



FIPS-BD

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

Features

- Compact design
- Bidirectional

Applications

- Supply from a fuel cell into a Three-phase system
- Supply of a fuel cell in the electrolyzed operating from the three-phase network
- Battery simulation
- Charging and discharging of energy storage systems

Mechanical Data

Height x Width x Depth
2197 x 410 x 633 mm
Approx. 430 kg

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Technical Characteristics

Symbol	Parameter	Description	Value	Unit
DC side (fuel cell / energy storage / load)				
U_{DC}	Voltage DC		155 till 384	V
I_{DCmax}	Max. DC current		82	A
P_{DCnom}	Nominal DC power		25,6	kW
P_{DCmax}	Max. DC power		27,5	kW
AC side				
U_{Netz}	Supply voltage	±10%	400	V
f_{Netz}	Power frequency	±1%	50	Hz
$I_{Netz,max}$	Mains current		44	A
$P_{Netz,nom}$	Nom. grid power		28,3	kVa
$P_{Netz,max}$	Max. grid power		30,6	kVa
Communication				
	Interfaces	CAN, digital signals		
Mechanical data				
	Weight		430	kg
	Width		410	mm
	Height		2197	mm
	Depth		633	mm
	Degree of protection	In closed state	IP21	
Environment				
T_{amb}	Operating temperature		0 till 40	°C
$T_{storage}$	Storage temperature		-20 till 50	°C
	Humidity	Not condensing	95	%

Mechanical Data

Height x Width x Depth: 2197 x 410 x 633 mm
Weight: Approx. 430 kg

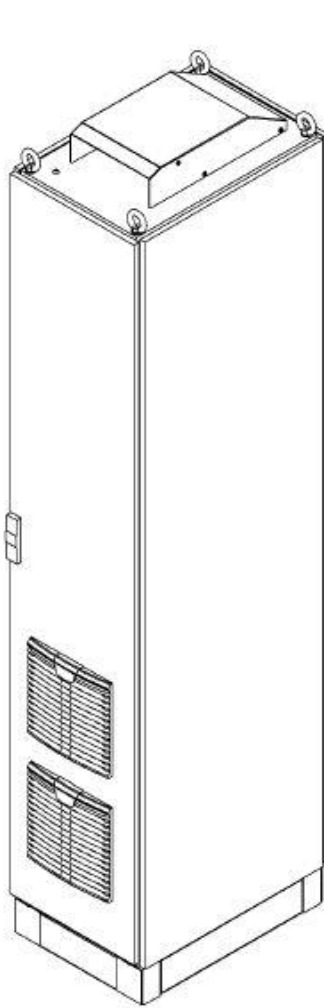


Figure 1: perspective view

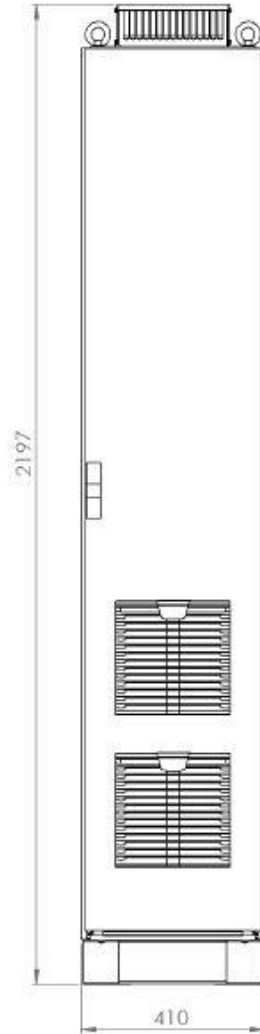


Figure 2: front view



Figure 3: side view

Connections



Figure 4: Terminals X1, X2, X3, X4, X5, X6



Power Terminal

Pin	Signal	Terminal	Description
X1, DC feed-in			
1	Fuel cell, DC+	UT35	Max. 384V, 82A
2	Fuel cell, DC-	UT35	Max. 384V, 82A
X2, Auxiliary supply, DC 24V			
1	24V +	UT6	Max. 32V, 10A
2	24V -	UT6	Max. 32V, 10A
3	24V PE	UT6	-
X3, AC grid connection			
1	Network, L1	UT16	Max. 440V, 44A
2	Network, L2	UT16	Max. 440V, 44A
3	Network, L3	UT16	Max. 440V, 44A
4	Network, N	UT16	Max. 254V, 44A
5	Network, PE	UT16	-

Control circuit

Pin	Signal	Terminal	Description
X4, Outputs			
3	DC/AC OK 1	PT 1,5/S	SPST, NC 250VAC / 24VDC, 6A
4	DC/AC OK2	PT 1,5/S	SPST, NC 250VAC / 24VDC, 6A
5	Reserve output 1 ¹	PT 1,5/S	SPST, NC 250VAC / 24VDC, 6A
6	Reserve output 2 ¹	PT 1,5/S	SPST, NC 250VAC / 24VDC, 6A
X4, Inputs			
1	E-stop	PT 1,5/S	Potential-free contact required, 30mA / 24 VDC
2	E-stop	PT 1,5/S	Potential-free contact required, 30mA / 24 VDC
7	DC/AC enable (+)	PT 1,5/S	Optodiode 24 VDC / 8,5mA
8	DC/AC enable (-)	PT 1,5/S	Optodiode 24 VDC / 8,5mA
9	Reserve input 1 (+) ¹	PT 1,5/S	Optodiode 24 VDC / 8,5mA
10	Reserve input 2 (-) ¹	PT 1,5/S	Optodiode 24 VDC / 8,5mA
X5 and X6, standard CAN input and output, with specific protocol, both connections internally connected			

¹ Application-specific use possible on request.