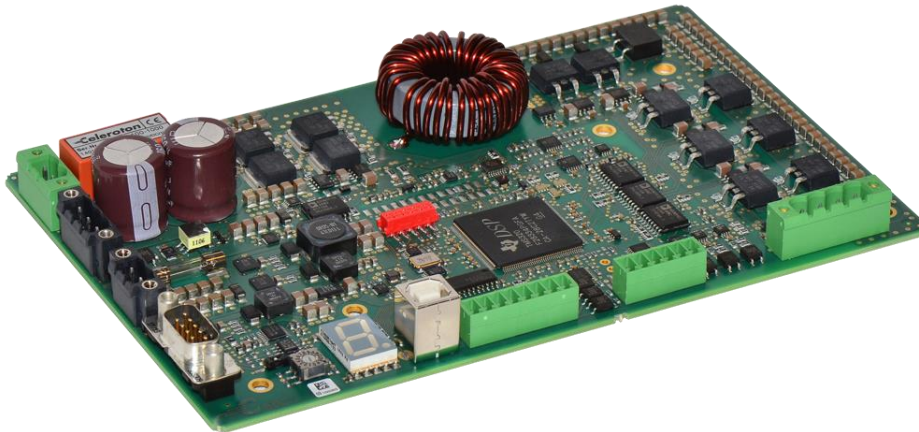


CC-100-1000



Converter for driving permanent-magnet synchronous motors (PMSM) and brushless DC motors (BLDC)



- Sensorless speed control from 5,000 rpm up to 500,000 rpm
- Maximum output power of 1,000 W
- No output filter required
- Separate supply for power and digital part
- User definable setup for different motor parameters
- Torque or speed control
- Integrated braking chopper up to 2 W
- Optional external braking chopper up to 420 W
- Highest possible efficiency
- Parallel connection of several converters to one DC-Bus possible
- User-friendly PC control software (CelerotonPilot)

Specifications converter

Input voltage power part U_{in} (DC)	24 – 100 V
Input voltage digital part U_{in} (DC)	24 V
Maximum output power (with respective cooling)	1,000 W
Output voltage (peak value phase-phase)	0 – 0.93 U_{in}
Maximum phase current (PAM-operation)	8.7 Arms / 12.3 A _{peak} ¹
Maximum frequency / speed (PAM-operation)	8.3 kHz / 500,000 rpm
Operating range	4-Quadrant
Communication interface	USB
Communication interfaces (optional)	RS232, CAN
PC control software	CelerotonPilot
Weight	0.28 kg
Dimensions (L x W x H) without heat sink	195 x 125 x 24 mm
Dimensions (L x W x H) with heat sink	195 x 125 x 62.62 mm
Operating temperature	0 – 40 °C

¹ Fundamental of the PAM block current

Interface (X7, X8)

Connector X7 – I/O interface (8 pins)

2 x Digital inputs	0 – 4 V	Low Level
	10 – 24 V	High Level
3 x Digital outputs	0 – 24 V (Relay, normally open contacts)	
1 x COM	Common rail for digital outputs	
2 x GND		

Connector X8 – I/O interface (6 pins)

1 x Analog input	0 – 10 V
1 x Analog output	0 – 10 V
1 x Temperature measurement input	PTC or NTC, resistance range according to option Tx
1 x Auxiliary power supply	10 V, 200 mA
2 x GND	

Operating range

The operating range of the converter is dependent on the output voltage (U_{out}) (peak value phase-phase) in Figure 1. The output power (P_{out}) increases with the output voltage as the phase current (i_{ph}) (rms) is constant until the power limit is reached. Above that point i_{ph} decreases with increasing output voltage. The input voltage (U_{in}) (grey area) must be higher than the maximum required output voltage.

Operating with full output power of 1,000 W requires cooling with heat sink with thermal resistance $R_{th} \leq 1$ K/W. Without heat sink a maximum phase current of 2.3 A and maximum output power of 280 W is available.

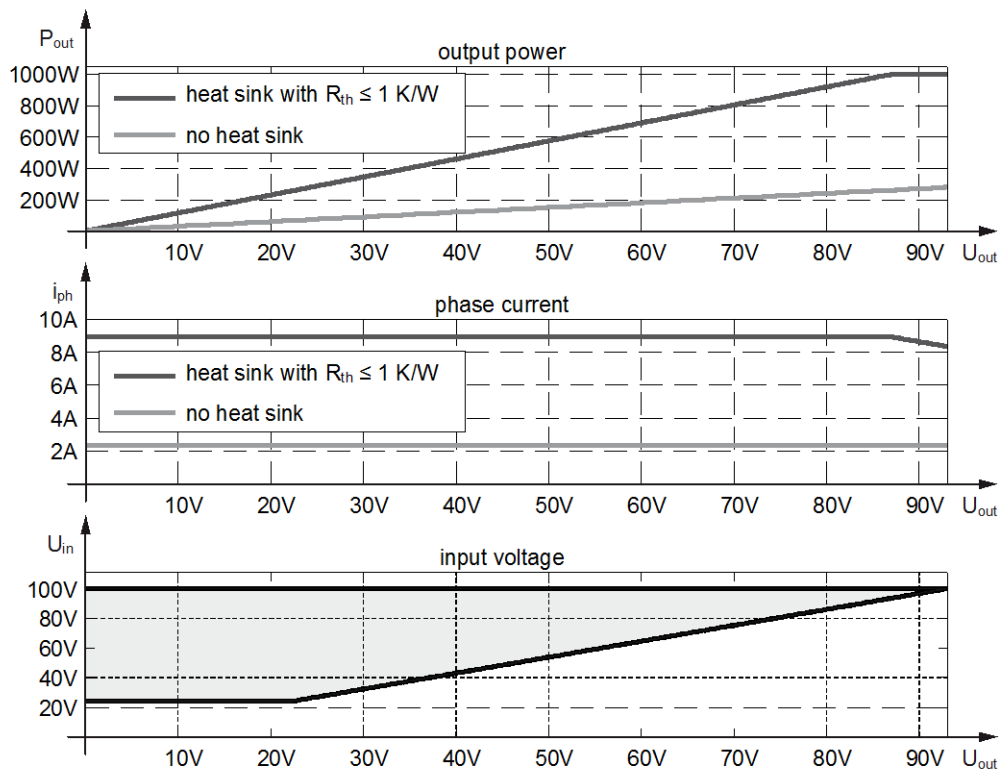
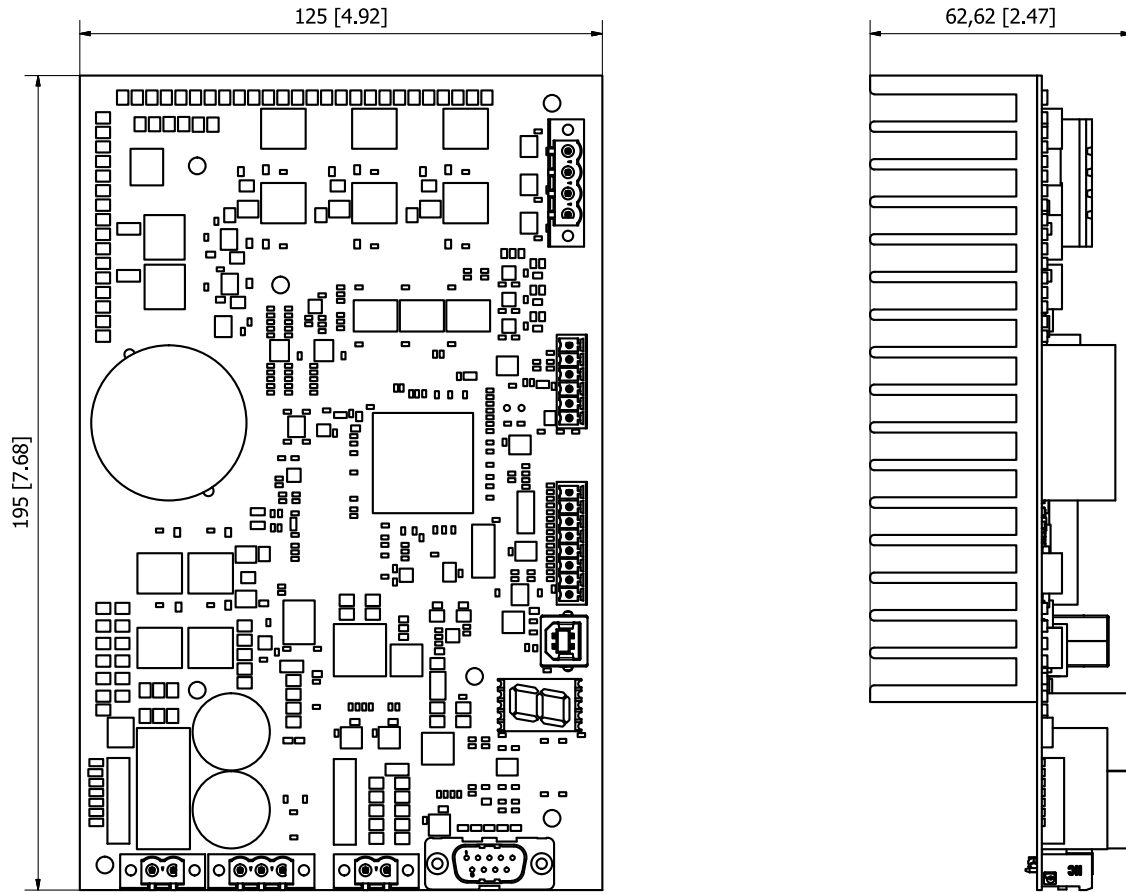


Figure 1: Output power, phase current and input voltage range of the converter CC-100-1000.



Order codes: CC-100-1000.SLx.Tx.HS

Sensorless SLx

SL1 (Standard)	Speed constants between 550 and 18,250 rpm/V Sensorless speed control from 7,000 rpm
SL2	Speed constants between 400 and 7,900 rpm/V Sensorless speed control from 5,000 rpm

The stated values are valid for number of pole pairs $p=1$. For higher number of pole pairs the speed constants and minimum speeds are divided by the number of pole pairs p .

PTC/NTC Tx

T1 (Standard)	Measurement range 6-150 Ω , e.g. PT100
T2	Measurement range 0.26-86 k Ω , e.g. KTY84, NTC10k

Heat sink HS

_ (Standard)	Without heat sink
HS	With heat sink

Accessories

- Connector set CC-100-1000

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