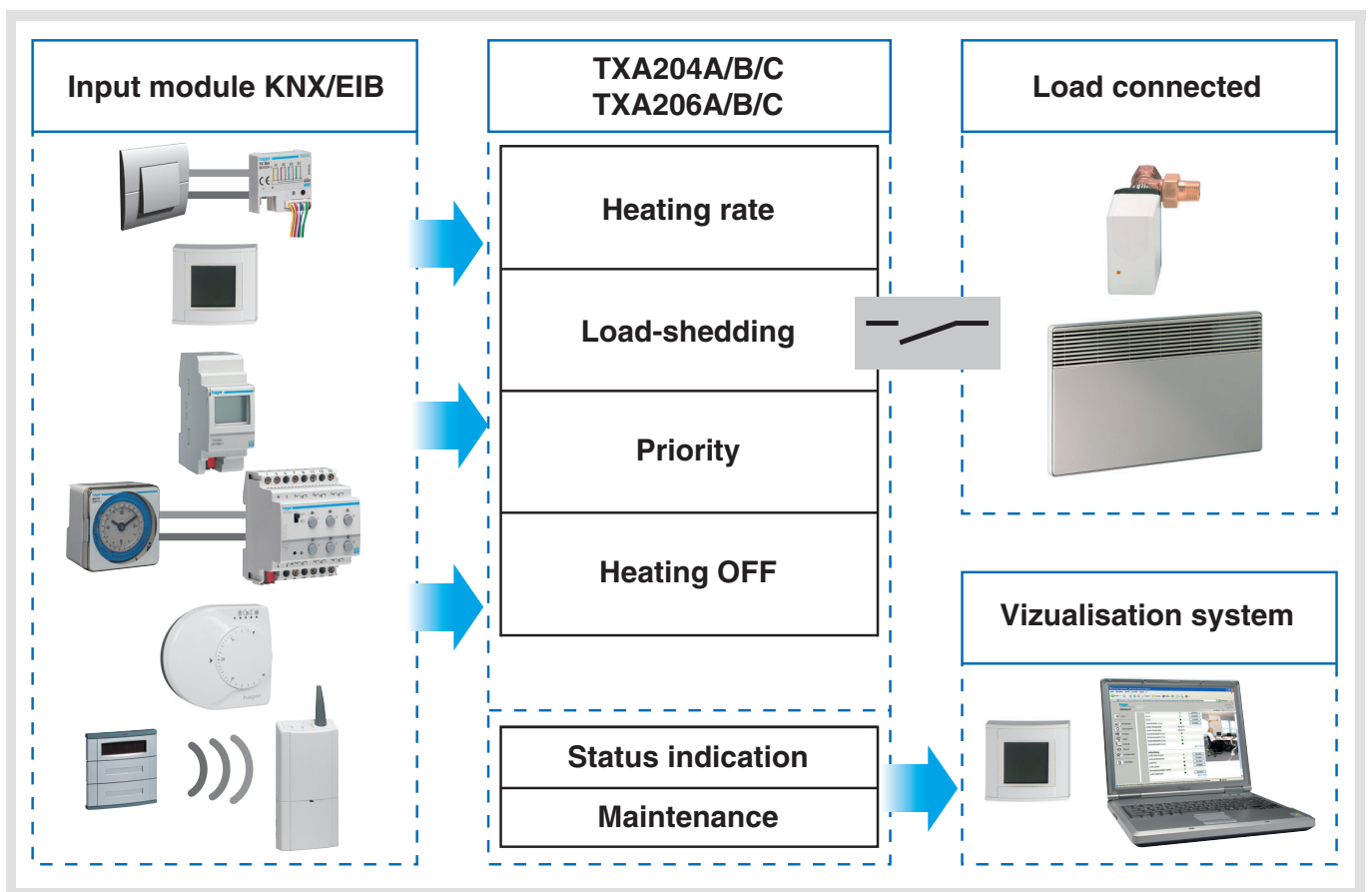# hager

Tebis application software

TL204B V3.x Lighting and heating
TL206C V3.x Lighting and heating
Heating function

Product reference	Product designation
TXA 204A/B/C	Output module 4-fold 4/10/16A 230V~/ 16 A capacitive loads
TXA 206A/B/C	Output module 6-fold 4/10/16A 230V~/ 16 A capacitive loads

Input module KNX/EIB

TXA204A/B/C
TXA206A/B/C

Heating rate

Load-shedding

Priority

Heating OFF

Status indication

Maintenance

Load connected

Vizualisation system

Summary

hager

1. Presentation of the Heating functions of the TL204B and TL206C applications

The TL204B and TL206C application softwares allow each output to be individually configured for Lighting or Heating applications.
The main functions of the Heating application of the TL204B and of the TL206C are the following:

Time-proportional control
The Time-proportional control function allows controlling:
- hot water heating: valve, circulation pump, burner.
- electrical heating: electrical floor heating, convectors, other electrical systems.

■ Priority

The Priority function allows the output to be forced at an ON or OFF status independently of the commands sent by the controller. This command has a high priority. No other command is taken into account if a priority is active. Only end of priority, load shedding or stop commands will be taken into consideration.

■ Load-shedding

In case of electrical heating, the load-shedding function stops one output if the subscribed power is exceeded.

■ Stop

The Heating OFF function allows the heating to be stopped completly.
This command has the highest priority.

■ Manual mode

The Manual mode is used to isolate the product from the bus.
In this mode, it is possible to override manually each output.

2. Configuration and parameters of the Heating functions
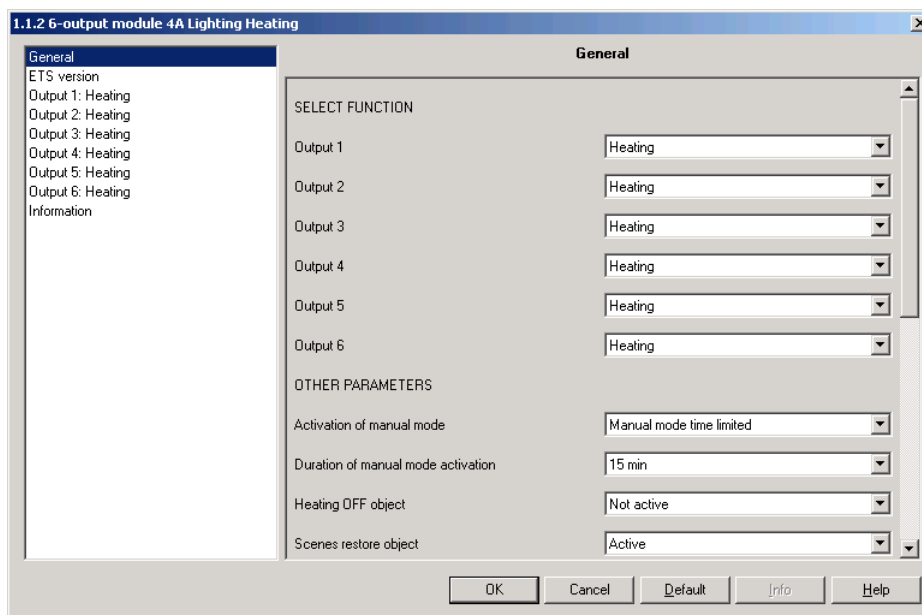
2.1 General parameters

■ ETS version selection

This parameter allows the presentation of the parameters to be optimised according to the ETS version used. Go to the ETS Version screen and select the required version: ETS2 or ETS3.
Default value: ETS3.

■ Function selection

Go to the General screen and select Heating for the outputs concerned.

Screen 1

■ Other parameters

Designation	Description	Values
Activation of manual mode*	This parameter enables or disables the 2 position switch located on the front side of the product. This switch allows selecting the Manual mode or the Auto mode. In Manual mode, the outputs may be controlled using the pushbuttons on the front side of the product. In Auto mode, the outputs are controlled by the instructions coming from the bus.	Manual mode authorized, Manual mode inhibited, Manual mode time limited. - Manual mode authorized: the manual mode can be activated at any time. - Manual mode inhibited: the switch is permanently disabled. Switching to manual mode is impossible. - Manual mode time limited: the manual mode can be activated for a limited duration. Default value: Manual mode authorized.
Duration of manual activation	This parameters defines the duration of activation of the manual mode.	15, 30, 60 min. Default value: 15 min.
Heating OFF object	This parameter authorizes or forbids taking the Heating OFF object into consideration.	Not used, Authorized. Default value: Not used.
Scene restore object (see also Scene function)	This object is not used for Heating functions.	

* When the position of the switch is not in line with the status of the product, the indicators associated with the outputs light up sequentially.

2.2 Objects List

Number	Name	Object Function	Length	C	R	W	T	U	Priority
0	Output 1	Heating rate	1 Byte	C	R	W	-	U	Low
1	Output 1	Load shedding	1 bit	C	R	W	-	U	Low
5	Output 2	Heating rate	1 Byte	C	R	W	-	U	Low
6	Output 2	Load shedding	1 bit	C	R	W	-	U	Low
10	Output 3	Heating rate	1 Byte	C	R	W	-	U	Low
11	Output 3	Load shedding	1 bit	C	R	W	-	U	Low
15	Output 4	Heating rate	1 Byte	C	R	W	-	U	Low
16	Output 4	Load shedding	1 bit	C	R	W	-	U	Low
20	Output 5	Heating rate	1 Byte	C	R	W	-	U	Low
21	Output 5	Load shedding	1 bit	C	R	W	-	U	Low
25	Output 6	Heating rate	1 Byte	C	R	W	-	U	Low
26	Output 6	Load shedding	1 bit	C	R	W	-	U	Low
32	Output 1	Priority	2 bit	C	R	W	-	U	Low
33	Output 1	Status indication	1 Byte	C	R	-	T	U	Low
39	Output 2	Priority	2 bit	C	R	W	-	U	Low
40	Output 2	Status indication	1 Byte	C	R	-	T	U	Low
46	Output 3	Priority	2 bit	C	R	W	-	U	Low
47	Output 3	Status indication	1 Byte	C	R	-	T	U	Low
53	Output 4	Priority	2 bit	C	R	W	-	U	Low
54	Output 4	Status indication	1 Byte	C	R	-	T	U	Low
60	Output 5	Priority	2 bit	C	R	W	-	U	Low
61	Output 5	Status indication	1 Byte	C	R	-	T	U	Low
67	Output 6	Priority	2 bit	C	R	W	-	U	Low
68	Output 6	Status indication	1 Byte	C	R	-	T	U	Low
76	All outputs	Maintenance	2 Byte	C	R	-	T	U	Low

2.3 Function descriptions

■ Heating rate and Status indication functions

The heating rate allows the output to be closed and opened cyclically. The heating rate corresponds to the lenght of contact closing time in relation with the total cycle lenght:
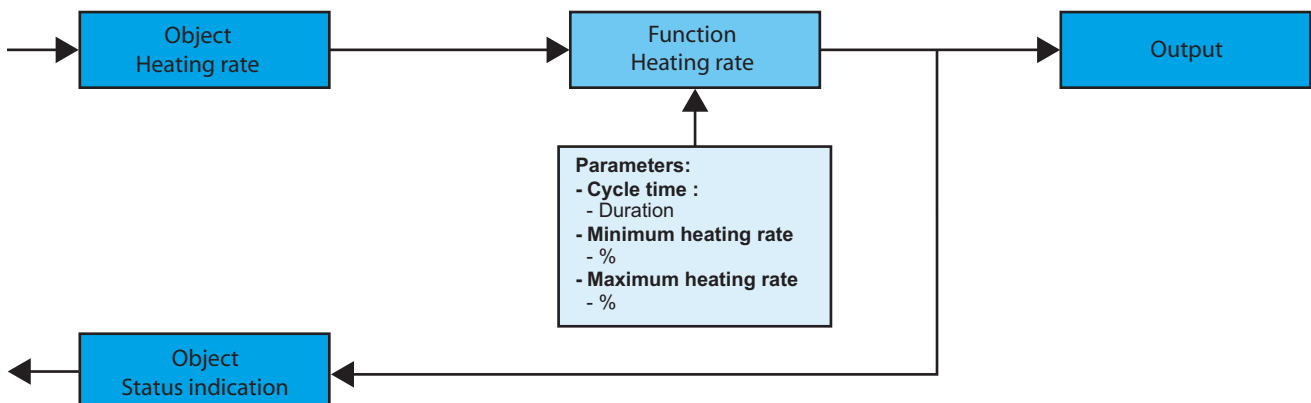Heating rate (%) = Contact closing duration (min) / Total cycle time (min).
The function is started by the Heating rate object coming from a controller.
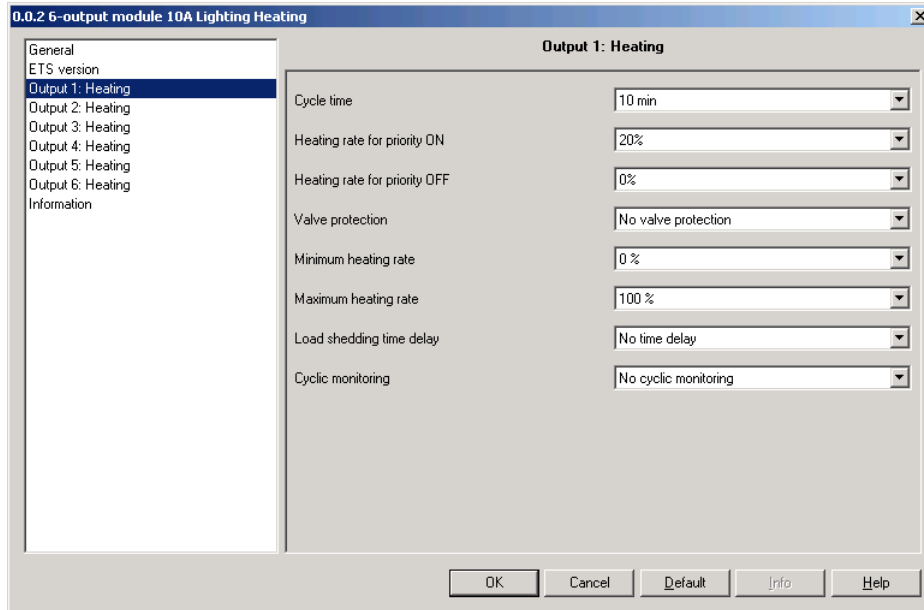The status of the output is indicated on the bus by the Status indication object.

➜ Description of the Status indication object (1 byte)

0	0	0	0	M	M	M	C

C: Contact status	0: contact open 1: contact closed
MMM: Output mode	000: normal mode 001: Priority mode 010: Stop mode 011: Load shedding mode 100: Transmission failure mode

Object Heating rate	→	Function Heating rate	→	Output

Parameters:
- **Cycle time :**
  - Duration
- **Minimum heating rate**
  - %
- **Maximum heating rate**
  - %

Object Status indication

➜ Parameters

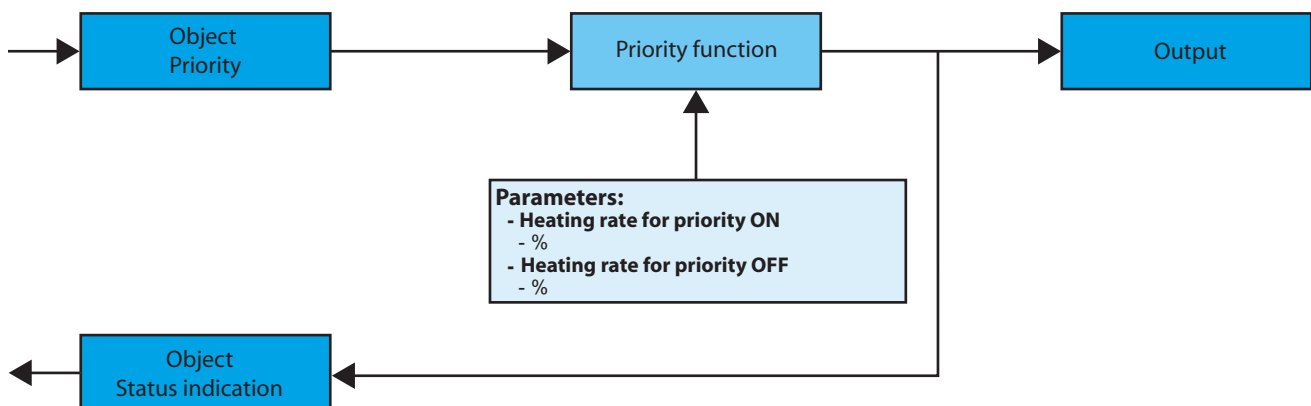*Screen 2*

- Cycle time:
  This parameter defines the total duration of a closing/opening cycle of the output.
  The value depends on the type of the heating and on its inertia.
  Values: 3 min, 5 min, 10 min, 15 min, 20 min, 25 min, 30 min.
  Default value: 10 min.
- Minimum heating rate:
  This parameter sets a minimum value for the heating rate. If the value of the Heating rate object is lower than the minimum, the minimum rate will be used.
  Values: 0%, 10%, 20%, 30%, 40%. Default value: 0%.
- Maximum heating rate:
  This parameter sets a maximum value for the heating rate. If the value of the Heating rate object exceeds the maximum, the maximum rate will be used.
  Values: 60 %, 70 %, 80 %, 90 %, 100%. Default value: 100%.

■ Priority function

The Priority function allows forcing the heating rate to a value. This function is started by the Priority object. The forced heating rate will only be taken into consideration at the following cycle. When receiving the Priority end command, the heating rate is set again to the last value of the Heating rate object sent by the controller. The value becomes effective at the following cycle.
Priority has a lower priority than Load shedding and Stop (Heating OFF > Load shedding > Forcing).
A Priority Cancellation command ends the Priority and allows again taking into consideration the commands comig from the Bus.

➜ Description of the Priority object.

Bit 1	Bit 0
Output behaviour	

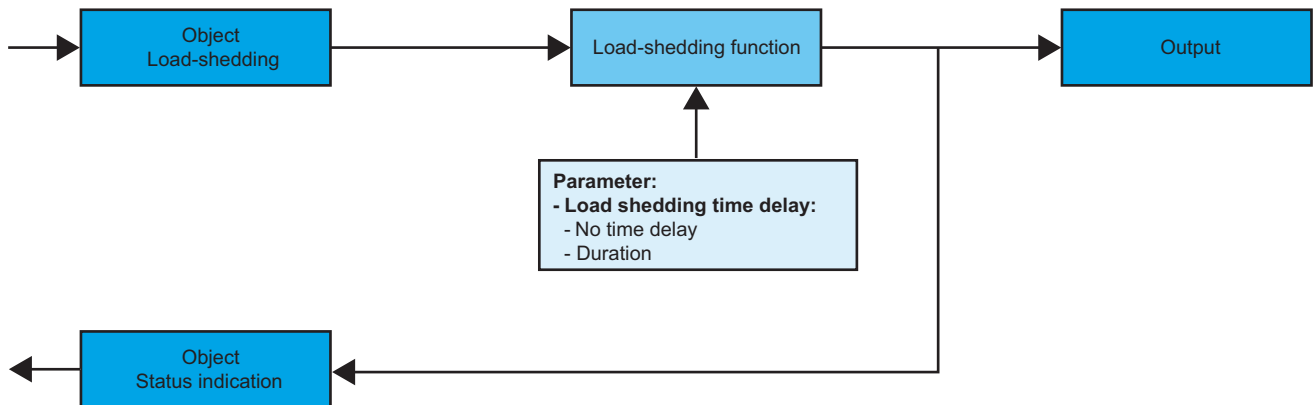| Output behaviour	00 = Priority-end 01 = Priority-end 10 = Priority OFF 11 = Priority ON

➜ Parameter Setting screen: See "Screen 2"

➜ Parameters
- Heating rate for priority ON:
  Values: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%.
  Default value: 20%.
- Heating rate for priority OFF:
  Values: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%.
  Default value: 0%.

■ Load shedding function

In case of electrical heating, the load-shedding function stops one output if the subscribed power is exceeded. This function is started by the Load shedding object.
The output is set to OFF for a duration defined by the Load shedding time delay parameter. The current cycle is interrupted. The load is automatically restored at the end of the delay, with a heating rate corresponding to the last value sent by the controller.
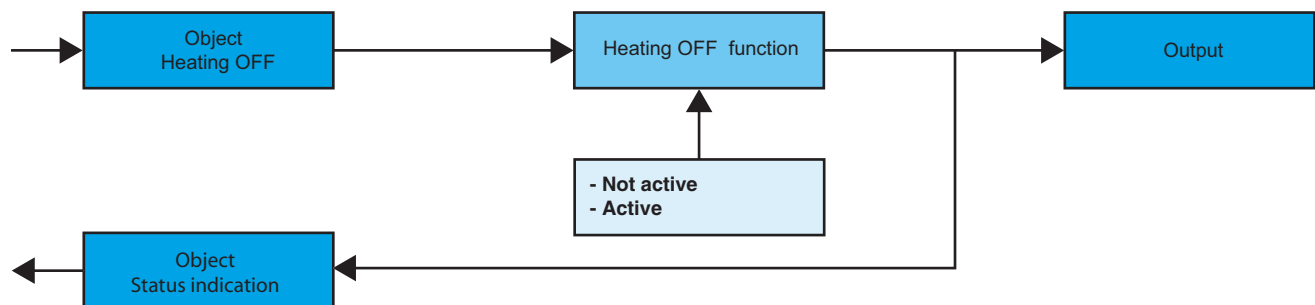Load shedding has a higher priority then Priority (Heating OFF > Load shedding > Priority).

➜ Parameter Setting screen: See "Screen 2".

➜ Parameters
- Load shedding time delay:
  Values: No time delay, 15 min, 30 min, 45 min, 60 min, 75 min, 90 min, 105 min, 120 min.
  Default value: No time delay.

■ Heating OFF function

The Heating OFF function allows the heating to be stopped immediately: all running cycles are stopped and all outputs are opened. This function is started by the Heating OFF object.
The Heating OFF command has the highest priority. Only the Valve protection function may be activated.

➜ General screen: See "Screen 1".

■ Valve protection function

The Valve protection function allows activating periodically a Valve protection cycle for a valve or a circulating pump. This function is started automatically when the output was inactive for 24h. Valve protection is carried out even when the Heating OFF function is activated.

→ Parameter Setting screen: See "Screen 2".

→ Parameter
   • Valve protection:
     Values: No valve protection, 5 minutes valve protection every 24 hours.
     Default value: No valve protection.

■ Cyclic monitoring function

The Cyclic monitoring function allows making sure that the product receives correctly the Heating rate object sent by the controller. If the Heating rate is not received during the period defined in the Cyclic monitoring parameter, the output switches to security mode. The heating rate used in security mode is defined by the Heating rate in security mode parameter. This function is also active in Stop mode to define the heating rate when re-starting the heating without receiving the Heating rate object from the controller.

→ Parameter
   • Cyclic monitoring:
     Values: No cyclic monitoring, 1 h 30 min, 2 h, 2 h 30 min.
     Default value: No cyclic monitoring.
     If the value of the Cyclic monitoring parameter is a duration, a value must be given to the Heating rate in security mode:
      - Heating rate for security mode
     Values: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%.
     Default value: 20%.

■ Maintenance function

The Maintenance function allows transmitting general data of the product by means of the Maintenance object.

→ Description of maintenance object (2 bytes)

0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	C

C: Operating mode of the product	0: Auto 1: Manual

3. Main characteristics

Product		TXA204A/B/C	TXA206A/B/C
Max. number of group addresses		254	254
Max. number of links		255	255
Objects	total	51	75
	per output	4	4
	for stopping	1	1
	for scenes restoration	1	1
	for maintenance	1	1

4. Physical addressing

To perform physical addressing or to check for bus presence, press the lighted pushbutton located above the label holder on the right of the product.
Indicator on = bus presence and product in physical addressing.
The product remains in physical addressing until the physical address has been transmitted by ETS. Press again to exit physical addressing mode.
Physical addressing may be performed in Auto or Manual (☜) mode.