Hybrid Power

AEP 100

DC/DC converter

- Innovative in energy storage & Power Electronics
- Custom-made solutions
- Complete solution: storage & Power Electronics
- Design and system integration

Features

- 75 kW converter, U_n 600V DC
- Bidirectional half bridge 3-phase topology
- Input voltage until 750V DC
- Output voltage until 650V DC
- Variable switching frequency up to 16 kHz
- High efficiency
- RS 232 / CAN interface
- Binary and analog I/O
- 24 VDC supply
- Air-Cooling

Applications

- Heavy transport
  - Fast energy storage hybrid driveline
  - Combination diesel-electric, fuel cell & batteries
- Maritime & Offshore
  - Dynamic energy storage vessels
  - Heavy lifting, cranes, etc.
- Industrial & UPS back-up
  - Peak power supply
  - Short term bridge power

Mechanical Data

Length x Depth x Height
160 x 355 x 154 mm
Approx. 6 kg

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Technical Characteristics

Symbol	Parameter	Description	Value	Unit
	General			
P_r	Rated power	@U_{out} 600V, f_r 4kHz	75	kW
F_r	Switching frequency		≤16	kHz
η_r	Efficiency	@P_r	>90	%
	Input			
U_{in}	Input voltage range		50 – 700	VDC
$U_{in,max}$	Max. operating voltage		750	VDC
	Output			
U_{out}	Output voltage range		50 – 650	VDC
I_{nom}	Nominal current		125	A
I_{max}	Max. output current		180	A
	Energy demand			
	Control voltage	Rated value	24 ± 5%	VDC
	Control current		<1	A
	Environment			
	Operating temperature		0 till 40	°C
	Storage temperature		0 till 50	°C
	Protection degree		IP00	
	Mechanical data			
	Weight		6	kg
	Dimensions	Length x Depth x Height	160 x 355 x 154	mm
	Communication			
	Measurement signals	IGBT temperature (NTC integrated in module) Output current (LEM LAH 100-P) DC-Link voltage PCB temperature	-40 till 160 -145 till 145 0 till 980 -40 till 150	°C A V °C
	6x relay drivers			
	7x binary outputs	High Low	16 till 29 0 till 2	V V
	7x binary inputs	High Low	17 till 30 0 till 2	V V
	2x connection for voltage and current measuring			
	Data	CAN / RS232		

Symbol	Parameter	Description	Value	Unit
	Cooling	Fischer electronic LA V 7 with 2 x 24 V DC fan and airflow chamber		
	Dimensions including fan and airflow chamber	Length x Depth x Height	355 x 125 x 74	mm
R_{th}	Thermal resistance		0,045	K/W
P_{Fan}	Power demand	Each fan	3	W
V/t	Max. Flow rate	Each fan	56	M^3/h
n_r	Rated revolutions		6850	Min^{-1}

Mechanical Data

Length x Depth x Height: 160 x 355 x 154 mm
Weight: Approx. 6 kg

Accessories

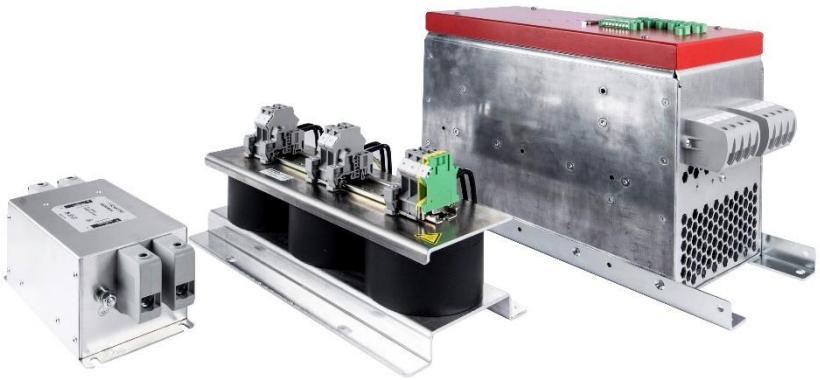

Figure 1: Overview

Figure 1: Choke Assembly

Figure 2: EMC filter

Figure 3: Voltage measurement

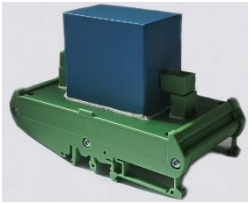

Figure 4: Output cap