

CC-120-1000

Converter for driving ultra-high-speed turbo compressors in fuel cell systems.

- Sensorless speed control from 5,000 rpm up to 500,000 rpm
- Auxiliary voltage supply (8 – 32 VDC) for start up of the turbo compressor from battery, automatic switch to high voltage input
- Operation of the compressor from wide input voltage range (40 – 120 VDC)
- Rated output power: 1,000 W
- Protection class IP67
- 94% efficiency
- Integrated break chopper
- Connection to active and passive cooling (water or air) possible



Specifications converter	
Input voltage U_{in} (DC) ¹	40 – 120 V
Input voltage auxiliary supply U_{in} (DC)	8 – 32 V
Rated output power	1,000 W
Output voltage (peak value phase-phase)	0 – 100 V
Maximum phase current (PAM-operation)	8.5 Arms/12 Apeak ²
Maximum frequency/speed (PAM-operation)	8.3 kHz/500,000 rpm
Communication interface	CAN, RS485 ³
Weight (incl. housing)	1.4 kg
Dimensions (L x W x H)	172 x 138 x 53 mm

User interfaces (X1, X2)

Connector X1 – In-/output (14 Pin) – CO1 version	
3 x CAN interface	CanH, CanL, CanGND
2 x Serial service interface	TxD, RxD
1 x Auxiliary power supply (DC)	8 – 32 V
1 x GND	Reference potential auxiliary supply
3 x Input voltage (DC)	40 – 120 V
3 x GND	Reference potential input voltage
1 x PE	Protective earth input

¹ Other voltage ranges on request

² Fundamental of the PAM-block current

³ See order codes

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Connector X1 – In-/output (14 Pin) – CO2 version

4 x RS485 interface	Rx+, Rx-, Tx+, Tx-
2 x Serial service interface	TxD, RxD
1 x Auxiliary power supply (DC)	8 – 32 V
1 x GND	Reference potential auxiliary supply
3 x Input voltage (DC)	40 – 120 V
3 x GND	Reference potential input voltage

Connector X2 – In-/output (8 Pin)

1 x Temperature measurement input	PT100
1 x GND	Reference potential temperature measurement
3 x Motor phase	PHA, PHB, PHC
3 x PE	Protective earth motor

Operating range

The operating range of the CC-120-1000 in FCO depends on the fuel cell input voltage as shown in Figure 1. The maximum continuous output power of 1,000 W can be obtained with an input voltage of 60-120 VDC. The absolute maximum power of 1,200 W can be reached during short time overload operation.

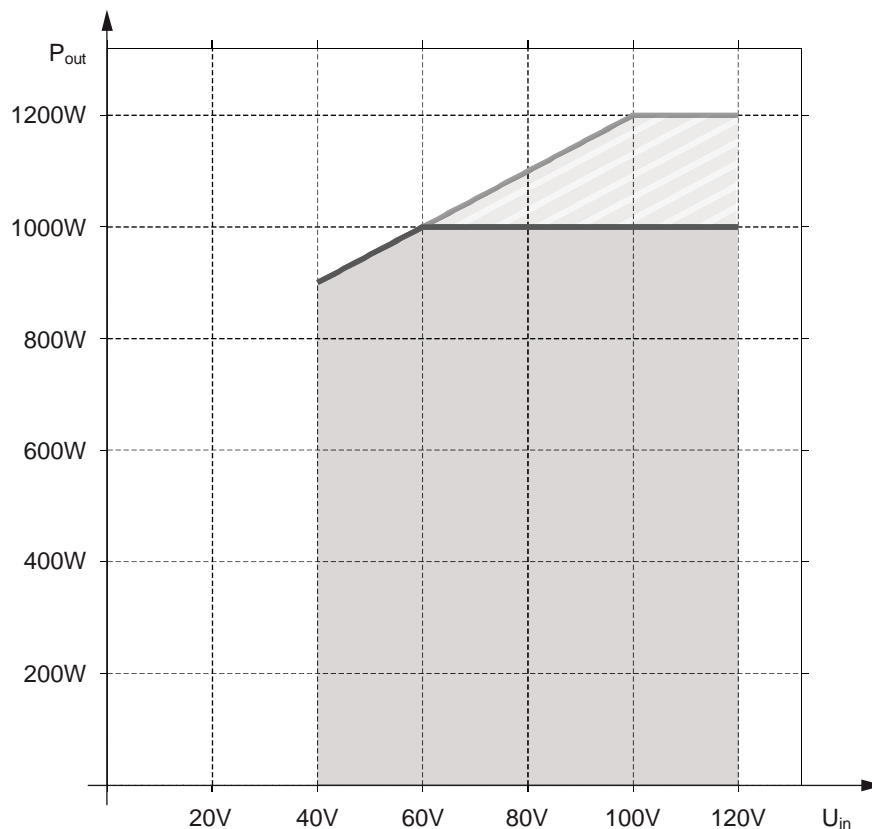


Figure 1: CC-120-1000 operating range. The continuous output power over fuel cell input voltage is shown as solid area. The short time overload operating range is shown as hatched area.

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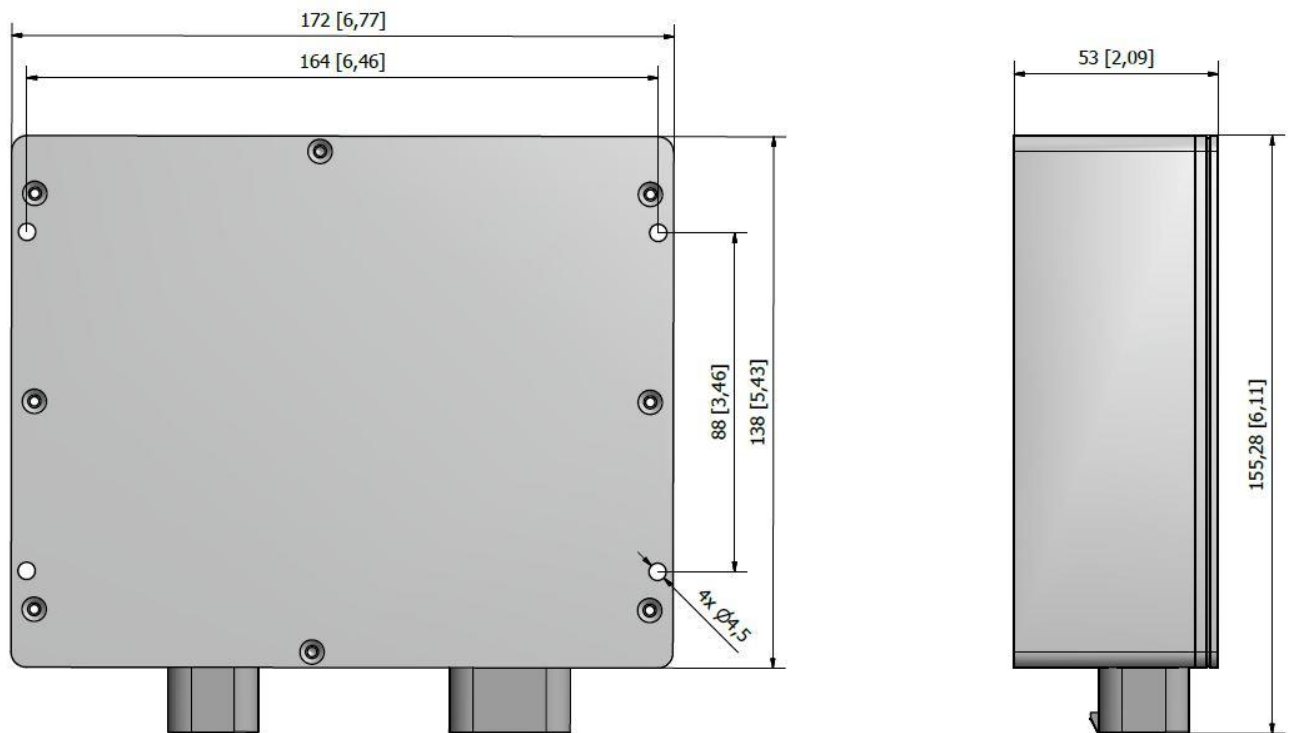
Order codes: CC-120-1000.COx

Communication interfaces CO1

CO1	CAN communication
CO2	RS485 communication

Ordering information	Article number
CC-120-1000.CO1	4030071
CC-120-1000.CO2	4030085
Service cable CC-120-1000.CO1 Low and high voltage supply cable with CAN and USB 1 m (open ends)	4080038
Service cable CC-120-1000.CO1 Low and high voltage supply cable with RS485 and USB 1 m (open ends)	4080045
Supply cable CC-120-1000.CO1 Low and high voltage supply cable with CAN 1 m (open ends)	4080037
Supply cable CC-120-1000.CO2 Low and high voltage supply cable with RS485 1 m (open ends)	4080047

Drawing in mm [inch]



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