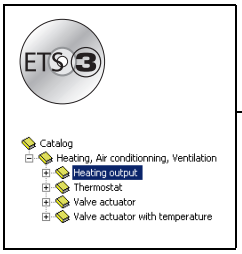
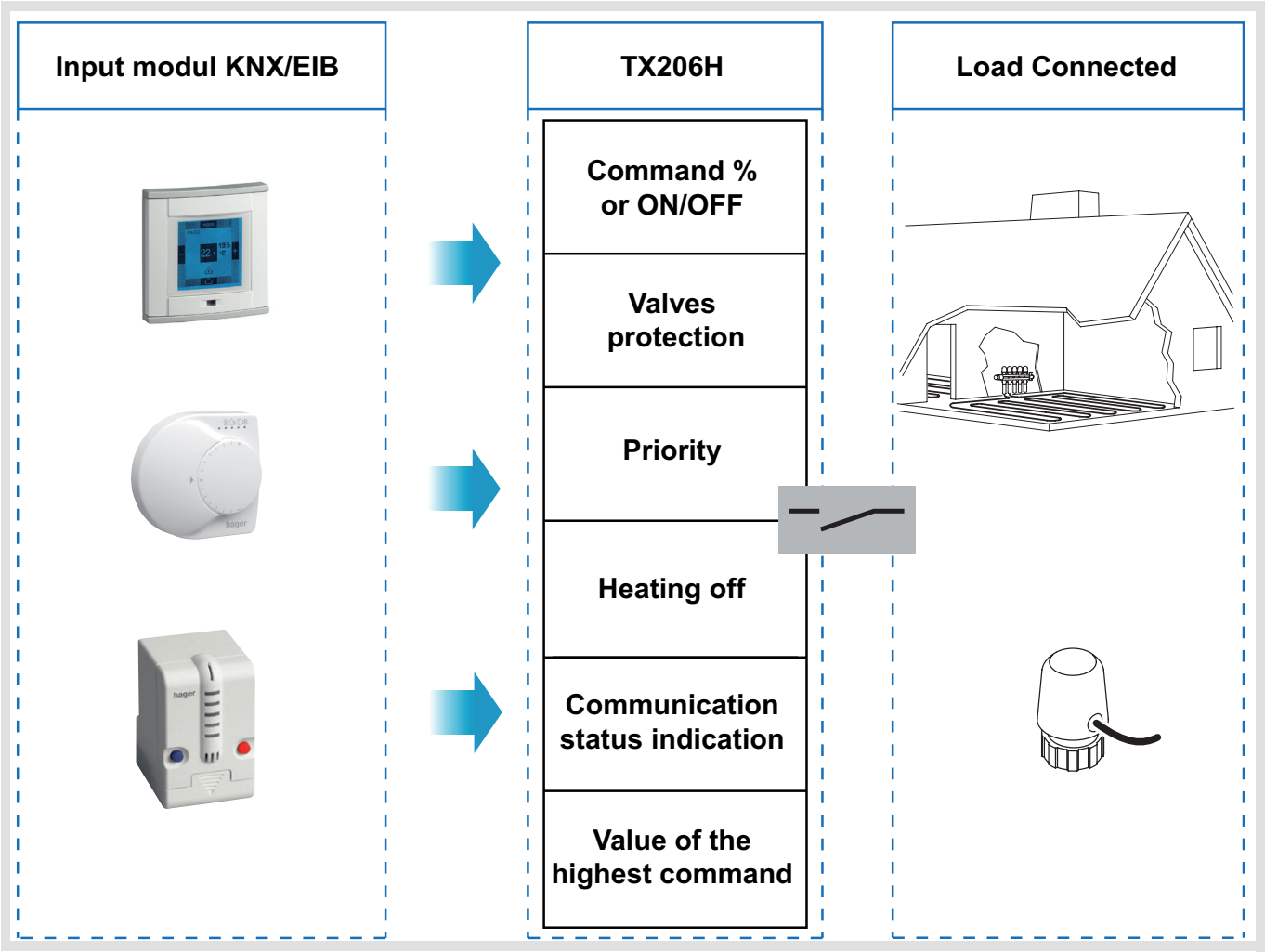


Tebis Application software

TL206D V1.X Heating
Heating actuator 6 channels
Electrical / Mechanical characteristics : see product user's instructions

	Product reference	Product designation
	TX206H	Heating actuator 6 channels



Summary

1. Presentation of the functions of the TL 206D application

The TL206D application software allows configuring the 6 output channels of the TX206H. The main functions are the following :

Valves control

The TX206H has 6 outputs. These outputs allow controlling valves equipped with 24VDC electrothermal motors for the control of heating or air-conditioning systems with water-distribution circuits.

Time-proportional control

The TX206H receives from the thermostat(s), for each output, the heating rate to be applied. This command may be either of the % or of the ON/OFF type. When the command sent is of the % type, the product interprets the heating rate as valve closing and opening times.

Valve protection

A valve that remains inoperated for a long time may jam. To prevent if from jamming, the heating actuator integrates a valve protection function. If the output is not actuated (opening of the valve) for more than 24 h, whatever the current mode, it will be actuated automatically for 6 min all 24 h.

Stop (Summer mode)

The Stop mode allows switching the heating actuator completely off (all outputs). Depending on the parameters setting, the valve protection function will be active or not during this period.

OFF priority

The OFF priority allows switching a specific valve off (or setting this valve to a defined position, e.g. 10 %). The valve protection function remains active.

Command failure mode

The command of each of the outputs may be monitored. If a command (coming from a thermostat) is missing on one of the outputs, a command value (e.g. 50 %) for default use may be set.

Bus failure mode

An emergency programme will be activated in case of a bus failure. This programme consists in activating successively each of the valves for 8 minutes. For example : channel 1 ON for 8 min (all other channels OFF), then channel 2 ON for 8 min (all other channels OFF), etc.

2. Configuration and parameterising

2.1 Objects list

	Object			
→	N°	Name	Object function	Value
→	0	Output 1	% command	0 - 100%
→	1	Output 1	OFF priority	0 : Priority not active 1 : Priority active
→	2	Output 2	% command	0 - 100%
→	3	Output 2	OFF priority	0 : Priority not active 1 : Priority active
→	4	Output 3	% command	0 - 100%
→	5	Output 3	OFF priority	0 : Priority not active 1 : Priority active
→	6	Output 4	% command	0 - 100%
→	7	Output 4	OFF priority	0 : Priority not active 1 : Priority active
→	8	Output 5	% command	0 - 100%
→	9	Output 5	OFF priority	0 : Priority not active 1 : Priority active
→	10	Output 6	% command	0 - 100%
→	11	Output 6	OFF priority	0 : Priority not active 1 : Priority active
→	12	Heating	Stop	0 : Not active 1 : Stop (Summer mode)
←	15	Status indication	Highest command value	0 - 100%
←	16	Status indication	Presence/Absence of command S1	0 : command on output 1 received 1 : command on output 1 missing
←	17	Status indication	Presence/Absence of command S2	0 : command on output 2 received 1 : command on output 2 missing
←	18	Status indication	Presence/Absence of command S3	0 : command on output 3 received 1 : command on output 3 missing
←	19	Status indication	Presence/Absence of command S4	0 : command on output 4 received 1 : command on output 4 missing
←	20	Status indication	Presence/Absence of command S5	0 : command on output 5 received 1 : command on output 5 missing
←	21	Status indication	Presence/Absence of command S6	0 : command on output 6 received 1 : command on output 6 missing

2.2 Functions description and parameters setting

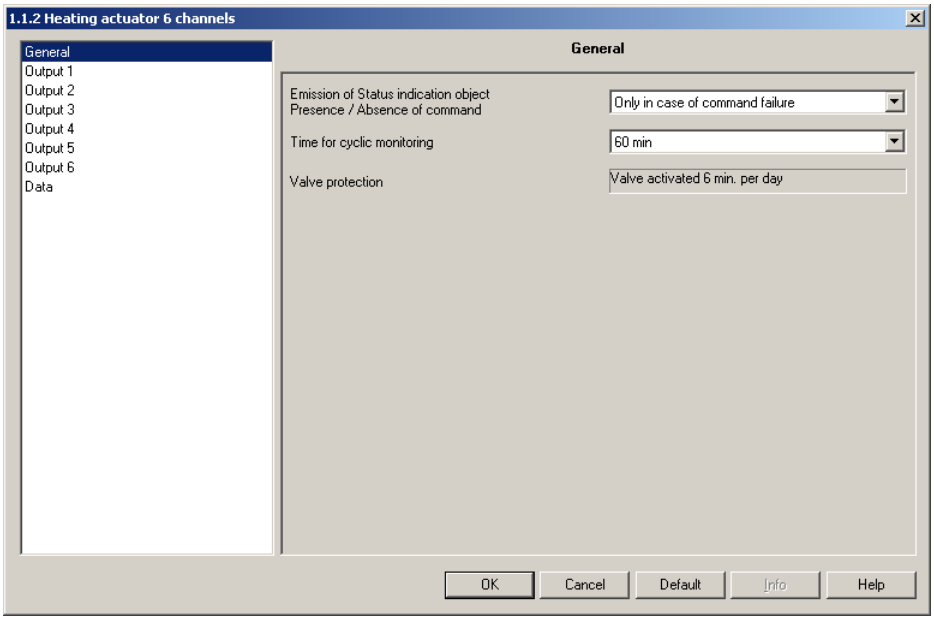
2.2.1 General parameters

The General parameters setting screen groups the parameters related to the whole of the product.
The reception of controls (% or ON/OFF) can be monitored for each of the outputs. If no command is received on the object Channel X - Command for a period of time longer than that defined in the parameter Monitoring cycle duration, and if the cyclic monitoring of the command is authorized, the output switches to an emergency mode.

The parameter Monitoring cycle duration allows defining a time interval within which a command must be received. The Emission parameter of the object Presence/Absence of command Status indication allows defining whether the information must be issued at the end of each monitoring cycle or only in case of absence of the command..

The valve protection function aims to prevent the controlled valves from jamming. So, if an output is not activated for more than 24 hours, the valves concerned by this function will be operated 6 minutes daily.

➜ **Parameters setting screen :**



Screen 1

➜ **Parameters**

Designation	Description	Values
Emission of status indication object Presence / Absence of command.	This parameter allows defining whether the object Presence/Absence of command must be issued as well in case of Presence as in case of Absence of the command, or if it will only be issued in case of Absence of the command.	At the end of each cyclic monitoring, Only in case of command failure. Default value : Only in case of command failure.
Time for cyclic monitoring.	This parameter allows defining the time interval within which a command must be received on the object Channel X - Command, before activating the Absence of command.	30 min, 60 min. Default value :60 min
Valve protection.	This parameter cannot be modified. It informs about the way the valve protection is managed.	Default value : Valve activated 6 min. per day.

2.2.2 Parameters setting for each output

The following individual settings may be carried out for each of the outputs.

2.2.2.1 Description of the function Command type, Cycle time and Cycle time in Priority OFF and command failure mode

Each of the outputs of the heating actuator may operate with a %-type command or with a ON/OFF-type command..

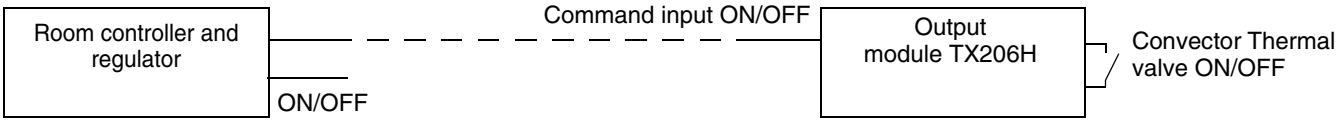
When the command used is of the % type, the actuator receives %-type values from the thermostat. It uses a time-proportional calculation to deduce from these values the on-off control of the output. The parameter Cycle time, multiplied by the command value in %, defines the activation time of the output. For example, if the parameter Cycle time has a value of 10 min and the value of the command is 20 %, the output will be activated for 2 min. When receiving a new command value, the latter will be integrated, as far as possible, in the current cycle (see 4 Example below).

When the command used is of the ON/OFF type, the actuator uses the on-off principle to drive the output. If a command is missing, the output is controlled on a time-proportional basis, using the parameter Cycle time in Priority OFF and Command failure mode. The Command failure mode starts automatically at the end of a monitoring cycle if no command is received. (see "2.2.2.5 Description of the Cyclic command monitoring and Valve position for command failure mode function")

The parameter Command type defines the way the output is controlled.

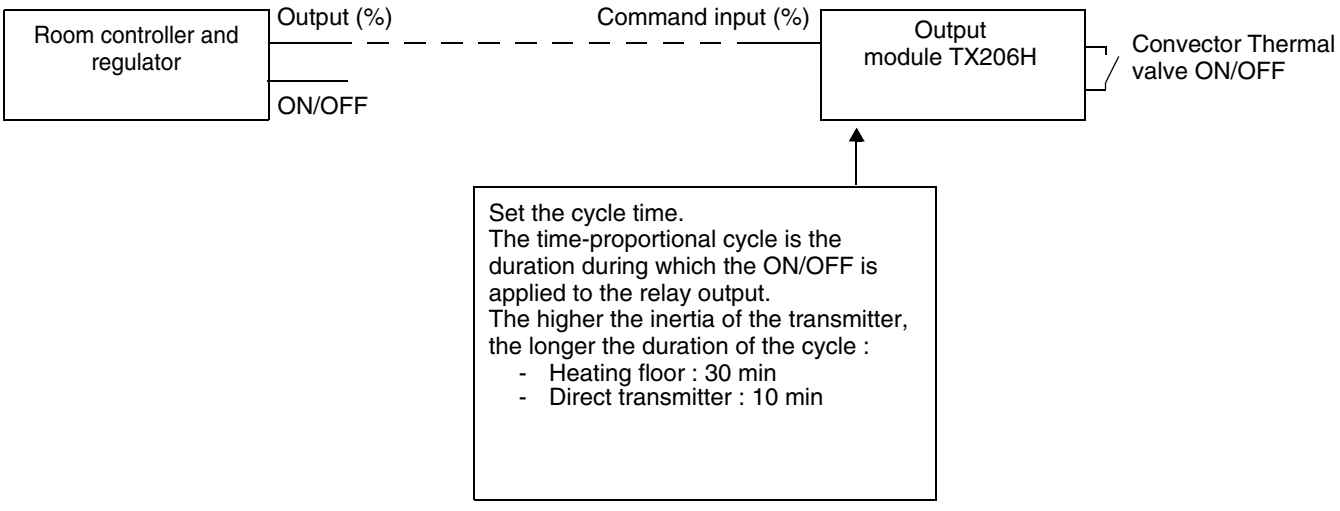
Command type :

- ON/OFF = The output is controlled by a thermostat which sends ON/OFF instructions.
  The input used is the object Command ON/OFF.



Command type :

- % = The output is controlled by a thermostat which sends opening rate instructions in %, like for example the TX320 or the TX460.
  The input used is the object Output X - Command %.

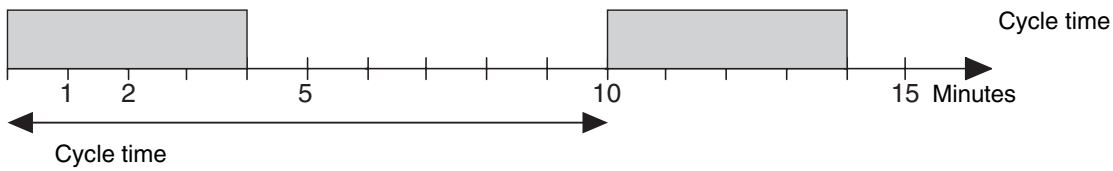


Cycle time for a constant command.

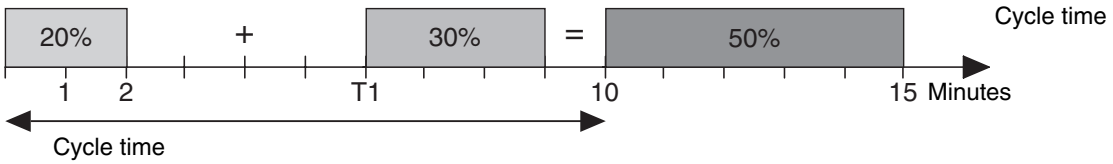
1. Basic principle

To meet the heating requirements while still maintaining a constant heating rate of 40 % for example, the output contact will be ON for 40 % of the cycle time and OFF for 60 %. The total duration of the heating cycle is defined in a parameter.

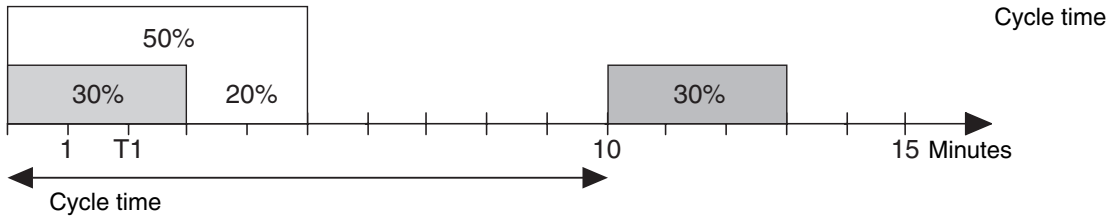
Example 1 :
Cycle time : 10 min.
Heating rate :40 %. .
➜ 4 min ON and 6 min OFF.



Example 2 :
Cycle time : 10 min.
Heating rate : 20 %.
➜ 2 min ON and 8 min OFF.
Reception of a new command : 50 % at the moment T1.
The output is immediately switched ON in order to reach the heating rate as soon as possible. As from the following cycle, the output will use the new heating rate.

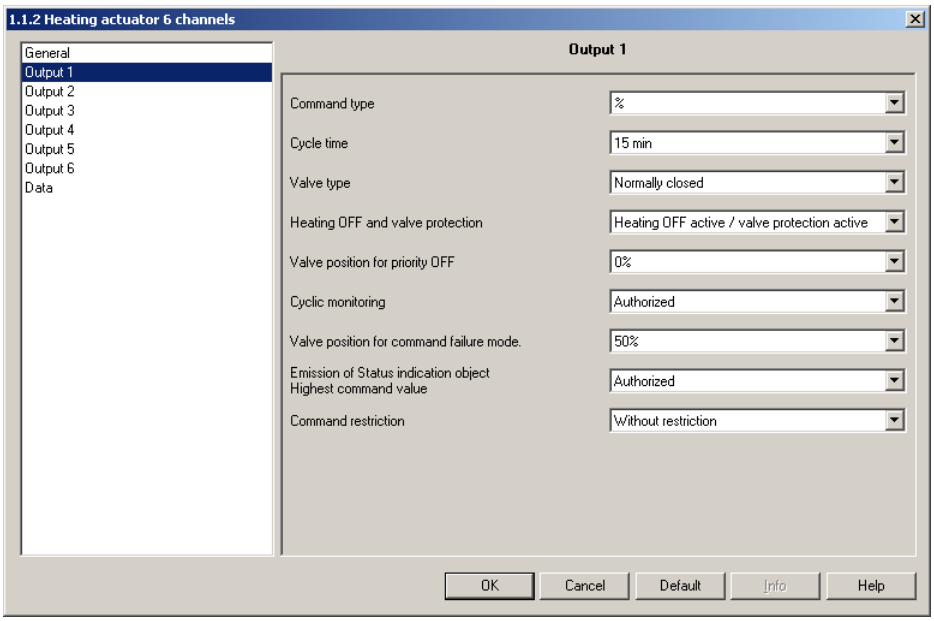


Example 3 :
Cycle time : 10 min
Heating rate : 50 %
Reception of a new command : 30 % at the moment T1
The output remains ON for the time required to implement the new heating rate. As from the following cycle, the output will use the new heating rate.



If, when receiving a new command, the heating rate lies above the activation time already performed, the output is switched off immediately.

➜ **Parameters setting screen :**



Screen 2

➜ **Parameters**

Designation	Description	Values
Command type.	This parameter allows selecting the command mode of the thermostat.	%, ON/OFF. Default value : %
Cycle time*.	This parameter allows defining the duration of the complete command cycle (opening time plus closing time) if the type is %.	4 min, 5 min, 6 min, 8 min, 10 min, 12 min, 15 min, 20 min, 25 min, 30 min Default value : 15 min
Cycle time in Priority OFF and Command failure mode**.	When the commande is of the ON/OFF type, this parameter allows defining the cycle time for the Priority OFF and Command failure mode. This value will be used as a calculation base for the time-proportional calculation in these two modes (e.g. cycle time = 10 min and heating rate = 50 % => in the Command failure mode, the output will be ON for 5 min and OFF for 5 min.	4 min, 5 min, 6 min, 8 min, 10 min, 12 min, 15 min, 20 min, 25 min, 30 min Default value : 15 min

* This parameter is only visible when the Command type is %.
** This parameter is only visible when the Command type is ON/OFF.

2.2.2.2 Description of valve type function

The parameter Valve type allows defining the type of the controlled valve (normally open or normally closed).

Designation	Description	Values
Valve type.	This parameter allows selecting the valve type controlled by the output.	Normally closed, Normally open. Default value : Normally closed.

Normally closed = when the output is not powered, the valve is closed and no heating is available.
In this configuration, the ON command = output powered, the OFF command = no voltage.

Normally open = when the output is not powered, the valve is open and heating is available.
In this configuration, the OFF command = output powered, the ON command = no voltage.

2.2.2.3 Description of Heating OFF and valve protection functions

The Heating OFF summer mode allows switching off the outputs for a long period. The function is started by the Heating OFF object. Any command on the Output X - command % or Output X - command ON/OFF object during this period will be ignored.

The Valve protection function allows preventing the valve from jamming. Valve protection consists in activating the valve for 6 min all 24 h.

Designation	Description	Values
Heating OFF and valve protection.	This parameter allows disabling or enabling the Heating OFF and Valve protection functions.	Heating OFF inactive / valve protection inactive, Heating OFF active / valve protection inactive, Heating OFF active / valve protection active, Heating OFF inactive / valve protection active. Default value : Heating OFF active / valve protection active.

2.2.2.4 Description of the Valve position for Priority OFF function

Each of the outputs has its own Output X - OFF priority object, which allows switching the output in the Priority mode. A 1 on this communication object activates the priority, a 0 on this object deactivates the priority. Priority allows switching the output to the % command value defined in the parameter Valve position for Priority OFF. This percentage will be applied considering the parameters Cycle time the Cycle time in Priority OFF and Commande failure mode.
If the Control type is %, the activation and deactivation duration of the valve will be based on the parameter Cycle time. If the Control type is ON/OFF, the activation and deactivation duration of the valve will be based on the parameter Cycle time in Priority OFF and Command failure mode.

Any command on the Output X - % or ON/OFF command object will be ignored for the whole duration of the Priority.

Designation	Description	Values
Valve position for priority OFF.	This parameter allows defining the position (%) of the valve in case of reception of a Priority instruction.	0 %, 10 %, 20 %, 30 %, 40 %, 50 %, 60 %, 70 %, 80 %, 90 %, 100 %. Default value : 0 %.

2.2.2.5 Description of the Cyclic command monitoring and Valve position for command failure mode function

This function allows monitoring, for each of the outputs, the reception of commands (% or ON/OFF). If no information is received on the Output X - Command object during the defined period, and if the Cyclic valve monitoring function is enabled, the output will switch to the Command failure mode, using the value defined in the parameters (see "2.2.1 General parameters").

The parameter Monitoring cycle duration is common to all outputs and allows defining the duration of the monitoring cycle.
The parameter Cyclic command monitoring allows enabling or disabling the function for each of the outputs.
The object Status indication - Presence/Absence of SX command allows sending on the bus the absence of command (value 1) or the presence of a command (value 0).

Designation	Description	Values
Cyclic monitoring.	This parameter allows enabling or disabling the monitoring of the instructions received.	Authorized, Forbidden. Default value : Authorized.
Valve position for command failure mode*.	This parameter allows defining the emergency position in case of absence of a command.	0 %, 10 %, 20 %, 30 %, 40 %, 50 %, 60 %, 70 %, 80 %, 90 %, 100 %. Default value : 50 %.

* This parameter is only visible if the Cyclic command monitoring parameter is Authorized

2.2.2.6 Description of the Object emission - Highest command value function

The object Status indication - Highest command value allows a heating installation to communicate its energy requirement. Thus the heat supplied by the heating can be adapted to the needs.
The Emission of the object Status indication/Highest command value is available for each of the outputs and allows defining whether the output must be taken into account in the comparison or not. This function only concerns the outputs with the Control type %.

Designation	Description	Values
Emission of status indication object - Highest command value.	This parameter allows to disable or enable taking into account the output value for the emission of the object Highest command value of all outputs.	Forbidden, Authorized. Default value : Authorized.

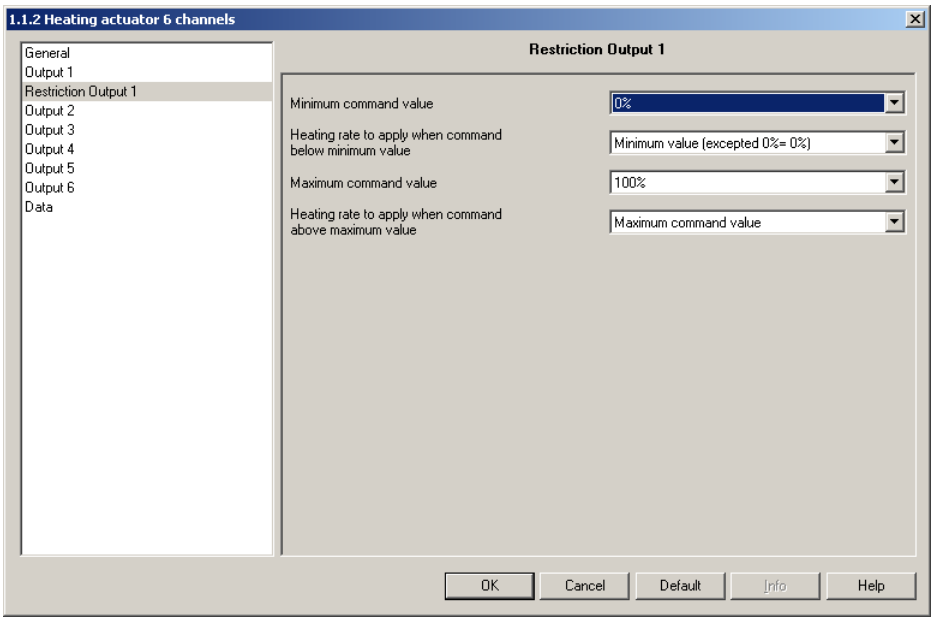
2.2.2.7 Description of the Command restriction function

This function is specific to a (%)-type command and allows defining the max. and min. position limits of the valves.

Designation	Description	Values
Command restriction.	This parameter allows defining whether the limit positions of the valves are customized or not.	Without restriction, Customized settings. Default value : Without restriction.

2.2.3 Description of the Command restriction output X function

When the parameter Command restriction has the value Customized settings, the maximum and minimum control values of the output may be set.



Screen 3

➜ **Parameters**

Designation	Description	Values
Minimum command value.	This parameter allows defining the minimum value of the command.	0 %, 10 %, 20 %, 30 %, 40 %, 50 %, Default value : 0 %.
Heating rate to apply when command below minimum value.	This parameter allows defining the command to be carried out for the valve when the received command (%) is lower than the value defined in the Minimum command value parameter. 0 % This setting means that, if the received command is lower than the minimum value, the output will be set to 0 % Minimum value (excepted 0%=0%). This setting means that, if the received command is lower than the minimum value, the output will be set to the value defined in the parameter Minimum command value. If the command received is 0 %, the output will be set to 0 %	0 %, Minimum value (excepted 0%=0%). Default value : Minimum value (excepted 0%=0%).
Maximum command value.	This parameter allows defining the maximum value of the command.	55 %, 60 %, 65 %, 70 %, 75 %, 80 %, 85 %, 90 %, 95 %, 100 %. Default value : 100 %.

Designation	Description	Values
Heating rate to apply when command above maximum value.	This parameter allows defining the command to be carried out for the valve when the received command (%) exceeds the value defined in the Maximum command value parameter. 100 %. This setting means that, if the received command exceeds the maximum value, the output will be set to 100 % Maximum command value. This setting means that, if the received command exceeds the maximum value, the output will be set to the value defined in the parameter Maximum command value.	100 %,Maximum command value. Default value : Maximum command value.

3. Main characteristics

Max. number of group addresses	254
Max. number of links	255
Objects	21

4. Physical addressing

To perform physical addressing or check for the presence of the bus, press the lighted pushbutton located on the product.
Indicator on = bus present and product in physical addressing.
The product remains in physical addressing until the physical address is transmitted by ETS.
Pressing a second time allows leaving the physical addressing mode.