

MDT Solution Proposal

Setpoint shift via Glass Push Button II Smart

Possible applications:

The setpoint adjustment with the Glass Push Button II Smart with temperature sensor can be used to adjust the setpoint of the heating per room. This allows the user to adjust the setpoint per room individually. In addition, the Glass Push Button II Smart offers the possibility of clearly visualising operating modes, current temperature value and setpoint temperature.

Info:

The setpoint adjustment can also be realised with the Push Button Smart 86 with temperature sensor. Both devices use the same database. Only the Glass Push Button II Smart is mentioned in the following example.

Used devices:

MDT Glass Push Button II Smart with temperature sensor

BE-GT2TW.01/ BE-GT2TS.01

MDT Heating Actuator

AKH-0400.02/ AKH-0600.02/ AKH-0800.02

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Solution example 1: Setpoint shift via 1 bit

Settings on Glass Push Button II Smart with temperature sensor:

- Buttons grouped together (two- function)
- Two-button function: temperature shift
- Temperature shift -> 1Bit temperature shift
- Use internal temperature value -> active

The settings for the grouped buttons are shown in the following figure:

Hardware select	Description of objects	Temperature shift
Operation / Display	Two-button function	temperature shift
General settings	Temperature shift	1Bit temperature shift
Display setting	Use internal temperature	<input type="radio"/> not active <input checked="" type="radio"/> active
Information screen	With left push button move down and with right push button move up	
Push button functions	Repeated sending at pressed key	<input checked="" type="radio"/> not active <input type="radio"/> active
PB1/2: Temperature shift	Function name	over text input
+ State LED	Text	
+ Logic	Color of symbol	red
+ Temperature measurement		
	Label for actual value of temperature	Ist
	Label for setpoint temperature	Soll
	Blocking Object	<input checked="" type="radio"/> not active <input type="radio"/> active

- Settings of the temperature value:

- Recommended setting:

"Send measured value cyclically - 10 min" and "Send measured value at change of 0.2 °C"

Hardware select	Temperature measurement	<input type="radio"/> not active <input checked="" type="radio"/> active
Operation / Display	External temperature measured value	not active (internal 100%)
State LED	Send measurement value cyclic	10 min
Logic	Send measurement value at change	0,2 °C
Temperature measurement	Adjustment value for internal temperature	0 x0,1 K
Basic setting	Temperature for upper message value	not active
	Temperature for lower message value	not active

Settings on Heating actuator:
Channel:
- Mode "integrated controller"

Setup general	Objects description	<input type="text"/>
A: Channel A	Mode	integrated controller
Controller settings	Heating / Cooling mode	Heating and Cooling
B: Channel B	Valve type	<input checked="" type="radio"/> not energized closed <input type="radio"/> not energized opened
Controller settings	PWM cycle time	10 min
Controller settings	Block object	<input type="radio"/> inactive <input checked="" type="radio"/> active

"Controller settings":
- Send setpoint changes -> YES
- Setpoint adjustment via -> 1 bit

Setup general	Priority	<input checked="" type="radio"/> Frost/Comfort/Night/Standby <input type="radio"/> Frost/Night/Comfort/Standby
A: Channel A	Heating system	Underfloor heating (6K / 150 min)
Controller settings	Basic comfort setpoint	21,0 °C
B: Channel B	Standby reduction	2,0 K
Controller settings	Night reduction	3,0 K
C: Channel C	Send cyclic setpoint comfort	5 min
Controller settings	Send setpoint change	<input type="radio"/> No <input checked="" type="radio"/> Yes
D: Channel D	Send cyclic current setpoint	not active
Controller settings	Max setpoint offset	3,0 K
E: Channel E	Setpoint value offset over 1Byte/2Byte object	not active
Controller settings	Setpoint value offset over 1Bit object	<input type="radio"/> inactive <input checked="" type="radio"/> active
Controller settings	Step width	0,5 K

The step width can be selected according to your own wishes. It specifies the setpoint shift per keystroke.

Group addresses:

Linking the group addresses:


1.1.1 BE-GT2Tx.01 Glas Push Button II Smart with temperature sensor												
0	Push buttons 1 / 2	Setpoint shift	Sollwertverschiebung	0/0/2	1 bit	C	R	-	T	-	step	Le
2	Push buttons 1 / 2	State current setpoint temperature	Aktueller Sollwert	0/0/3	2 bytes	C	-	W	T	U	temperatu...	Le
106	Day / Night	Input			1 bit	C	-	W	T	U	boolean	Le
107	Presence	Input			1 bit	C	-	W	T	U	switch	Le
108	Temperature	Internal measurement	Temperatur Messwert	0/0/1	2 bytes	C	R	-	T	-	temperatu...	Le
112	Time	Input			3 bytes	C	-	W	T	U	time of day	Le
114	Time/Date	Input			8 bytes	C	-	W	T	U	date time	Le
119	Message text (lowest p...	Input			14 bytes	C	-	W	T	U	Character...	Le
120	State text 1	Input			14 bytes	C	-	W	T	U	Character...	Le
121	State text 2	Input			14 bytes	C	-	W	T	U	Character...	Le
126	Push button operation	active			1 bit	C	R	-	T	-	state	Le
1.1.2 AKH-0400.02 Heating actuator 4-fold, 2TE,24/230VAC												
0	Channel A	Temperature value	Temperatur Messwert	0/0/1	2 bytes	C	-	W	T	U	temperatu...	Le
7	Channel A	Setpoint comfort			2 bytes	C	-	W	T	-	temperatu...	Le
9	Channel A	Current setpoint	Aktueller Sollwert	0/0/3	2 bytes	C	R	-	T	-	temperatu...	Le
10	Channel A	Mode selection			1 byte	C	R	W	T	-	HVAC mo...	Le
11	Channel A	DPT_HVAC Status			1 byte	C	R	-	T	-		Le
12	Channel A	DPT_RHCC Status			2 bytes	C	R	-	T	-	RHCC stat...	Le
13	Channel A	Mode comfort			1 bit	C	-	W	-	-	switch	Le
14	Channel A	Mode night			1 bit	C	-	W	-	-	switch	Le
15	Channel A	Mode frost protection			1 bit	C	-	W	-	-	switch	Le
16	Channel A	Frost alarm			1 bit	C	R	-	T	-	alarm	Le
17	Channel A	Heat alarm			1 bit	C	R	-	T	-	alarm	Le
18	Channel A	Setpoint value offset(1=+/0=-)	Sollwertverschiebung	0/0/2	1 bit	C	-	W	-	-	step	Le
60	Channel D	Temperature value			2 bytes	C	-	W	T	U	temperatu...	Le
67	Channel D	Setpoint comfort			2 bytes	C	-	W	T	-	temperatu...	Le
70	Channel D	Mode selection			1 byte	C	-	W	-	-	HVAC mo...	Le
71	Channel D	DPT_HVAC Status			1 byte	C	R	-	T	-		Le
72	Channel D	DPT_RHCC Status			2 bytes	C	R	-	T	-	RHCC stat...	Le

Solution example 2: Setpoint shift via 1Byte or 2Byte

Settings on Glass Push Button II Smart with temperature sensor:

- Buttons grouped
- Two-button function: temperature shift
- Temperature shift -> 1Bit temperature shift
- Use internal temperature value -> active

The settings for the grouped buttons are shown in the following figure (here: 2 Byte):

Hardware select	Description of objects	Temperature shift
- Operation / Display	Two-button function	temperature shift
General settings	Temperature shift	2Byte temperature shift
Display setting	Use internal temperature	<input type="radio"/> not active <input checked="" type="radio"/> active
Information screen	With left push button move down and with right push button move up	
Push button functions	Step width	0.5 K
PB1/2: Temperature shift	Lower limit	-5 K
+ State LED	Upper limit	5 K
+ Logic	Repeated sending at pressed key	<input checked="" type="radio"/> not active <input type="radio"/> active
+ Temperature measurement	Switchover considers status object	<input checked="" type="radio"/> yes <input type="radio"/> no
	Function name	over text input
	Text	
	Color of symbol	red
		
	Label for actual value of temperature	Ist
	Label for setpoint temperature	Soll
	Blocking Object	<input checked="" type="radio"/> not active <input type="radio"/> active

- Settings of the temperature value:

- Recommended setting:

"Send measured value cyclically - 10 min" and "Send measured value at change of 0.2 °C"

Hardware select	Temperature measurement	<input type="radio"/> not active <input checked="" type="radio"/> active
+ Operation / Display	External temperature measured value	not active (internal 100%)
+ State LED	Send measurement value cyclic	10 min
+ Logic	Send measurement value at change	0,2 °C
+ Temperature measurement	Adjustment value for internal temperature	0 x0,1 K
Basic setting	Temperature for upper message value	not active
	Temperature for lower message value	not active

Settings on Heating actuator:
"Channel":
- Mode "integrated controller"

Setup general	Objects description	
A: Channel A	Mode	integrated controller
Controller settings	Heating / Cooling mode	Heating and Cooling
B: Channel B	Valve type	<input checked="" type="radio"/> not energized closed <input type="radio"/> not energized opened
Controller settings	PWM cycle time	10 min
	Block object	<input type="radio"/> inactive <input checked="" type="radio"/> active

"Controller settings":
- Send setpoint changes -> YES
- Setpoint adjustment via -> 2Byte / 1Byte

Setup general	Priority	<input checked="" type="radio"/> Frost/Comfort/Night/Standby <input type="radio"/> Frost/Night/Comfort/Standby
A: Channel A	Heating system	Underfloor heating (6K / 150 min)
Controller settings	Basic comfort setpoint	21,0 °C
B: Channel B	Standby reduction	2,0 K
Controller settings	Night reduction	3,0 K
C: Channel C	Send cyclic setpoint comfort	5 min
Controller settings	Send setpoint change	<input type="radio"/> No <input checked="" type="radio"/> Yes
D: Channel D	Send cyclic current setpoint	not active
Controller settings	Max setpoint offset	3,0 K
E: Channel E	Setpoint value offset over 1Byte/2Byte object	2Byte-Object
	Setpoint value offset over 1Bit object	<input checked="" type="radio"/> inactive <input type="radio"/> active

Group addresses:

The objects on the glass push button and the actuator are the same for both types of shift, only the length (1Byte or 2Byte) is different.

Here the example for shift via 2Byte.

1.1.1 BE-GT2Tx.01 Glas Push Button II Smart with temperature sensor									
0	Push buttons 1 / 2	Setpoint shift	Sollwertverschiebung 2Byte	0/0/4	2 bytes	C	R	-	temperatu... Lo
2	Push buttons 1 / 2	State current setpoint temperature	Aktueller Sollwert	0/0/3	2 bytes	C	-	W T U	temperatu... Lo
3	Push buttons 1 / 2	State setpoint shift	Sollwertverschiebung 2Byte	0/0/4	2 bytes	C	-	W T U	temperatu... Lo
106	Day / Night	Input			1 bit	C	-	W T U	boolean... Lo
107	Presence	Input			1 bit	C	-	W T U	switch Lo
108	Temperature	Internal measurement	Temperatur Messwert	0/0/1	2 bytes	C	R	-	temperatu... Lo
112	Time	Input			3 bytes	C	-	W T U	time of day Lo
114	Time/Date	Input			8 bytes	C	-	W T U	date time Lo
119	Message text (lowest p...	Input			14 bytes	C	-	W T U	Character... Lo
120	State text 1	Input			14 bytes	C	-	W T U	Character... Lo
121	State text 2	Input			14 bytes	C	-	W T U	Character... Lo
126	Push button operation	active			1 bit	C	R	-	state Lo
1.1.2 AKH-0400.02 Heating actuator 4-fold, 2TE,24/230VAC									
0	Channel A	Temperature value	Temperatur Messwert	0/0/1	2 bytes	C	-	W T U	temperatu... Lo
7	Channel A	Setpoint comfort			2 bytes	C	-	W T -	temperatu... Lo
8	Channel A	Setpoint value offset	Sollwertverschiebung 2Byte	0/0/4	2 bytes	C	-	W - -	temperatu... Lo
9	Channel A	Current setpoint	Aktueller Sollwert	0/0/3	2 bytes	C	R	-	temperatu... Lo
10	Channel A	Mode selection			1 byte	C	R	W T -	HVAC mo... Lo
11	Channel A	DPT_HVAC Status			1 byte	C	R	-	T - Lo
12	Channel A	DPT_RHCC Status			2 bytes	C	R	-	T - RHCC stat... Lo
13	Channel A	Mode comfort			1 bit	C	-	W - -	switch Lo
14	Channel A	Mode night			1 bit	C	-	W - -	switch Lo
15	Channel A	Mode frost protection			1 bit	C	-	W - -	switch Lo
16	Channel A	Frost alarm			1 bit	C	R	-	T - alarm Lo
17	Channel A	Heat alarm			1 bit	C	R	-	T - alarm Lo


Solution example 3: 2Byte shift of basis comfort setpoint value

This is a special case because this is not a classic setpoint shift but the basic comfort setpoint is changed as an absolute value. As a result, the setpoints for the other operating modes also change, as these refer to the basic comfort value. With the classic setpoint shift, the parameterised base value - and thus the reference value for the other operating modes - remains the same and is only shifted as the difference in K (Kelvin). This special case is usually required when visualisations are also in the project. These can usually no setpoint shift but only the change of the absolute value. Both methods should not be mixed because problems can often occur here!

Settings on Glass Push Button II Smart with temperature sensor:

- Buttons grouped
- Two-button function: temperature shift
- Temperature shift -> 2Byte shift of basis comfort setpoint value
- Use internal temperature value -> active

The settings for the grouped buttons are shown in the following figure:

Hardware select	Description of objects	Temperature shift
Operation / Display	Two-button function	temperature shift
General settings	Temperature shift	2Byte shift of basis comfort setpoint value
Display setting	Use internal temperature	<input type="radio"/> not active <input checked="" type="radio"/> active
Information screen	With left push button move down and with right push button move up	
Push button functions	Step width	0,5 K
PB1/2: Temperature shift	Lower limit	19 °C
+ State LED	Upper limit	23 °C
+ Logic	Repeated sending at pressed key	<input checked="" type="radio"/> not active <input type="radio"/> active
+ Temperature measurement	Switchover considers status object	<input checked="" type="radio"/> yes <input type="radio"/> no
	Function name	no text
	Color of symbol	red
		
	Label for actual value of temperature	Ist
	Label for setpoint temperature	Soll
	Blocking Object	<input checked="" type="radio"/> not active <input type="radio"/> active

- Settings of the temperature value:

- Recommended setting:

"Send measured value cyclically - 10 min" and "Send measured value at change of 0.2 °C"

Hardware select	Temperature measurement	<input type="radio"/> not active <input checked="" type="radio"/> active
+ Operation / Display	External temperature measured value	not active (internal 100%)
+ State LED	Send measurement value cyclic	10 min
+ Logic	Send measurement value at change	0,2 °C
- Temperature measurement	Adjustment value for internal temperature	0 x0,1 K
Basic setting	Temperature for upper message value	not active
	Temperature for lower message value	not active

Settings on Heating actuator:

"Channel":

- Mode ->"integrated controller"

Setup general	Objects description	
A: Channel A	Mode	integrated controller
Controller settings	Heating / Cooling mode	Heating and Cooling
B: Channel B	Valve type	<input checked="" type="radio"/> not energized closed <input type="radio"/> not energized opened
Controller settings	PWM cycle time	10 min
	Block object	<input type="radio"/> inactive <input checked="" type="radio"/> active

"Controller settings":

- Send setpoint changes -> YES

Setup general	Priority	<input checked="" type="radio"/> Frost/Comfort/Night/Standby <input type="radio"/> Frost/Night/Comfort/Standby
A: Channel A	Heating system	Underfloor heating (6K / 150 min)
Controller settings	Basic comfort setpoint	21,0 °C
B: Channel B	Standby reduction	2,0 K
Controller settings	Night reduction	3,0 K
C: Channel C	Send cyclic setpoint comfort	5 min
Controller settings	Send setpoint change	<input type="radio"/> No <input checked="" type="radio"/> Yes
D: Channel D	Send cyclic current setpoint	not active
Controller settings	Max setpoint offset	3,0 K
E: Channel E	Setpoint value offset over 1Byte/2Byte object	not active
	Setpoint value offset over 1Bit object	<input checked="" type="radio"/> inactive <input type="radio"/> active

Settings for "setpoint shift" are not required and can be deactivated.

Group addresses:

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
^ 1.1.2 AKH-0400.02 V2.4												
0	A: Channel A	Temperature value	Temperatur Messwert	0/0/1	2 bytes	C	-	W	T	U	temperatu...	Low
1	A: Channel A	Flow temperature			2 bytes	C	-	W	-	-	temperatu...	Low
3	A: Channel A	State control value			1 byte	C	R	-	T	-	percentag...	Low
7	A: Channel A	Setpoint comfort	Basis Komfort Sollwert	0/0/6	2 bytes	C	-	W	T	-	temperatu...	Low
9	A: Channel A	Current setpoint	Aktueller Sollwert	0/0/3	2 bytes	C	R	-	T	-	temperatu...	Low
10	A: Channel A	Mode selection			1 byte	C	-	W	-	-	HVAC mode	Low
11	A: Channel A	DPT_HVAC Status			1 byte	C	R	-	T	-		Low
12	A: Channel A	DPT_RHCC Status			2 bytes	C	R	-	T	-	RHCC status	Low
13	A: Channel A	Mode comfort			1 bit	C	-	W	-	-	switch	Low
14	A: Channel A	Mode night			1 bit	C	-	W	-	-	switch	Low
15	A: Channel A	Mode frost protection			1 bit	C	-	W	-	-	switch	Low
16	A: Channel A	Frost alarm			1 bit	C	R	-	T	-	alarm	Low
17	A: Channel A	Heat alarm			1 bit	C	R	-	T	-	alarm	Low
80	Summer / Winter	Switchover			1 bit	C	-	W	T	U	switch	Low
84	Fault	At power failure/short circuit			1 bit	C	R	-	T	-	alarm	High
87	Scene	Activate			1 byte	C	-	W	-	-	scene num...	Low
^ 1.1.14 BE-GT2Tx.01 Smart II V2.1												
0	Push buttons 1 / 2	Basis comfort setpoint	Basis Komfort Sollwert	0/0/6	2 bytes	C	R	-	T	-	temperatu...	Low
2	Push buttons 1 / 2	State current setpoint temperature	Aktueller Sollwert	0/0/3	2 bytes	C	-	W	T	U	temperatu...	Low
3	Push buttons 1 / 2	State basis comfort setpoint	Basis Komfort Sollwert	0/0/6	2 bytes	C	-	W	T	U	temperatu...	Low
106	Day / Night	Input			1 bit	C	-	W	T	U	boolean	Low
107	Presence	Input			1 bit	C	-	W	T	U	switch	Low
108	Temperature	Internal measurement	Temperatur Messwert	0/0/1	2 bytes	C	R	-	T	-	temperatu...	Low
112	Time	Input			3 bytes	C	-	W	T	U	time of day	Low
114	Time/Date	Input			8 bytes	C	-	W	T	U	date time	Low
116	Message 2	Input			1 bit	C	-	W	T	U	alarm	Low
119	Message text (lowest priority)	Input			14 bytes	C	-	W	T	U	Character...	Low
120	State text 1	Input			14 bytes	C	-	W	T	U	Character...	Low
121	State text 2	Input			14 bytes	C	-	W	T	U	Character...	Low
124	State value 3	Value in Lux			2 bytes	C	-	W	T	U	lux (Lux)	Low
126	Push button operation	active			1 bit	C	R	-	T	-	state	Low