Certificate of Conformity

Certificate Number: CN-PV-230418R1

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

Applicant:	Shenzhen Growatt New Energy Co., Ltd. 4-13/F, Building A, Sino-German (Europe) Industrial Park, Hangcheng Ave, Bao'an District, Shenzhen, China
Product:	Energy Storage system
Ratings & Principle Characteristics:	See appendix of Certificate of Conformity
Model:	Smarter AC interface model: SYN 50-XH-30, SYN 100-XH-30 Brands: GROWATT Inverter conversion device: MID 11KTL3-XA, MID 12KTL3-XA, MID 13KTL3-XA, MID 15KTL3-XA, MID 17KTL3-XA, MID 20KTL3-XA, MID 25KTL3-XA, MID 30KTL3-XA, MID 11KTL3-XH, MID 12KTL3-XH, MID 13KTL3-XH, MID 15KTL3-XH, MID 17KTL3-XH, MID 20KTL3-XH, MID 25KTL3-XH, MID 30KTL3-XH Batteries and BMS - Battery Management System: Battery system: APX 5.0P-S2, APX10.0P-S2, APX 15.0P-S2, APX 20.0P-S2, APX 25.0P-S2, APX 30.0P-S2, APX 5.0P-S1, APX10.0P-S1, APX 15.0P-S1, APX 20.0P-S1, APX 25.0P-S1, APX 30.0P-S1 Battery model: APX 5.0P-B1 High voltage control model: APX 98020-P1, APX 98034-P2
Brand Name:	GROWATT
Product Complies with:	CEI 0-21: 2022-03 + V1:2022-11: Reference technical rules for the connection of active and passive users to the LV electrical Utilities
Certificate Issuing Office Name & Address:	Intertek Testing Services Ltd. Shanghai West Area, 2nd 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
Test Report Number:	231128195GZU-001, 29 Nov 2023 Issued by Intertek Testing Services Shenzhen Ltd. Guangzhou Branch accredited by IAS (TL-395) in accordance with ISO/IEC 17025:2017

Replaces certificate CN-PV-230418, dated 24 July 2023
Additional information in Appendix

Signature
Certification Manager: Grady Ye
Date: 07 December 2023

PRD N° 306B

THis Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230418R1

Test item description……:	Energy Storage system
Trademark……:	GROWATT
Manufacturer……:	Same as applicant
Model/Type reference……:	Smarter AC interface model: SYN 50-XH-30, SYN 100-XH-30 Brands: GROWATT Inverter conversion device: MID 11KTL3-XA, MID 12KTL3-XA, MID 13KTL3-XA, MID 15KTL3-XA, MID 17KTL3-XA, MID 20KTL3-XA, MID 25KTL3-XA, MID 30KTL3-XA, MID 11KTL3-XH, MID 12KTL3-XH, MID 13KTL3-XH, MID 15KTL3-XH, MID 17KTL3-XH, MID 20KTL3-XH, MID 25KTL3-XH, MID 30KTL3-XH Brands: GROWATT Batteries and BMS - Battery Management System: Battery system: APX 5.0P-S2, APX10.0P-S2, APX 15.0P-S2, APX 20.0P-S2, APX 25.0P-S2, APX 30.0P-S2, APX 5.0P-S1, APX10.0P-S1, APX 15.0P-S1, APX 20.0P-S1, APX 25.0P-S1, APX 30.0P-S1 Battery model: APX 5.0P-B1 High voltage control model: APX 98020-P1, APX 98034-P2 Brands: GROWATT
Inverter Firmware Version……:	DN1.0
Number of phases……:	Three-phase
Nominal Power……:	11000W (MID 11KTL3-XA, MID 11KTL3-XH) 12000W (MID 12KTL3-XA, MID 12KTL3-XH) 13000W (MID 13KTL3-XA, MID 13KTL3-XH) 15000W (MID 15KTL3-XA, MID 15KTL3-XH) 17000W (MID 17KTL3-XA, MID 17KTL3-XH) 20000W (MID 20KTL3-XA, MID 20KTL3-XH) 25000W (MID 25KTL3-XA, MID 25KTL3-XH) 30000W (MID 30KTL3-XA, MID 30KTL3-XH)
Type……:	Bidirectional
CUS (useful capacity of the storage system)……:	See below table for details
Psn (nominal discharge power):	See below table for details
Pcn (nominal charge power)…..:	See below table for details
Psmax (maximum discharge power)……:	See below table for details
Pcmax (maximum charge power)……:	See below table for details
BMS Firmware Version ……:	V1.0
BMS Software Version ……:	QAba Version WA1.0

THis Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230418R1

Battery system	APX 5.0P-S2	APX 10.0P-S2	APX 15.0P-S2	APX 20.0P-S2	APX 25.0P-S2	APX 30.0P-S2
Psn (nominal discharge power)	2.5kW	5.0kW	7.5kW	10.0kW	12.5kW	15.0kW
Pcn (nominal charge power)	2.5kW	5.0kW	7.5kW	10.0kW	12.5kW	15.0kW
Psmax (maximum discharge power)	2.5kW	5.0kW	7.5kW	10.0kW	12.5kW	15.0kW
Pcmax (maximum charge power)	2.5kW	5.0kW	7.5kW	10.0kW	12.5kW	15.0kW
System Model	APX 5.0P-S1	APX 10.0P-S1	APX 15.0P-S1	APX 20.0P-S1	APX 25.0P-S1	APX 30.0P-S1
Psn (nominal discharge power)	2.5kW	5.0kW	7.5kW	7.5kW	7.5kW	7.5kW
Pcn (nominal charge power)	2.5kW	5.0kW	7.5kW	7.5kW	7.5kW	7.5kW
Psmax (maximum discharge power)	2.5kW	5.0kW	7.5kW	7.5kW	7.5kW	7.5kW
Pcmax (maximum charge power)	2.5kW	5.0kW	7.5kW	7.5kW	7.5kW	7.5kW
Battery system	APX 15.0P-S2 + APX 20.0P-S2	APX 20.0P-S2 + APX 20.0P-S2	APX 20.0P-S2 + APX 25.0P-S2	APX 25.0P-S2 + APX 25.0P-S2	APX 25.0P-S2 + APX 30.0P-S2	APX 30.0P-S2 + APX 30.0P-S2
Psn (nominal discharge power)	17.5kW	20kW	22.5kW	25kW	27.5kW	30kW
Pcn (nominal charge power)	17.5kW	20kW	22.5kW	25kW	27.5kW	30kW
Psmax (maximum discharge power)	28kW,60S	32kW,60S	36kW,60S	40kW,60S	40kW,60S	40kW,60S
Pcmax (maximum charge power)	17.5kW	20kW	22.5kW	25kW	27.5kW	30kW
Note: It could be limited by power of inverter, if the battery system used with inverter and has more power than inverter.						

THis Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230418R1

Number of battery pack	Manufacter	Capacity of battery system (kWh)	System Battery possible configuration	Recommended configuration
1	Shenzhen Growatt New Energy Co., Ltd.	4,5	APX 5.0P-S1	APX 5.0P-S1
2		9	APX 5.0P-S1+ APX 5.0P-S1 or APX 10.0P-S1	APX 10.0P-S1
3		13,5	APX 5.0P-S1+ APX 10.0P-S1 or APX 15.0P-S1	APX 15.0P-S1
4		18	APX 5.0P-S1+ APX 15.0P-S1 or APX 10.0P-S1+ APX 10.0P-S1 or APX 20.0P-S1	APX 20.0P-S1
5		22,5	APX 5.0P-S1+ APX 20.0P-S1 or APX 10.0P-S1+ APX 15.0P-S1 OR APX25.0P-S1	APX 25.0P-S1
6		27	APX 5.0P-S1+ APX 25.0P-S1 OR APX 10.0P-S1+ APX 20.0P-S1 OR APX 15.0P-S1+ APX 15.0P-S1 OR APX30.0P-S1	APX 30.0P-S1
7		31.5	APX 5.0P-S1+ APX 30.0P-S1 OR APX 10.0P-S1 + APX 25.0P-S1 OR APX 15.0P-S1+ APX 20.0P-S1	APX 15.0P-S1 + APX 20.0P-S1
8		36	APX 10.0P-S1+ APX 30.0P-S1 or APX 20.0P-S1+ APX 20.0P-S1 OR APX 15.0P-S1+ APX 25.0P-S1	APX 20.0P-S1 + APX 20.0P-S1
9		30.5	APX 15.0P-S1+ APX 30.0P-S1 or APX20.0P-S1+ APX 25.0P-S1	APX 25.0P-S1 + APX 20.0P-S1
10		45	APX 20.0P-S1+ APX 30.0P-S1 or APX 25.0P-S1+ APX 25.0P-S1	APX 25.0P-S1 + APX 25.0P-S1
11		49.5	APX 25.0P-S1+ APX 30.0P - S1	APX 25.0P-S1+ APX 30.0P-S1
12		54	APX 30.0P-S1+ APX 30.0P-S1	APX 30.0P-S1+ APX 30.0P-S1

THis Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230418R1

Number of battery pack	Manufacte r	Capacity of battery system (kWh)	System Battery possible configuration	Recommended configuration
1	Shenzhen Growatt New Energy Co., Ltd.	4,5	APX 5.0P-S2	APX 5.0P-S2
2		9	APX 5.0P-S2+ APX 5.0P-S2 or APX 10.0P-S2	APX 10.0P-S2
3		13,5	APX 5.0P-S2+ APX 10.0P-S2 or APX 15.0P-S2	APX 15.0P-S2
4		18	APX 5.0P-S2+ APX 15.0P-S2 or APX 10.0P-S2+ APX 10.0P-S2 or APX 20.0P-S2	APX 20.0P-S2
5		22,5	APX 5.0P-S2+ APX 20.0P-S2 or APX 10.0P-S2+ APX 15.0P-S2 OR APX25.0P-S2	APX 25.0P-S2
6		27	APX 5.0P-S2+ APX 25.0P-S2 OR APX 10.0P-S2+ APX 20.0P-S2 OR APX 15.0P-S2+ APX 15.0P-S2 OR APX30.0P-S2	APX 30.0P-S2
7		31.5	APX 5.0P-S2+ APX 30.0P-S2 OR APX 10.0P-S2 + APX 25.0P-S2 OR APX 15.0P-S2+ APX 20.0P-S2	APX 15.0P-S2 + APX 20.0P-S2
8		36	APX 10.0P-S2+ APX 30.0P-S2 or APX 20.0P-S2+ APX 20.0P-S2 OR APX 15.0P-S2+ APX 25.0P-S2	APX 20.0P-S2 + APX 20.0P-S2
9		30.5	APX 15.0P-S2+ APX 30.0P-S2 or APX20.0P-S2+ APX 25.0P-S2	APX 25.0P-S2 + APX 20.0P-S2
10		45	APX 20.0P-S2+ APX 30.0P-S2 or APX 25.0P-S2+ APX 25.0P-S2	APX 25.0P-S2 + APX 25.0P-S2
11		49.5	APX 25.0P-S2+ APX 30.0P -S2	APX 25.0P-S2+ APX 30.0P-S2
12		54	APX 30.0P-S2+ APX 30.0P-S2	APX 30.0P-S2+ APX 30.0P-S2

Note:
1. Batteries are not integrated within the inverter and shall be installed according to local regulation.
2. APX high voltage battery system is composed of a high voltage controller APX 98020-P1 or APX 98034-P2 plus 1 to 6 battery packs APX 5.0P-B1
3. Every battery system have one controller. System with suffix S1 uses the controller APX98020-P1 and system with suffix S2 uses the controller APX98034-P2
4.MID 11-30KTL3-XH has two independent battery imports, and can be connected to a maximum of two battery system for a total of 12 battery packs. The possible combinations and recommended configurations are detailed in the table above.

THis Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230418R1

Inverter conversion device:

Model	MID 11KTL3-XH	MID 12KTL3-XH	MID 13KTL3-XH	MID 15KTL3-XH	MID 17KTL3-XH	MID 20KTL3-XH	MID 25KTL3-XH	MID 30KTL3-XH
PV data								
Max. PV voltage	1100 d.c.V							
PV voltage range	160-1000 d.c.V							
Max.input current	32 d.c.A*2						32 d.c.A*3	
PV Isc	40 d.c.A*2						40 d.c.A*3	
DC data								
Max. DC voltage	1100 d.c.V							
DC voltage range	600-980 d.c.V							
Max. DC current	25 d.c.A*2							
Max. input/output power	30/11kW	30/12kW	30/13kW	30/15kW	30/17kW	30/20kW	30/25kW	30/30kW
AC data								
Max. output power	11kW	12kW	13kW	15kW	17kW	20kW	25kW	30kW
Max. apparent power	12.1kVA	13.2kVA	14.3kVA	16.5kVA	18.7kVA	22kVA	27.5kVA	30kVA

THis Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230418R1

Nominal output voltage	3W/N/PE, 230/400 a.c.V							
Nominal output Frequency	50/60Hz							
Max. input/output current	18.3/18.3 a.c.A	20/20 a.c.A	21.7/21.7 a.c.A	25/25 a.c.A	28.3/28.3 a.c.A	33.3/33.3 a.c.A	41.6/41.6 a.c.A	45.5/45.5 a.c.A
Power factor range	0.8Leading~0.8Lagging							
Safety level	Class I							
Ingress Protection	IP 66							
Operation Ambient Temperature	-25℃ - +60℃							
Software version	DN1.0							
Model	MID 11KTL3-XA	MID 12KTL3-XA	MID 13KTL3-XA	MID 15KTL3-XA	MID 17KTL3-XA	MID 20KTL3-XA	MID 25KTL3-XA	MID 30KTL3-XA
AC intput/output data								
Nominal intput/output power	11/11kW	12/12kW	13/13kW	15/15kW	17/17kW	20/20kW	25/25kW	30/30kW
Max. output apparent power	11kVA	12kVA	13kVA	15kVA	17kVA	20kVA	25kVA	30kVA
Max intput/output current	16.7/16.7 a.c.A	18.2/18.2 a.c.A	19.7/19.7 a.c.A	22.7/22.7 a.c.A	25.8/25.8 a.c.A	30.3/30.3 a.c.A	37.9/37.9 a.c.A	45.5/45.5 a.c.A

THis Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230418R1

Nominal voltage	3W/N/PE, 230/400 a.c.V							
Nominal output Frequency	50/60Hz							
Power factor range	0.8Leading~0.8Lagging							
Battery data								
Battery voltage range	600-980 d.c.V							
Max. charging and discharging current	18.3 d.c.A	20 d.c.A	21.7 d.c.A	25 d.c.A	28.3 d.c.A	33.3 d.c.A	41.7 d.c.A	50 d.c.A
Type of battery	Lithium							
Others								
Safety level	Class I							
Ingress Protection	IP 66							
Operation Ambient Temperature	-25℃ - +60℃							
Software version	DN1.0							

THis Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230418R1

Battery system	APX 5.0P-S1	APX 10.0P-S1	APX 15.0P-S1	APX 20.0P-S1	APX 25.0P-S1	APX 30.0P-S1
High Voltage Controller Model	APX 98020-P1					
Battery module	APX 5.0P-B1					
Number of modules	1	2	3	4	5	6
BMS Firmware Version	QAba Version WA1.0					
Battery system	APX 5.0P-S2	APX 10.0P-S2	APX 15.0P-S2	APX 20.0P-S2	APX 25.0P-S2	APX 30.0P-S2
High Voltage Controller Model	APX 98034-P2					
Battery module	APX 5.0P-B1					
Number of modules	1	2	3	4	5	6
BMS Firmware Version	QAba Version WA1.0					

THis Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230418R1

Smarter AC interface:

Model	SYN 50-XH-30	SYN 100-XH-30
Nominal grid voltage	3W/N/PE, 230/400a.c.V	
Range of grid voltage	312-485Vac (L-L)	
Max. Grid current	63A	125A
Max. continuous grid current	50A	90A
Nominal grid frequency	50/60Hz	
Range of grid frequency	45-65Hz	
Nominal inverter voltage	3W/N/PE, 230/400Vac, 50/60Hz	
Max. continuous inverter input current	26.1A	58A
Nominal backup voltage	3W/N/PE, 230/400Vac, 50/60Hz	
Max. backup output current	26.1A	58A
Ingress protection	IP65	
Operation ambient temperature	-25℃ - +50℃	

THis Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230418R1

TYPE OF APPARATUS: Energy Storage system			
Number of phases: three-phase			
DISCONNECTION DEVICE	INTERFACE PROTECTION DEVICE	DEVICE FOR CONVERSION	ROTATING GENERATOR DEVICE
		☒	
Static converters in systems with capacity up to 11.08 kW.(for MID 11KTL3-XA, MID 11KTL3-XH) Static converters in systems with capacity more than 11.08 kW.(for MID 12-30KTL3-XH, MID 12-30KTL3-XA) The devices are capable to limit I_{dc} to 0.5% of the rated grid current. Having examined the ISO 9001 certificate of the manufacturer No.: 02421Q32012223R0M, issued by: SHENZHEN UNIVERSAL CERTIFICATION CENTRE Co., Ltd.			

THis Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.