

Certificate No. AK 50691212 0001

Our Reference CN25DCXC 001

Appendix No. 1.0

Constructional Data Form (CDF) for Electrical Appliances

Page 1 of 13

License holder : Dunext Technology Suzhou Co.,Ltd.
1st & 2nd Floors, Factory Building 6, 58 Xingnan Road, Wuzhong Economic and Technological Development Zone, Suzhou, 215100 Jiangsu P.R. China

Factory Address : Wuxi Unite Energy Technology Co., LTD
No.24 Yu'an Road, Shuofang Industrial Park, Xinwu District, Wuxi, JIANGSU P.R. CHINA

Type of Appliance : Integrated energy storage system

Type Designation : PowerHill-P105M120-233kWh, PowerHill-P105M120-233kWh-S2, PowerHill-P105M120-233kWh-S3, PowerHill-P105M120-233kWh-S4, PowerHill-P105M120-233kWh-S5, PowerHill-P100M120-233kWh, PowerHill-P100M120-233kWh-S2, PowerHill-P100M120-233kWh-S3, PowerHill-P100M120-233kWh-S4, PowerHill-P100M120-233kWh-S5, PowerHill-P100-233kWh, PowerHill-P100-233kWh-S2, PowerHill-P100-233kWh-S3, PowerHill-P100-233kWh-S4, PowerHill-P100-233kWh-S5, PowerHill-P105-233kWh, PowerHill-P105-233kWh-S2, PowerHill-P105-233kWh-S3, PowerHill-P105-233kWh-S4, PowerHill-P105-233kWh-S5

Rating : See model list

Protection Class : Class I equipment

Supply connection : fixed power cord
 permanent connection
 appliance inlet
 direct plug in
 Special Connector

Constructional Data Form (CDF) for Electrical Appliances

MODELS LIST		PowerHill-P105M120-233kWh, PowerHill-P105M120-233kWh-S2, PowerHill-P105M120-233kWh-S3, PowerHill-P105M120-233kWh-S4, PowerHill-P105M120-233kWh-S5	PowerHill-P100M120-233kWh, PowerHill-P100M120-233kWh-S2, PowerHill-P100M120-233kWh-S3, PowerHill-P100M120-233kWh-S4, PowerHill-P100M120-233kWh-S5
PV INPUT	V _{MAX} PV [Vdc]	670	
	I _{sc} PV [A]	540	
	MPP Voltage Range V _{MPP} [Vdc]	300 - 670	
	Max. Input Current I _{MAX} [A]	200*2	
	MPP Full Power Voltage Range [Vdc]	300 - 670	
	Start-up Voltage[Vdc]	300	
	Backfeed Current [A]	0	
	Overvoltage Category(OVC)	OVC II	
Battery	Rated Capacity[kWh]	233	
	Cell Type	LiFePO4	
	Charge / discharge power(kW)	105	100
	Voltage Range[Vdc]	741 - 936	
	Rated Voltage [Vdc]	832	
	Cooling method	liquid cooling	
	Overvoltage Category(OVC)	OVC II	
AC OUTPUT	Rated Output Voltage Un [Vac]	3L/N/PE, 230/400	
	Rated Output Frequency fn [Hz]	50	
	Max/Rated Power Pn [kW]	105	100
	Max Output Current I _{max} [A]	152	145
	Power Factor Range cosφ	1Lagging – 1Leading	
	Overvoltage Category (OVC)	OVC III	
CONSTRUCTION	Type of inverter	Non-isolated	
	Protective Class	I	
	Enclosure Protection (IP)	IP54	

Certificate No. AK 50691212 0001

Our Reference CN25DCXC 001

Appendix No. 1.0

Constructional Data Form (CDF) for Electrical Appliances

Page 3 of 13

Operating Temperature Range (°C)	-25 ~ +55(>45 derating)
Humidity Range[%RH]	0-100
Cooling method	Liquid cooling
Acoustic Noise [dB]	< 70
Pollution degree (PD)	External PD3/Internal PD 2
Altitude [m]	2000
Size [mm]	W*H*D: 1390 x 2380 x 1350
Weight [kg]	< 3000

Notes:

MODELS LIST		PowerHill-P105-233kWh, PowerHill-P105-233kWh-S2, PowerHill-P105-233kWh-S3, PowerHill-P105-233kWh-S4, PowerHill-P105-233kWh-S5	PowerHill-P100-233kWh, PowerHill-P100-233kWh-S2, PowerHill-P100-233kWh-S3, PowerHill-P100-233kWh-S4, PowerHill-P100-233kWh-S5
Battery	Rated Capacity[kWh]	233	
	Cell Type	LiFePO4	
	Charge / discharge power(kW)	105	100
	Voltage Range[Vdc]	741 - 936	
	Rated Voltage [Vdc]	832	
	Cooling method	liquid cooling	
	Overvoltage Category(OVC)	OVC II	
AC OUTPUT	Rated Output Voltage Un [Vac]	3L/N/PE, 230/400	
	Rated Output Frequency fn [Hz]	50	
	Max/Rated Power Pn [kW]	105	100
	Max Output Current Imax [A]	152	145
	Power Factor Range cosφ	1Lagging – 1Leading	
	Overvoltage Category (OVC)	OVC III	
CONSTRUCTION	Type of inverter	Non-isolated	
	Protective Class	I	
	Enclosure Protection (IP)	IP54	
	Operating Temperature Range (°C)	-25 ~ +55(>45 derating)	

Certificate No. AK 50691212 0001

Our Reference CN25DCXC 001

Appendix No. 1.0

Constructional Data Form (CDF) for Electrical Appliances

Page 4 of 13

Humidity Range[%RH]	0-100
Cooling method	Liquid cooling
Acoustic Noise [dB]	<70
Pollution degree (PD)	External PD3/Internal PD 2
Altitude [m]	2000
Size [mm]	W*H*D: 1390 x 2380 x 1350
Weight [kg]	< 3000

Notes:

Critical Components

Material: e.g. external enclosure, PCB, closed-end connector, sleeves, cord anchorage etc

Components with winding: e.g. motor, transformer, magnetic coil etc.

Other components: e.g. switch, thermostat, heater, plug, internal wire, capacitor, relay, varistor etc.

Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹ .
Battery Pack					
Rechargeable Prismatic Lithium-ion Cell	REPT BATTERO Energy Co., Ltd.	CB71173204EB	3.2V, 280Ah	EN IEC 62619: 2022	TUV RH R 50571322
Fuse in Battery module	COOPER XI'AN FUSEGEAR CO LTD	ESP2D-750	DC250V/750A/ breaking capacity 50kA/-40°C~+100°C	EN 60269-1: 2007+A1+A2 EN 60269-4: 2009+A1+A2	TUV RH R 50576949
Connector (High voltage)	Huizhou Futronics Electronic Technology Co., Ltd	Socket: FSPC22180P-M6A1 FSPC22180Q-M6B1 Plug: FSPC80180P-50A4 FSPC80180Q-50B4	Rated current:250 A Operating voltage: DC1500V Operating temperature: -40°C~+125°C IP67	EN 61984:2009	TUV SUD No. Z2 116776 0008 Rev. 03
Connector (Low-Voltage)	Shanghai Futronics Electronic Technology Co Ltd	FLP25	Operating voltage: DC300V Operating temperature: -40°C~+125°C IP67	EN 61984:2009	TUV SUD No. B 123935 0003 Rev. 01
End Plate	SHANGHAI KUMHO SUNNY PLASTICS CO., LTD.	HRP7016NH	Melting point:208°C 5 VA, V-0, 65 °C Min. thickness: 1,5 mm	UL 94 UL 746B	UL E254819
Insulator (between cells and case)	Hunan Dobesty Optical Material Co., Ltd.	DB98KJ	V-0, Min. Thickness: 0,5 mm, 80°C	UL 94 UL 746B	UL E524866
NTC	TDK	NTCG163JF103FTDS	Resistance at 25 °C: R25=10kΩ±1%	UL 1434 UL 60730	UL E250289

Constructional Data Form (CDF) for Electrical Appliances

Sealing Strip	JIANGSU KOMPA NEW MATERIAL CO., LTD.	KB104FU	Material: Silicone foam cellular Oper. temperature range: -40~+90°C	UL 157	UL MH66775
FPC	HUBEI OMAR ELECTRONICS TECHNOLOGY CO., LTD.	PI	Min thickness:0.1mm VTM-0	UL 94	UL E467972
Communication wiring (Inside the battery pack)	KUNSHAN XINGHONGME NG ELECTRONIC CO., LTD.	UL1332 20AWG UL2103 2*20AWG	Rating Temp:200°C Rating Voltage:300V 20AWG Rating Temp:105°C Rating Voltage:300V 20AWG	UL 758	UL E315421
Voltage & Temperature Sensor Wiring Harness	KUNSHAN XINGHONGME NG ELECTRONIC CO., LTD.	UL1332 20AWG UL2103 2*20AWG	Rating Temp:200°C Rating Voltage:300V 20AWG Rating Temp:105°C Rating Voltage:300V 20AWG	UL 758	UL E315421
High-voltage box					
Switching Power Supply	PHOENIX CONTACT GmbH & Co.KG	PHO.1159038	240W Rated input voltage range:100 ~ 240Vac Rated output voltage:24Vdc	EN 61000-6-3: 2007+A1:2011+ AC:2012 EN 61000-6-2:2019 EN IEC 61010-2-201:2018 EN IEC 63000:2018	097211277_0 0_DoC_EU
Female positive high voltage connector	Huizhou Futronics Electronic Technology Co.,Ltd	FSPC22180P-M6A1	DC1500V/200A	EN 61984:2009	TUV SUD No. Z2 116776 0008 Rev. 03
Female negative high voltage connector	Huizhou Futronics Electronic Technology Co.,Ltd	FSPC22180Q-M6B1	DC1500V/200A	EN 61984:2009	TUV SUD No. Z2 116776 0008 Rev. 03

Constructional Data Form (CDF) for Electrical Appliances

BCU	Hangzhou BMSer Technology Co., Ltd.	BCU-B30-201	24V DC; Methods of communication: CAN, RS485	IEC/EN 62477-1:2012 IEC/EN 62619:2022 IEC/EN 63056:2020	Test with appliance
Fuse	Xi'an Sinofuse Electric Co., Ltd.	RS306-01-AT5Z-315A1250V	1000Vdc/315A Breaking capacity: 100kA (time constant: 10ms~15ms)	EN 60269-1:2007+A1+A2 EN 60269-4:2009+A1+A2	TUV RH R 50405695 0001
Hall current sensor	SINOMAGS TECHNOLOGY CO., LTD.	STB-CAB500M-52C	Rated Voltage : DC 12V or 24V Rated Current : 26-250mA Measurement category: CAT III, 300V for RI, 600V for BI Nominal Current: 500A Temperature: -40 to 85°C	EN 61010-1:2010+A1 EN IEC 61010-2-030:2021+A11 EN IEC 62368-1:2020+A11 EN 62477-1:2012+A11+A1+A12	TUV RH R 50621977 0001
High-voltage box relay	Xiamen Hongfa Electroacoustic Co.,Ltd	HFE88P-400/1500-24-HA-C5-6	1500Vdc/400A Contact Arrangement:1 Form A Max Breaking Current:2000A(1 op)	EN IEC 60947-4-1:2019 EN 60947-1:2007/A2:2014, EN IEC 60947-1:2021	TUV SUD N8A 053286 0060 Rev.00
Pre-charge contactor	Xiamen Hongfa Electroacoustic Co.,Ltd	HFE82P-20/1500-24-H-Q2J-1	1500Vdc/20A Contact Arrangement: 1 Form A Max Breaking Current:200 A 1000 Vd.c. (1 op)	EN IEC 60947-4-1:2019	TUV RH AN 50599939 0001
Breaker	Xiamen Hongfa Electrical Safety & Controls Co.,Ltd	UEM6H-400H/250-234011-Z3	1500Vdc/250A,2P Shell frame grade:400A Rated operating short-circuit breaking capacity Ics:15kA	IEC 60947-1:2020 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB DE1-65843

Constructional Data Form (CDF) for Electrical Appliances

Battery cabinet and Electrical cabinet					
Smoke fire detector	Apollo Fire Detectors Ltd.	55000-316APO	Supply voltage: 9~33Vdc Operating temperature -20°C to +60°C	EN 54-7:2018	DBI 2531-CPR-CSP10905
Axial fan	Sotop Electric(Shanghai) Co., Ltd.	SF2206HA2	45W 230Vac/0.32A Rated Speed: 2600RPM Rated Airflow: 415CFM	EN 60335-1: 2012+A11+A13 +A1+A14+A2	TUV RH AN 50484246 0001
Temperature-sensing fire detector	Apollo Fire Detectors Ltd.	55000-126APO	Supply voltage: 9~33Vdc Operating temperature A1R: -20°C to +50°C BR: -20°C to +65°C CS/CR: -20°C to +80°C	EN 54-5:2017/ A1:2018	DBI 2531-CPR-CSP11179
Detector base	Apollo Fire Detectors Ltd.	45681-246APO	Max switching power:30W,50VA Max switching current:1A(resistive load) Max switching voltage:50Vac,75Vdc	EN 54-18:2005	DBI 2531-CPR-CSP11118
Low-voltage connector plug	Shanghai Futronics Electronic Technology Co Ltd	FLP6008W-01W	DC300V,7A Max Operating temperature: -40°C~+125°C IP67	EN 61984:2009	TUV SUD B 123935 0003 Rev.01
Low-voltage connector socket	Shanghai Futronics Electronic Technology Co Ltd	FLP2508W-01W	DC300V,7A Max Operating temperature: -40°C~+125°C IP67	EN 61984:2009	TUV SUD B 123935 0003 Rev.01
DC back-up fuse	Xi'an Sinofuse Electric Co., Ltd.	SFD2-GEC-20	1500Vdc/40A Breaking capacity:50kA	EN 60269-4: 2009+A1+A2 EN 60269-1: 2007+A1+A2	TUV RH AN 50621667 0001

Certificate No. AK 50691212 0001

Our Reference CN25DCXC 001

Appendix No. 1.0

Constructional Data Form (CDF) for Electrical Appliances

Page 9 of 13

Back-up fuse base(2P)	Xi'an Sinofuse Electric Co., Ltd.	TSA1485-K2/40	1500Vdc/40A,2P	EN IEC 60947-1:2021 EN IEC 60947-3:2021	TUV RH AN 50634419 0001
AC back-up fuse	Xi'an Sinofuse Electric Co., Ltd.	SFD2-8EC-20	500Vac/40A Breaking capacity: 50kA	EN 60269-1: 2007+A1+A2 EN 60269-4: 2009+A1+A2	TUV RH R 50554874 0001 TUV RH AN 50557430 0001
Back-up fuse base(3P)	Xi'an Sinofuse Electric Co., Ltd.	TSA1451-K3/40	500Vac/40A, 3P	EN IEC 60947-1:2021 EN IEC 60947-3:2021	TUV RH R 50554873 0001 TUV RH AN 50559209 0001
DC SPD	Sichuan Zhongguang Lightning Protection Technologies Co.,Ltd.	ZGG40-1000(2+1)PV	Nominal discharge current 20kA; Maximum discharge current 40kA; Voltage protection level 4kV	EN 50539-11: 2013	TUV RH R 50264361 0001
AC SPD	Sichuan Zhongguang Lightning Protection Technologies Co.,Ltd.	ZGG40-385(3+1)e	Nominal discharge current 20kA; Maximum discharge current 40kA; Voltage protection level L-N: 1.8kV, N-PE: 1.5kV	IEC 61643-11: 2011 EN 61643-11: 2012	TUV RH AN 50611522 0001
MPPT	Xi'an Golden Stone Electric Technology Co., Ltd.	MPPT60A	60KW PV input voltage: 300~850Vdc DC output voltage: 350~1000Vdc	EN 62109-1: 2010 IEC 62109-1: 2010 EN 62477-1: 2012+A11+A1+A12 IEC 62477-1: 2012+A1	TUV RH R 50670739

Certificate No. AK 50691212 0001

Our Reference CN25DCXC 001

Appendix No. 1.0

Constructional Data Form (CDF) for Electrical Appliances

Page 10 of 13

PCS	Shenzhen Enjoy Technology Co., Ltd.	EPCS105-AM	105KW DC side operating voltage range:650~950Vdc AC side rated voltage:230/400Vac Power factor range: 1 (leading) ~ 1 (lagging)	EN 62477-1: 2012+A11+A1+A12	TUV RH AN 50673943 0001
HVAC	Shenzhen Envicool Technology Co., Ltd.	EMW50HD NC1C	220Vac; Max operating current: 16A Cooling capacity: 5KW Heating capacity: 2KW	EN 60335-1: 2012+A11+A13+A1+A14+A2+A15 EN 60335-2-40: 2003+A11+A12+A1+A2+A13, EN 62233:2008	TUV RH AM 50629381 0001
Others					
AC meter	Acrel Co., Ltd.	ADL400-C	Range: 400A Voltage range: 3×57.7/100V~3×260/450V Grid frequency: 45~65Hz	EN IEC 61326-1:2021	SGS KSEM240800 210301MIC
AC circuit breaker	Xiamen Hongfa Electrical Safety & Controls Co.,Ltd	UEM5-250L/250-434011B	400Vac/250A,4P Shell Frame Rating: 250A Rated operating short-circuit breaking capacity Ics: 25kA	EN 60947-2: 2017+A1	TUV RH AN 50672511 0001
E-STOP button	PHOENIX CONTACT GmbH & Co.KG	PHO.1108295	Contact form: one set of normally closed	EN 60947-5-5: 1997+A1:2005+A11:2013+A2:2017 EN IEC 63000: 2018 EN 60947-5-1: 2017	1108295.CE.0 0

Constructional Data Form (CDF) for Electrical Appliances

EMS	Zhejiang LnXall IoT Technology Co., Ltd.	WL-EMS-1000	DC12V ~ 48V Methods of communication: RS485, Ethernet, CAN Power consumption: 10W	IEC/EN 62477-1:2012 IEC/EN 62619:2022 IEC/EN 63056:2020	Test with appliance
Positive high voltage connector plug	Huizhou Futronics Electronic Technology Co.,Ltd	FSPC80180P-50A4	DC1500V/200A	EN 61984:2009	TUV SUD No. Z2 116776 0008 Rev. 03
Negative high voltage connector plug	Huizhou Futronics Electronic Technology Co.,Ltd	FSPC80180Q-50B4	DC1500V/200A	EN 61984:2009	TUV SUD No. Z2 116776 0008 Rev. 03
Breaker(40A, 4P)	Shanghai Liangxin Electrical Co., Ltd.	NDB2-63C40/4	400Vac/40A,4P Shell Frame Grade: 63A	IEC 60898-1 IEC 60898-2	TUV RH AN 50606700 0001
Breaker(12A, 2P)	Shanghai Liangxin Electrical Co., Ltd.	NDB2-63C12/2	400Vac/12A,2P Shell Frame Grade: 63A	IEC 60898-1 IEC 60898-2	TUV RH AN 50606700 0001
Breaker(3A, 3P)	Shanghai Liangxin Electrical Co., Ltd.	NDB2-63C3/3	400Vac/3A,3P Shell Frame Grade: 63A	IEC 60898-1 IEC 60898-2	TUV RH AN 50606700 0001
Breaker(3A, 1P)	Shanghai Liangxin Electrical Co., Ltd.	NDB2-63C3/1	400Vac/3A,1P Shell Frame Grade: 63A	IEC 60898-1 IEC 60898-2	TUV RH AN 50606700 0001
Breaker(32A, 1P)	Shanghai Liangxin Electrical Co., Ltd.	NDB2-63C32/1	400Vac/32A,1P Shell Frame Grade: 63A	IEC 60898-1 IEC 60898-2	TUV RH AN 50606700 0001
Breaker(6A,1P)	Shanghai Liangxin Electrical Co., Ltd.	NDB2-63C6/1	400Vac/6A, 1P Shell Frame Grade: 63A	IEC 60898-1 IEC 60898-2	TUV RH AN 50606700 0001

Constructional Data Form (CDF) for Electrical Appliances

Breaker(16A,2P)	Shanghai Liangxin Electrical Co., Ltd.	NDB2-63C16/2	400Vac/16A, 2P Shell Frame Grade: 63A	IEC 60898-1 IEC 60898-2	TUV RH AN 50606700 0001
European standard socket	ABB S.p.A. – ELSB	M1175	250 Vac/16 A Rated Frequency:50/60 Hz	IEC 60884-1: 2002 IEC 60884-1: 2002/AMD1:200 6 IEC 60884-1: 2002/AMD2:201 3	VDE 40022740
AC power cable	Wuxi Huahao Electric Co., Ltd.	1015	50mm ²	UL 758	UL E231903
DC power cable	Suzhou Yongding Cable Technology Co., Ltd	3640	50mm ² Rating voltage: AC1.1kV/DC1.5kV	UL 758	UL E470465
Gasket	AEROFLEX CO LTD	MSR20	EPDM.V-0	UL 94	UL E228536
Cabinet body	Wuxi Weijia Power Technology Co., Ltd.	UE312-0405-701-A0	Material: SGCC Galvanized Steel Sheet Cabinet Dimensions: Size1390*1350*2380 Coating: Zinc-rich primer + finish coat, RAL9003, fine orange peel texture Film Thickness: 120– 280 µm	IEC/EN 62477- 1:2012 IEC/EN 62619: 2022 IEC/EN 63056: 2020	Test with appliance
Insulating Column	JIANGSU BI-GOLD TECHNOLOGY NEW MATERIALS CO., LTD.	YD0304E	3mm, V-0, 130°C	UL 94	UL E240680
White Epoxy Board	Anhui Yisuola Composite Materials Co., Ltd	UE312-05001-701-A0	FR4 Thickness: 2mm.V0	UL 94	UL E510612

Produkte
Products
Certificate No. AK 50691212 0001 **Our Reference** CN25DCXC 001 **Appendix No.** 1.0

Constructional Data Form (CDF) for Electrical Appliances

Page 13 of 13

Copper busbar	Suzhou Yantai Copper Industry Technology Co., Ltd.	UE312-04003-406-A0	Grade T2 Copper Copper content: 99.988 Tensile strength: 258 Thickness: 3mm	IEC/EN 62477-1:2012 IEC/EN 62619:2022 IEC/EN 63056:2020	Test with appliance
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Note(s):

TÜV Rheinland Group

2025-08-29

Kevin Peng


Date
Name
Signature