BUILDING AUTOMATION COMPETENCE CENTER EUROPE

KNX Combi Switch Actuators SAH/S

Exercise

1. **<u>Switch Actuator and Staircase Function:</u>**

   In a corridor of an office building a conventional push button (via Universal Interface US/U 4.2, Channel A, only ON function) turns on the light (SAH/S, Output A). After 5 minutes (in this exercise 20 sec.) it is switched off automatically via staircase function.

Adjust 4 minutes (in this exercise 15 sec.) staircase pre warning time to switch off the light for a short time.

Please note: In this case the warning time will be added to the staircase time, resulting in a total staircase time of 35 s (Timeline: 20 s – warning – 15 s – end).

Pressing the push button twice extends the period to 10 min (in this exercise 40 sec.) (40 s – warning – 15 s – end)

Another push button (linked via channel B with US/U 4.2) allows the caretaker to change the staircase time. The button sends a new time (8 minutes, in this exercise 30 seconds) to the actuator.

A further push button (simulated with channel C of US/U 4.2) disables the time function, that means the staircase function does not run anymore.

2. **Switch Actuator and Flashing**

In a private home an intrusion alarm system is linked with KNX. The setting of the system is carried out with a setting device outside next to the main entrance.

To confirm a successful setting the light outside (SAH/S, Output B) shall flash three times (1 sec. ON and 1 sec. OFF).

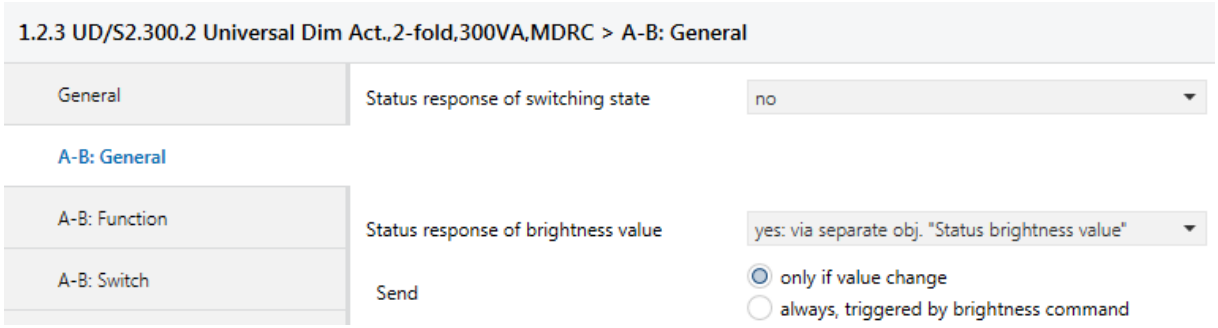
Simulate the setting of the alarm system with a normal KNX push button.

3. Switch Actuator and Threshold

In a events hall the illumination of the stage is dimmable. If the brightness in the hall falls below a defined value, the lights at the exits have to be switched on due to safety reasons.

Implement it with the dim actuator UD/S 2.300.2 (stage lighting) and channel C of SAH/S (exit light) together with functionality threshold.

Recommendation for parameters of the dim actuator:
Activate the transmission of the brightness value via status object brightness value:



4. Switch Actuator and Scenes

In an industrial warehouse 4 light circuits are installed, each connected to one channel (A,B,G,H) of SAH/S. A tableau with 3 push buttons (Channel A-C of US/U 4.2) has the following functions:

Scene 1: all lights off
Scene 2: 50% on, that means light circuits A/G 50% ON, B/H OFF
Scene 3: 75% on, that means light circuits A/B/G ON, H OFF, Delay 3s

Scene 1: Use the all off function with the central switch group object
Scene 2 and 3: Use scene function in SAH/S

Use templates if reasonable.

5. Switch Actuator and Forced Operation

In the warehouse (exercise 4) exists a further push button, which turns on the complete lighting.

If the central on function is active, button 1-3 are without function.

Parametrize it with forced operation, a button connected to channel D of US/U 4.2 will be used.

When the button is pressed for at least 3s, the function will be carried out. Short operation deactivates the forced operation.

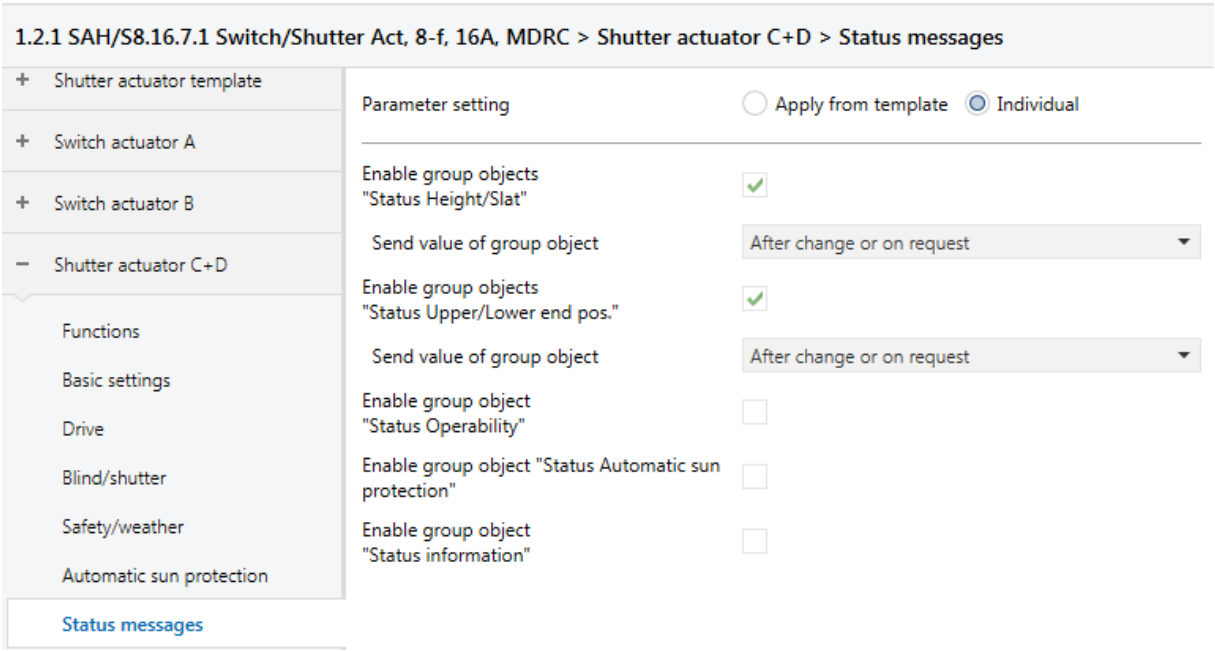
6. Function Shutter Control

a) The blinds in the office run electrically with a motor. Use channel C/D for shutter control and a rocker of the 3-fold TRITON push button or 4-fold SOLO to operate it.

With another rocker the blinds move directly down and the slats turn to half open, independent of the actual position of the blinds.
Use the 1 byte objects 'Move to position ...'

Test different positions for height and slat position

- Travel time of the blinds: 10s (Parameter block ‘Drive’)
- Configure the slat adjustment with total duration for slat turning 1000 ms and number of slat adjustments: 5 (Parameter block ‘Blind/shutter’)
- To recognize the positions enable objects Status Height/ Slat/ Upper/ Lower end position



- Run the shutter in both end positions to achieve correct status feedback
- Use Group Monitor in ETS to visualize the position values

b) A wind sensor has to move up the blinds in case of strong wind.
The wind sensor is connected to US/U4.2 and sends cyclically every 10 s telegrams to the actuator. The monitoring time in the shutter actuator has to be longer, e.g. 20 s.
Via object 'Operability' it shall be shown with red LED on the related push button when local operation is not possible.

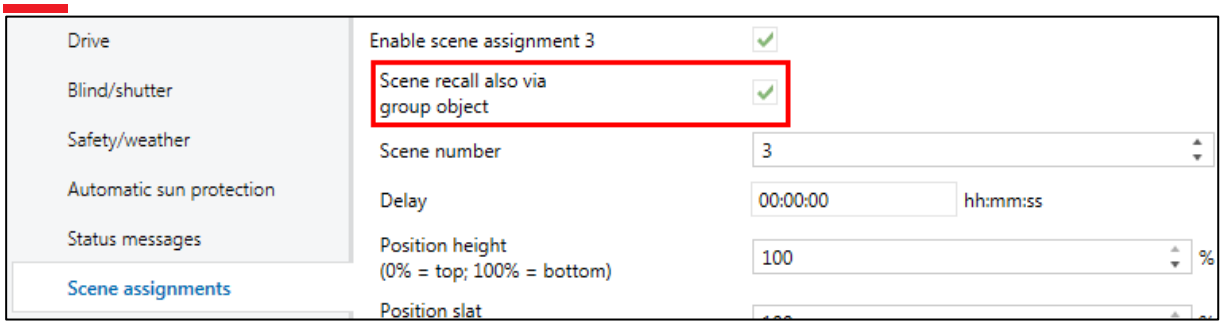
7. Scene for switching and Shutter Control (Logic Control)

Extend the scene (exercise 4) with positioning of the blinds:

Scene 1: all lights off, **blinds down, slats closed**
Scene 2: 50% on, that means light circuits A/G ON, B/H OFF,
blinds position 50 %
Scene 3: 75% on, that means light circuits A/B/G ON, H OFF,
blinds position 75 % down

For scene 1 different solution possible:

- Use central switch group object (as in exercise 4) and an additional logic to invert this off telegram to drive the blinds down
- Create a scene, controlled via 1 byte
- Create a scene, controlled via 1 bit
  For each scene of every channel a further 1 bit object can be activated to recall the scene:



Recall scene assignment 3	Channel C: Shutter	1 bit