Converter

CC-75-500

Summary

- Converter for driving permanent-magnet synchronous motors (PMSM) and brushless dc motors (BLDC)
- Sensorless speed control from 0 rpm up to 1 Million rpm
- Maximum output power of 500 W (800W resp.)
- No output filter required
- User definable setup for different motor parameters
- Custom-definable input- and output-connections
- Torque- or speed-control
- Highest possible efficiency
- Integrated braking chopper
- Mountable on a DIN-rail
- Parallel connection of several converters to one dc-bus possible
- User-friendly PC control software (CelerotonPilot)

Specifications	
Input voltage U_{in} (dc)	24 – 75 V
Maximum output power	500 W (800 W with HC-option)
Output voltage (peak value phase-phase)	0 – 0.95 U_{in}
Maximum phase current (PAM-operation)	6.2 Arms / 8.8 Apeak[1] (10.9 Arms / 15.4 Apeak[1] with HC-option)
Maximum frequency/ speed (PAM-operation)	16.6 kHz/ 1,000,000 rpm
Operating range	4-Quadrant
Communication interface	USB
Communication interfaces (optional)	RS232, RS485, CAN, Ethernet
PC control software	CelerotonPilot
Weight	1 kg
Dimensions	215 x 135 x 35 mm
Operating temperature	0 – 40 °C

[1]Fundamental of the PAM-block current

Safe operating area (SOA)

The maximum output power (P_{out}) of the converter CC-75-500 depends on the ambient temperature (T_{amb}). The average power losses in the breaking chopper ($P_{chopper}$) are limited by the output power and the ambient temperature. The respective relation is depicted in Figure 1.

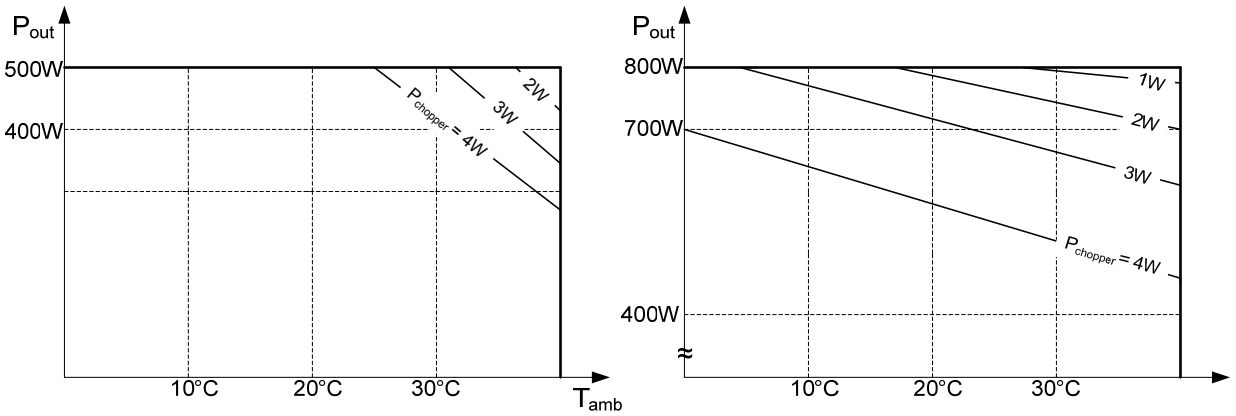


Figure 1: Safe operating areas (SOA) of the converter CC-75-500 (left) and CC-75-500.HC (right) versus ambient temperature (T_{amb}) and the allowed average power losses in the breaking chopper ($P_{chopper}$).

Variable user interface (X2, X3, X4)

Standard configuration *E01*

Connector X2 – Motor Interface	
1 x power supply	5 V, 100 mA
3 x digital hall sensor inputs	(open collector), pull up to 5 V
1 x temperature measurement input	thermocouple type K
1 x temperature measurement input	PTC or NTC

Connector X3 – Digital Interface	
1 x auxiliary power supply	12 – 24 V (adjustable), 200 mA (max.) e.g. for digital inputs/outputs
2 x digital inputs	0 – 24 V, galvanically isolated (software adjustable thresholds 0.8 – 23 V)
2 x digital outputs	0 – 24 V (relay, normally open contacts)

Connector X4 – Analog Interface	
1 x power supply	10 V, 100 mA
2 x analog inputs	0 – 10 V
2 x analog outputs	0 – 10 V

Connectors X2, X3 and X4 can be customized according to user specifications.

Options

*CC-75-500.**HC**.**Exx**.**SLx**.**COx***

High current *HC*

- HC: Version with 800 W output power

Extension Board *Exx* (Configuration of the connectors X2, X3, X4)

- E01: Standard – see above

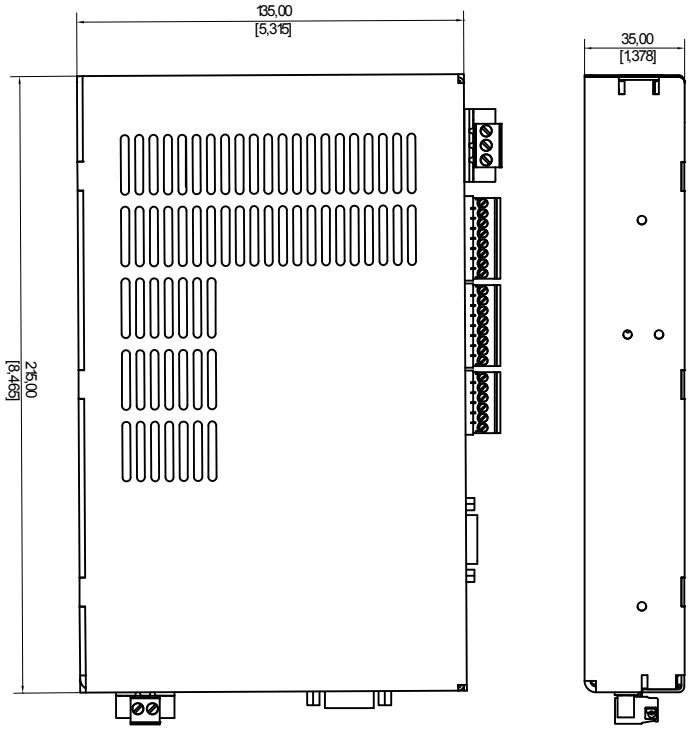
Sensorless *SLx*

- SL0:
  - Sensorless speed control from zero speed
- **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

Communication interfaces *COx*

	USB	CAN	RS232/RS485	Ethernet
CO1 (Standard)	x	x	x	
CO2	x	x	x	x

Basic converter dimensions in mm (inch)



Contact

Celeroton AG
Technoparkstrasse 1
8005 Zurich
Switzerland

Tel.: +41 44 250 52 20
Fax: +41 44 250 52 29
info@celeroton.com
www.celeroton.com