5.4.7 Define Remote Control

The remote control function in CTC's products provides a wide range of opportunities to adjust the heating externally. There are four programmable inputs that can activate the following functions:

- Heat pump tariff
- Immersion heater tariff
- Night reduction
- Ripple control
- Additional domestic hot water
- Flow/level switch
- Heating ext mode Rad 1
- Heating ext mode Rad 2
- Smart A
- Smart B
- Vent. Reduced
- Vent. Boost
- Vent. Custom
- Vent. Unoccupied

Terminal blocks – inputs

There are two programmable 230V inputs and two low-voltage ports on the relay card (A2).

Open terminal block = no external effect. (Normal NO).

Closed terminal block = function activated externally.

Designation	Terminal block name	Connection type
K22	A14 & A25	230 V
K23	A24 & A25	230 V
K24	G33 & G34	Low voltage (<12V)
K25	G73 & G74	Low voltage (<12V)

Remote control procedure

Assign input

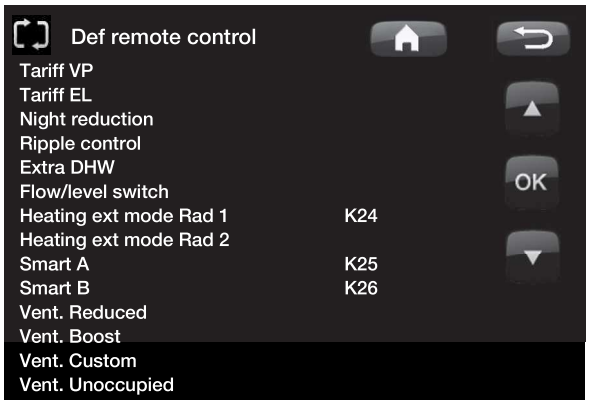
First of all, an input is assigned to the function or functions to be controlled remotely.

This is done in *"Advanced/Define system/Remote Control"*.

Example

In the example, there is manual control of whether the heating is to be on or off in Heating System 1 (HS1).

First of all, *"Heating ext mode Rad 1"* is assigned input K24.



Example in which "Heating, ext. mode HS1" has been assigned terminal block "K24" for remote control.

NB: Enertech AB is NOT responsible for the required heat being produced if the remote control has blocked the heating over a long period.

Activate/select function.

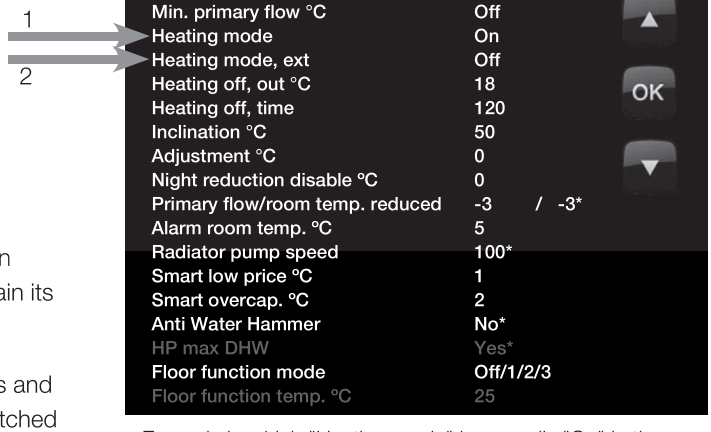
When an input is assigned, the function must be activated or set in the menu *Installer/Settings/Heating circuit*.

When this has been done, you programme what is to happen at Remote Control/ Heating, external mode HS1 (closed input, arrow 2).

Arrow 2 indicates the selection "Off".

So in this example the heating is always on. (Normal mode). The radiator pump is switched on continuously, the mixing valve operates to maintain its "setpoint value"

But when K24 is closed, the radiator pump stops and the mixing valve closes. The heating remains switched off until you choose to start heating up by opening K24.



Example in which "Heating mode" is normally "On" in the heating season, but when terminal block K24 is closed "Off" is activated and the heating is switched off.

Open terminal block = "On" (in this example)

Closed terminal block = "Off" (in this example)

NB: Enertech AB is NOT responsible for the required heat being produced if the remote control has blocked the heating over a long period.

The functions in remote control.

HP tariff
When electricity suppliers use a differentiated tariff, you have the opportunity to block the heat pump when the electricity tariff is high.

Electricity tariff*.
When electricity suppliers use a differentiated tariff, you have the opportunity to block the immersion heater(s) when the electricity tariff is high.

Night reduction
Night reduction means that you reduce the temperature indoors during scheduled periods, for example at night or when you are at work.

Ripple control
Disconnecting the compressor and immersion heater during a certain period which is defined by the electricity supplier (special equipment).

Ripple control is a device which an electricity supplier can fit with the aim of disconnecting high current draw equipment for a short period of time. The compressor and electrical power are blocked when ripple control is active.

Additional Domestic Hot Water
Select this option if you want to activate the *Extra DHW* function.

NB: Enertech AB is NOT responsible for the required heat being produced if the remote control has blocked the heating over a long period.

Flow/level switch
In some cases, extra protection is required due to local requirements or provisions. For example, the requirement in some areas is for the system to be installed within a water catchment area. The pressure/level switch is defined in the *Installer/Define system/Def. Heat pump* menu. If there is a leak, the compressor and brine pump stop and the Flow/level switch alarm appears on the display.

Heating, ext. mode HS1

Heating, ext. mode HS2
With remote controlled "Heating, etc. mode", "On" is selected if the heating is to be on or "Off" if the heating is to be switched off. "Auto" mode can also be selected.

Read more in the section entitled "Your home's heating curve".

Smart A

Smart B
Smart Grid offers an opportunity to control from the outside whether heating is to be calculated as normal price, low price or overcapacity. The heat pump and immersion heater can also be blocked in a way similar to "Ripple control".

Vent. Reduced,

Vent. Boost,

Vent. Custom,

Vent. Unoccupied

NB: Enertech AB is NOT responsible for the required heat being produced if the remote control has blocked the heating over a long period.

Smart Grid

The "Smart Grid" function selects different heating options depending on the price of energy using accessories from the energy supplier.

Smart Grid is based on the energy price being calculated as

- Normal price
- Low price
- Overcapacity
- Blocking

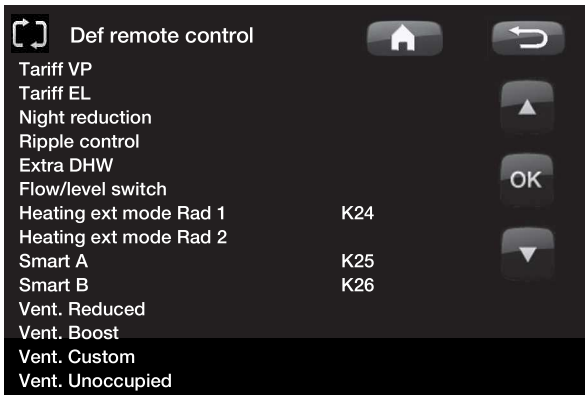
Room temperature, pool temperature and hot water temperature, etc. are given different heating temperatures depending on the energy price.

Procedure:
First of all, Smart A and Smart B are assigned a separate input in the menu *Installer/Define system/Def. Remote control/Smart A/B.*

Activation then takes place based on the terminal blocks' closure and settings for each function.

- Normal price: (Smart A: Open, Smart B: Open). No effect on the system.
- Low price mode: (Smart A: Open, Smart B: Closed).
- Overcapacity mode: (Smart A: Closed, Smart B: Closed).
- Blocking mode: (Smart A: Closed, Smart B: Open)

In each function that can be controlled there is a choice of temperature change for low price mode and overcapacity mode.



Example in which Smart A has been assigned low voltage input K24 and Smart B has been assigned low voltage input K25.

NB: Enertech AB is NOT responsible for the required heat being produced if the remote control has blocked the heating over a long period.

Factory setting for low price is 1ºC increase* in temperature.

Factory setting for overcapacity is 2ºC increase* in temperature.

Alternative setting range 1-30º

The following can be controlled:

- Room temperature heating systems 1-2
- Primary flow temperature heating systems 1-2
- Upper tank
- Pool
- Cooling

Comment re. cooling

When active cooling = setpoint has not been reached.

E.g. 26.0 (25.0)

In these cases Smart Grid "Normal mode" is activated for the heating systems. (Smart low price or smart overcapacity is not activated).

The reason for this is to avoid a conflict between heating and cooling. For example, if there is a standard 2 ºC difference between heating and cooling, you do not want to heat and cool at the same time.

NB: Enertech AB is NOT responsible for the required heat being produced if the remote control has blocked the heating over a long period.

Low price mode: (A: Open, B: Closed).

- With room sensor: Room temp. (setpoint) increased by 1ºC (Factory setting, Smart low price ºC)
- Without room sensor: Primary flow (setpoint) increased by 1ºC (Factory setting, Smart low price ºC)
- Upper tank: Setpoint increased by 10ºC (Factory setting, Smart low price ºC)
- Pool: Pool temp. increased by 1ºC (Factory setting, Smart low price ºC)
- Cooling. Room temperature is reduced by 1ºC (Factory setting, Smart low price ºC)

Blocking mode: (A: Closed, B: Open).

- The heat pump and immersion heater can be blocked in accordance with the settings in heat pump and immersion heater.
- **Smart blocking hp** **No (Yes/No)**
  Blocks heat pump
  Advanced/Settings/Heat pump
- **Smart blocking immersion** **No (Yes/No)**
  Blocks immersion heater
  Advanced/Settings/Immersion heater
- **Smart blocking mixing valve** **No (Yes/No)**
  Blocks bivalent mixing valve so that it does not pass 50%. If the mixing valve has passed 50% when blocking starts, the mixing valve remains in the upper tank. If demand falls and the mixing valve closes, it may not open more than 50%.

NB: Enertech AB is NOT responsible for the required heat being produced if the remote control has blocked the heating over a long period.

Overcapacity mode: (A: Closed, B: Closed).

- With room sensor: Room temp. (setpoint) is increased by 2ºC (Factory setting, Smart overcap. ºC)
- Without room sensor: Primary flow (setpoint) is increased by 2ºC (Factory setting, Smart overcap. ºC)
- Upper tank: Immersion heater
  Setpoint is "Min. temp ºC + increase of 10ºC (Factory setting, Smart overcap. ºC)
- Lower tank: Heat pump
  The heat pump only operates in the lower tank. Calculated setpoint increases by 2ºC (Factory setting, Smart overcap. ºC)
- Pool: Pool temp. is increased by 2ºC (Factory setting, Smart overcap. ºC)
- Cooling. Room temperature is reduced by 2ºC (Factory setting, Smart overcap. ºC)
  (EcoZenith 550; Heating System 2 is not affected)

NB: Enertech AB is NOT responsible for the required heat being produced if the remote control has blocked the heating over a long period.