

CERTIFICATE OF CONFORMITY

CERTIFICATO DI CONFORMITÀ

Issued to: Afore New Energy Technology (Shanghai) Co., Ltd.
Rilasciato a: Building 7, No.333 Wanfang Rd, Minhang District, Shanghai, China

For the product: Hybrid Inverter
Tipo prodotto:

Trade name:
Marchio:


Afore

Type/Model: AF1K-SL-1, AF1.5K-SL-1, AF2K-SL-1, AF2.5K-SL-1, AF3K-SL-1, AF3.6K-SL-1,
Riferimento modello: AF3K-SL, AF3.6K-SL, AF4K-SL, AF4.6K-SL, AF5K-SL, AF5.5K-SL, AF6K-SL,
AF4K-SLP, AF4.6K-SLP, AF5K-SLP, AF5.5K-SLP, AF6K-SLP,
AF1K-SL-0, AF1.5K-SL-0, AF2K-SL-0, AF2.5K-SL-0, AF3K-SL-0, AF3.6K-SL-0,
AF4K-SL-0, AF4.6K-SL-0, AF5K-SL-0, AF5.5K-SL-0, AF6K-SL-0

Ratings: See Annex
Dati di targa:

Manufactured by: Afore New Energy Technology (Shanghai) Co., Ltd.
Costruttore: Building 7, No.333 Wanfang Rd, Minhang District, Shanghai, China

Requirements: CEI 0-21:2022-03
Requisiti: *Regola tecnica di riferimento per la connessione di Utenti attivi e passivi alle reti BT delle imprese distributrici di energia elettrica*

The tested models are suitable for installation in systems with a total power greater than 11.08 kW.
I modelli testati sono adatti per l'installazione in sistemi con potenza di uscita maggiore di 11.08 kW.
This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in a confidential file no. 6186686.50
Il presente certificato è rilasciato a causa di un esame da parte di DEKRA, i cui risultati sono riportati in un file riservato n. 6186686.50

The examination has been carried out on one single specimen or several specimens of the product, submitted by the manufacturer. The certificate does not include an assessment of the manufacturer's production. Conformity of his production with the specimen tested by DEKRA is not the responsibility of DEKRA.
Il sottoscritto dichiara che il prodotto di cui sopra è conforme ai requisiti tecnici menzionati. Questo attestato di conformità è rilasciato sulla base dei risultati di prova riferiti nel rapporto sopra menzionato.
La valutazione non include una verifica della produzione di serie né del luogo di produzione.
This Test Certificate expires at the latest on 2029-05-28 or expires upon withdrawal of one of the above mentioned standards.
Il presente certificato di prova scade al più tardi il 2029-05-28 o scade al momento del ritiro di uno dei suddetti standard.

Shanghai, 28 May 2024

Certificate Number: 6186686.01COC

DEKRA Testing and Certification (Shanghai) Ltd.



Cliff Lin
Certification Manager

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PCA-141

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ESA-CER-F021 v4.1

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Ratings of the testing Hybrid Inverter:

Valutazioni dell'invertitore ibrido di prova:

Models	AF1K-SL-1	AF1.5K-SL-1	AF2K-SL-1	AF2.5K-SL-1	AF3K-SL-1	AF3.6K-SL-1
PV input:						
Max PV voltage (V)	550					
MPPT voltage range (V)	80-500					
Max PV current (A)	18.5					
Isc PV (A)	26					
Max PV power (W)	1500	2300	3000	3800	4500	5400
Battery port:						
Battery type	Rechargeable Li-ion Battery/ LiFePO4/ Lead-acid					
Battery normal voltage (range) (Vdc)	51.2 (40-60)					
Max charge/discharge current (A)	25	40	50	63	80	80
Max charge/discharge power (W)	1000	1500	2000	2500	3000	3600
AC grid (input and output):						
Rated voltage (V)	L/N/PE, 230Vac					
Rated frequency (Hz)	50					
Max AC current (A)	5	7	10	12	14	17
Rated AC power (W)	1000	1500	2000	2500	3000	3600
Max AC apparent power (VA)	1000	1500	2000	2500	3000	3600
Power factor range	1.0 (-0.8 ~ +0.8 adjustable)					
AC load output (stand alone):						
Rated voltage (V)	L/N/PE, 230Vac					
Rated frequency (Hz)	50					
Max AC current (A)	5	7	10	12	14	17
Rated continuous AC power (W)	1000	1500	2000	2500	3000	3600
Max continuous AC apparent power (VA)	1000	1500	2000	2500	3000	3600
General:						
Protection class	I					
Degree of protection	IP65					
Overvoltage category	II(DC), III(AC)					
Ambient temperature	-25...+60°C (Derating > 45°C)					

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Models	AF3K-SL	AF3.6K-SL	AF4K-SL	AF4.6K-SL	AF5K-SL	AF5.5K-SL	AF6K-SL
PV input:							
Max PV voltage (V)	550						
MPPT voltage range (V)	80-500						
Max PV current (A)	18.5 x 2						
Isc PV (A)	26 x 2						
Max PV power (W)	4500	5400	6000	6900	7500	8300	9000
Battery port:							
Battery type	Rechargeable Li-ion Battery/ LiFePO4/ Lead-acid						
Battery normal voltage (range) (Vdc)	51.2 (40-60)						
Max charge/ discharge current (A)	80						
Max charge/ discharge power (W)	3000	3600	4000	4600	4800	4800	4800
AC grid (input and output):							
Rated voltage (V)	L/N/PE, 230Vac						
Rated frequency (Hz)	50						
Max AC current (A)	14	17	19	22	23	26	28
Rated AC power (W)	3000	3600	4000	4600	5000	5500	6000
Max AC apparent power (VA)	3000	3600	4000	4600	5000	5500	6000
Power factor range	1.0 (-0.8 ~ +0.8 adjustable)						
AC load output (stand alone):							
Rated voltage (V)	L/N/PE, 230Vac						
Rated frequency (Hz)	50						
Max AC current (A)	14	17	19	22	23	26	28
Rated continuous AC power (W)	3000	3600	4000	4600	5000	5500	6000
Max continuous AC apparent power (VA)	3000	3600	4000	4600	5000	5500	6000
General:							
Protection class	I						
Degree of protection	IP65						
Overvoltage category	II(DC), III(AC)						
Ambient temperature	-25...+60°C (Derating > 45°C)						

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Models	AF4K-SLP	AF4.6K-SLP	AF5K-SLP	AF5.5K-SLP	AF6K-SLP
PV input:					
Max PV voltage (V)	550				
MPPT voltage range (V)	80-500				
Max PV current (A)	18.5 x 2				
Isc PV (A)	26 x 2				
Max PV power (W)	6000	6900	7500	8300	9000
Battery port:					
Battery type	Rechargeable Li-ion Battery/ LiFePO4/ Lead-acid				
Battery normal voltage (range) (Vdc)	51.2 (40-60)				
Max charge/discharge current (A)	120				
Max charge/discharge power (W)	4000	4600	5000	5500	6000
AC grid (input and output):					
Rated voltage (V)	L/N/PE, 230Vac				
Rated frequency (Hz)	50				
Max AC current (A)	19	22	23	26	28
Rated AC power (W)	4000	4600	5000	5500	6000
Max AC apparent power (VA)	4000	4600	5000	5500	6000
Power factor range	1.0 (-0.8~ +0.8 adjustable)				
AC load output (stand alone):					
Rated voltage (V)	L/N/PE, 230Vac				
Rated frequency (Hz)	50				
Max AC current (A)	19	22	23	26	28
Rated continuous AC power (W)	4000	4600	5000	5500	6000
Max continuous AC apparent power (VA)	4000	4600	5000	5500	6000
General:					
Protection class	I				
Degree of protection	IP65				
Overvoltage category	II(DC), III(AC)				
Ambient temperature	-25...+60°C (Derating > 45°C)				

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Models	AF1K-SL-0	AF1.5K-SL-0	AF2K-SL-0	AF2.5K-SL-0	AF3K-SL-0	AF3.6K-SL-0
Battery port:						
Battery type	Rechargeable Li-ion Battery/ LiFePO4/ Lead-acid					
Battery normal voltage (range) (Vdc)	51.2 (40-60)					
Max charge/ discharge current (A)	25	40	50	63	80	80
Max charge/ discharge power (W)	1000	1500	2000	2500	3000	3600
AC grid (input and output):						
Rated voltage (V)	L/N/PE, 230Vac					
Rated frequency (Hz)	50					
Max AC current (A)	5	7	10	12	14	17
Rated AC power (W)	1000	1500	2000	2500	3000	3600
Max AC apparent power (VA)	1000	1500	2000	2500	3000	3600
Power factor range	1.0 (-0.8 ~ +0.8 adjustable)					
AC load output (stand alone):						
Rated voltage (V)	L/N/PE, 230Vac					
Rated frequency (Hz)	50					
Max AC current (A)	5	7	10	12	14	17
Rated continuous AC power (W)	1000	1500	2000	2500	3000	3600
Max continuous AC apparent power (VA)	1000	1500	2000	2500	3000	3600
General:						
Protection class	I					
Degree of protection	IP65					
Overvoltage category	II(DC), III(AC)					
Ambient temperature	-25...+60°C (Derating > 45°C)					

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Models	AF4K-SL-0	AF4.6K-SL-0	AF5K-SL-0	AF5.5K-SL-0	AF6K-SL-0
Battery port:					
Battery type	Rechargeable Li-ion Battery/ LiFePO4/ Lead-acid				
Battery normal voltage (range) (Vdc)	51.2 (40-60)				
Max charge/discharge current (A)	120	120	120	120	120
Max charge/discharge power (W)	4000	4600	5000	5500	6000
AC grid (input and output):					
Rated voltage (V)	L/N/PE, 230Vac				
Rated frequency (Hz)	50				
Max AC current (A)	19	22	23	26	28
Rated AC power (W)	4000	4600	5000	5500	6000
Max AC apparent power (VA)	4000	4600	5000	5500	6000
Power factor range	1.0 (-0.8 ~ +0.8 adjustable)				
AC load output (stand alone):					
Rated voltage (V)	L/N/PE, 230Vac				
Rated frequency (Hz)	50				
Max AC current (A)	19	22	23	26	28
Rated continuous AC power (W)	4000	4600	5000	5500	6000
Max continuous AC apparent power (VA)	4000	4600	5000	5500	6000
General:					
Protection class	I				
Degree of protection	IP65				
Overvoltage category	II(DC), III(AC)				
Ambient temperature	-25...+60°C (Derating > 45°C)				

Type of generating unit:

Tipologia di apparato:

Static Conversion Device <i>Dispositivo di conversione statica</i>	Interface Protection <i>Protezione di interfaccia</i>	Interface Protection Device <i>Dispositivo di interfaccia</i>	Rotating Generator Device <i>Dispositivo di generazione rotante</i>
Yes/Sì	Yes/Sì	Yes/Sì	No

REMARK: the device is capable to limit the I_{dc} to 0,5% of the nominal current

NOTA: Il dispositivo è in grado di limitare la I_{dc} allo 0,5% della corrente nominale

Hardware version: 1.01

Versione hardware: 1.01

Firmware release (SW): V02

Revisione firmware (SW): V02

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The battery used for testing with the Hybrid Inverter covered by this certificate:

La batteria utilizzata per i test con l'invertitore ibrido coperto dal presente certificato:

Battery Models	AT48-200H, VT-12040			
Manufacturer	Dongguan Antai Electronic Technology Co., Ltd.			
Number of battery module in parallel	1	2	3	4
Nominal Voltage	51.2 V			
Nominal capacity	200 Ah	400 Ah	600 Ah	800 Ah
Battery System Capacity	10.24 kWh	20.48 kWh	30.72 kWh	40.96 kWh
Number of battery module in parallel	5	6	7	8
Nominal Voltage	51.2 V			
Nominal capacity	1000 Ah	1200 Ah	1400 Ah	1600 Ah
Battery System Capacity	51.20 kWh	61.44 kWh	71.68 kWh	81.92 kWh
Number of battery module in parallel	9	10	11	12
Nominal Voltage	51.2 V			
Nominal capacity	1800 Ah	2000 Ah	2200 Ah	2400 Ah
Battery System Capacity	92.16 kWh	102.40 kWh	112.64 kWh	122.88 kWh
Number of battery module in parallel	13	14	15	-
Nominal Voltage	51.2 V			
Nominal capacity	2600 Ah	2800 Ah	3000 Ah	-
Battery System Capacity	133.12 kWh	143.36 kWh	153.60 kWh	-
Remark:	<p>The CB test certificate No. of the battery: FR_718828 When the batteries are connected in parallel, the charge/ discharge current is superimposed and is limited by the maximum current of the battery port of the Hybrid Inverter. The parameters of AT48-200H and VT-12040 are the same except for the model names. The batteries are not integrated into the Hybrid Inverter and must be installed according to the local regulations.</p>			

Testing Laboratory:

Laboratorio prove:

Testing Laboratory for CEI 0-21:2022-03
 DEKRA Testing and Certification (Suzhou) Co., Ltd.
 No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
 Accreditation Number: L5313 (CNAS-ILAC)

Testing Laboratory for EMC:

1. Intertek Testing Services Shanghai
 Building No.86, 1198 Qinzhou Road (North), Caohejing Development Zone, Shanghai 200233, China
 Accreditation Number: 3309.02 (A2LA-ILAC)
2. Shanghai Inspection and Testing Institute of Instruments and Automation Systems Co., Ltd.
 No.103, Caobao Road, Xuhui District, Shanghai, China
 Accreditation Number: L0130 (CNAS-ILAC)

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