



AEP 100 Dual & Choke box

Water-cooled DC/DC converter



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

Features

- 6-Phase DC/DC converter
- Bidirectional converter
- Step-down (Input to Output)
- Step-up (Output to Input)
- Low Output current ripple for DC/DC applications
- Optional: Customer specific signal analysis & processing
- Optional: Implementation & analysis of customer specific data interface & protocol

Applications

- DC/DC converter (e.g.) Fuel cell applications
- Battery charging
- Higher input and output voltage available upon request

Mechanical Data

AEP100 Dual:
Length x Width x Height
540 x 190 x 318,9 mm
Approx.: 15 kg

Chokebox:
Length x Width x Height
540 x 190 x 318,9 mm
Approx.: 30 kg

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Technical Characteristics

Symbol	Parameter	Description	Value	Unit
General				
V_{in}	Input voltage	Low voltage, LV	0 till 270*	V
F_{sw}	Switching frequency		4	kHz
V_{out}	Output voltage	High voltage, HV	50 till 420*	V
I_{in}	Input current		300	A
I_{out}	Output current		6 x 50	A
	Control voltage		24	V
Environmental				
	Operating temperature range		-20 till +40	°C
	Storage temperature range		-40 till +85	°C
	Max operational altitude	Above sea level	2000	m
	Degree of protection	Housing	IP20	
		Power contacts, not covered	IP00	
Interfaces				
	Communication	CAN		
	Binary inputs/outputs	Signals	24	V
	Auxiliary supply		24	V
Cooling				
	Water cooled			
	Coolant flow		10	l/min
	Coolant pressure		1,5	bar
	Coolant temperature	Max. coolant temperature	30	°C
	Cooling liquid	Water (with Glycol), min. 20% Clariant Antifrogen N.		
	Material	Copper tubes		
Housing				
	Description	AEP 100 Dual: Power electronics Chokebox: Chokes, Precharge and Voltage measurement		
	Material	Al		
	Weight	AEP 100 Dual	Ca. 15	kg
		Chokebox	Ca. 30	kg

* Higher input and output voltage available upon request, up to 600-700 V

Mechanical Data, AEP 100 Dual

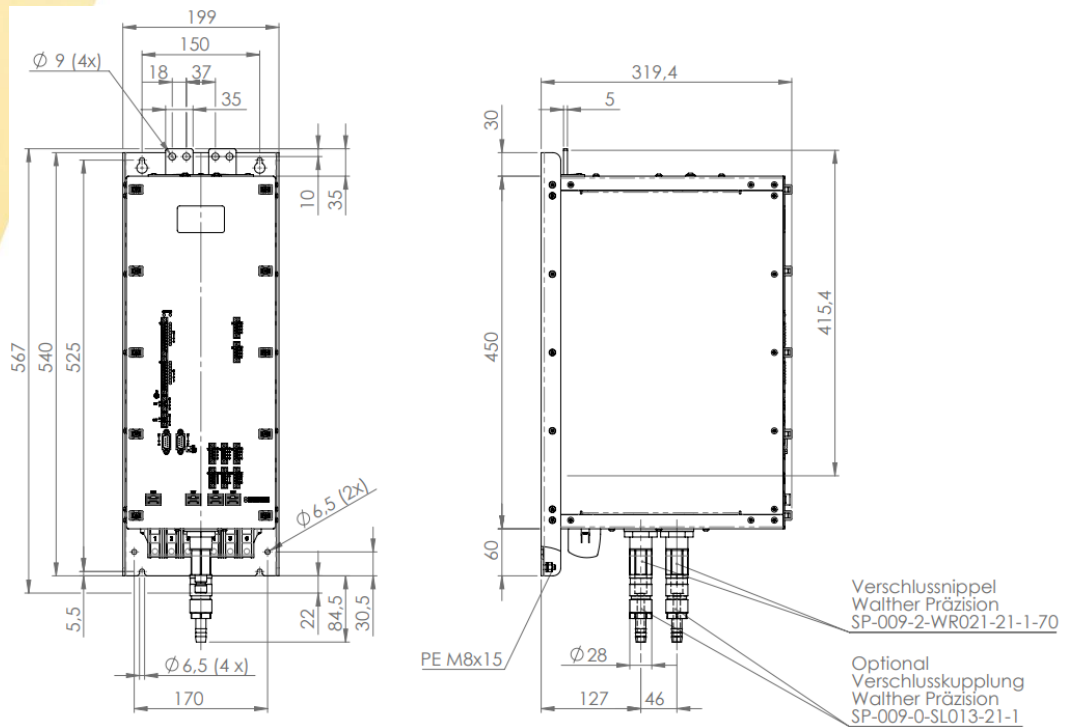


Figure 1, AEP 100 Dual top & side view

Mechanical Data, Chokebox

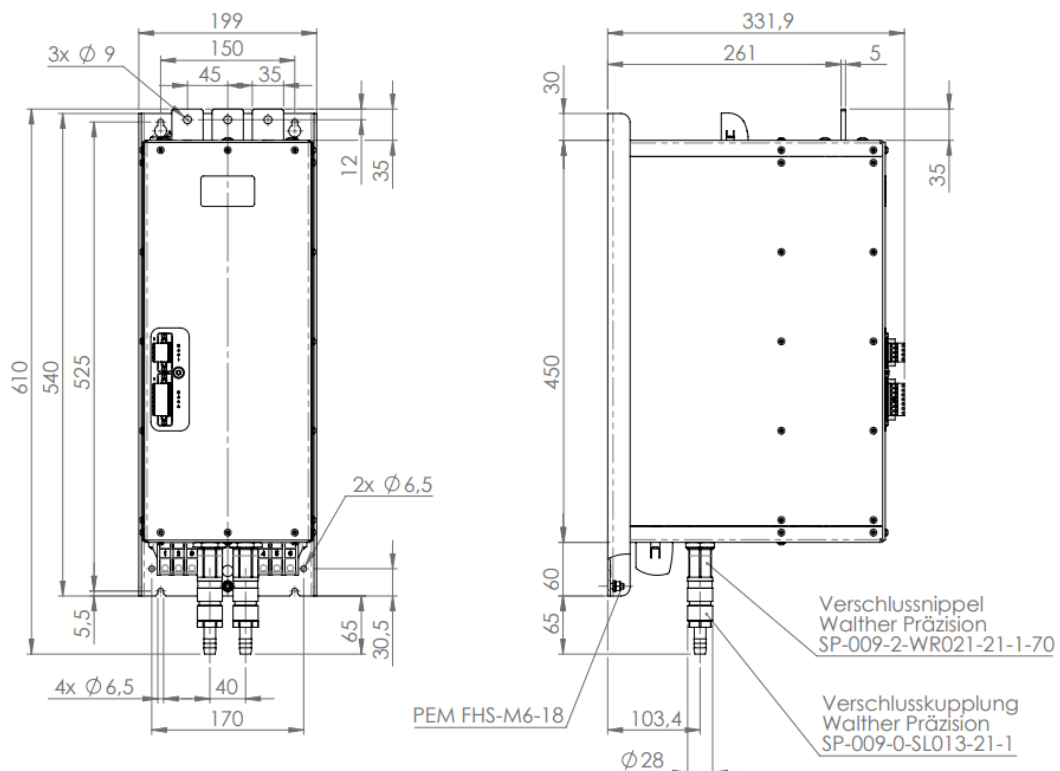


Figure 2, Chokebox top & side view



Connections, AEP 100 Dual

Pin	Signal	Connection	Description
1	AC phase L1	Terminal with screwed connection	Fastening torque: 2-2,3 Nm
2	AC phase L2	Terminal with screwed connection	Fastening torque: 2-2,3 Nm
3	AC phase L3	Terminal with screwed connection	Fastening torque: 2-2,3 Nm
4	AC phase L4	Terminal with screwed connection	Fastening torque: 2-2,3 Nm
5	AC phase L5	Terminal with screwed connection	Fastening torque: 2-2,3 Nm
6	AC phase L6	Terminal with screwed connection	Fastening torque: 2-2,3 Nm
+	DC-link +	Busbar, 2x M8 sized hole	
-	DC-link -	Busbar, 2x M8 sized hole	

Connections, Chokebox

Pin	Signal	Connection	Description
1	AC phase L1	Terminal with screwed connection	Fastening torque: 2-2,3 Nm
2	AC phase L2	Terminal with screwed connection	Fastening torque: 2-2,3 Nm
3	AC phase L3	Terminal with screwed connection	Fastening torque: 2-2,3 Nm
4	AC phase L4	Terminal with screwed connection	Fastening torque: 2-2,3 Nm
5	AC phase L5	Terminal with screwed connection	Fastening torque: 2-2,3 Nm
6	AC phase L6	Terminal with screwed connection	Fastening torque: 2-2,3 Nm
7	DC-out -	Terminal with screwed connection	Fastening torque: 2-2,3 Nm
DC-out +	DC-out +	Busbar, M8 sized hole	
DC-link +	DC-link +	Busbar, M8 sized hole	
DC-in +	DC-in +	Busbar, M8 sized hole	



Hybrid Power

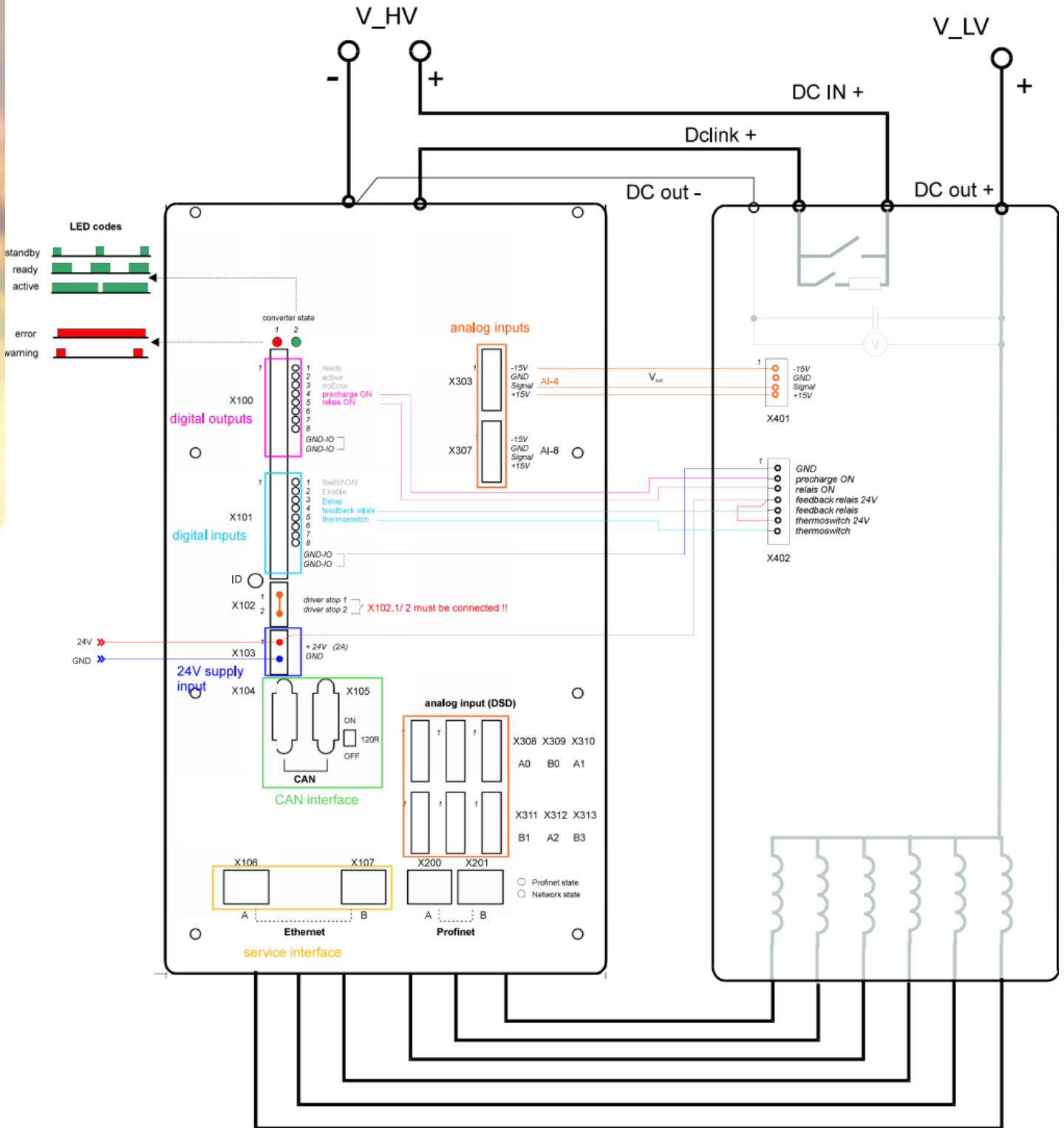


Figure 3, AEP 100 Dual and Chokebox connections



Communication, AEP 100 Dual

Connector	Pin	Signal
X100, Digital output		
	1	Ready
	2	Active
	3	noError
	4	Precharge ON
	5	Relais ON
	6	Reserved
	7	Reserved
	8	Reserved
	9	GND-IO
	10	GND-IO
X101, Digital input		
	1	SwitchON
	2	Enable
	3	Estop
	4	Feedback relais
	5	Thermoswitch
	6	Reserved
	7	Reserved
	8	Reserved
	9	GND-IO
	10	GND-IO
X102		
	0	Driver stop 1
	1	Driver stop 2
X103, 24V supply input		
	1	+24 VDC (2A)
	2	GND

Connector	Pin	Signal
X104		
		Canbus
	1	
	2	CAN_L
	3	CAN-GND
	4	
	5	
	6	
	7	CAN_H
	8	
	9	
X105		
		Canbus
	1	
	2	CAN_L
	3	CAN-GND
	4	
	5	
	6	
	7	CAN_H
	8	
	9	
X303, Analog input		
	1	-15V
	2	GND
	3	Signal
	4	+15V
X307, Analog input		
	1	-15V
	2	GND
	3	Signal
	4	+15V



Connector	Pin	Signal
X308, Analog input (DSD)		Reserved
	1	-15V
	2	GND
	3	Signal
	4	+15V
X309, Analog input (DSD)		Reserved
	1	-15V
	2	GND
	3	Signal
	4	+15V
X310, Analog input (DSD)		Reserved
	1	-15V
	2	GND
	3	Signal
	4	+15V
X311, Analog input (DSD)		Reserved
	1	-15V
	2	GND
	3	Signal
	4	+15V
X312, Analog input (DSD)		Reserved
	1	-15V
	2	GND
	3	Signal
	4	+15V
X313, Analog input (DSD)		Reserved
	1	-15V
	2	GND
	3	Signal
	4	+15V

	Signal	Description
X106		
	Ethernet	RJ45 connection
X107		
	Ethernet	RJ45 connection
X200		
	Profinet	RJ45 connection
X201		
	Profinet	RJ45 connection



Communication, Chokebox

Connector	Pin	Signal	Description
X401			
	1	-15V	
	2	GND	
	3	Signal	
	4	+15V	
X402			
	1	GND	
	2	Precharge ON	
	3	Relais ON	
	4	Feedback relais 24V	
	5	Feedback relais	
	6	Thermoswitch 24V	
	7	Thermoswitch	