

01/23

MDT Solution proposal

Group status

Info:

Linking the status object of multiple channels using a single group address is a common beginner's mistake, because the last KNX telegram always determines the status of the group address.

Example: (GO = Group Object, GA = Group Address)

Two lamp statuses (GO1, GO2) are connected to one group address (GA1).

Lamp 1 is switched on, status GO1 = „1“, → GA1 = „1“ **status correct**

Lamp 2 is switched on, status GO2 = „1“, → GA1 = „1“ **status correct**

Lamp 1 is switched off, status GO1= „0“ → status GA1 = „0“ **status wrong**

The status of both lamps with one GA is now "0" or "Off", although lamp 2 is still lit!

For this reason, several statuses are linked together via a logic. For example, to group window contacts by floor, or to obtain a switching status for a lighting group. In this solution proposal, we use the logic of the MDT Glass Push-button II Smart to group the status of 3 channels of an AKS switch actuator. This procedure can be adapted to many MDT products with integrated logics.

Used devices in this example:

MDT Glass Push-button II Smart, BE-GT2xx.02

MDT Switch Actuator, AKS-0416.03

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1. Desired function:

A Glass Push-button II Smart already switches three lamps in a room on and off separately. Now the following toggle function is to be added with the "Slap function".

1. All lamps are off → Slap function → All Lamps switch on.
2. At least one of the three lamps is on → Slap function → All lamps switch off.

The "slap function" requires a grouped status of the three lamps, as "Status for toggle".

2. Prerequisites:

Each channel already has separate group addresses (switch and status). These are already linked to the Glass Push-button II Smart.

Example:

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type
0	Channel A: Switch On/Off		Channel A switch	1/0/1	1 bit	C	-	W	-	-	switch
4	Channel A: Lock				1 bit	C	-	W	-	-	enable
7	Channel A: State		Channel A status	1/1/1	1 bit	C	R	-	T	-	state
12	Channel B: Switch On/Off		Channel B switch	1/0/2	1 bit	C	-	W	-	-	switch
16	Channel B: Lock				1 bit	C	-	W	-	-	enable
19	Channel B: State		Channel B status	1/1/2	1 bit	C	R	-	T	-	state
24	Channel C: Switch On/Off		Channel C switch	1/0/3	1 bit	C	-	W	-	-	switch
28	Channel C: Lock				1 bit	C	-	W	-	-	enable
31	Channel C: State		Channel C status	1/1/3	1 bit	C	R	-	T	-	state

Figure 1, AKS-0416.03

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type
0	F1:	Toggle	Channel A switch	1/0/1	1 bit	C	-	-	T	-	switch
1	F1:	Status for toggle	Channel A status	1/1/1	1 bit	C	-	W	T	U	state
7	F2:	Toggle	Channel B switch	1/0/2	1 bit	C	-	-	T	-	switch
8	F2:	Status for toggle	Channel B status	1/1/2	1 bit	C	-	W	T	U	state
14	F3:	Toggle	Channel C switch	1/0/3	1 bit	C	-	-	T	-	switch
15	F3:	Status for toggle	Channel C status	1/1/3	1 bit	C	-	W	T	U	state

Figure 2, BE-GT2xx.02

3. Activating the slap function:

The slap function of the Glass Push-button II Smart is activated at "Button/Function Settings".

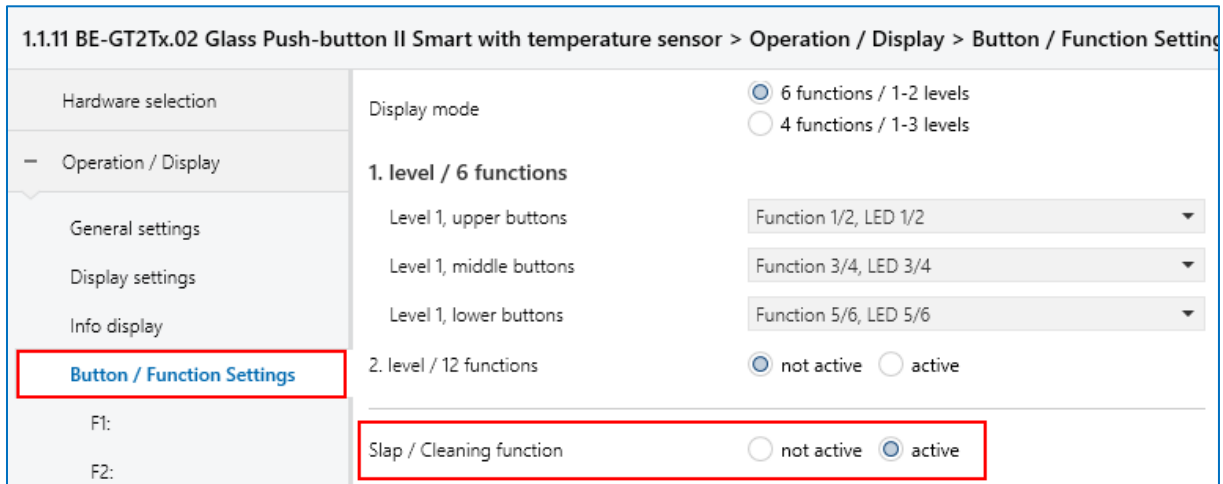


Figure 3, Push button functions BE-GT2xx.02

Now set "slap function for short keypress" to "Toggle".

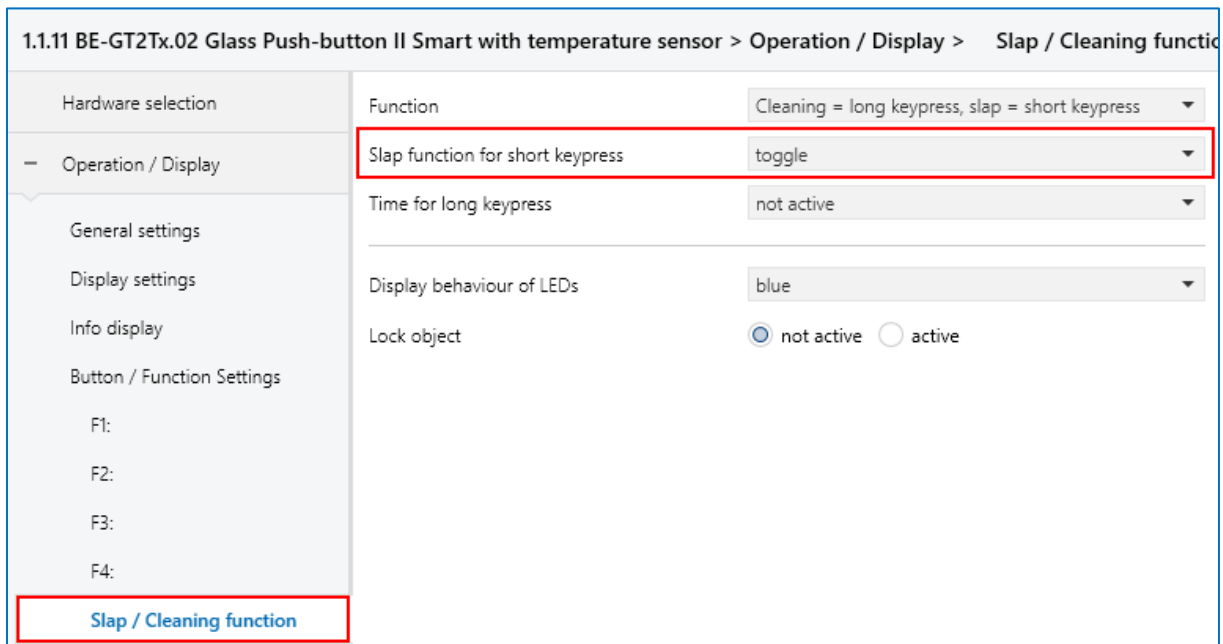


Figure 4, Slap function BE-GT2xx.02

The Slap function gets a new GA 1/0/5, which we connect to the switching actuator later.



Figure 5, Group address Slap function BE-GT2xx.02

4. Logic:

Each logic – in the Glass Push-button II Smart – can link two external objects. Set logic (1) and logic (2) to OR function. To ensure that the status is correct even after a power failure, request external logic objects after bus power return (3).

1.1.11 BE-GT2Tx.02 Glass Push-button II Smart with temperature sensor > Logic > Logic basic setting

Hardware selection	Setting Logic 1	OR
+ Operation / Display	Description of function	
+ Status LED	Additional text	
- Logic	Object type	1 Bit DPT 1.001 Switch
	Sending condition	on change of output
	Output inverted	<input checked="" type="radio"/> not active <input type="radio"/> active
Logic basic setting	Setting Logic 2	OR
Logic 1	Description of function	
Logic 2	Additional text	
+ Temperature measurement	Object type	1 Bit DPT 1.001 Switch
	Sending condition	on change of output
	Output inverted	<input checked="" type="radio"/> not active <input type="radio"/> active
	Setting Logic 3	not active
	Setting Logic 4	not active
	Behaviour on bus power return	<input type="radio"/> Do not request external logic objects <input checked="" type="radio"/> Request external logic objects

Figure 6, Logic basic setting BE-GT2xx.02

The required logic inputs are now activated.
Logic 1 is used here as an example. Set Logic 2 in the same way.

1.1.11 BE-GT2Tx.02 Glass Push-button II Smart with temperature sensor > Logic > Logic 1

Hardware selection	Logic object A (external)	normally active, with preallocation "0"
+ Operation / Display	Logic object B (external)	normally active, with preallocation "0"
+ Status LED	Internal Input 1	not active
- Logic	Internal Input 2	not active
	Logic basic setting	
	Logic 1	
	Logic 2	

Figure 7, Logic 1/2 BE-GT2xx.02

5. Logic operation and group addresses:

The objective is the following logical function. Two additional group addresses are required for this. GA 1/1/5 is the grouped status from A and B. GA 1/1/6 is the grouped status from A, B and C, which is used as the "status for toggle" for the slap function.

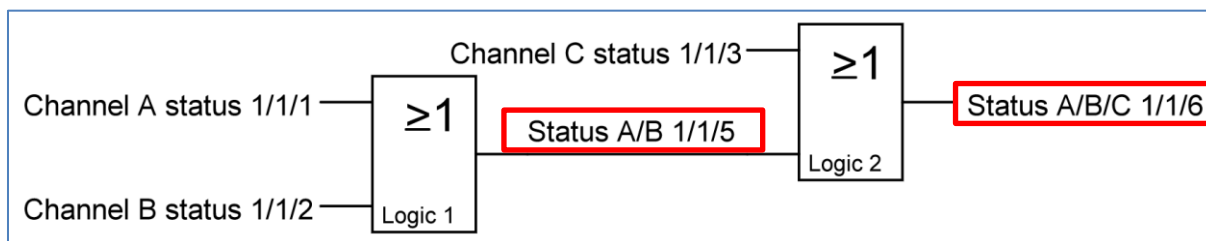


Figure 8, Logical operation

Linked group addresses in the Glass Push-button II Smart.

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type
0	F1:	Toggle	Channel A switch	1/0/1	1 bit	C	-	-	T	-	switch
1	F1:	Status for toggle	Channel A status	1/1/1	1 bit	C	-	W	T	U	state
7	F2:	Toggle	Channel B switch	1/0/2	1 bit	C	-	-	T	-	switch
8	F2:	Status for toggle	Channel B status	1/1/2	1 bit	C	-	W	T	U	state
14	F3:	Toggle	Channel C switch	1/0/3	1 bit	C	-	-	T	-	switch
15	F3:	Status for toggle	Channel C status	1/1/3	1 bit	C	-	W	T	U	state
84	Slap-but...	Toggle	Slap switch	1/0/5	1 bit	C	-	-	T	-	switch
85	Slap-but...	Status for toggle	Status A/B/C	1/1/6	1 bit	C	-	W	T	U	state
91	Logic 1	Input A	Channel A status	1/1/1	1 bit	C	-	W	T	U	switch
92	Logic 1	Input B	Channel B status	1/1/2	1 bit	C	-	W	T	U	switch
93	Logic 1	Output: Switch	Status A/B	1/1/5	1 bit	C	R	-	T	-	switch
94	Logic 2	Input A	Channel C status	1/1/3	1 bit	C	-	W	T	U	switch
95	Logic 2	Input B	Status A/B	1/1/5	1 bit	C	-	W	T	U	switch
96	Logic 2	Output: Switch	Status A/B/C	1/1/6	1 bit	C	R	-	T	-	switch

Figure 9, Group addresses BE-GT2xx.02

Finally, the group address 1/0/5 of the Slap function is linked to the switch objects of the switch actuator.

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type
0	Channel A: Switch On/Off		Channel A switch	1/0/1, 1/0/5	1 bit	C	-	W	-	-	switch
4	Channel A: Lock				1 bit	C	-	W	-	-	enable
7	Channel A: State		Channel A status	1/1/1	1 bit	C	R	-	T	-	state
12	Channel B: Switch On/Off		Channel B switch	1/0/2, 1/0/5	1 bit	C	-	W	-	-	switch
16	Channel B: Lock				1 bit	C	-	W	-	-	enable
19	Channel B: State		Channel B status	1/1/2	1 bit	C	R	-	T	-	state
24	Channel C: Switch On/Off		Channel C switch	1/0/3, 1/0/5	1 bit	C	-	W	-	-	switch
28	Channel C: Lock				1 bit	C	-	W	-	-	enable
31	Channel C: State		Channel C status	1/1/3	1 bit	C	R	-	T	-	state

Figure 10, Group addresses AKS-0416.03