

Certificate of Conformity

No. ESY 075386 0232 Rev. 00

Holder of Certificate: **Shenzhen Kstar New Energy Company Limited**
The 9th Floor, R&D Building
Kstar Industrial Park, Guangming Hi-tech Industrial Zone
518107 Shenzhen, Guangdong Province
PEOPLE'S REPUBLIC OF CHINA

Product: **Converter
(PV Inverter)**

Model(s): **G40KT, G40KT1, G40KT2, G40KT3, G50KT,
G50KT1, G60KT, G60KT1, G70KT, G70KT1,
G75KT, G75KT1, G80KT, G80KT1**

Parameters: See page 3-5

Applicable standards: EN 50549-1:2019/AC:2019
RfG:2016
NC RfG:2018
PTPIREE:2021

This Certificate of Conformity confirms the compliance with the above listed standards on a voluntary basis. It refers only to the sample submitted to TÜV SÜD Product Service GmbH and does not certify the quality or safety of the serial products. It was issued according to TÜV SÜD Product Service certification program Photovoltaics and Grid Integration. For details see: www.tuvsud.com/ps-cert

Test report no.: 64290233039001

Date, 2024-01-29



(Billy Qiu)

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Technical Certifier (Billy Qiu) appointed by Certification Body TÜV SÜD Product Service GmbH performed assessment of the products listed in this certification in the place: Ridlerstraße 65, 80339 Munich, Germany.

<p>Test requirement</p>	<p>The certification complies with the requirements of the following documents for Type A/B PGM installations:</p> <p>EN 50549-1:2019/AC:2019 Requirements for generating plants to be connected in parallel with distribution networks - Part 1: Connection to a LV distribution network -Generating plants up to and including Type B</p> <p>RfG:2016 Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for the connection of generating units to the Network (OJ EU L 112/1 of 27.4.2016)</p> <p>NC RfG:2018 General applicability requirements resulting from EU commission regulation 2016/631 of of 14 April 2016 establishing a network code concerning the requirements for with regard to the connection of generating units to the grid (NC RfG-2018)- approved by the Decision of the President of the Energy Regulatory Office DRE.WOSE.7128.550.2.2018.ZJ dated 2 January 2019.</p> <p>PTPiREE:2021 Conditions and procedures for the use of certificates in the process of connecting modules generation modules to the power grid V1.2</p>
<p>Type of certification programme</p>	<p>1(a) according to EN ISO/IEC 17067 Based on Photovoltaics and Grid Integration Certification Program (Revision 6,Dated 5 Dec 2021) for Poland Grid Code</p>
<p>Manufacturer & Address of manufacturing site</p>	<p>Shenzhen Kstar New Energy Company Limited The 9th Floor, R&D Building, Kstar Industrial Park, Guangming Hi-tech Industrial Zone,Shenzhen, Guangdong Province, PEOPLE'S REPUBLIC OF CHINA</p>
<p>Software version</p>	<p>DSP:0.2.0; ARM: 0.3.7</p>
<p>Certificate expiry date</p>	<p>2029-01-28</p>

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Parameters:

Model:	G40KT	G40KT1	G40KT2	G40KT3
PV terminal parameters				
Maximum PV voltage [V _{DC}]	1100			
Rated voltage [V _{DC}]	650			
MPPT voltage range [V _{DC}]	200 ÷ 1000			
MPPT voltage range (full load) [V _{DC}]	550 ÷ 850			
Maximum input current [A _{DC}]	32/32/32	40/20/20	32/32/32/32	20/20/20/20
Isc PV [A _{DC}]	48/48/48	60/30/30	48/48/48/48	30/30/30/30
MPPT Tracker number	3	3	4	4
Maximum input power [kW]	48	48	48	48
Grid terminal parameters				
Rated output active power [kW]	40			
Maximum output active power [kW]	44			
Maximum output apparent power [kVA]	44			
Rated output current [A _{AC}]	58.0			
Maximum continuous input current [A _{AC}]	66.7			
Rated input frequency [Hz]	50			
Rated input voltage [V _{AC}]	3P+N+PE, 230/400			
Power factor range	0.8 inductive ÷ 0.8 capacitive			

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Model:	G50KT	G50KT1	G60KT	G60KT1	G70KT
PV terminal parameters					
Maximum PV voltage [V _{DC}]	1100				
Rated voltage [V _{DC}]	650				
MPPT voltage range [V _{DC}]	200 ÷ 1000				
MPPT voltage range (full load) [V _{DC}]	550 ÷ 850				
Maximum input current [A _{DC}]	32/32/32/32	40/20/20/20	32/32/32/32	40/40/20/20	45/45/45/45
Isc PV [A _{DC}]	48/48/48/48	60/30/30/30	48/48/48/48	60/60/30/30	60/60/60/60
MPPT Tracker number	4	4	4	4	4
Maximum input power [kW]	60	60	72	72	84
Grid terminal parameters					
Rated output active power [kW]	50		60		70
Maximum output active power [kW]	55		66		77
Maximum output apparent power [kVA]	55		66		77
Rated output current [A _{AC}]	72.5		87.0		101.4
Maximum continuous input current [A _{AC}]	83.3		100.0		116.7
Rated input frequency [Hz]	50				
Rated input voltage [V _{AC}]	3P+N+PE, 230/400				
Power factor range	0.8 inductive ÷ 0.8 capacitive				

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Model:	G70KT1	G75KT	G75KT1	G80KT	G80KT1
PV terminal parameters					
Maximum PV voltage [V _{DC}]	1100				
Rated voltage [V _{DC}]	650				
MPPT voltage range [V _{DC}]	200 ÷ 1000				
MPPT voltage range (full load) [V _{DC}]	550 ÷ 850				
Maximum input current [A _{DC}]	45/45/45/45	45/45/45/45	45/45/45/45	45/45/45/45	45/45/45/45
Isc PV [A _{DC}]	60/60/60/60	60/60/60/60	60/60/60/60	60/60/60/60	60/60/60/60
MPPT Tracker number	4	4	4	4	4
Maximum input power [kW]	84	90	90	96	96
Grid terminal parameters					
Rated output active power [kW]	70	75		80	
Maximum output active power [kW]	77	82.5		88	
Maximum output apparent power [kVA]	77	82.5		88	
Rated output current [A _{AC}]	101.4	108.7		115.9	
Maximum continuous input current [A _{AC}]	116.7	125.0		127.5	
Rated input frequency [Hz]	50				
Rated input voltage [V _{AC}]	3P+N+PE, 230/400				
Power factor range	0.8 inductive ÷ 0.8 capacitive				

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Scope of assessment and results

Clause of NfG	Requirement	Type A	Type B	Type C	Type D	Assessment Result
Article 13.1 (a)	Frequency range	Y	Y	-	-	Pass
Article 13.1 (b)	Ability to withstand the rate of change of frequency (RoCoF)	Y	Y	-	-	Pass
Article 13.2	Limited frequency sensitive mode — overfrequency (LFSM-O)	Y	Y	-	-	Pass
Article 13.4 & 13.5	Maximum power capability reduction with falling frequency	Y	Y	-	-	Pass
Article 13.6	Remote ceasing active power	Y	Y	-	-	Pass
Article 13.7 & 14.4	Automatic connection to the network	Y	Y	-	-	Pass
Article 14.2	PGM remote control	-	Y	-	-	Pass
Article 14.3 & 16.3 & 20.2 (b, c) & 20.3	Ability to withstand voltage dips for terminals below 110 kV & Introduction of fast current & Restore of active power after fault	-	Y	-	-	Pass
Article 20.2 (a)	Voltage support by reactive power – Capabilities	-	Y	-	-	Pass