User Manual Display
QC-PC-D-CH1

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Technical specifications:

Supply voltage: 12VDC…24VDC
40mA….25mA
Digital output: open collector 10KΩ
The digital output is only used for getting signals.
Don't let the current grow upper 10mA.

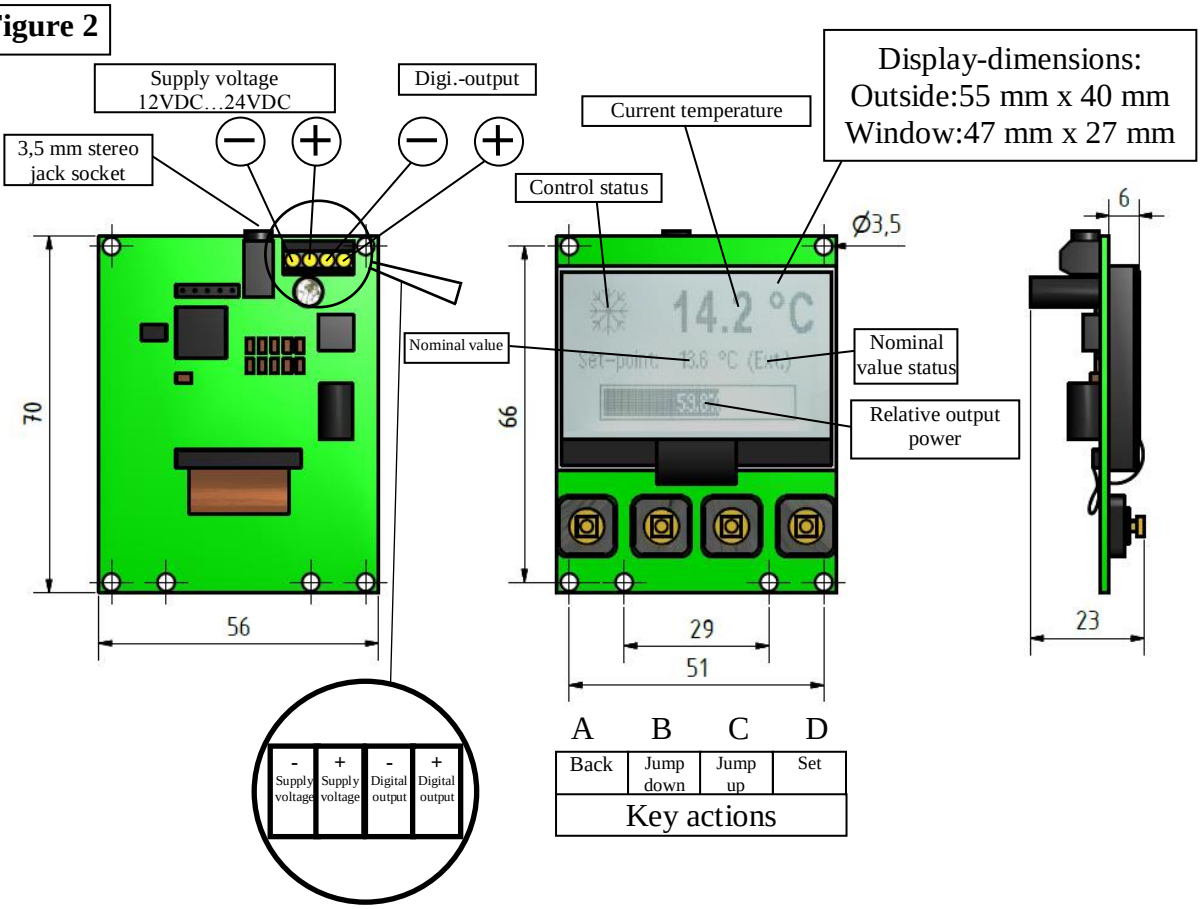
1. Usage of the displays QC-PC-D-CH1

The display extends the features of the controller, it serves the parameterization and the status indication of the Peltier controller QC-PC-CO-CH1. Aided by this display all relevant control parameters can be adjusted to every tempering setup individually and written into the memory of the controller. The current temperature of the tempered object as well as the nominal temperature can be read from the display immediately. Due to the intuitive symbolism it is possible to recognize the current control status with one look on the large screen.

2. The electrical setup

The display gets connected to the supply voltage by screw terminals (cf. Fig. 2). The connection to the controller is realized by a jack plug.

Figure 2



3. The Menu

The display is controlled by a menu.
The keys A (Back), B (Jump down), C (Jump up) and D (Set) (cf. Figure 2) navigate through the menu and change the settings. By the key >Set< the menu is opened.

3.1 Navigating in the menu

A Keystroke on A (Back) causes one jump back of a menu level and the quitting of the menu, respectively.

B Keystroke on B (Jump down) causes one line skip of the selection downwards. If the selection is currently set to a parameter-window, a keystroke on B causes the reduction of the adjusted value.

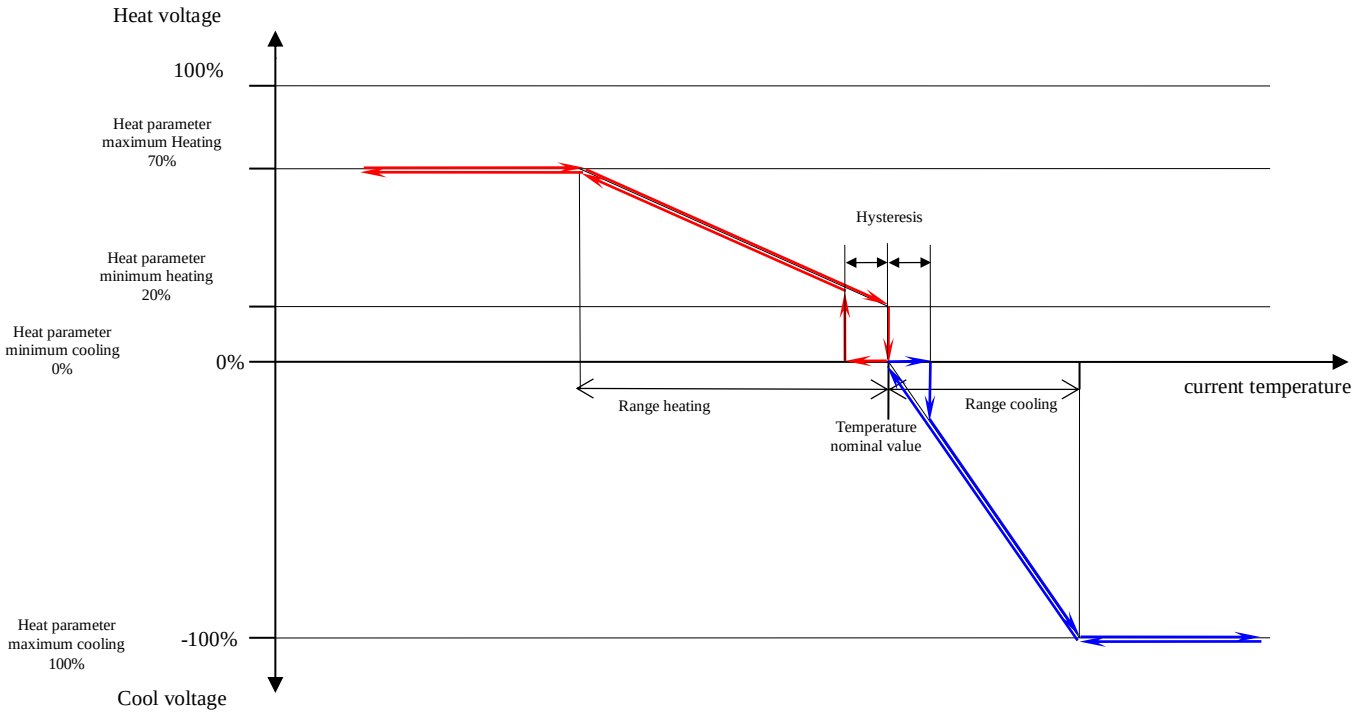
C Keystroke on C (Jump up) causes a line skip of the selection upwards. If the selection is currently set to a parameter-window, a keystroke on C causes the increase of the adjusted value.

D With the key D (Set) the menu can be opened from the display mode. In the menu a highlighted menu item is called by the key D. The mark switches to one menu level below. A changed value is saved with a keystroke on D only volatile.

3.2 Save parameter changes non-volatile

After all parameters are handled, a non-volatile storage has to be executed in the menu item “Save settings“. Otherwise the change only persists as long as the supply voltage is preserved.

Fig. 3: Depiction of the control characteristics



3.3 The menu structure

menu level 1	menu level 2	menu level 3	menu level 4	Factory settings
Control settings	Control mode	Fixed External		External
	Temperature set-point Only in *Fixed* Mode	-40°C – 100°C		20°C
	Set-point minimum Only in *Extern* Mode	-40°C – 100°C		-40°C
	Sollwert maximum Only in *Extern* Mode	-40°C – 100°C		100°C
	Hysteresis	0,0°C bis 100,0 °C		0,2°C
	Cooling settings	Bandwidth cooling	0,1°C – 100°C	1,0°C
		Min. cooling output	0% - 100%	0%
		Max. cooling output	0% - 100%	100%
	Heating settings	Bandwidth heating	0,1°C – 100°C	1,0°C
		Min. heating output	0% - 100%	0%
		Max heating output	0% - 100%	100%
	PWM frequency	1kHz; 5kHz; 10kHz; 15kHz; 20kHz; 25kHz		10kHz
	Digital output	Off Idle mode Cooling mode Heating mode Idle mode (inv) Cooling mode (inv) Heating mode (inv)		Off
Sensor settings	Temperature offset	-10°C - +10°C		0.0°C
Save settings	Save all settings	Settings successfully saved to target device. OK		!
	Factory defaults	Proceeding will reset all settings on target device to factory defaults. No Yes		!
System	Language	French/German/ Dutch/English		English
	Lcd contrast	0% - 100%		50%
	Lcd backlight	Off/Dimmed/On 15 -300 seconds		150 Sekunden
	Factory defaults	Proceeding will reset all settings to factory defaults. No Yes		!
	Software version	*Info*		
	Factory service	Enter password 0000		