CPC 100 Technical Data

INTERFACE ELEMENTS

1) **6 A or 130 V AC Output**

2) **Current Output 6 A DC**

3) **Current Measuring Input I AC**

4) **Voltage Measuring Input 300 V AC**

5) **Low Level Voltage Measuring Input 3V AC**

6) **Voltage Measuring Input V DC / 2-wire resistance measurement**

7) **Binary input for potential-free contacts or voltages up to 300 V DC**

See page 7 for details on outputs and inputs.

8) **Safety key lock**
If locked, the quantities which are currently put out are frozen. The unit does not accept any commands except for an Emergency stop.

9) **Signal Lights**
Green light indicates a safe operation, whereas red light indicates an operation with hazardous voltage and/or current levels at the outputs

10) **Emergency stop button**

11) **Keys for quick selection of your application**

12) **Keys for quick selection of your desired view**

13) **LCD monitor**

14) **Soft-touch keys changing according to the selected application**

15) **Keys for selecting stacked test cards**

16) **Numerical keyboard**

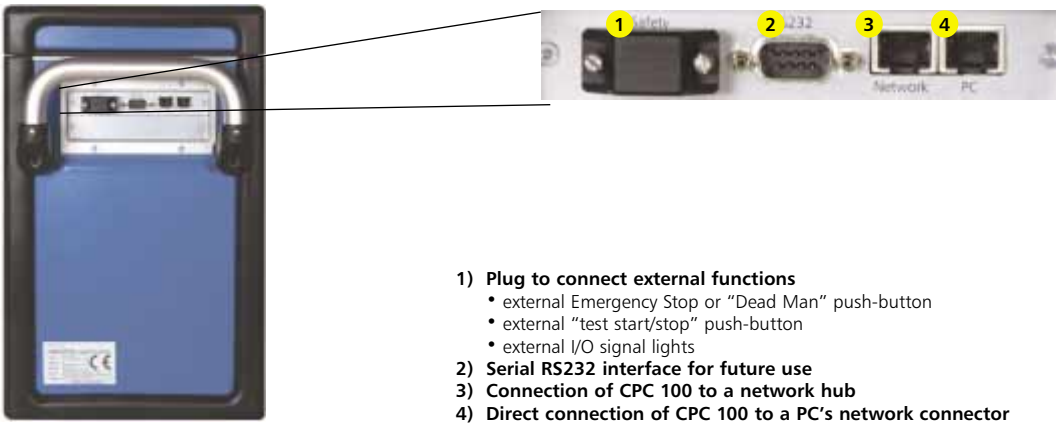
17) **Advanced jog-dial handwheel with "click" (Enter) function**
The handwheel allows for navigation within test cards, within other views, or across views, and it also allows for the entering of values. In 'entering' mode, the wheel's adaptive acceleration function will increase/decrease the input value in ever bigger steps, if the wheel is turned fast. Slow turning will increase/decrease the value in ever smaller steps.

18) **Up / down keys for naviagation and entering values**

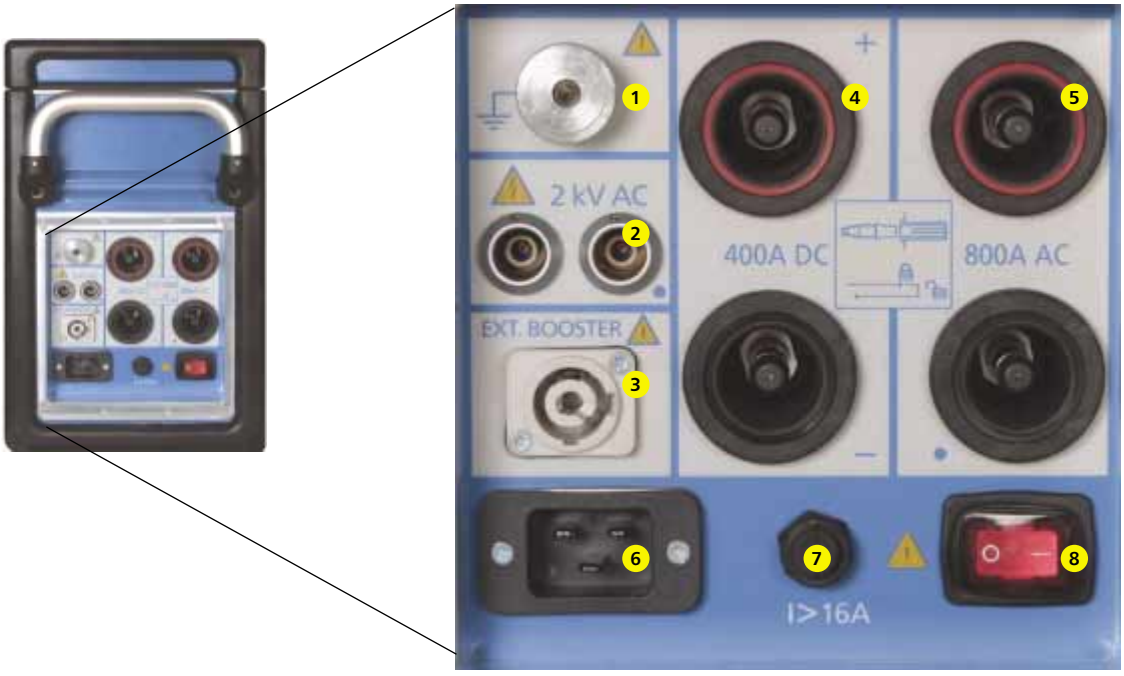
19) **Test start/stop button**

CPC 100 Technical Data

INTERFACE ELEMENTS (CONTINUED)



1) **Plug to connect external functions**
   - external Emergency Stop or "Dead Man" push-button
   - external "test start/stop" push-button
   - external I/O signal lights
2) **Serial RS232 interface for future use**
3) **Connection of CPC 100 to a network hub**
4) **Direct connection of CPC 100 to a PC's network connector**



1) **Grounding terminal**
2) **High AC Voltage Output 2 kV AC** (1 A...4 A AC)
3) **Ext. BOOSTER**
   for the connection of the **CP CB2** current booster option for output currents of up to 2000 A (see page 18).
4) **High DC current output 400 A DC**
5) **High AC current output 800 A AC**
6) **Mains power supply,** 1 phase, 85V-264 V AC
7) **Overcurrent protection**
8) **POWER O/I**

CPC 100 Technical Data

TECHNICAL DATA

The output is either voltage or current, and is automatically selected by the software or manually by the user. Current and voltage outputs are overload and short circuit proof and protected against over temperature.

Generator / Output section

Current outputs

Range	Amplitude	t_{max} [1]	V_{max} [2]	$Power_{max}$ [2]	f
800A AC [3]	0...800 A	25 s	6.0 V	4800 VA	15-400 Hz
	0...400 A	8 min	6.4 V	2560 VA	15-400 Hz
	0...200 A	> 2 h	6.5 V	1300 VA	15-400 Hz
6A [10]	0...6 A	> 2 h	55 V	330 VA	15-400 Hz
3A [10]	0...3 A	> 2 h	110 V	330 VA	15-400 Hz
400A DC	0...400 A	2 min	6.5 V	2600 W	DC
	0...300 A	3 min	6.5 V	1950 W	DC
	0...200 A	> 2 h	6.5 V	1300 W	DC
6A DC [4, 10]	0...6 A	> 2 h	60 V	360 W	DC

2000A AC [3] with an optional Current Booster. Please see page 18 for details.

Voltage outputs

Range	Amplitude[5]	t_{max}	I_{max}	$Power_{max}$ [5]	f
2 kV AC [3]	0...2 kV	1 min	1.25 A	2.5 kVA	15-400 Hz
	0...2 kV	> 2 h	0.5 A	1.0 kVA	15-400 Hz
1 kV AC [3]	0...1 kV	1 min	2.5 A	2.5 kVA	15-400 Hz
	0...1 kV	> 2 h	1.0 A	1.0 kVA	15-400 Hz
500 V AC [3]	0...0.5 kV	1 min	5.0 A	2.5 kVA	15-400 Hz
	0...0.5 kV	> 2 h	2.0 A	1.0 kVA	15-400 Hz
130V AC [10]	0...130 V	> 2 h	3.0 A	390 VA	15-400 Hz

Internal measurement of outputs

Output	Range	Guaranteed accuracy			Typical accuracy[6]		
		Amplitude		Phase	Amplitude		Phase
		Reading	Full Scale	Full Scale	Reading	Full Scale	Full Scale
800 A AC	-	0.20 %	0.20 %	0.20 °	0.10 %	0.10 %	0.10 °
400 A DC	-	0.40 %	0.10 %	-	0.20 %	0.05 %	-
2 kV AC	2000 V	0.10 %	0.10 %	0.20 °	0.05 %	0.05 %	0.10 °
	1000 V	0.10 %	0.10 %	0.30 °	0.05 %	0.05 %	0.15 °
	500 V	0.10 %	0.10 %	0.40 °	0.05 %	0.05 %	0.20 °
	5 A	0.40 %	0.10 %	0.20 °	0.20 %	0.05 %	0.10 °
	500 mA	0.10 %	0.10 %	0.20 °	0.05 %	0.05 %	0.10 °

Guaranteed values valid over one year within 23°C±5°C (73°F±10°F), in the frequency range of 45 ... 65 Hz or DC. Accuracy values indicate that the error is smaller than +/- (Value read * Reading error + Full Scale of the range * Full Scale Error).

1 With mains voltage 230 V with 2 x 6 m high current cable at 23°C±5°C (73°F±10°F) ambient temperature.

2 Signals below 50 Hz or above 60 Hz with reduced values possible.

3 Output can be synchronized with mains.

4 The input / output is protected with lightning arrestors between the pins and against protective earth. In case of energies above a few hundred Joule the lightning arrestors apply a permanent short circuit to the input / output.

5 Signals below 50 Hz or above 200 Hz with reduced values possible.

6 98 % of all units have an accuracy better than specified as Typical.

7 Input is galvanically separated from all other inputs.

8 V1 and V2 are galvanically coupled but separated from all other inputs.

9 There are power restrictions for mains voltages below 190 V AC.

10 Fuse protected.

11 Error of reading < than ± value.

Inputs

Measuring inputs

Input	Imped.	Range	Guaranteed accuracy			Typical accuracy[6]		
			Amplitude		Phase	Amplitude		Phase
			Reading	Full Scale	Full Scale	Reading	Full Scale	Full Scale
I AC/DC[4,7]	< 0.1 Ω	10 A AC	0.10 %	0.10 %	0.20 °	0.05 %	0.05 %	0.10 °
		1 A AC	0.10 %	0.10 %	0.30 °	0.05 %	0.05 %	0.15 °
		10 A DC	0.05 %	0.15 %	-	0.03 %	0.08 %	-
		1 A DC	0.05 %	0.15 %	-	0.03 %	0.08 %	-
V1 AC[8]	500 kΩ	300 V	0.10 %	0.10 %	0.20 °	0.05 %	0.05 %	0.10 °
		30 V	0.10 %	0.10 %	0.20 °	0.05 %	0.05 %	0.10 °
		3 V	0.20 %	0.10 %	0.20 °	0.10 %	0.05 %	0.10 °
		300 mV	0.30 %	0.10 %	0.20 °	0.15 %	0.05 %	0.10 °
V2 AC[8]	10 MΩ	3 V	0.05 %	0.15 %	0.20 °	0.03 %	0.08 %	0.10 °
		300 mV	0.15 %	0.15 %	0.20 °	0.08 %	0.08 %	0.10 °
		30 mV	0.20 %	0.50 %	0.30 °	0.10 %	0.25 %	0.15 °
V DC[4, 7]	500 kΩ	10 V	0.05 %	0.15 %	-	0.03 %	0.08 %	-
		1 V	0.05 %	0.15 %	-	0.03 %	0.08 %	-
		100 mV	0.10 %	0.20 %	-	0.05 %	0.10 %	-
		10 mV	0.10 %	0.30 %	-	0.05 %	0.15 %	-

- Automatic range switching
- Galvanically separated potential groups: **I AC/DC** ; **V1 & V2** ; **V DC**
- AC frequency range 15 - 400 Hz
- Protection of **I AC/DC** input: 10 A FF fuse [4]

Binary input for dry contacts or voltages up to 300 V DC[7]- see (7) on page 5

Trigger criteria	Toggling with potential free contacts or voltages of up to 300 V.
Input impedance	> 100 kΩ
Response time	1 ms

Ω meter (DC)

Mode	Connection	Range	Current	Accuracy (full scale)	
				Guaranteed	Typical
0.5 μΩ ... 12.5 mΩ	4-wire	400 A DC	400 A	0.85 %	0.45 %
10 μΩ ... 1 Ω	4-wire	6 A DC	6 A	0.60 %	0.35 %
100 μΩ ... 10 Ω	4-wire	6 A DC	1 A	0.40 %	0.25 %
0.2 Ω ... 20 kΩ	2-wire	V DC in	<5 mA	1.00 % + 0.2 Ω[11]	0.50 % + 0.1Ω[11]

General

Display	1/4 VGA greyscale LCD display
Power Supply	
Single-phase, nominal[9]	100 V AC...240 V AC, 16 A
Single-phase, permissible	85 V AC...264 V AC (L-N or L-L)
Frequency, nominal	50/60 Hz
Power consumption	<3500 VA (<7000 VA for short time < 10 sec)
Connection	IEC320/C20
Environmental conditions	
Operating temparture	-10...+55 °C (+14...+131 °F)
Storage temparture	-20...+70 °C (-4...+158 °F)
Humidity range	Rel. humidity 5...95%, non-condensing
Shock	IEC68-2-27 (operating) 15g/11ms half sine
Vibration	IEC68-2-6 (operating) 10 ... 150 Hz : 2g
EMC	EN 50081-2, EN 55011, EN 61000-3-2, FCC Subpart B of Part 15 Class A, EN 50082-2, IEC 61000-4-2/3/4/8 CE conform (89/336/EEC)
Safety	EN 61010-1, EN 60950, EN 50191, IEC 61010-1 Produced and tested in an EN ISO 9001 certified company
Weight	29 kg (64 lbs), robust case with cover
Dimensions	468 x 394 x 233 mm (18.6 x 15.5 x 9.2 ") (W x H x D with cover, without handles)