


# Certificate of Conformity

Certificate Number: CN-PV-230557

On the basis of the tests undertaken, the sample<s> of the below product have been found to comply with the requirements of the referenced specification<s>/standard<s> at the time the tests were carried out. It does not imply that Intertek has performed any surveillance or control of the manufacture(s). The manufacturer(s) shall ensure that the manufacturing process assures compliance of the production units with the examined products mentioned in this certificate.

<b>Applicant:</b>	Elmark Industries SC 2 Dobrudzha blvd. , 9300, Dobrich, Bulgaria
<b>Product:</b>	Hybrid Inverter
<b>Ratings &amp; Principle Characteristics:</b>	See appendix of Certificate of Conformity
<b>Model:</b>	ELM3TH* (*=3K, 4K, 5K, 6K, 8K, 10K, 12K, 15K, 17K, 20K, 25K, 30K) ELM3THP* (*=3K, 4K, 5K, 6K, 8K, 10K, 12K)
<b>Brand Name&lt;s&gt;:</b>	
<b>Product Complies with:</b>	EN 50549-1:2019 Requirements for the connection of generation equipment in parallel with public distribution networks.
<b>Certificate Issuing Office Name &amp; Address:</b>	Intertek Testing Services Ltd. Shanghai West Area, 2 <sup>nd</sup> Floor, No. 707, Zhangyang Road China (Shanghai) Pilot Free Trade Zone, Shanghai, P. R. China Accredited by ACCREDIA in accordance with ISO/IEC 17065:2012
<b>Test Report No.&lt;s&gt;:</b>	2308A0282SHA-001

Additional information in Appendix.

Signature



Certification Manager: Qiao Qiao

Date: 28 September 2023



PRD N° 306B

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## APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230557

Ratings & Principle Characteristics:

Specifications table					
Model	ELM3TH3K	ELM3TH4K	ELM3TH5K	ELM3TH6K	ELM3TH8K
<b>Input</b>					
Ppv Max (kW)	5	6	7.5	9	12
Vmax PV (V)	1000	1000	1000	1000	1000
Isc PV (absolute Max.) (A)	30*2	30*2	30*2	30*2	30*2
Number of MPP trackers	2	2	2	2	2
Number of input strings	1/1	1/1	1/1	1/1	1/1
Max. PV input range (A)	20*2	20*2	20*2	20*2	20*2
MPPT Voltage Range (V)	150-850	150-850	150-850	150-850	150-850
Vdc range @ full power (V)	200-850	200-850	200-850	250-850	300-850
<b>Battery (input and output)</b>					
Battery type	Li-ion / lead acid etc.				
Battery Voltage Range (V)	150-800 (Field adapt battery voltage range)				
Max. Charge/Discharge Current (A)	30	30	30	30	30
Max. Charge/Discharge Power (kW)	3	4	5	6	8
<b>AC Grid (input and output)</b>					
Nominal Voltage (V)	3P+N+PE/3P+PE 230/400				
Nominal Frequency (Hz)	50				
Max. continuous Input/output Current (A)	8 / 5.3	10.5 / 7	13 / 8.5	16 / 10.5	20 / 13.5
Nominal Power (kW)	3	4	5	6	8
Max. Power (kW)	4.5 / 3.3	6 / 4.4	7.5 / 5.5	9 / 6.6	12 / 8.8
Max. apparent Power (kVA)	4.5 / 3.3	6 / 4.4	7.5 / 5.5	9 / 6.6	12 / 8.8
Power Factor	1(-0.8~+0.8 adjustable)				
<b>AC Load output</b>					
Nominal Output Voltage (V)	3P+N+PE/3P+PE 230/400				
Nominal Frequency (Hz)	50				
Max. continuous Input/output Current (A)	5.3	7	8.5	10.5	13.5
Nominal Output Power(kW)	3	4	5	6	8
Max. Output Power (kW)	3	4	5	6	8
Max. apparent Power (kVA)	3	4	5	6	8
Power Factor	1				
<b>others</b>					
Ingress protection (IP)	IP65				
Temperature (°C)	-25°C to +60°C (Derating45°C)				
Inverter Isolation	Non-isolated				
Firmware Version	1.01				

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### Ratings & Principle Characteristics:

Specifications table					
Model	ELM3TH10 K	ELM3TH12 K	ELM3TH15 K	ELM3TH17 K	ELM3TH20 K
<b>Input</b>					
Ppv Max (kW)	15	18	22.5	25.5	30
Vmax PV (V)	1000	1000	1000	1000	1000
Isc PV (absolute Max.) (A)	30*2	30*2	30+48	48*2	48*2
Number of MPP trackers	2	2	2	2	2
Number of input strings	1/1	1/1	1/2	2/2	2/2
Max. PV input range (A)	20*2	20*2	20+32	32*2	32*2
MPPT Voltage Range (V)	150-850	150-850	150-850	150-850	150-850
Vdc range @ full power (V)	500-850	500-850	500-850	500-850	500-850
<b>Battery (input and output)</b>					
Battery type	Li-ion / lead acid etc.				
Battery Voltage Range (V)	150-800 (Field adapt battery voltage range)				
Max. Charge/Discharge Current (A)	30	30	50	50	50
Max. Charge/Discharge Power (kW)	10	12	15	17	20
<b>AC Grid (input and output)</b>					
Nominal Voltage (V)	3P+N+PE/3P+PE 230/400				
Nominal Frequency (Hz)	50				
Max. continuous Input/output Current (A)	26 / 17	32 / 21.5	40.5 / 27	45 / 30	48 / 32
Nominal Power (kW)	10	12	15	17	20
Max. Power (kW)	15 / 11	18 / 13.2	22.5 / 16.5	25.5 / 18.7	30 / 22
Max. apparent Power (kVA)	15 / 11	18 / 13.2	22.5 / 16.5	25.5 / 18.7	30 / 22
Power Factor	1(-0.8~+0.8 adjustable)				
<b>AC Load output</b>					
Nominal Output Voltage (V)	3P+N+PE/3P+PE 230/400				
Nominal Frequency (Hz)	50				
Max. continuous Input/output Current (A)	17	21.5	27	30	32
Nominal Output Power(kW)	10	12	15	17	20
Max. Output Power (kW)	10	12	15	17	20
Max. apparent Power (kVA)	10	12	15	17	20
Power Factor	1				
<b>others</b>					
Ingress protection (IP)	IP65				
Temperature (°C)	-25°C to +60°C (Derating45°C)				
Inverter Isolation	Non-isolated				
Firmware Version	1.01				

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This is an Appendix to Certificate of Conformity Number: CN-PV-230557

Ratings & Principle Characteristics:

Specifications table					
Model	ELM3TH25 K	ELM3TH30 K			
<b>Input</b>					
Ppv Max (kW)	37.5	45			
Vmax PV (V)	1000	1000			
Isc PV (absolute Max.) (A)	60*2	60*2			
Number of MPP trackers	2	2			
Number of input strings	2/2	2/2			
Max. PV input range (A)	40*2	40*2			
MPPT Voltage Range (V)	150-850	150-850			
Vdc range @ full power (V)	500-850	500-850			
<b>Battery (input and output)</b>					
Battery type	Li-ion / lead acid etc.				
Battery Voltage Range (V)	150-800 (Field adapt battery voltage range)				
Max. Charge/Discharge Current (A)	60	60			
Max. Charge/Discharge Power (kW)	25	30			
<b>AC Grid (input and output)</b>					
Nominal Voltage (V)	3P+N+PE/3P+PE 230/400				
Nominal Frequency (Hz)	50				
Max. continuous Input/output Current (A)	60 / 40	72 / 48			
Nominal Power (kW)	25	30			
Max. Power (kW)	37.5 / 27.5	45 / 33			
Max. apparent Power (kVA)	37.5 / 27.5	45 / 33			
Power Factor	1(-0.8~+0.8 adjustable)				
<b>AC Load output</b>					
Nominal Output Voltage (V)	3P+N+PE/3P+PE 230/400				
Nominal Frequency (Hz)	50				
Max. continuous Input/output Current (A)	40	48			
Nominal Output Power(kW)	25	30			
Max. Output Power (kW)	25	30			
Max. apparent Power (kVA)	25	30			
Power Factor	1				
<b>others</b>					
Ingress protection (IP)	IP65				
Temperature (°C)	-25°C to +60°C (Derating45°C)				
Inverter Isolation	Non-isolated				
Firmware Version	1.01				

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### Ratings & Principle Characteristics:

Specifications table				
Model	ELM3THP3K	ELM3THP4K	ELM3THP5K	ELM3THP6K
<b>PV input</b>				
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
<b>Battery (charge/discharge)</b>				
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
<b>AC Grid (input and output)</b>				
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)			
<b>AC Load output (stand alone)</b>				
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			
<b>Others</b>				
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	1.01			
Software Version	V01			

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### Ratings & Principle Characteristics:

Specifications table			
Model	ELM3THP8K	ELM3THP10K	ELM3THP12K
<b>PV input</b>			
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
<b>Battery (charge/discharge)</b>			
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
<b>AC Grid (input and output)</b>			
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 (kW)	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
Power factor(adjustable)	1.0(-0.8~ +0.8)		
<b>AC Load output (stand alone)</b>			
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		
<b>Others</b>			
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	1.01		
Software Version	V01		

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