

Test Verification of Conformity

In the basis of the tests undertaken, the sample(s) of the below product have been found to comply with the requirements of the referenced specifications at the time the tests were carried out.

Applicant Name & Address:	SHENZHEN GROWATT NEW ENERGY TECHNOLOGY CO., LTD 1st East & 3rd Floor of Building A, Building B, Jiayu Industrial Park, #28, GuangHui Road, LongTeng Community, Shiyan Street, Baoan District, Shenzhen, P.R.China
Product Description:	PV Grid inverter
Ratings & Principle Characteristics:	See Annex to Test Verification of Conformity
Models:	Growatt 8000 TL3-S, Growatt 9000 TL3-S Growatt 10000 TL3-S, Growatt 11000 TL3-S
Brand Name:	Growatt(logo)
Relevant Standards	EN 50438: 2013, Requirements for micro-generating plants to be connected in parallel with public low-voltage distribution networks Type Verification for Ireland
Verification Issuing Office:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Date of Tests:	28 Feb., 2017 – 09 Mar., 2017
Test Report Number(s):	161118023GZU-003

This verification is part of the full test report(s) and should be read in conjunction with them.



Signature



Name: Grady Ye
Position: Assistant Manager
Date: 17 Mar 2017

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Annex to Verification of Conformity

This is an Annex to Test Verification of Conformity with Verification/Report Number(s):
161118023GZU-003. the issuing office is Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
(Address: Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD,
Guangzhou, China).

Ratings & Principle Characteristics:

For all models: Ambient Temperature: -25°C - +60°C, IP65, Class I
AC output rating: Nominal Output Voltage: 3W/N/PE 230Vac/400Vac;
Nominal Frequency: 50Hz; Power Factor:0.8 Leading – 0.8 Lagging

For model: Growatt 8000 TL3-S
DC input:
Max. PV Voltage: 1000Vdc; DC Voltage Range: 160-1000Vdc; MPPT Voltage Range: 360-850Vdc; PV Isc: 16A/16A
AC output:
Max. Apparent Power: 8.8kVA; Max Output Current: 3*13.3A;

For model: Growatt 9000 TL3-S
DC input:
Max. PV Voltage: 1000Vdc; DC Voltage Range: 160-1000Vdc; MPPT Voltage Range: 400-850Vdc; PV Isc: 16A/16A
AC output:
Max. Apparent Power: 9.9kVA; Max Output Current: 3*15A;

For model: Growatt 10000 TL3-S
DC input:
Max. PV Voltage: 1000Vdc; DC Voltage Range: 160-1000Vdc; MPPT Voltage Range: 450-850Vdc; PV Isc: 16A/16A
AC output:
Max. Apparent Power: 11kVA; Max Output Current: 3*16.7A;

For model: Growatt 11000 TL3-S
DC input:
Max. PV Voltage: 1000Vdc; DC Voltage Range: 160-1000Vdc; MPPT Voltage Range: 450-850Vdc; PV Isc: 16A/16A
AC output:
Max. Apparent Power: 12.1kVA; Max Output Current: 3*18.3A;

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Guangzhou, China).

D.2.3 Over-/under-voltage				P	
		Over Voltage		Under Voltage	
Parameter		Voltage	Disconnection Time	Voltage	Disconnection Time
Protection limit		253V	0.5s	207V	0.5s
Actual setting (as applied to interface protection)		253V	0.4s	207V	0.4s
Trip value (test result)-1	All phases	253.36V	0.4035s	208.55V	0.454s
	Phase R	253.49V	0.3984s	208.31V	0.446s
	Phase S	253.59V	0.4150s	209.18V	0.459s
	Phase T	253.70V	0.3974s	207.17V	0.450s
Trip value (test result)-2	All phases	253.38V	0.4030s	207.18V	0.433s
	Phase R	253.38V	0.4059s	207.25V	0.438s
	Phase S	253.40V	0.4150s	209.31V	0.442s
	Phase T	253.13V	0.3899s	207.16	0.440s

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Trip value (test result)-3	All phases	253.37V	0.4005s	207.23V	0.434s
	Phase R	253.65V	0.4074s	207.03V	0.454s
	Phase S	253.41V	0.4190s	209.23V	0.454s
	Phase T	253.10V	0.4089s	207.09V	0.451s
Trip value (test result)-4	All phases	253.39V	0.4065s	207.07V	0.449s
	Phase R	253.47V	0.4059s	207.27V	0.448s
	Phase S	253.43V	0.4050s	209.18V	0.447s
	Phase T	253.28V	0.4009s	207.88V	0.433s
Trip value (test result)-5	All phases	253.41V	0.4075s	207.19V	0.430s
	Phase R	253.94V	0.4134s	207.28V	0.445s
	Phase S	254.66V	0.4170s	209.21V	0.447s
	Phase T	253.32V	0.4039s	207.02V	0.450s



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Over- /under-frequency				
Parameter	Over Frequency		Under Frequency	
	Frequency	Time	Frequency	Time
Protection limit	50.5Hz	0.5s	48Hz	0.5s
Actual setting (as applied to interface protection)	50.5Hz	0.4s	48Hz	0.4s
Trip value (test result)-1	50.52Hz	0.462s	48.01Hz	0.426s
Trip value (test result)-2	50.52Hz	0.470s	48.01Hz	0.414s
Trip value (test result)-3	50.52Hz	0.438s	48.01Hz	0.422s
Trip value (test result)-4	50.52Hz	0.462s	48.01Hz	0.420s
Trip value (test result)-5	50.52Hz	0.472s	48.01Hz	0.416s

LOM test						
Method used	EN 62116					
Balancing load on island network	33% of -5% Q Test 22	66% of -5% Q Test 12	100% of -5% P Test 5	33% of +5% Q Test 31	66% of +5% Q Test 21	100% of +5% P Test 10
Trip time	129.0ms	103.0ms	126.0ms	118.0ms	98.0ms	123.0ms


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