:



Picture 24-Shutter: Scene settings for Shutter

The xy: Shutter-> Scene settings for “Blind” are shown at the picture below:



Picture 25-Shutter: Scene settings for Blind

➘ Please refer to section 4.5 (“Switch”) for more details about “Scene”.

The following table shows the xy: Shutter communication objects:

Table 18-Shutter communication objects

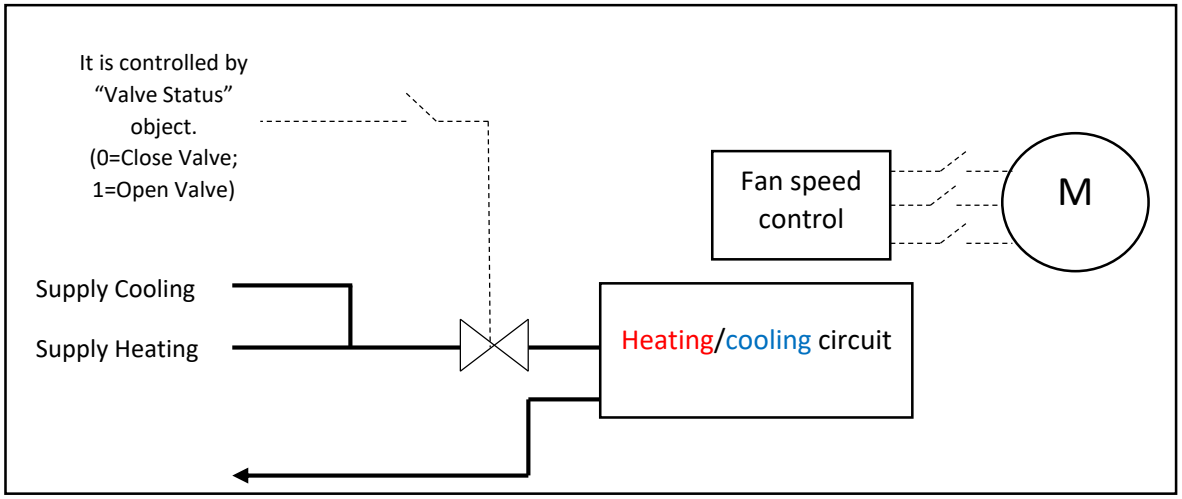
Object Name	Function	Size	Flags	Usage
Shutter x,y	Rising Edge Relay Status (0=Open;1=Closed)	1bit	CRT	Shows the state of rising relay
Shutter x,y	Lock	1bit	CW	Allows locking the output
Shutter x,y	Alarm (0=Deactivated;1=Active)	1bit	CW	Activates or deactivates the Alarm function
Shutter x,y	Scene	1byte	CW	This object calls the scenes
Shutter x,y	Falling Edge Relay Status (0=Open;1=Closed)	1bit	CRT	Shows the state of falling relay
Shutter x,y	Up/Down (0=Up;1=Down)	1bit	CW	Movement of the shutter
Shutter x,y	Stop/Step (0=1=Stop/0=Step Up;1=Step Down)	1bit	CW	Stopping of the shutter movement/ Adjustment of the blinds
Shutter x,y	Shutter Position Status (0%=Up;100%=Down)	1byte	CRT	Indicates the actual shutter/blinds position
Shutter x,y	Shutter Positioning (0%=Up;100%=Down)	1byte	CW	For adjustment of the shutter/blind to a specific value
Shutter x,y	Slat Position Status (0%=Up;100%=Down)	1byte	CRT	Indicates the actual slats position (only at blinds)
Shutter x,y	Slat Positioning (0%=Up;100%=Down)	1byte	CW	For adjustment of the blinds to a specific value (only at blinds)
Shutter x,y	Drive to Position	1bit	CW	Drives to the adjusted position

3.8 Fan Coil

The UA.2416 can control up to 6 FanCoil or blower systems which means each block of this device can control one 2-pipe FanCoil. In 2-pipe systems only one heat exchanger and one control valve are available. This system consists of a single water circuit which is heated or cooled depending on the season.

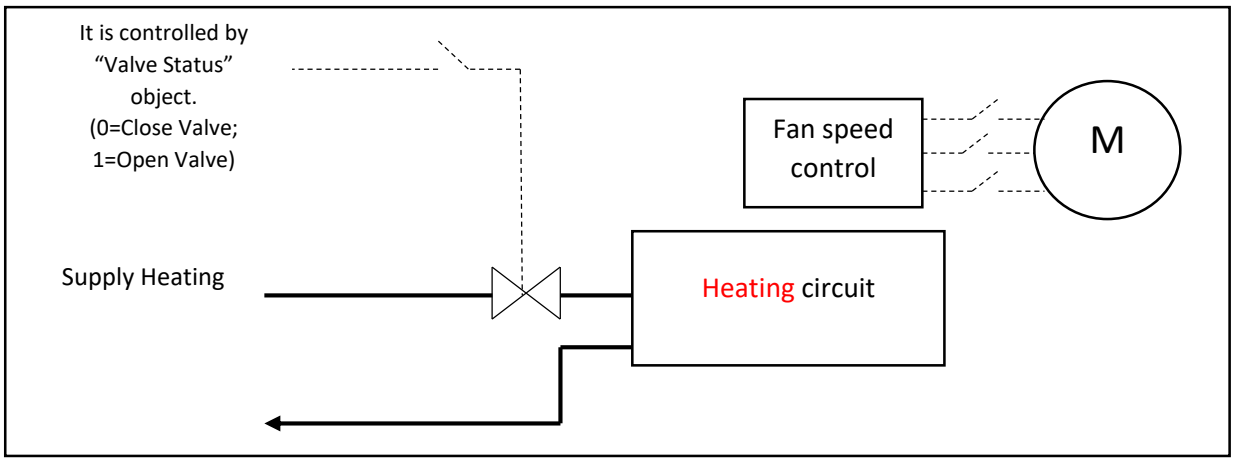
This module features four relays in each block (i.e. Block A) which are mechanically independent of the other outputs. It can possible to control three fan speed with three relays. Moreover, this module provides one binary outputs, thus making it possible to control a two-pipe FanCoil valve or it can use as a simple switch. Normally the FanCoil actuator is used in conjunction with a room temperature controller for an individual room temperature control system. The room temperature controller sends a setting value (in percentage or centigrade degree) for the fan speeds.

The following picture shows a 2-Pipe system with combined heating and cooling mode. The FanCoil is controlled directly from the Ultra Actuator. The valve, which works as heating and cooling valve, is switched by a separate actuator, which is controlled by “Valve Status” object. If the user wants a valve for FanCoil system, he should put the “Valve Status” and the “Control Value”-1Bit- (which it actives from “x4: General tab: Valve” menu) objects in the same group address. According to the mode - heating or cooling - the heating- or cooling-supply is switched on:



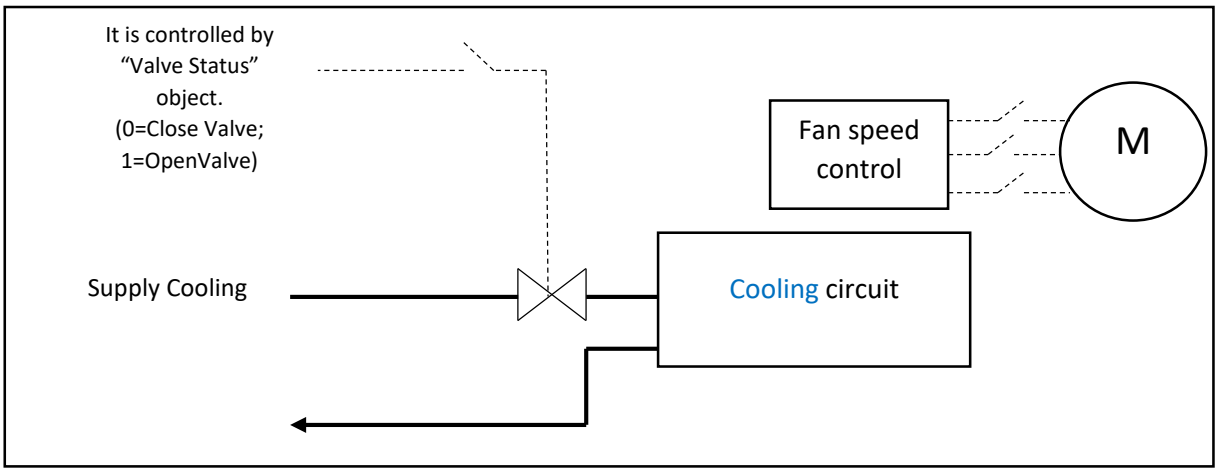
Picture 26-A 2-Pipe system with combined heating and cooling mode

The following picture shows a 2-Pipe system with heating mode. The FanCoil is controlled directly from the Ultra Actuator. The valve, which works as heating and cooling valve, is switched by a separate actuator, which is controlled by “Valve Status” object.



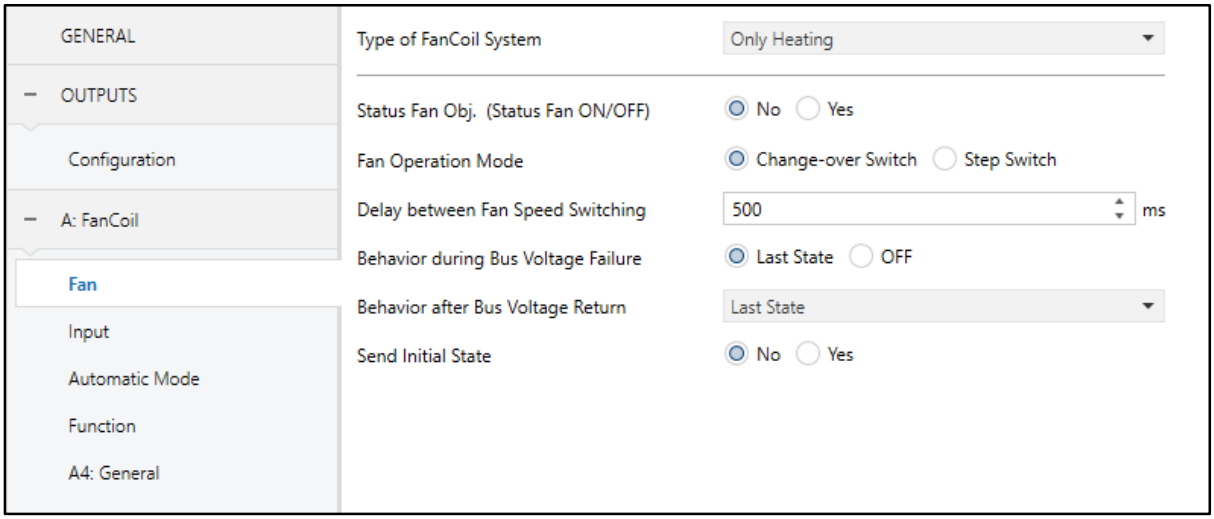
Picture 27-A 2-Pipe system with heating mode

The following picture shows a 2-Pipe system with cooling mode. The FanCoil is controlled directly from the Ultra Actuator. The valve, which works as heating and cooling valve, is switched by a separate actuator, which is controlled by “Valve Status” object.



Picture 28-A 2-Pipe system with cooling mode

The x: FanCoil -> Fan settings are shown at the picture below:



Picture 29-FanCoil: Fan settings

The following table show the x: FanCoil -> Fan settings:

ETS text	Dynamic Range	Comment
Type of FanCoil System	**Only Heating** Only Cooling Heating/Cooling	Determines the function of the FanCoil
Status Fan Obj. (Status fan ON/OFF)	**No** Yes	Activates or deactivates the status fan object
Fan Operation Mode	**Change-Over Switch** Step Switch	This parameter is used to set how the FanCoil fan speed is controlled.
Delay between Fan Speed Switching	*50…10000 ms* ***[500]***	*Sets a delay between the switching of the fan speeds. This parameter is enabled only for change-over switch*
Behavior during Bus Voltage Failure	**Last State** OFF	Determines the behavior of the outputs during a bus voltage failure
Behavior after Bus Voltage Return	**Last State** OFF Speed 1 Speed 2 Speed 3	Determines the behavior of the outputs after bus voltage return
Send Initial State	**No** Yes	Sets whether send the FanCoil statuses at the startup or not

Table 19-FanCoil: Fan settings

- ✓ Type of FanCoil System:
  - **Only Heating:** Only warm water is supplied centrally to the pipe system. There is a heat exchanger and the valve controls the flow of the warm water.
  - **Only Cooling:** Only cool water is supplied centrally to the pipe system. There is a cool exchanger and the valve controls the flow of the cold water.
  - **Heating/Cooling:** In this system only one water circuit is available for heating and cooling. Depending on the central system, warm or cold water is supplied to the pipe system but the valve which controls the flow of this water is unique.
- ✓ Status Fan Obj. (Status fan ON/OFF):

The object “Fan Status” can be enabled with this parameter. Some fans initially require an ON command before they are set to a fan speed from the OFF state. This ON command influences a master switch which has to be switched on. This request can be implemented with any switch output which is controlled via the “Fan Status” object. The corresponding switching object of the switch actuator should be connected with the “Fan Status” object.

The value of the object “Fan Status” is set to 1 if a fan speed is set that is not equal to 0 (OFF). If no fan speed is set, the object value is set to 0.

- ✓ Fan Operation Mode:

The mode of fan control should be taken from the technical data of the fan. Usually the fans are controlled with a change-over switch.

  - **Change-Over**: Only one output is switched on when the change-over switch is parameterized, i.e. the second fan speed is set so that only the second input of the fan is switched on. The LFA/S switches on the second relay of the fan group.
  - **Step Switch**: On a step switch, all the previous outputs are switched on, i.e. the second fan speed is set so that the first and second input of the fan are switched on. The lower speeds are activated consecutively (outputs switched on) until the required speed is achieved.
- ✓ Delay between Fan Speed Switching:

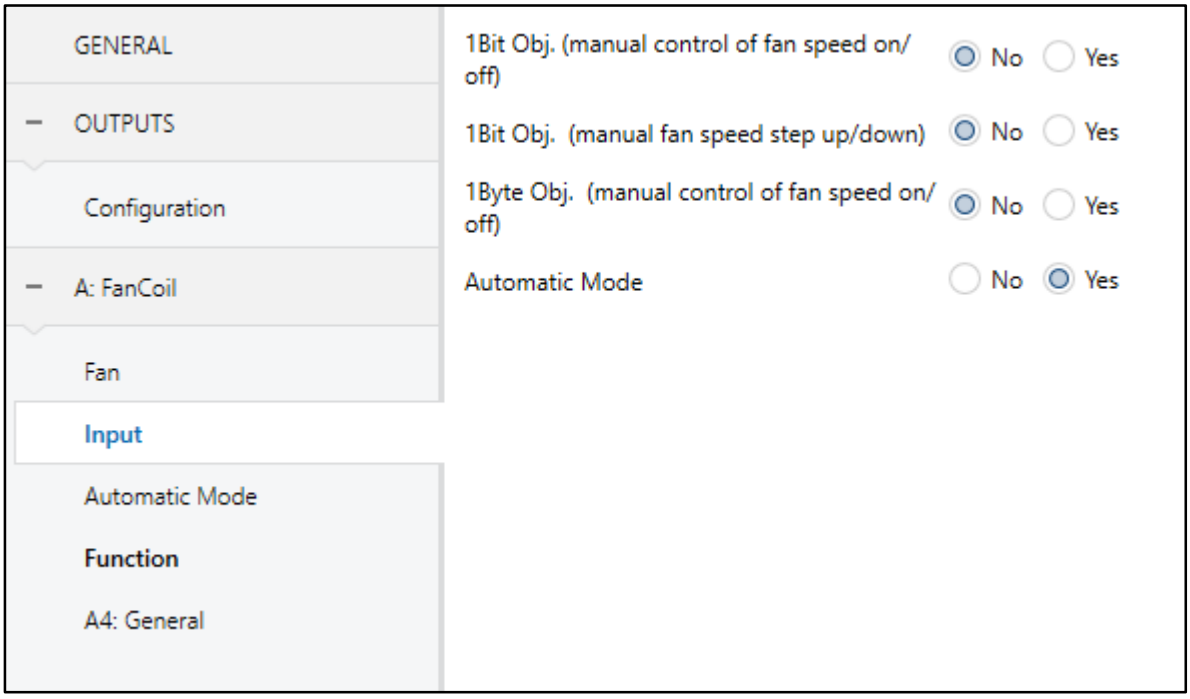
Some FanCoil systems require a switchover delay between speed changes (contact change). This delay corresponds to the period in which the current fan speed is switched off and the next speed is not yet switched on. The necessary delay is a fan-specific factor and can be taken from the technical data of the fan.

This parameter only visible for “Change-Over Switch” control mode. Because with “Step Switch” mode, no erratic and sudden switching on of the fan is possible.

- ✓ Behavior during Bus Voltage Failure:
  - **Last State:** The FanCoil actuator outputs of the fan remain unchanged and the fan speed is retained on bus voltage failure.
  - **OFF:** The fan off via the actuator.
- ✓ Behavior after Bus Voltage Return:
  - **Last State:** The outputs of the fan stays in the last state.
  - **OFF:** The fan off via the actuator.
  - **Speed 1:** The fan speed 1 is switched on.
  - **Speed 2:** The fan speed 2 is switched on.
  - **Speed 3:** The fan speed 3 is switched on.
  -
- ✓ Send Initial State:

If yes is selected, the device will send all status (i.e. fan status, valve status, and etc.) at the moment it is turned on.

The x: FanCoil -> Input settings are shown at the picture below:



Picture 30-FanCoil: Input settings

The following table show the x: FanCoil -> Input settings:

ETS text	Dynamic Range	Comment
1Bit Obj. (manual control of fan speed on/off)	**No** Yes	Activates or deactivates the three 1bit object to manually switched fan speeds
1Bit Obj. (manual fan speed step up/down)	**No** Yes	Activates or deactivates the 1 bit object for manually speed up/down
1Byte Obj. (manual control of fan speed on/off)	**No** Yes	change the fan speed via 1 byte object
Automatic Mode	No **Yes**	For automatically control the FanCoil actuator

Table 20-FanCoil: Input settings

- ✓ 1Bit Obj. (manual control of fan speed on/off):

If yes is selected, the three 1-bit objects" Fan Speed 1" to "Fan Speed 3" are enabled. The FanCoil actuator receives a control command via these objects. A telegram with the value 1 at the object "Fan Speed x" causes fan speed x to switch on. The value 0 to any speed switches off the FanCoil.

- ✓ 1Bit Obj. (manual fan speed step up/down):

If yes is selected, the 1-bit object "Fan Speed Up/Down" is enabled. A speed is switched up a step if a FanCoil actuator receives a telegram with the value 1. If a telegram with the value 0 is received, the fan is switched down one speed. If the maximum speed is achieved and a further telegram with the value 1 is received, the fan's speed will remain as it is.

- ✓ 1Byte Obj. (manual control of fan speed on/off):

If yes is selected, the 1-byte object "Fan Speed Switch" is enabled. The FanCoil actuator receives its setting variables as 1-byte counter values via this object. If a telegram with value 0 is received, the fan is switched off. If a telegram with value 1, 2 and 3 is received, the fan speed 1, fan speed 2 and fan speed 3 is enabled respectively.

- ✓ Automatic Mode:

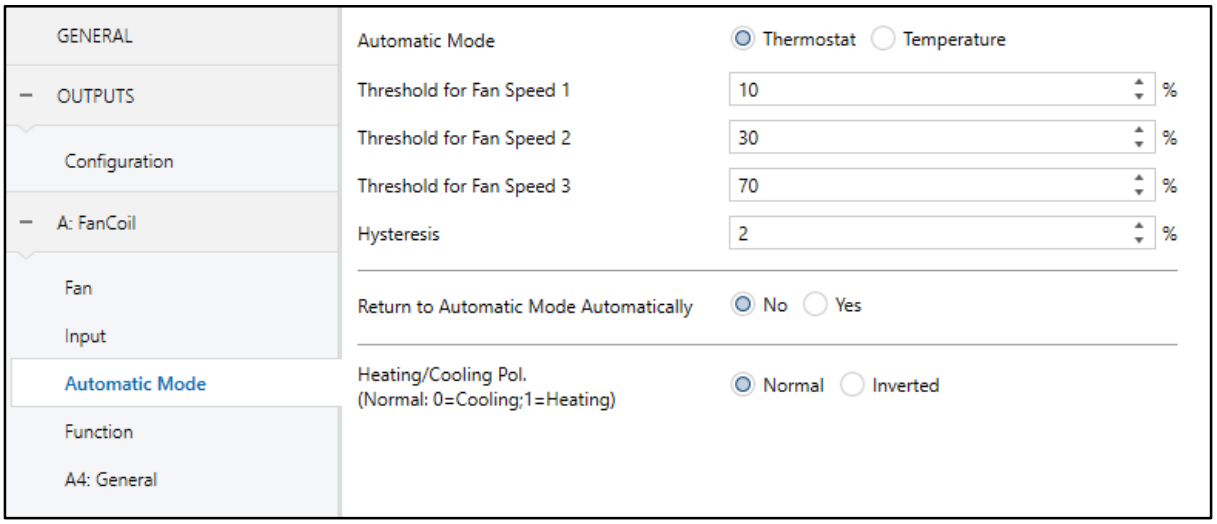
In automatic mode, the UA evaluates its object(s) for automatic mode for the fan via 1-byte object (Control Value (Heating) and/or Control Value (Cooling)) or 2-byte object (Temperature Value). The variables are provided for example by a thermostat or by a temperature sensor.

Automatic mode is activated by a telegram with the value 1 to the object "Automatic ON/OFF" or it can activate automatically if the "Return to Automatic Mode Automatically" parameter sets to Yes. Automatic mode is switched off either by a telegram with the value 0 to the object "Automatic ON/OFF", a manual action via the objects "Fan Speed x", "Fan Speed Up/Down" or "Fan Speed Switch".

↘ Thermostat:

The control value(s) is received through a percentage communication object.

The following picture shows the available settings for the Automatic Mode via “Thermostat”:



Picture 31-Settings for the Automatic Mode via Thermostat

The following table shows the available settings:

ETS text	Dynamic Range	Comment
Automatic Mode	**Thermostat** Temperature	Defines that the FanCoil actuator should react to control values comes from the thermostat or temperature sensor
Threshold for Fan Speed 1	0…100 % **[10]**	Defines from which value the FanCoil switches into fan speed 1
Threshold for Fan Speed 2	0…100 % **[30]**	Defines from which value the FanCoil switches into fan speed 2
Threshold for Fan Speed 3	0…100 % **[70]**	Defines from which value the FanCoil switches into fan speed 3
Hysteresis	0…20 % **[2]**	Defines the hysteresis for switching off/on the certain fan speed
Return to Automatic Mode Automatically	**No** Yes	Determines whether the FanCoil should return to automatic mode automatically or not
Time	*1…3600 second* ***[30]***	*Defines the time which starts after switching manually a fan speed. When this time is elapsed, the FanCoil switches back into the automatic mode*
Heating/Cooling Pol. (Normal: 0=Cooling; 1=Heating)	***Normal*** *Inverted*	*This parameter allows toggling heating and cooling. This parameter is only visible for “Heating/Cooling” FanCoil system.*

Table 21- Settings for the Automatic Mode via Thermostat

✓ Automatic Mode:

The UA FanCoil actuator can react to control values comes from the thermostat (1-byte object(s): “Control Value (Heating)” and/or “Control Value (Cooling)”) or temperature sensor (1-byte object: “Temperature Value”).

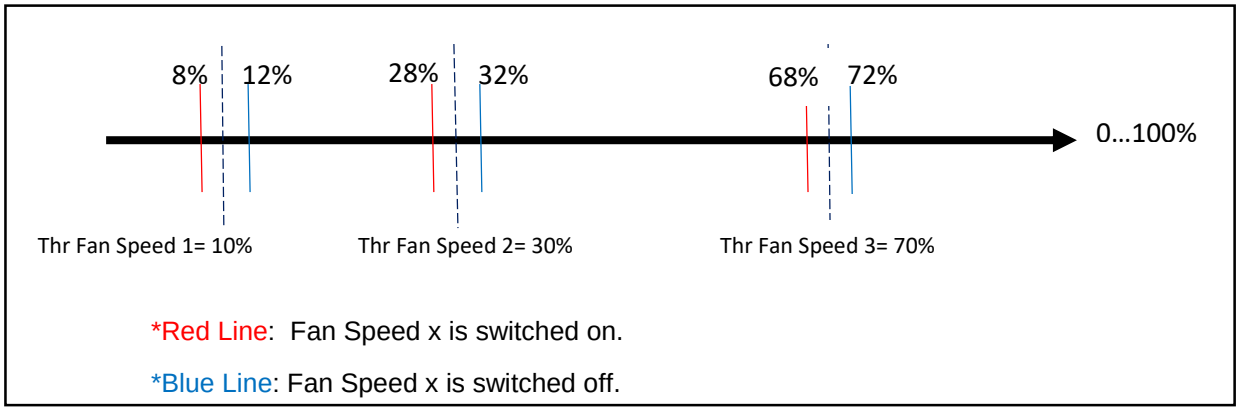
In this “Automatic Mode” parameter window, the threshold values for switching over the fan speed are defined. The corresponding valve control objects named “Valve Status” receive the value 1 if a fan position is set. If a fan speed is not selected, the object will receive the value 0.

✓ Thresholds and Hysteresis: (Thermostat)

- **Threshold for Fan Speed 1:** If the value in the control value object is greater than the parameterized threshold value, speed 1 is switched on; otherwise the FanCoil is switched off.
- **Threshold for Fan Speed 2:** If the value in the control value object is greater than the parameterized threshold value, switching over to speed 2 occurs.
- **Threshold for Fan Speed 3:** If the value in the object Control Value is greater than the parameterized value, switching over to speed 3 occurs.
- **Hysteresis:** Using a hysteresis, continuous switching between the speeds around the threshold value with deviating input signals can be avoided.

The following picture shows an example of the thresholds for fan speed switch:

In this example the “Threshold for Fan Speed 1” is set to 10%, the “Threshold for Fan Speed 2” is sets to 30%, the “Threshold for Fan Speed 3” is sets to 70%, the “Hysteresis” is sets to 2% and the previous speed was zero.



Picture 32-Example of the thresholds for fan speed switch (via Thermostat)

✓ Return to Automatic Mode:

Sets if the manual control switches automatically to automatic control after a certain time of inactivity. This time can be between 1 to 3600 second.

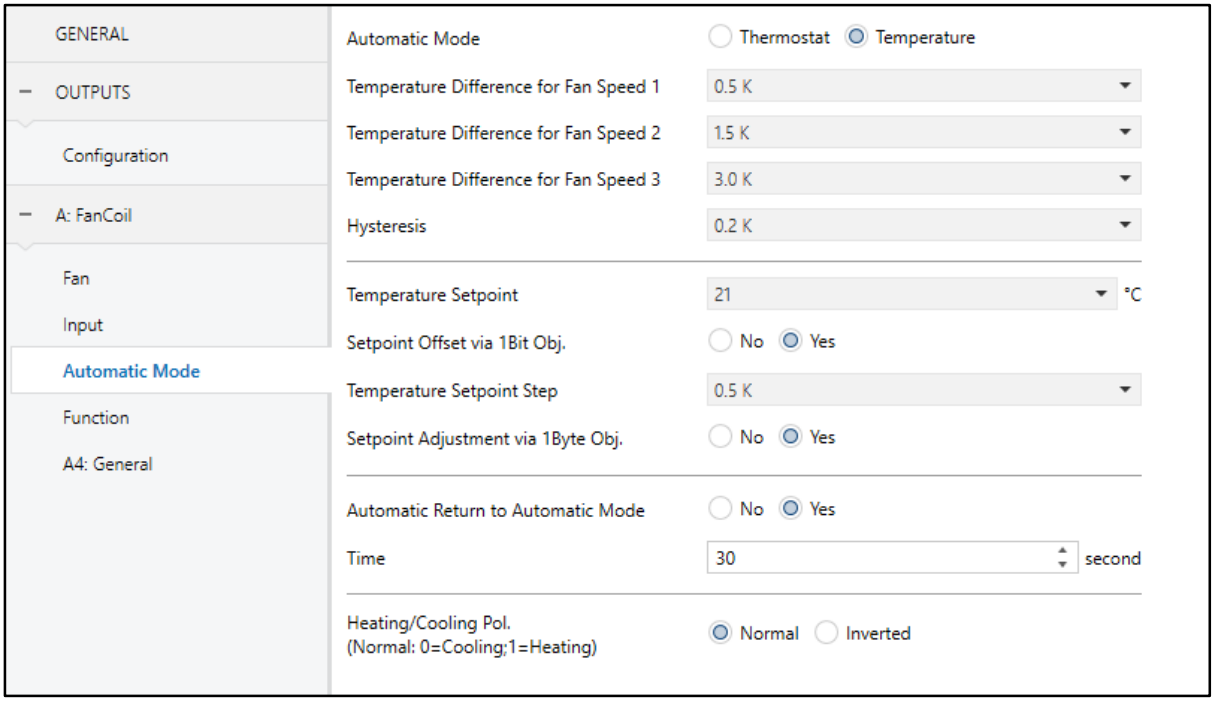
✓ Heating/Cooling Pol.:

When the FanCoil Function is parameterized as “Heating/Cooling”, a new communication object is added (“Heating/Cooling Exchange”) which defines the operating mode of the FanCoil. With the normal configuration, when this object takes the value 0 the FanCoil operates as cooling and when the value is 1 as heating. However, it is possible to change this configuration via “Heating/Cooling Pol.” parameter.

↘ Temperature:

The fan speed is determined according to the difference between a temperature setpoint (or target temperature) and an ambient temperature (or reference temperature), both received through their specific objects.

The following picture shows the available settings for the Automatic Mode via “Temperature”:



Picture 33-Settings for the Automatic Mode via Temperature’

The following table shows the available settings:

ETS text	Dynamic Range	Comment
Temperature Difference for Fan Speed 1	0…10 K **[0.5]**	Defines from which difference value the FanCoil switches into step 1.
Temperature Difference for Fan Speed 2	0…10 K **[1.5]**	Defines from which difference value the FanCoil switches into fan speed 2

Temperature Difference for Fan Speed 3	0…10 K **[3]**	Defines from which difference value the FanCoil switches into fan speed 3
Hysteresis	0…2 K **[0.2]**	Defines the hysteresis for switching off/on the certain fan speed
Temperature Setpoint	10…30 °C **[21]**	Adjustment of the Setpoint
Setpoint Offset via 1Bit Obj.	**No** Yes	The Setpoint offset via 1 Bit object increases the Setpoint at receiving a 1 by the adjusted step range and reduces the Setpoint at receiving a 0 by the adjusted step range.
Temperature Setpoint Step	*0…1 K* ***[0.5]***	*Defines the step range fort the Setpoint offset via 1 Bit object.*
Setpoint Adjustment via 2Bytes Obj.	**No** Yes	Activation of the Setpoint adjustment via 2 Bytes object

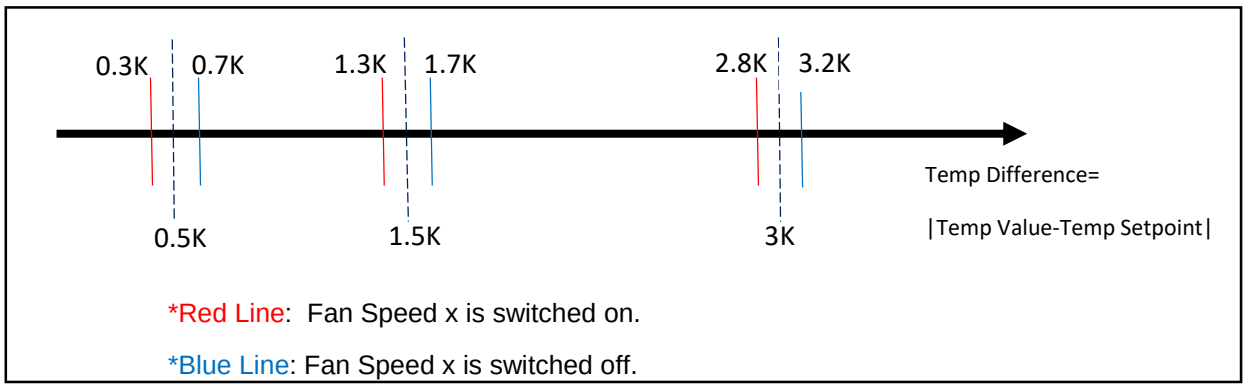
Table 22-Settings for the Automatic Mode via Temperature

✓ Thresholds and Hysteresis: (Temperature)

The fan speed is determined according to the difference between a temperature setpoint (or target temperature) and an ambient temperature (or reference temperature), both received through their specific objects. Such difference determines the target speed depending on whether it exceeds or not certain parameter sable thresholds.

The following picture shows an example of the thresholds for fan speed switch:

In this example the “Temperature Difference for Fan Speed 1” is set to 0.5K, the “Temperature Difference for Fan Speed 2” is sets to 1.5K, the “Temperature Difference for Fan Speed 3” is sets to 3K, the “Hysteresis” is sets to 0.2K and the previous speed was zero.



Picture 34-Example of the thresholds for fan speed switch (via Temperature)

The hysteresis helps to avoid continuous fan speed switches in case the ambient temperature keeps fluctuating around the limit temperature between contiguous levels.

✓ Temperature Setpoint:

Because the “Temperature “mode controls always with the current setpoint, the setpoint can be shifted or set to a new value. Two methods to change the setpoint are available:

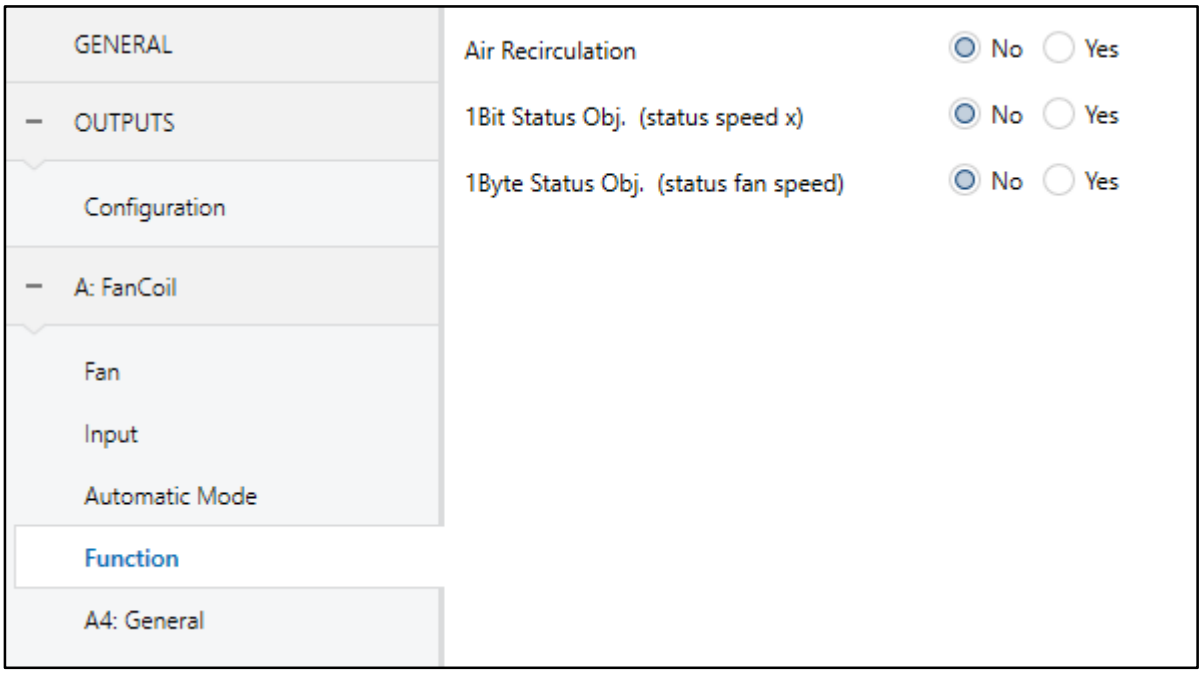
- **Setting a new absolute setpoint:** By sending a temperature to the “Setpoint Adjustment”, a complete new setpoint is set.
- **Shifting the setpoint in steps by using a 1 –bit object:** By sending a 1 to “Setpoint Offset” object, the setpoint is increased by the adjusted step range and by sending a 0 to that object, the setpoint is decreased by the adjusted step range.

Note:

-The temperature setpoint can set between 10 to 30 °C.

The next parameter window is “Function” window. This parameter window is used to enable the individual functions.

The x: FanCoil -> Function settings are shown at the picture below:



Picture 35-FanCoil: Function settings

The following table shows the available settings:

ETS text	Dynamic Range	Comment
Air Recirculation	**No** Yes	Enables air recirculation function
1Bit Status Obj. (status fan speed x)	**No** Yes	Enables three 1-bit objects for shows the fan speed x status
1Byte Status Obj. (status fan speed)	**No** Yes	Enables 1-byte object which defines the numerical value of the fan speed

Table 23-FanCoil: Function settings

✓ Air Recirculation:

It sets whether the fan should remain on even when the valve is closed (“Valve Status” object always send value 0). This feature allows the ventilation of room when there is no demand of heat or cold. It is possible to enable this air recirculation function via sending value 1 to the “Air Recirculation” object and this function will be disabled if a telegram with 0 value is received.

✓ 1Bit Status Obj. (status fan speed x):

If yes is selected, three 1-bit objects (“Fan Speed x Status”, x = 1 to 3) are enabled.

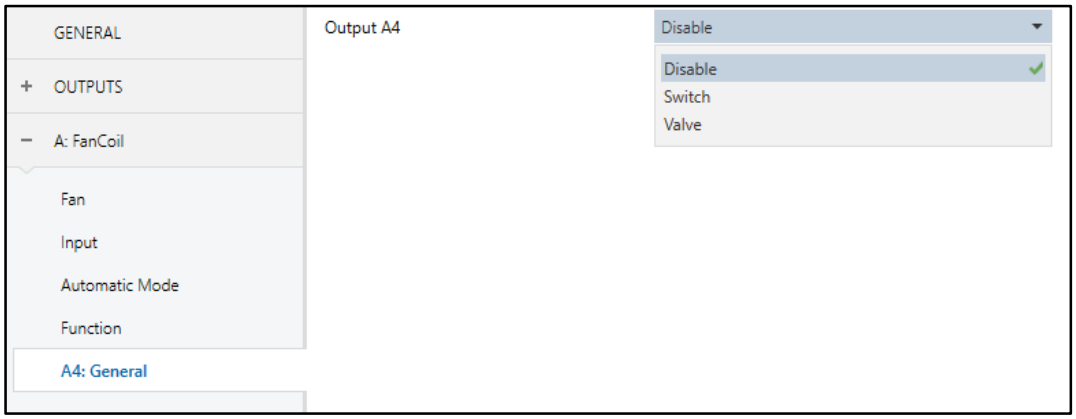
✓ 1Byte Status Obj. (status fan speed)

If yes is selected, the object “Fan Speed Status” is enabled. This status byte defines the numerical value of the fan speed.

0= FanCoil is OFF; 1= Fan speed 1 is on; 2= Fan speed 2 is on; 3= Fan speed 3 is on.

The last parameter window is “x4: General” window. The free outputs of the FanCoil actuator which are not required for a fan application to control its “Valve”, can be used as “Switch” actuators. For more details about these functions please refer to section 4.5 “Switch” and section 4.6 “Heating”. The parameter and communication objects of the “valve” is the same as “Heating” actuator.

The following picture shows this parameter window:



Picture 36-FanCoil: x4:General settings.

The following table shows the x: FanCoil communication objects:

Object Name	Function	Size	Flags	Usage
Fancoil x1,x2,x3	Fan Speed 1 (0=OFF;1=ON)	1bit	CW	The actuator receives a setting value for fan speed 1 via this object
Fancoil x1,x2,x3	Fan Speed 1 Status (0=OFF;1=ON)	1bit	CRT	With this object, is possible to display the state of the fan speed 1

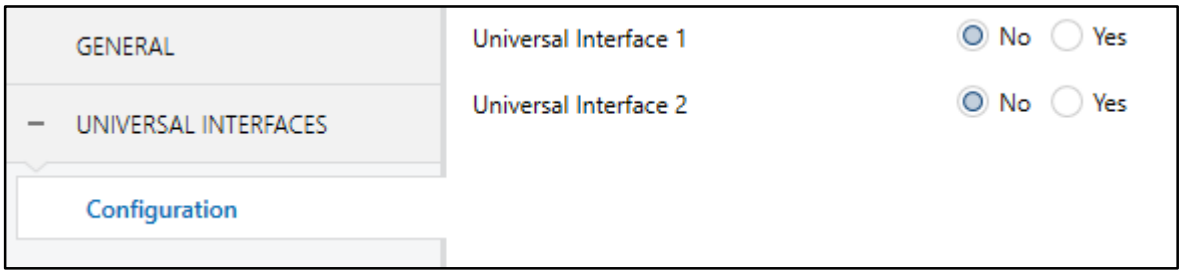
Fancoil x1,x2,x3	Heating/Cooling Exchange	1bit	CW	This object defines if the input variable is a heating signal which controls the heating circuit (via “Control Value (Heating)” obj.) or a cooling signal which controls the cooling circuit (via “Control Value (Cooling)” obj.)
Fancoil x1,x2,x3	Automatic ON/OFF (0=OFF;1=ON)	1bit	CW	This object enables or disables the automatic control mode
Fancoil x1,x2,x3	Air Recirculation (0=Deactivated;1=Active)	1bit	CW	Shows the state of falling relay
Fancoil x1,x2,x3	Fan Speed 2 (0=OFF;1=ON)	1bit	CW	The actuator receives a setting value for fan speed 2 via this object
Fancoil x1,x2,x3	Fan Speed 2 Status (0=OFF;1=ON)	1bit	CRT	With this object, is possible to display the state of the fan speed 2
Fancoil x1,x2,x3	Fan Speed 3 (0=OFF;1=ON)	1bit	CW	The actuator receives a setting value for fan speed 3 via this object
Fancoil x1,x2,x3	Fan Speed 3 Status (0=OFF;1=ON)	1bit	CRT	With this object, is possible to display the state of the fan speed 3
Fancoil x1,x2,x3	Fan Speed Status (0=OFF;1=S1;2=S2;3=S3)	1byte	CRT	With this object it is possible for example to display the fan speed on the display as a direct numerical value
Fancoil x1,x2,x3	Fan Status (0=OFF;1=ON)	1bit	CRT	The object receives the object value 1 (ON), if a fan speed is not equal to OFF. The value of the object is updated if the fan speed changes
Fancoil x1,x2,x3	Fan Speed Up/Down (0=Down;1=Up)	1bit	CW	Using this object, the fan can be switched up or down a speed via a 1-bit object
Fancoil X1,x2,x3	Fan Speed Switch (0=OFF;1=S1;2=S2;3=S3)	1byte	CW	With this object, the fan can be switched on via a 1-byte object of a fan speed
Fancoil x1,x2,x3	Control Value (Heating)	1byte	CW	Receiving a control value for heating via thermostat
Fancoil x1,x2,x3	Control Value (Cooling)	1byte	CW	Receiving a control value for cooling via thermostat
Fancoil x1,x2,x3	Valve Status (0=Closed;1=Open)	1bit	CRT	The valve of the heating/cooling circuit is controlled via this object
Fancoil x1,x2,x3	Setpoint Adjustment	2bytes	CW	Sending a new absolute Setpoint
Fancoil x1,x2,x3	Temperature Value	2bytes	CW	Receiving the current room temperature
Fancoil x1,x2,x3	Setpoint Offset (0=Deacrese;1=Increase)	1bit	CW	Shifts the Setpoint by the adjusted step range
Fancoil x1,x2,x3	Setpoint Status	2bytes	CRT	State of the current Setpoint

Table 24-FanCoil communication objects

3.9 Universal Interface

The UA.2416.01 actuator has up 2 Universal Interface channels which you will be able to parameterize each channel as “Switch”, “Switch Short/Long Button Press” or “Scene”. Each input is parameterized individually via ETS. The inputs react depending on their programmed parameters and send a telegram on the bus. You can connect conventional push-buttons or auxiliary contacts (e.g. door and window contacts) to the device. The command for rising and falling edge can be defined independently and with the block communication object each channel can be blocked or released.

The Universal Interface-> Configuration settings are shown at the picture below:



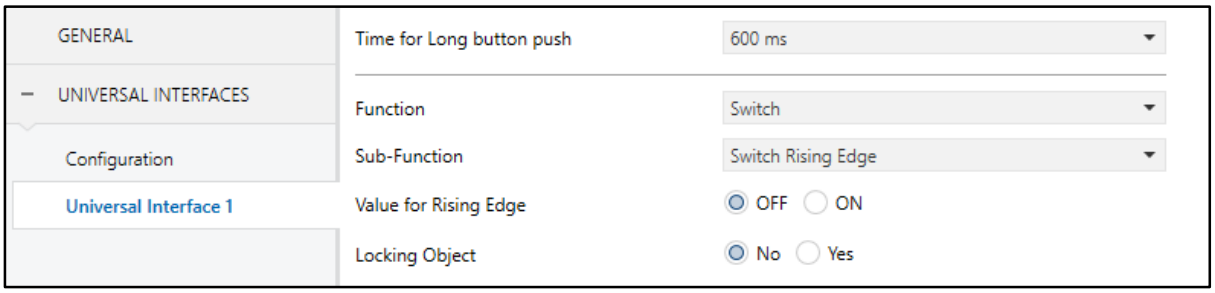
Picture 37-Universal Interface:Configuration settings

The following chart shows the dynamic range for the Universal Interface -> configuration settings:

ETS text	Dynamic Range	Comment
Universal interface One	**No** Yes	Enables or disables the universal interface 1
Universal Interface Two	**No** Yes	Enables or disables the universal interface 2

Table 25-Universal Interface:Configuration settings

If you enable any of these two parameter, the relevant parameter window is shown. For example, the following picture shows the Universal Interface -> Universal interface 1 settings:



Picture 38-Universal interface x (Function=Switch) settings.

The following table shows the available settings:

ETS text	Dynamic Range	Comment
Time for Long button push	300…10000 ms **[600]**	Defines the time when the ETS recognizes a long button push
Function	**Switch** Switch Short/Long Button Press Scene	Defines the universal interface function
Sub-Function	***Switch Rising Edge*** *Toggle Rising Edge* *Switch Falling Edge* *Toggle Falling Edge* *Send Status* *Toggle Both Edges* *Send 1Byte Value Rising Edge* *Send 1Byte Value Falling Edge* *Send 1Byte Value Both Edges* *Send Status with ON Delay* *Send Status with OFF Delay*	*Defines the Sub-Function. This parameter only visible if the "Switch" function is selected*
Value for Rising Edge (Sub-Function=Switch Rising Edge)	***OFF*** *ON*	*Defines the value for rising edge (this parameter only visible if Sub-Function=Switch Rising Edge)*
Value for Falling Edge (Sub-Function=Switch Falling Edge)	***OFF*** *ON*	*Defines the value for falling edge (this parameter only visible if Sub-Function=Switch Falling Edge)*
Value for Rising Edge (Sub-Function=Send 1Byte Value Rising Edge)	*0…255* ***[0]***	*Defines the 1-byte value to send for rising edge (this parameter only visible if Sub-Function= Send 1Byte Value Rising Edge)*
Value for Falling Edge (Sub-Function=Send 1Byte Value Falling Edge)	*0…255* ***[0]***	*Defines the 1-byte value to send for falling edge (this parameter only visible if Sub-Function= Send 1Byte Value Falling Edge)*
Send Initial State	***No*** *Yes*	*Defines the behavior at a bus power up*
On Delay	*1…60 second* ***[1]***	*Adjustment of the delay time for the sending process*
OFF Delay	*1…60 second* ***[1]***	*Adjustment of the delay time for the sending process*
Locking Object	**No** Yes	blocks the related channel by sending a value 1

Table 26-Universal Interface x (Function=Switch) settings

✓ Time for Long button push:

This parameter allocates a static value to the universal interface from when a long button push is recognized. This parameter is important for functions, which have different functions for a long and a short button push.

✓ Locking Object:

Both Universal Interface channels has a “Lock” object witch can be enabled by corresponding “Locking Object” parameter. The universal interface is blocked by sending a value 1 to “Lock” object. A blocked channel is not controllable as long as it is locked. By sending a value 0, the channel can be unlocked again.

✓ Function:

Switch:

The switching function is for switching the corresponding output on, off and toggling it. There is a multitude of sub-functions at the switching function, which enables the user to evaluate edges and integrate times to the switching process.

Various sub-functions are available at a switching output. Most of these sub-functions contain also of further parameterization-options. The different sub-functions as well as their parameterization options are described in the following segments:

- **Switch Falling/Rising Edge:** The sub-function “Switch Rising Edge” and “Switch Falling Edge” send only a telegram at the adjusted edge. You can parameterize whether a 0 telegram or a 1 telegram should be sent via “Value for Rising Edge” or “Value for Falling Edge” parameters.

The following table shows the corresponding communication object:

Object Name	Function	Size	Flags	Usage
Universal Interface x	Output-Switch	1bit	CRT	Switching function, no differences between a long and a short button push

Table 27-Universal Interface x (Function=Switch Falling/Rising Edge) communication objects

- **Toggle Rising/Falling/Both Edge:** the sub-function “Toggle Rising Edge” and “Toggle Falling Edge” toggles at the adjusted edge. That means, the current value of the communication object is inverted at every switching process. The sub-function “Toggle Both Edge” enables toggling in both edges.

  The following table shows the corresponding communication object:

Object Name	Function	Size	Flags	Usage
Universal Interface x	Output-Switch	1bit	CRT	Switching function, no differences between a long and a short button push
Universal Interface x	Value for Toggle	1bit	CW	Indicates the switching state of the output

Table 28-Universal Interface x (Function=Toggle Rising/Falling/Both Edge) communication objects

- **Send Status:** By using the sub-function “Send Status” the input sends always the parameterized telegram for corresponding edge. You can parameterize whether a 0 telegram or a 1 telegram should be sent via “Value for Rising Edge” or “Value for Falling Edge” parameters. With the “Send Initial State” parameter, you can define the behavior of the interface at the bus power up. The following table is shown the communication objects for this sub-function:

Object Name	Function	Size	Flags	Usage
Universal Interface x	Output-Switch	1bit	CRT	Switching function, no differences between a long and a short button push

Table 29-Universal Interface x (Function=Send Status) communication objects

- **Send 1Byte Value Rising/Falling/Both Edges:** After activating the sub-function “Send 1Byte Value Rising Edge” or “Send Value Falling Edge” or “Send Value Both Edges” you have to choose witch value should be send. The 1 Byte communication object can send any value in its dynamic range. The dynamic range is thereby from 0-255. Depending on parameterization the input sends the adjusted values for the rising or the falling edge or for both edges.

  The following table is shown the communication objects for this sub-function:

Object Name	Function	Size	Flags	Usage
Universal Interface x	Output-Switch	1byte	CRT	Sends the parameterized value

Table 30-Universal Interface x (Function=Send 1Byte Value Rising/Falling/Both Edges) communication objects

- **Send Status with ON/OFF Delay:** The sub-function “Send Status with ON Delay” and “Send Status with OFF Delay” allows that the binary input sends its status after a certain time (“ON Delay” or “OFF Delay”). At the on-delay, the time starts when the associated input was switched on and at the off-delay, the time starts when the associated input was switched off. The universal interface sends always its current status at this function. If the status changes before the time ran out, the on delay will expire. For example, when an input with a parameterized on-delay is switched off, before it was switched on, the input remains off.

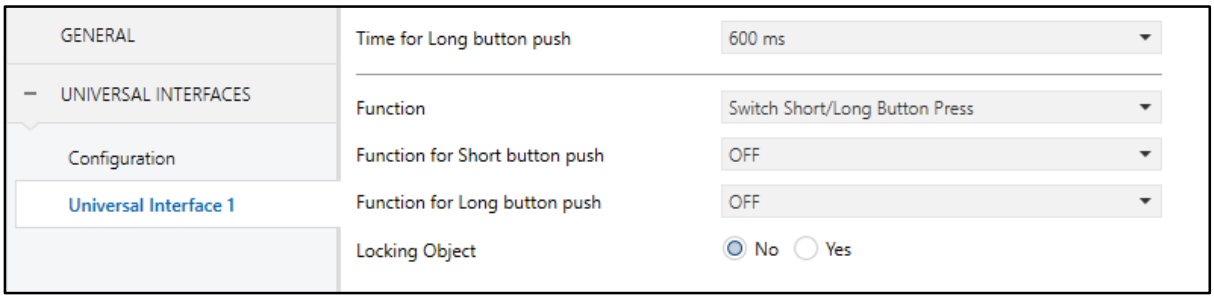
  The following table is shown the communication objects for this sub-function:

Object Name	Function	Size	Flags	Usage
Universal Interface x	Output-Switch	1bit	CRT	Switching function; no differences between long and short button push

Table 31-Universal Interface x (Function=Send Status with ON/OFF Delay) communication objects

Switch Short/Long Button Press:

The parameter switch short/long button press can assign the input different switching processes for a long and a short button push. The following picture shows the sub-functions for this parameter:



Picture 39-Universal Interface x (Function=Switch Short/Long) settings

The following table shows the available settings:

ETS text	Dynamic Range	Comment
Function for Short button push	**OFF** ON Toggle Send Value Nothing	Action for a short button push
Function for Long button push	**OFF** ON Toggle Send Value Nothing	Action for a long button push

Table 32-Universal Interface x (Function=Switch Short/Long Button Press) settings

The parameter “Switch Short/Long Button Press” can control for example two output of the actuator by using only one input. Furthermore, you can switch an output with a long button push on and with a short button push off. For both objects, a function can be set individually. Therefore, the sub-functions on, off, toggle and nothing are available. Two communication objects are displayed, which can be connected in any way. By activating the sub-function “Toggle” an additional object names “Value for Toggle” is appeared.

Moreover, any value can be send for the sub-function “Send Value” at a Short/Long button push. As well scenes can be called as any byte value can be sent. So it is for example possible to call different scenes for a long and a short button push.

The following table is shown the communication objects for this sub-function:

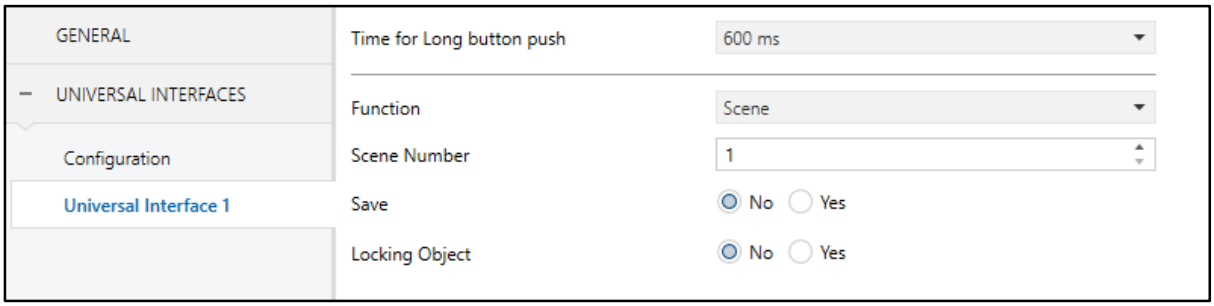
Object Name	Function	Size	Flags	Usage
Universal Interface x	Output-Short button push	1bit	CRT	Switching function short button push
Universal Interface x	Output-Long button push	1bit	CRT	Switching function long button push
Universal Interface x	Value for Toggle Short	1bit	CW	Indicates the switching state of the output for short button push
Universal Interface x	Value for Toggle Long	1bit	CW	Indicates the switching state of the output for long button push

Table 33-Universal Interface x (Function=Switch Short/Long Button Press) communication objects

Scene:

The scene function calls scenes, which are saved in actuators. Scene numbers in the universal interface and the actuators must be identical. It is possible to save scenes by a long button push if the saving function was activated.

The following picture shows the sub-functions for this parameter:



Picture 40-Universal Interface x (Function=Scene) settings

The following table shows the available settings:

ETS text	Dynamic Range	Comment
Scene Number	1…64 **[1]**	Defines the scene number. Scene number must be identical with the one in the actuators
Save	**No** Yes	Saving function is selected to be a long button push

Table 34-Universal Interface x (Function=Scene) settings

The scene function calls scenes, which were stored in actuators. Scenes contain of parameterized states of several actuators, which can be called with only one button push by using the scene function. Additional to the call of scenes, scenes can be saved at the call of a universal interface by a

long button push. When the saving function was activated, a long button push at the universal interface saves the current state of the actuators to the depending scene.

➘ Please refer to section 4.5 “Switch -> Scene”, for more detail about the “Scene Number” and the “Save” function”.

The following table is shown the communication objects for this sub-function:

Object Name	Function	Size	Flags	Usage
Universal Interface x	Output-Scene	1byte	CRTU	calls the depending scene

Table 35-Universal Interface x (Function=Scene) communication objects

4 Appendix A: Logic Gates

AND				
Input 1	Input 2	Input 3	Input 4	Output
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	0
0	1	0	0	0
0	1	0	1	0
0	1	1	0	0
0	1	1	1	0
1	0	0	0	0
1	0	0	1	0
1	0	1	0	0
1	0	1	1	0
1	1	0	0	0
1	1	0	1	0
1	1	1	0	0
1	1	1	1	1

Table 36- AND logic gate function

OR				
Input 1	Input 2	Input 3	Input 4	Output
0	0	0	0	0
0	0	0	1	1
0	0	1	0	1
0	0	1	1	1
0	1	0	0	1
0	1	0	1	1
0	1	1	0	1
0	1	1	1	1
1	0	0	0	1
1	0	0	1	1
1	0	1	0	1
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1

Table 37- OR logic gate function

XOR				
Input 1	**Input 2**	**Input 3**	**Input 4**	**Output**
0	0	0	0	0
0	0	0	1	1
0	0	1	0	1
0	0	1	1	0
0	1	0	0	1
0	1	0	1	0
0	1	1	0	0
0	1	1	1	1
1	0	0	0	1
1	0	0	1	0
1	0	1	0	0
1	0	1	1	1
1	1	0	0	0
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0

Table 38- XOR logic gate function

5 Index

5.1 List of Pictures

5.2 List of Tables

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