



## Data Sheet MCT21 regelaar.

Voor u begint met programmeren gebruik eerst de knop "Reset settings". Doe dat ook voor dat u wijzigingen aanbrengt in een bestaand programma en bij een storing.

Met de knop Sp2 regelt u de maximum temperatuur.

Met de knop V2\*\*\* stelt u het maximale toerental in. Advies 9.5

Met de knop SP1 regelt u de minimum temperatuur.

Met de knop V1\*\*\* stel u het minimale toerental in. Advies 1.0

Met de knop Hysteresis stelt u de bandbreedte in. Advies 0.5

Voor eventuele hulp neem contact op met 0031 6 10771014





## MCT21 Button combinations

M  
A  
I  
N  
  
M  
O  
D  
E

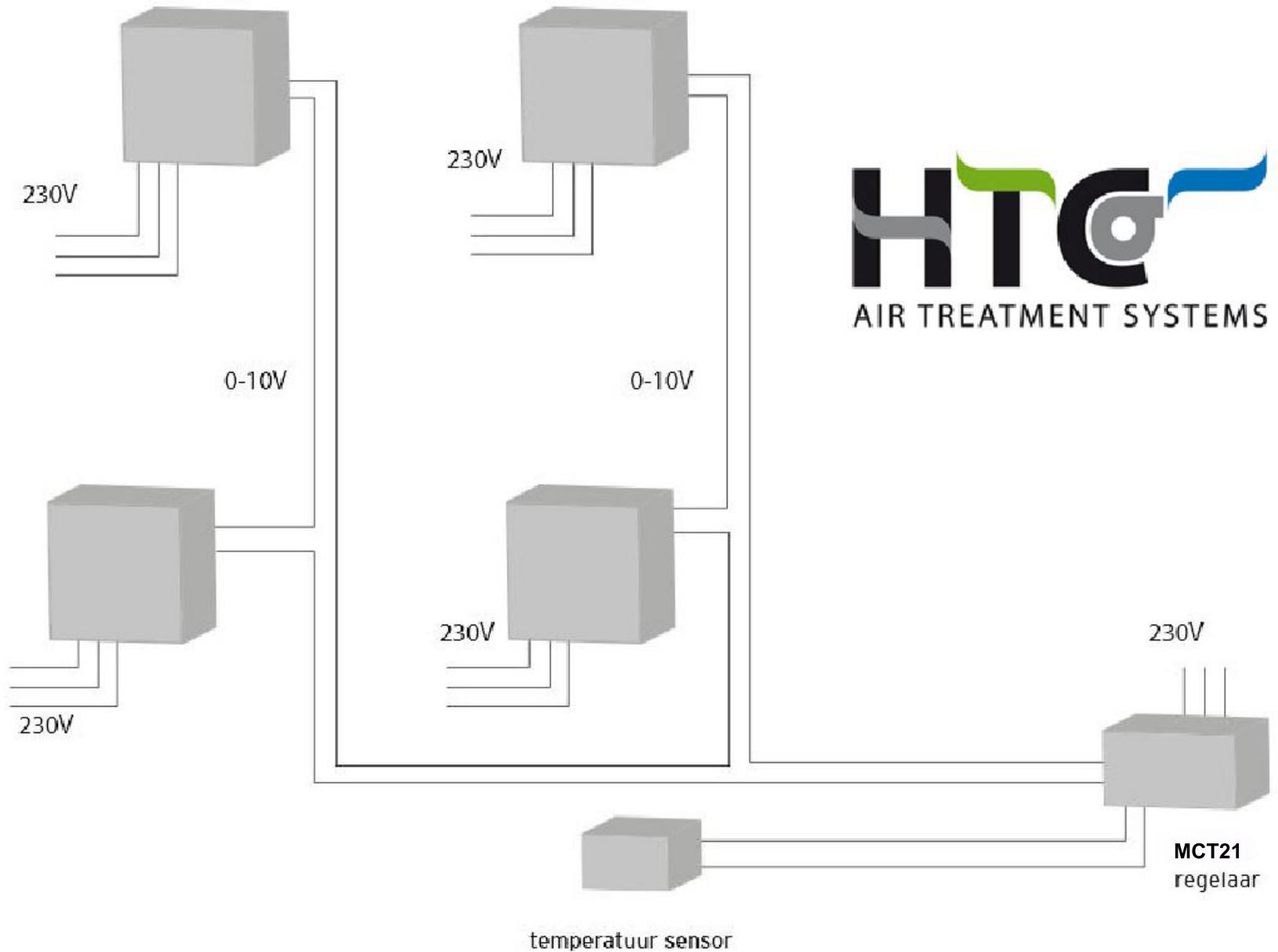
Hold button 	Sp2	confirm	+0.1	-0.1
Press once then press again and hold 	V2***	confirm	+0.1V	-0.1V
Hold button 	SP1	confirm	+0.1	-0.1
Press once then press again and hold 	V1***	confirm	+0.1V	-0.1V
Hold button 	Hysteresis**	confirm	Next value	Previous value
Press once then press again and hold 	Input Mode*	confirm	Next mode	Previous mode
Press together 	Speed Cutoff	confirm	ON	OFF
Press together and hold 	Reset settings			

The complete manual can be downloaded from our website.

Reset MCT21 again before you start programming.

For additional information or assistance call 0031 6 10771014

Met een regelaar voor EMC ventilatoren kunnen meerdere units aangestuurd worden.  
Zie hiervoor onderstaand schema.



### HV mode (HV)

To turn on/off press and hold 'SET' and '-'. "HV" will be displayed for 1 sec. and the current value will be shown. Use '+' and '-' to switch between on and off. To confirm press 'SET'.



### Input mode

To change input mode press '-' twice and hold the second time for more than 1 sec. "In" will be displayed for 1 sec. and the current input mode will be shown. You can choose between 8 modes using '+' and '-'.

4 single input modes: PT500, 0-10 V, 0-20 mA, 4-20 mA displayed as: "500", "010", "020" and "420"

4 differential input modes: PT500, 0-10 V, 0-20 mA, 4-20 mA displayed as: "50d", "01d", "02d" and "42d"

To confirm press 'SET':



### Reset

Press all three buttons. All segments on the LCD indication will light.



If a button isn't pressed for 6 seconds, the controller returns to working mode without changing the edited values.

### Adjusting settings

1. Set input mode by pressing '-' twice and hold the second time.
2. Set SP2 by pressing and holding 'SET'.
3. Set V2 by pressing 'SET' twice and hold the second time.
4. Set SP1 by pressing and holding '+'.
5. Set V1 by pressing '+' twice and hold the second time.
6. Adjust the remaining settings, example:

- Hysteresis for the relays and Speed cutoff by pressing '+' twice and hold
- Turn on Speed cutoff if necessary by pressing and holding 'SET' and '+' or turn on HV mode by pressing and holding 'SET' and '-'.

Set the input mode first because every input mode has its own setting values.

## EN MOUNTING INSTRUCTIONS

MCT21 | universal digital controller

### Technical data

Power supply: 230 Vac - 50/60 Hz  
 Operating temperature range: 0-40 °C  
 Device protection class: IP54  
 Enclosure: plastic R-ABS, UL94-V0, grey RAL 9002

This controller consists of a control board and a display board. On the display board there is a three digit display, one led (on/off) as well as three pushbuttons for parameter settings.

### Wiring (see fig.)

Ai1, GND	PT500 sensor input or analog input
Ai2, GND	PT500 sensor input or analog input
L, N	power supply 230 Vac - 50/60 Hz
AO1, GND	analog output (0-10 Vdc/0-20 mA)
NO1, NO2	relay outputs - normally open (250 Vac/6 A)
COM1, COM2	relay outputs - common (250 Vac/6 A)
NC1, NC2	relay outputs - normally closed (250 Vac/6 A)

### Mounting

The device is to be mounted in a room (surface mounting). Measured values in function of the PT500 sensor cable length:

Cable cross section	Variation
0.35 mm <sup>2</sup>	+0.044 °C/m
0.50 mm <sup>2</sup>	+0.035 °C/m
0.75 mm <sup>2</sup>	+0.022 °C/m
1.00 mm <sup>2</sup>	+0.017 °C/m

Load resistance of the analog output in 0-10 Vdc mode should be > 50 kΩ, in 0-20 mA mode < 500 Ω.

### Transport and stock keeping

Avoid shocks and extreme conditions, stock in original packing.

### Warranty

Two years from delivery date against defects in manufacturing. Any modifications or alterations to the product relieve the manufacturer of all responsibility.

The manufacturer bears no responsibility for any misprints or mistakes in this data, and modifications or improvements to the product can be made at any time after date of publication.

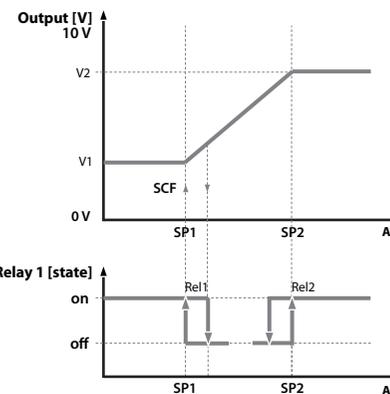
### Maintenance

In normal conditions the controllers are maintenance-free. If soiled clean with dry or dampish cloth. In case of heavy pollution clean with a non-aggressive product. In these circumstances the controller should be disconnected from the mains. Pay attention that no fluids enter the controller. Only reconnect the controller to the mains when it is completely dry.

All works may only be carried out by skilled personnel following the local regulations and AFTER the controller is completely separated from the mains.

## EN USER GUIDE

The MCT2 controller visualizes temperature and 0-10 Vdc or 0-20 mA inputs on a three-digit display. The temperature measurement range is from -30 to 70 °C. A LED on the cover shows if relay 1 is switched on.



The measured temperature or analog input (0-10 Vdc/0-20 mA) is converted to an analog output signal of 0-10 Vdc or 0-20 mA (selectable by slide switch), according to menu settings:

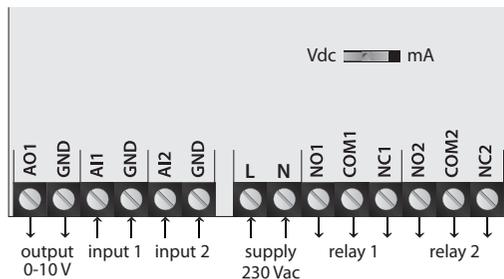
- SP1: Setpoint 1 (temperature, voltage or current)
- V1: Analog output at Setpoint 1
- SP2: Setpoint 2 (temperature, voltage or current)
- V2: Analog output at Setpoint 2

With these four parameters you can achieve full control of the analog output functionality. SP1 sets the point where the analog output reaches its minimum level 'V1' and SP2 sets the point where the output reaches its maximum level 'V2'. V1 and V2 are set in Volts.

The dashed line at SP1 shows the hysteresis switching when the 'Speed cutoff' option of the controller is selected. If this setting is set to the 'on' position (off by default), the analog output will drop to 0 V after reaching the SP1 level. The hysteresis of the speed cutoff switching (SCF) is the same as the relay hysteresis. It can be changed in the menu.

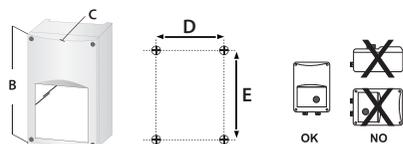
The controller can switch two relays on or off to regulate additional outputs/devices. When the measurement drops below SP1, relay 1 turns on. When the measurement is above SP2, relay 2 turns on. The relay outputs can be used to supply a contactor, a heater, etc.

The controller can measure temperature, 0-10 Vdc, 0-20 mA or 4-20 mA analog input signal (selectable in menu). Depending on the type of input selected, the displayed values and the settings will be in different units. The input can be single or differential (two inputs). In differential mode the functionality is the same as with single input, only the signal is the difference between input 1 and input 2.



	Pt500 input mode		0-10 V input mode		0-20 mA input mode		4-20 mA input mode	
	settings range	default	settings range	default	settings range	default	settings range	default
<b>SP2</b>	-30...70 °C (0.1 steps)	25.0 °C	0...10 V (0.1 V steps)	6.2 V	0...20 mA (0.1 mA steps)	12.5 mA	4...20 mA (0.1 mA steps)	12.5 mA
<b>V2</b>	0...10 V (0.1 V steps)	10.0 V	0...10 V (0.1 V steps)	10.0 V	0...10 V (0.1 V steps)	10.0 V	0...10 V (0.1 V steps)	10.0 V
<b>SP1</b>	-30...70 °C (0.1 steps)	20.0 °C	0...10 V (0.1 V steps)	5 V	0...20 mA (0.1 mA steps)	10 mA	4...20 mA (0.1 mA steps)	10 mA
<b>V1</b>	0...10 V (0.1 V steps)	0 V	0...10 V (0.1 V steps)	0 V	0...10 V (0.1 V steps)	0 V	0...10 V (0.1 V steps)	0 V
<b>Hysteresis</b>	0.5/1/1.5/2 °C	0.5 °C	0.1/0.2/0.3/0.5 V	0.1 V	0.2/0.4/0.6/1 mA	0.2 mA	0.2/0.4/0.6/1 mA	0.2 mA
<b>Speed cutoff</b>	on/off	off	on/off	off	on/off	off	on/off	off

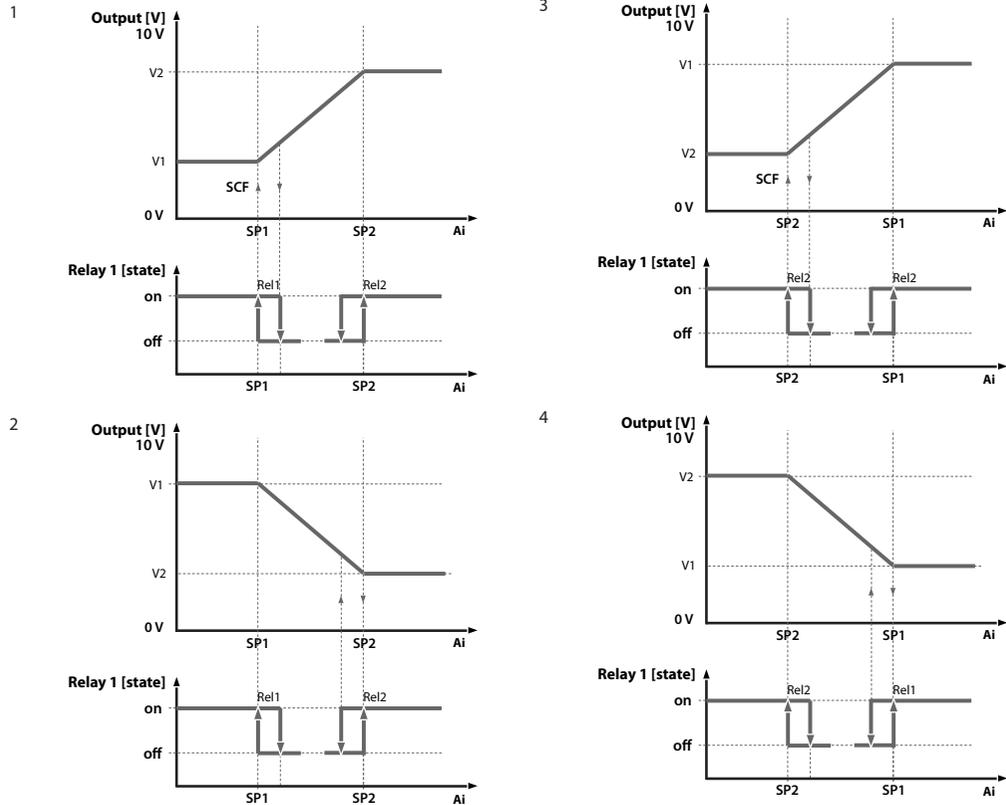
According to the low voltage directive: 2006/95/EC / the EMC directive: 2004/108/EC



	A	B	C	D	E	net weight	gross weight
MCT21-3070	84	160	80	71	108	450 g	600 g

### Normal working mode

The parameters SP2, V2, SP1 and V1 are fully adjustable. Depending on which value is bigger (SP1 or SP2, V1 or V2) four output control graphs are possible:



Please pay attention that relay 1 switches at the value of SP1 and relay 2 at the value of SP2!

When SP1 is equal to SP2, the analog output will not change and it takes the lower analog output value of V1 and V2. If V1 is equal to V2 the analog output doesn't change as well.

### MENUS

The controller has six menus to set the parameters:

- Setpoint 2 (SP2)
- Voltage at Setpoint 2 (V2)
- Setpoint 1 (SP1)
- Voltage at Setpoint 1 (V1)
- Speed cutoff (SCF)
- Hysteresis (H)
- HV mode (HV)

Input mode can be set as well and all settings can be reset.

#### Setpoint 2

To change SP2 press and hold 'SET'. "SP2" will be displayed for 1 sec. and the current value will be shown. Use '+' and '-' to change the setpoint in steps of 0.1. To confirm press 'SET'.



#### Voltage at Setpoint 2

To change V2 press '+' twice and hold the second time for more than 1 sec. "V2" will be displayed for 1 sec. and the current value will be shown. Use '+' and '-' to change the value in steps of 0.1 V. To confirm press 'SET'.



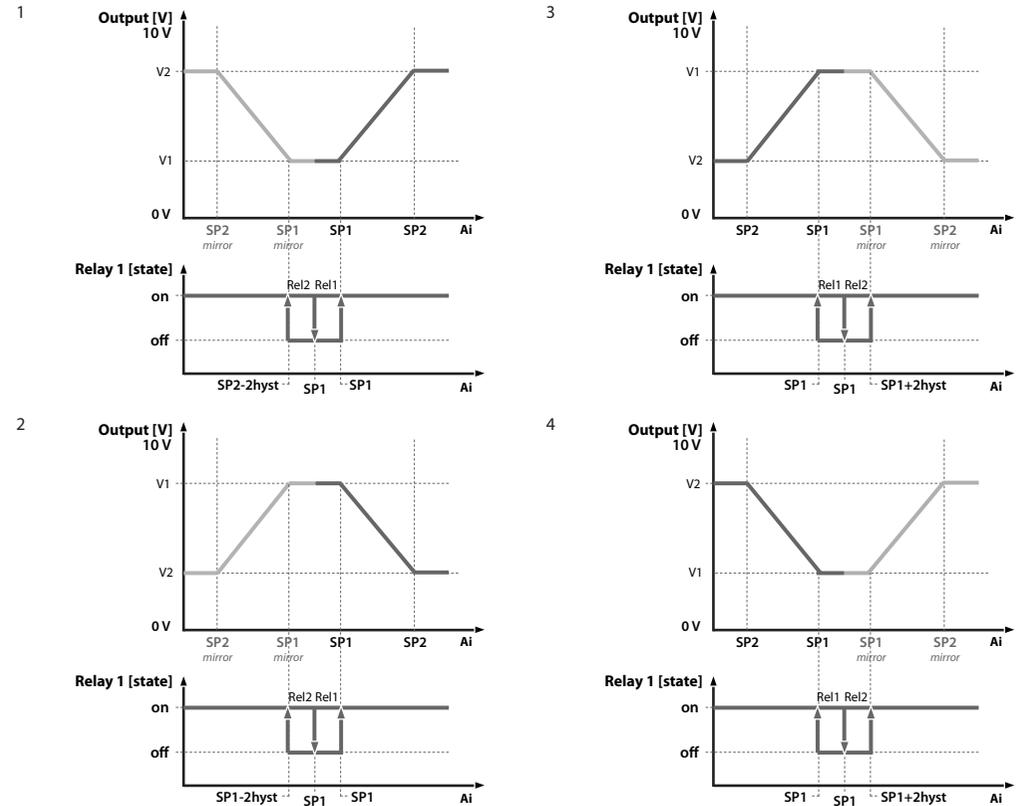
#### Setpoint 1

To change SP1 press and hold '+'. "SP1" will be displayed for 1 sec. and the current value will be shown. Use '+' and '-' to change the setpoint in steps of 0.1 (°C, Vdc, mA). To confirm press 'SET'.



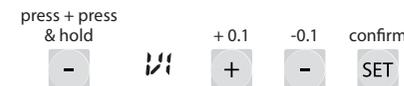
### HV working mode

In the additional HV mode the slope created by SP1, V1 and SP2, V2 is mirrored at a distance of twice the hysteresis value from SP1. Again there are four output control graphs possible. Relay 1 switches at SP1. Relay 2 switches at the mirrored SP1. When HV mode is selected Speed cutoff is not working.



#### Voltage at Setpoint 1

To change V1 press '-' twice and hold the second time for more than 1 sec. "V1" will be displayed for 1 sec. and the current value will be shown. Use '+' and '-' to change the value in steps of 0.1 V. To confirm press 'SET'.



#### Hysteresis (Hyst)

To change the hysteresis press and hold '-' for more than 1 sec. "H" will be displayed for 1 sec. and the current value will be shown. Use '+' and '-' to change the value.

Pt500: 0.5/1/1.5/2 °C  
0-10 V: 0.1/0.2/0.3/0.5 V  
0-20 and 4-20 mA: 0.2/0.4/0.6/1 mA

To confirm press 'SET':



#### Speed cutoff

To turn on/off press and hold 'SET' and '+'. "SCF" will be displayed for 1 sec. and the current value will be shown. Use '+' and '-' to switch between on and off. To confirm press 'SET'.

