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Data Sheet 7.95/4

Water Conditioning Unit, Type CEU

Description

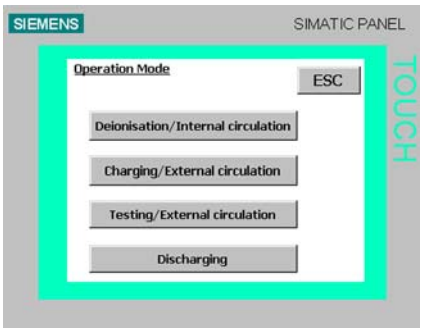
The **Water Conditioning Unit,** type **CEU,** is mainly used to deionize the water flowing through the cable end terminations and to control its conductivity. Secondly, it is used to remove the heat excess generated by the current flowing through the water of the cable end terminations.

Two versions of the Water Conditioning Unit are available with different cooling capacities. The smaller CEU 60 has a cooling capacity of 60 kW and the larger version CEU 120 (Fig. 2) has a cooling capacity of 120 kW. The PLC controls fully automatically the filling and emptying process as well as the water conductivity with an uncertainty of +/- 0.01 µS/cm. Setting the parameters and operating the system are very easy via a touch panel (Fig. 1). Both, charging and discharging of a pair of cable end terminations is done simultaneously and thus allows a quick exchange of the cable to be tested.

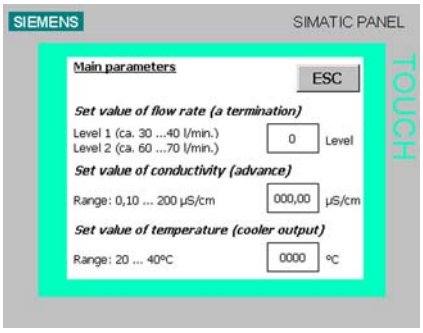
Furthermore, the water conditioning unit is optimized for an external water cooling system with a closed water cycle (Fig. 3). Thus, no water is wasted and cooling costs are reduced to a minimum.

Additionally, via a fiber optic-link and PROFIBUS system, the Water Conditioning Unit CEU can be incorporated into the HIGHVOLT control and measuring system of high-voltage AC and impulse sources. This allows the visualization on a central display as well as the remote control of all parameters and the starting of all processes of the CEU.

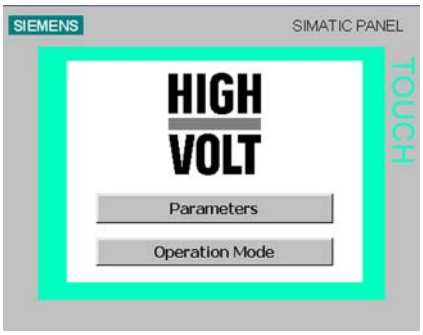
In addition, for very high-voltage applications, two CEUs can be controlled via fiber optic-links by one touch panel. Another advantage is the fast and easy exchange of the deionization resin by simple replacement of the bottle. This allows also a very long lifetime of about one year and more, even if the system is used intensively.



a) Start menu for the four operation modes

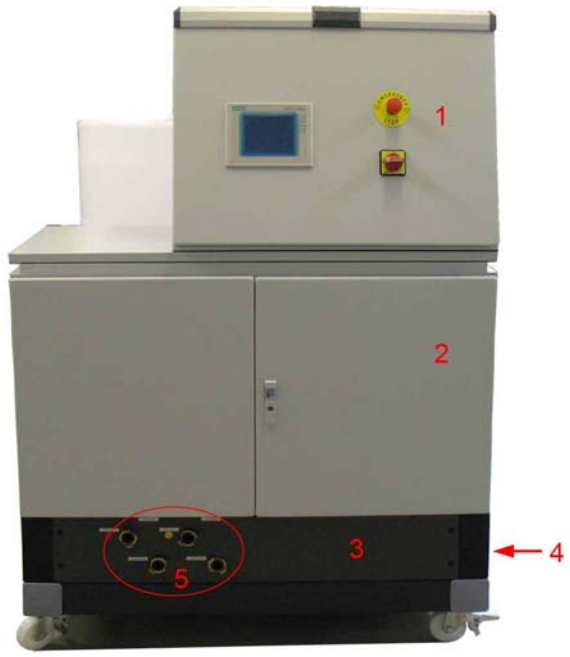


b) Menu for setting main control parameters (flow rate, conductivity, temperature)



c) View of touch panel with start window

Fig. 1: Operation examples of the touch panel



1 Top section of control cabinet with touch panel
2 Cabinet for water processing, measurements, etc.
3 Cabinet base
4 Hose connection for external cooling water
5 Hose connections for cable terminations (on the side)

Fig. 2: Water Conditioning Unit CEU 120

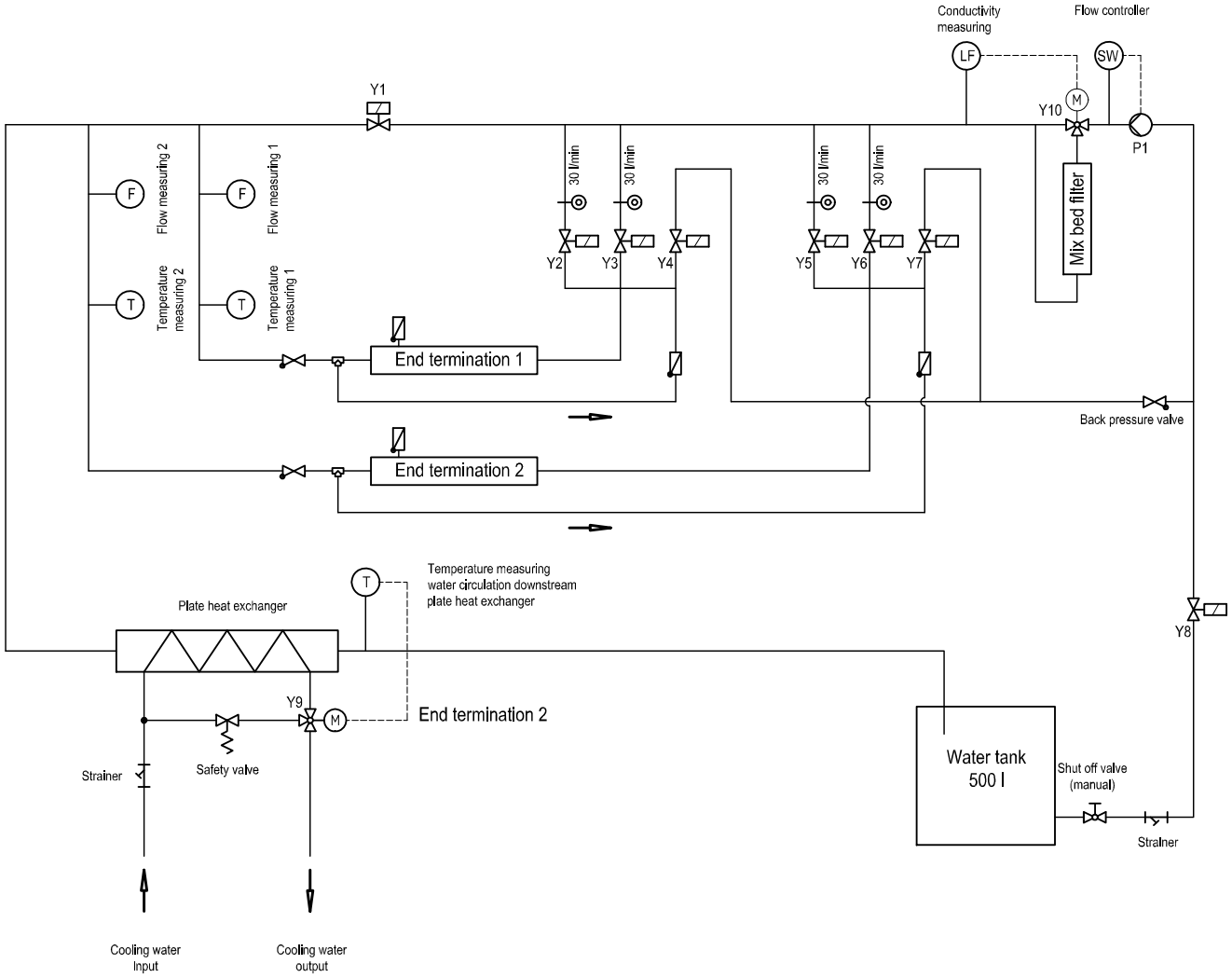


Fig. 3: Schematic flow diagram

Table 1: Main Parameters

Type	Cooling capacity (max.)	Temperature of deionized water (max.)	Conductivity range	Ambient temperature	Ambient humidity (max.)
	kW	°C	µS/cm	°C	%
CEU 60	60	55	0.1 ... 2.0 controlled: ± 0.01	2 … 35	95
CEU 60	60	55	0.1 ... 2.0 controlled: ± 0.01	2 … 35	95
CEU 120	120	55	0.1 ... 2.0 controlled: ± 0.01	2 … 35	95
CEU 120	120	55	0.1 ... 2.0 controlled: ± 0.01	2 … 35	95

Table 2: Dimensions and Connectors

Type	Length x Width x Height (approx.)	Water storage capacity	Weight[1)] (approx.)	Hose connection	
				external circuit	for terminations
	mm	l	kg	Inch	Inch
CEU 60	1400 x 1200 x 1600	300	480	1	1
CEU 60	1400 x 1200 x 1600	300	480	1	1
CEU 120	1400 x 1200 x 1600	500	590	1	1
CEU 120	1400 x 1200 x 1600	500	590	1	1

[1)] without water

Table 3: Requirements for power and cooling water supply

Type	Power supply				Cooling water supply		
	Type	Voltage	Current (Fuse)	Frequency	Flow rate (min.)	Intake pressure of water	Temperature of water (max.)
		V	A	Hz	l/min.	bar	°C
CEU 60	1NPE	230	16	50	70	4.5 … 10.0	20
CEU 60	1NPE	230	16	60	70	4.5 … 10.0	20
CEU 120	1NPE	230	16	50	180	4.5 … 10.0	20
CEU 120	1NPE	230	16	60	180	4.5 … 10.0	20

Type designation

CEU a

a = cooling capacity