


Test Verification of Conformity

Verification Number: 230600404SHA-V1

On the basis of the referenced test report(s), sample(s) tested of the below product have been found to comply with the standards harmonized with the directives listed on this verification at the time the tests were carried out. Other standards and Directives may be relevant to the product. This verification is part of the full test report(s) and should be read in conjunction with it <them>.

Once compliance with all product relevant  mark directives are verified, including any relevant e.g. risk assessment and production control, the manufacturer may indicate compliance by signing a Declaration of Conformity themselves and applying the mark to products identical to the tested sample(s).

Applicant Name & Address:	SUZHOU JOHNRAY SOLAR ENERGY CO., LTD Room 209, Building 1, Lejihui Business Plaza, New District, Suzhou, Jiangsu, China
Product Description:	Hybrid inverter
Ratings & Principle Characteristics:	See Appendix
Models/Type References:	JH-*-TH (*=3K, 4K, 5K, 6K, 8K, 10K, 12K, 15K, 17K, 20K, 25K,30K) JH-*-THP (*=3K, 4K, 5K, 6K, 8K, 10K, 12K)
Brand Name:	 JOHNRAY
Relevant Standards/Directives:	EN IEC 61000-6-3:2021 EN IEC 61000-6-1:2019 the EMC Directive 2014/30/EU
Verification Issuing Office Name & Address:	Intertek Testing Services Shanghai Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China
Date of Tests:	2022-11-03 to 2022-12-25
Test Report Number(s):	230600404SHA-001



Signature

Name: Max Jin

Position: General Manager

Date: 2023-06-15

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APPENDIX: Test Verification of Conformity

This is an Appendix to Test Verification of Conformity Number: 230600404SHA-V1

Model	JH-3K-TH	JH-4K-TH	JH-5K-TH	JH-6K-TH
PV input				
P pv Max(kW)	5	6	7.5	9
Vmax PV (Vdc) (absolute Max.)	1000	1000	1000	1000
Isc PV (absolute Max.) (A)	30*2	30*2	30*2	30*2
Number MPP trackers	2	2	2	2
Number input strings	1/1	1/1	1/1	1/1
Max. PV input current (A)	20*2	20*2	20*2	20*2
MPPT voltage range (Vdc)	150-850	150-850	150-850	150-850
Vdc range @ full power (Vdc)	200-850	200-850	200-850	250-850
Battery (charge/discharge)				
Battery type	Li-ion/Lead-acid			
Battery Normal Voltage (Range) (Vdc)	150-800(Field adapt battery voltage range)			
Max charge/discharge Current(A)	30	30	30	30
Max charge/discharge Power(kW)	3	4	5	6
AC Grid (input and output)				
Normal AC Voltage (VAC)	3P+N+PE/3P+PE 230/400			
Frequency (Hz)	50			
Normal AC Current (A)	4.4	5.8	7.3	8.7
Max. cont. input/output current (A)	8 / 5.3	10.5 / 7	13 / 8.5	16 / 10.5
Rated Power (kW)	3	4	5	6
Rated Apparent Power (kVA)	3	4	5	6

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Model	JH-3K-TH	JH-4K-TH	JH-5K-TH	JH-6K-TH
Max. cont. input/output Power (kW)	4.5 / 3.3	6 / 4.4	7.5 / 5.5	9 / 6.6
Max. cont. Apparent input/output Power (KVA)	4.5 / 3.3	6 / 4.4	7.5 / 5.5	9 / 6.6
Power factor(adjustable)	1.0(-0.8~ +0.8)			
AC Load output (stand alone)				
Normal Voltage (VAC)	3P+N+PE/3P+PE 230/400			
Frequency (Hz)	50			
Nominal Current (A)	4.4	5.8	7.3	8.7
Max. cont. current (A)	5.3	7	8.5	10.5
Max. cont. Power (kW)	3	4	5	6
Rated Apparent Power (kVA)	3	4	5	6
Max. cont. Apparent Power (kVA)	3	4	5	6
Power factor	1.0			
Others				
Ingress protection (IP)	IP65			
Protective class	Class I			
Temperature (°C)	-25°C to +60°C (Derating 45°C)			
Inverter Isolation	Non-isolated (PV-AC-BAT)			
Overvoltage category	OVC III (AC Main), OVC II (PV)			
Firmware Version	V1.01			
Software Version	V01			

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Model	JH-8K-TH	JH-10K-TH	JH-12K-TH	JH-15K-TH
PV input				
P pv Max(kW)	12	15	18	22.5
Vmax PV (Vdc) (absolute Max.)	1000	1000	1000	1000
Isc PV (absolute Max.) (A)	30*2	30*2	30*2	30+48
Number MPP trackers	2	2	2	2
Number input strings	1/1	1/1	1/1	1/2
Max. PV input current (A)	20*2	20*2	20*2	20+32
MPPT voltage range (Vdc)	150-850	150-850	150-850	150-850
Vdc range @ full power (Vdc)	300-850	500-850	500-850	500-850
Battery (charge/discharge)				
Battery type	Li-ion/Lead-acid			
Battery Normal Voltage (Range) (Vdc)	150-800(Field adapt battery voltage range)			
Max charge/discharge Current(A)	30	30	30	50
Max charge/discharge Power(kW)	8	10	12	15
AC Grid (input and output)				
Normal AC Voltage (VAC)	3P+N+PE/3P+PE 230/400			
Frequency (Hz)	50			
Normal AC Current (A)	11.6	14.5	17.4	21.8
Max. cont. input/output current (A)	20 / 13.5	26 / 17	32 / 21.5	40.5 / 27
Rated Power (kW)	8	10	12	15
Rated Apparent Power (kVA)	8	10	12	15
Max. cont. input/output Power (kW)	12 / 8.8	15 / 11	18 / 13.2	22.5 / 16.5
Max. cont. Apparent input/output Power (kVA)	12 / 8.8	15 / 11	18 / 13.2	22.5 / 16.5

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Model	JH-8K-TH	JH-10K-TH	JH-12K-TH	JH-15K-TH
Power factor(adjustable)	1.0(-0.8~ +0.8)			
AC Load output (stand alone)				
Normal Voltage (VAC)	3P+N+PE/3P+PE 230/400			
Frequency (Hz)	50			
Nominal Current (A)	11.6	14.5	17.4	21.8
Max. cont. current (A)	13.5	17	21.5	27
Max. cont. Power (kW)	8	10	12	15
Rated Apparent Power (kVA)	8	10	12	15
Max. cont. Apparent Power (kVA)	8	10	12	15
Power factor	1.0			
Others				
Ingress protection (IP)	IP65			
Protective class	Class I			
Temperature (°C)	-25°C to +60°C (Derating 45°C)			
Inverter Isolation	Non-isolated (PV-AC-BAT)			
Overvoltage category	OVC III (AC Main), OVC II (PV)			
Firmware Version	V1.01			
Software Version	V01			

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Model	JH-3K-THP	JH-4K-THP	JH-5K-THP	JH-6K-THP
PV input				
P pv Max(kW)	5	6	7.5	9
Vmax PV (Vdc) (absolute Max.)	1000	1000	1000	1000
Isc PV (absolute Max.) (A)	30*2	30*2	30*2	30*2
Number MPP trackers	2	2	2	2
Number input strings	1/1	1/1	1/1	1/1
Max. PV input current (A)	20*2	20*2	20*2	20*2
MPPT voltage range (Vdc)	150-850	150-850	150-850	150-850
Vdc range @ full power (Vdc)	200-850	200-850	200-850	250-850
Battery (charge/discharge)				
Battery type	Li-ion/Lead-acid			
Battery Normal Voltage (Range) (Vdc)	80-600(Field adapt battery voltage range)			
Max charge/discharge Current(A)	50	50	50	50
Max charge/discharge Power(kW)	3	4	5	6
AC Grid (input and output)				
Normal AC Voltage (VAC)	3P+N+PE/3P+PE 230/400			
Frequency (Hz)	50			
Normal AC Current (A)	4.4	5.8	7.3	8.7
Max. cont. input/output current (A)	8 / 5.3	10.5 / 7	13 / 8.5	16 / 10.5
Rated Power (kW)	3	4	5	6
Rated Apparent Power (kVA)	3	4	5	6
Max. cont. input/output Power (kW)	4.5 / 3.3	6 / 4.4	7.5 / 5.5	9 / 6.6
Max. cont. Apparent input/output Power (KVA)	4.5 / 3.3	6 / 4.4	7.5 / 5.5	9 / 6.6
Power factor(adjustable)	1.0(-0.8~ +0.8)			

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Model	JH-3K-THP	JH-4K-THP	JH-5K-THP	JH-6K-THP
AC Load output (stand alone)				
Normal Voltage (VAC)	3P+N+PE/3P+PE 230/400			
Frequency (Hz)	50			
Nominal Current (A)	4.4	5.8	7.3	8.7
Max. cont. current (A)	5.3	7	8.5	10.5
Max. cont. Power (kW)	3	4	5	6
Rated Apparent Power (kVA)	3	4	5	6
Max. cont. Apparent Power (kVA)	3	4	5	6
Power factor	1.0			
Others				
Ingress protection (IP)	IP65			
Protective class	Class I			
Temperature (°C)	-25°C to +60°C (Derating 45°C)			
Inverter Isolation	Non-isolated (PV-AC-BAT)			
Oversvoltage category	OVC III (AC Main), OVC II (PV)			
Firmware Version	V1.01			
Software Version	V01			

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Model	JH-8K-THP	JH-10K-THP	JH-12K-THP
PV input			
P pv Max(kW)	12	15	18
Vmax PV (Vdc) (absolute Max.)	1000	1000	1000
Isc PV (absolute Max.) (A)	30*2	30*2	30*2
Number MPP trackers	2	2	2
Number input strings	1/1	1/1	1/1
Max. PV input current (A)	20*2	20*2	20*2
MPPT voltage range (Vdc)	150-850	150-850	150-850
Vdc range @ full power (Vdc)	300-850	500-850	500-850
Battery (charge/discharge)			
Battery type	Li-ion/Lead-acid		
Battery Normal Voltage (Range) (Vdc)	80-600(Field adapt battery voltage range)	120-650(Field adapt battery voltage range)	
Max charge/discharge Current(A)	50	50	50
Max charge/discharge Power(kW)	8	10	12
AC Grid (input and output)			
Normal AC Voltage (VAC)	3P+N+PE/3P+PE 230/400		
Frequency (Hz)	50		
Normal AC Current (A)	11.6	14.5	17.4
Max. cont. input/output current (A)	20 / 13.5	26 / 17	32 / 21.5
Rated Power (W)	8	10	12
Rated Apparent Power (kVA)	8	10	12
Max. cont. input/output Power (kW)	12 / 8.8	15 / 11	18 / 13.2
Max. cont. Apparent input/output Power (kVA)	12 / 8.8	15 / 11	18 / 13.2

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Model	JH-8K-THP	JH-10K-THP	JH-12K-THP
Power factor(adjustable)	1.0(-0.8~ +0.8)		
AC Load output (stand alone)			
Normal Voltage (VAC)	3P+N+PE/3P+PE 230/400		
Frequency (Hz)	50		
Nominal Current (A)	11.6	14.5	17.4
Max. cont. current (A)	13.5	17	21.5
Max. cont. Power (kW)	8	10	12
Rated Apparent Power (kVA)	8	10	12
Max. cont. Apparent Power (kVA)	8	10	12
Power factor	1.0		
Others			
Ingress protection (IP)	IP65		
Protective class	Class I		
Temperature (°C)	-25°C to +60°C (Derating 45°C)		
Inverter Isolation	Non-isolated (PV-AC-BAT)		
Oversvoltage category	OVC III (AC Main), OVC II (PV)		
Firmware Version	V1.01		
Software Version	V01		

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Specifications table				
Model	JH-17K-TH	JH-20K-TH	JH-25K-TH	JH-30K-TH
PV input				
P pv Max(kW)	25.5	30	37.5	45
Vmax PV (Vdc) (absolute Max.)	1000	1000	1000	1000
Isc PV (absolute Max.) (A)	48*2	48*2	60*2	60*2
Number MPP trackers	2	2	2	2
Number input strings	2/2	2/2	2/2	2/2
Max. PV input current (A)	32*2	32*2	40*2	40*2
MPPT voltage range (Vdc)	150-850	150-850	150-850	150-850
Vdc range @ full power (Vdc)	500-850	500-850	500-850	500-850
Battery (charge/discharge)				
Battery type	Li-ion/Lead-acid			
Battery Normal Voltage (Range) (Vdc)	150-800(Field adapt battery voltage range)			
Max charge/discharge Current(A)	50	50	60	60
Max charge/discharge Power(kW)	17	20	25	30
AC Grid (input and output)				
Normal AC Voltage (VAC)	3P+N+PE/3P+PE 230/400			
Frequency (Hz)	50			
Normal AC Current (A)	24.7	29	36.3	43.5
Max. cont. input/output current (A)	45 / 30	48 / 32	60 / 40	72 / 48
Rated Power (kW)	17	20	25	30
Rated Apparent Power (kVA)	17	20	25	30
Max. cont. input/output Power (kW)	25.5 / 18.7	30 / 22	37.5 / 27.5	45 / 33
Max. cont. Apparent input/output Power (kVA)	25.5 / 18.7	30 / 22	37.5 / 27.5	45 / 33

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Specifications table				
Model	JH-17K-TH	JH-20K-TH	JH-25K-TH	JH-30K-TH
Power factor(adjustable)	1.0(-0.8~ +0.8)			
AC Load output (stand alone)				
Normal Voltage (VAC)	3P+N+PE/3P+PE 230/400			
Frequency (Hz)	50			
Nominal Current(A)	24.7	29	36.3	43.5
Max. cont. current (A)	30	32	40	48
Max. cont. Power (kW)	17	20	25	30
Rated Apparent Power (kVA)	17	20	25	30
Max. cont. Apparent Power (kVA)	17	20	25	30
Power factor	1.0			
Others				
Ingress protection (IP)	IP65			
Protective class	Class I			
Temperature (°C)	-25°C to +60°C (Derating 45°C)			
Inverter Isolation	Non-isolated (PV-AC-BAT)			
Overvoltage category	OVC III (AC Main), OVC II (PV)			
Firmware	V1.01			
	V01			

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