

# MDT Solution proposal

## MDT Heating Actuators and the use of visualisations.

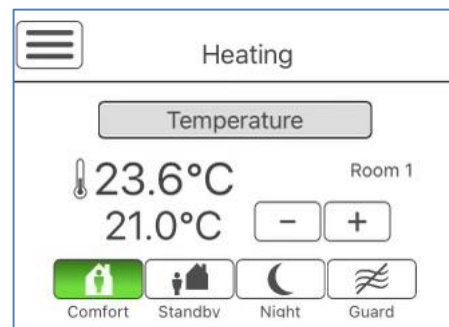
### Info:

With their extensive database, the MDT Heating Actuators offer a very high level of compatibility with many visualisations on the market. In this solution proposal, we show the linking of the MDT VisuControl Easy object server. Third-party visualisations should also be easy to put into operation using this document.

### Used devices:

MDT Heating Actuator  
AKH-0x00.03

MDT VisuControl Easy Object Server  
VC-EASY.02



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### VisuControl Easy Object Server:

We assume that the electrothermic valve drives have been properly connected and the heating actuator has already been commissioned with its basic functions.

### Settings VisuControl Easy Object Server:

The MDT VisuControl Easy Object Server supports the setpoint shift via 1 bit (step up/down) and the change of the setpoint by means of 2 bytes (absolute value). Select the function type "FKT 5 Room temperature controller" and the desired subfunction, e.g. "Room temperature controller with HVAC-Mode and -Status". Then choose how to change the set point. (In our example, setpoint shift via 1 bit).

1.4.12 VisuControl Easy > Functions 1-10 > F1: Heating room 1

General	Description for parameter and objects	Heating room 1
General	Area number	Area 1
Formatting of the areas	Name for area 1	heating
Formatting of the function typ...	Function type 1	FKT 5: Room temperature controller
Weather data	Description of the function for visualisation	Room 1
Web interface	Function selection	Room temperature controller with HVAC-Mode and -Status
Time/Date	Adjust the set point on	<input checked="" type="radio"/> set point shift with 1 Bit Object <input type="radio"/> base setpoint
Functions 1-10	Datapoint type Object 1A: Room temperature	DPT 17 - Floating-point number - 2 Bytes
Function selection	Datapoint type Object 1B: Setpoint temperature	DPT 17 - Floating-point number - 2 Bytes
<b>F1: Heating room 1</b>	Datapoint type Object 1C: Setpoint shift 1 Bit	DPT 02 - Up/Down - 1 Bit
Functions 11-20	Datapoint type Object 1D: HVAC Mode	DPT 24 - HVAC Mode - 1 Byte
Functions 21-30	Datapoint type Object 1E: HVAC status	DPT 23 - HVAC Status - 1 Byte
Functions 31-40	Visibility on the home page	<input checked="" type="radio"/> not display <input type="radio"/> show
Functions 41-50	Function visible	<input checked="" type="radio"/> only for admin <input type="radio"/> for admin and user
Functions 51-60	Setting of the sorting	<input checked="" type="radio"/> normal <input type="radio"/> extended

### Settings Heating Actuator:

The MDT VisuControl Easy Object Server requires the feedback of the operating mode as "HVAC status".

For this, we change the status object in the heating channel via the following parameter:

*Channel → Controller → HVAC Status object → „HVAC Status (non-standard DPT)“*

1.4.10 AKH-0800.03 Heating Actuator 8-fold, 4SU MDRC, 24/230VAC > Channel A: Raum 1 > Controller

Setup general	Max setpoint offset valid for	<input checked="" type="radio"/> Comfort <input type="radio"/> Comfort / night / standby
Channel selection	Action when shifting to night/standby	<input checked="" type="radio"/> no action <input type="radio"/> change to Comfort
Channel A: Raum 1	Reset setpoint offset after change of mode	<input checked="" type="radio"/> not active <input type="radio"/> active
Basic setting	Clear setpoint shift after new absolute setpoint	<input type="radio"/> not active <input checked="" type="radio"/> active
<b>Controller</b>	Reset setpoints to parameterization after operating mode change	<input checked="" type="radio"/> not active <input type="radio"/> active
Output	Send setpoint change	<input type="radio"/> not active <input checked="" type="radio"/> active
Scenes	Send cyclic current setpoint	not send
	Comfort extension with time	<input checked="" type="radio"/> not active <input type="radio"/> active
	Operating mode after reset	comfort with parameterized setpoint
	HVAC Status object	<input checked="" type="radio"/> HVAC Status (non-standard DPT) <input type="radio"/> HVAC Mode (DPT 20.102)
	Additional HVAC Status object	not active
	Send HVAC Status object cyclically	not send

### Group addresses and linking:

#### Heating Actuator:

ID	Object Name	Channel	Address	Length	Unit	Value	Control	Feedback	Unit
1	Channel A: Room 1 Receive temperature value	Channel A: Room 1, Receive temperature value	1/1/1	2 bytes	C - W T U	temperature (°C)			
2	Channel A: Room 1 Preset setpoint			2 bytes	C - W - -	temperature (°C)			
3	Channel A: Room 1 (Basic) Preset comfort setpoint			2 bytes	C - W - -	temperature (°C)			
8	Channel A: Room 1 Send current setpoint	Channel A: Room 1, Send current setpoint	1/1/8	2 bytes	C R - T -	temperature (°C)			
9	Channel A: Room 1 Manual setpoint shift (2byte)			2 bytes	C - W - -	temperature difference (K)			
10	Channel A: Room 1 Manual setpoint shift (1=+ / 0=-)	Channel A: Room 1, Manual setpoint shift (1=+ / 0=-)	1/1/10	1 bit	C - W - -	step			
12	Channel A: Room 1 Control value Heating: Send status			1 byte	C R - T -	percentage (0..100%)			
15	Channel A: Room 1 Send valve state			1 bit	C R - T -	state			
17	Channel A: Room 1 Mode selection	Channel A: Room 1, Mode selection	1/1/17	1 byte	C - W - -	HVAC mode			
19	Channel A: Room 1 Switch Comfort operating mode			1 bit	C - W - -	switch			
20	Channel A: Room 1 Switch Night operating mode			1 bit	C - W - -	switch			
21	Channel A: Room 1 Switch Frost protection operating mode			1 bit	C - W - -	switch			
22	Channel A: Room 1 DPT_HVAC Status: Send controller status	Channel A: Room 1, DPT_HVAC Status: Send controller status	1/1/22	1 byte	C R - T -				

#### VisuControl Easy Object Server:

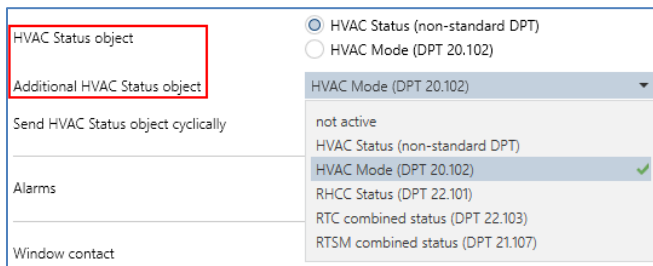
ID	Object Name	Channel	Address	Length	Unit	Value	Control	Feedback	Unit
116	Object 1A: Heating r... Status temperature	Channel A: Room 1, Receive temperature value	1/1/1	2 bytes	C - W T U	temperature (°C)			
117	Object 1B: Heating ro...Set point temperature	Channel A: Room 1, Send current setpoint	1/1/8	2 bytes	C - W T U	temperature (°C)			
118	Object 1C: Heating r... Set point shift 1 Bit	Channel A: Room 1, Manual setpoint shift (1=+ / 0=-)	1/1/10	1 bit	C - - T U	up/down			
119	Object 1D: Heating r... Operating mode selector (HVAC Mode)	Channel A: Room 1, Mode selection	1/1/17	1 byte	C - W T U	HVAC mode			
120	Object 1E: Heating ro...HVAC Status	Channel A: Room 1, DPT_HVAC Status: Send controller status	1/1/22	1 byte	C - W T U				

### Other visualisations:

Visualisations that change the setpoint by means of 2 bytes can also be linked without any problems. It is always important to select the correct status object type for the feedback of the operating mode. To illustrate the differences, we compare both status objects and their feedback in heating mode:

	Mode	Feedback	
	HVAC Mode	HVAC Mode	HVAC Status
Comfort	\$01	\$01	\$21
Standby	\$02	\$02	\$22
Night	\$03	\$03	\$24
Frost protection	\$04	\$04	\$28

The MDT Heating Actuator AKH-0x00.03 has the possibility to output the HVAC mode, the HVAC status and other statuses in parallel via a second object.

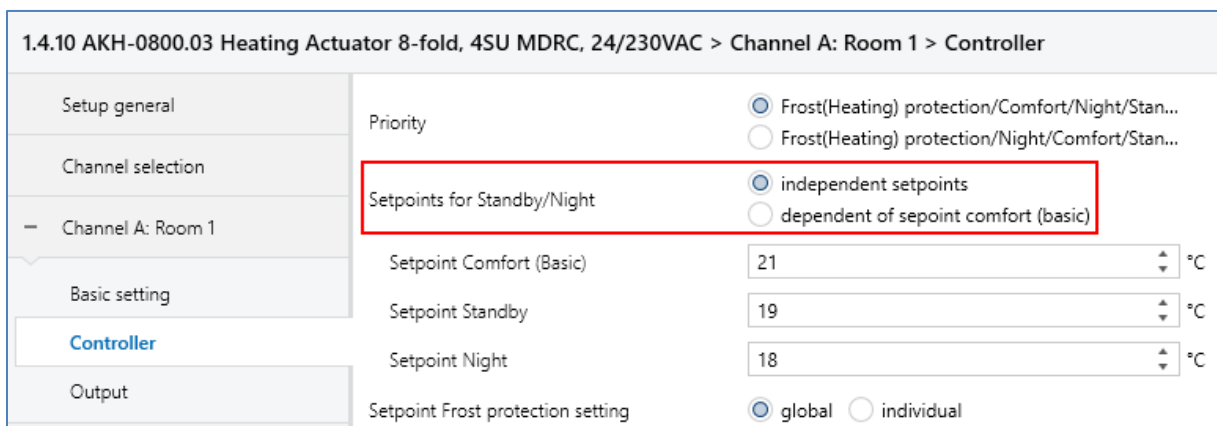


22	Channel A: Room 1	DPT_HVAC Status:	Send controller status	Channel A: Room 1, DPT_HVAC Status: Send controller status	1/1/22	1 byte	C	R	-	T	-
23	Channel A: Room 1	DPT_HVAC Mode:	Send controller status	Channel A: Room 1, DPT_HVAC Mode: Send controller status	1/1/23	1 byte	C	R	-	T	- HVAC mode

### Example:

For the visualisation shown below with setpoint change via 2-byte (absolute value), only a few parameters need to be set in the AKH:

First set the heating actuator to "independent setpoints".



To query the heating status (control value > 0%), we change the following parameter.

**1.4.10 AKH-0800.03 Heating Actuator 8-fold, 4SU MDRC, 24/230VAC > Channel A: Room 1 > Output**

Setup general	Valve type	<input checked="" type="radio"/> not energized closed <input type="radio"/> not energized opened
Channel selection	PWM cycle time	10 min
Channel A: Room 1	Minimum limitation of control value	0%
Basic setting	Maximum limitation of control value during Heating	100%
Controller	Limitation over object	not active
<b>Output</b>	Control value at lower deviation of minimum limitation	<input checked="" type="radio"/> 0% = 0% otherwise use minimum set value <input type="radio"/> 0% = minimum set value
Scenes	Send control value cyclically	5 min
	Object valve state	<input type="radio"/> actual valve state (1=closed, 0=opened) <input checked="" type="radio"/> 1 if control value > 0%

This results in the following objects and group addresses:

1	Channel A: Room 1	Receive temperature value	Channel A: Room 1, Receive temperature value	1/1/1	2 bytes	C	-	W	T	U	temperature (°C)
2	Channel A: Room 1	Preset setpoint	Channel A: Room 1, Preset setpoint	1/1/2	2 bytes	C	-	W	-	-	temperature (°C)
8	Channel A: Room 1	Send current setpoint	Channel A: Room 1, Send current setpoint	1/1/8	2 bytes	C	R	-	T	-	temperature (°C)
14	Channel A: Room 1	Control value > 0%: send status	Channel A: Room 1, Control value > 0%: send status	1/1/14	1 bit	C	R	-	T	-	state
17	Channel A: Room 1	Mode selection	Channel A: Room 1, Mode selection	1/1/17	1 byte	C	-	W	-	-	HVAC mode
22	Channel A: Room 1	DPT_HVAC Status: Send controller status	Channel A: Room 1, DPT_HVAC Status: Send controller status	1/1/22	1 byte	C	R	-	T	-	

In the visualisation:

Data points	
Actual temperature	
1/1/1 1/1/1 Channel A: Room 1, Receive temperature value	
Setpoint temperature	
1/1/2 1/1/8 Channel A: Room 1, Preset setpoint	
Operating mode	
1/1/17 1/1/17 Channel A: Room 1, Mode selection	
Operating mode status	
1/1/22 1/1/22 Channel A: Room 1, DPT_HVAC Status: Send co...	
Presence	
Heating status	
1/1/14 1/1/14 Channel A: Room 1, Control value > 0%: send...	