



Manufacturer's Declaration for Type A Power Park Modules equipped with PV converters

Compliance monitoring for equipment certification as a part of A type of power generating modules
compliance with EU Regulation 2016/631 of 14 April 2016

establishing a network code on requirements for grid connection of generators, (NC RfG)

regarding to:

TOR Erzeuger:

**Anschluss und Parallelbetrieb von Stromerzeugungsanlagen des Typs A und von
Kleinsterzeugungsanlagen**

For the following																									
Equipment/Series:	: Huawei FusionSolar SUN2000 Inverter : Huawei FusionHome SUN2000 Inverter																								
Models:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">: SUN2000-12KTL-M0/M2 Huawei</td> <td style="width: 50%; border: none;">: SUN2000L-2KTL /Huawei</td> </tr> <tr> <td style="border: none;">: SUN2000-15KTL-M0/M2 Huawei</td> <td style="border: none;">: SUN2000L-3KTL /Huawei</td> </tr> <tr> <td style="border: none;">: SUN2000-17KTL-M0/ M2 Huawei</td> <td style="border: none;">: SUN2000L-3.68KTL /Huawei</td> </tr> <tr> <td style="border: none;">: SUN2000-20KTL-M0/ M2 Huawei</td> <td style="border: none;">: SUN2000L-4KTL /Huawei</td> </tr> <tr> <td style="border: none;">: SUN2000-33KTL-A /Huawei</td> <td style="border: none;">: SUN2000L-4.6KTL /Huawei</td> </tr> <tr> <td style="border: none;">: SUN2000-36KTL /Huawei</td> <td style="border: none;">: SUN2000L-5KTL /Huawei</td> </tr> <tr> <td style="border: none;">: SUN2000-50KTL-M0 /Huawei</td> <td style="border: none;">: SUN2000-3KTL-M0/M1 /Huawei</td> </tr> <tr> <td style="border: none;">: SUN2000-60KTL-M0 /Huawei</td> <td style="border: none;">: SUN2000-4KTL- M0/M1 /Huawei</td> </tr> <tr> <td style="border: none;"></td> <td style="border: none;">: SUN2000-5KTL- M0/M1 /Huawei</td> </tr> <tr> <td style="border: none;"></td> <td style="border: none;">: SUN2000-6KTL- M0/M1 /Huawei</td> </tr> <tr> <td style="border: none;"></td> <td style="border: none;">: SUN2000-8KTL- M0/M1 /Huawei</td> </tr> <tr> <td style="border: none;"></td> <td style="border: none;">: SUN2000-10KTL- M0/M1 /Huawei</td> </tr> </table>	: SUN2000-12KTL-M0/M2 Huawei	: SUN2000L-2KTL /Huawei	: SUN2000-15KTL-M0/M2 Huawei	: SUN2000L-3KTL /Huawei	: SUN2000-17KTL-M0/ M2 Huawei	: SUN2000L-3.68KTL /Huawei	: SUN2000-20KTL-M0/ M2 Huawei	: SUN2000L-4KTL /Huawei	: SUN2000-33KTL-A /Huawei	: SUN2000L-4.6KTL /Huawei	: SUN2000-36KTL /Huawei	: SUN2000L-5KTL /Huawei	: SUN2000-50KTL-M0 /Huawei	: SUN2000-3KTL-M0/M1 /Huawei	: SUN2000-60KTL-M0 /Huawei	: SUN2000-4KTL- M0/M1 /Huawei		: SUN2000-5KTL- M0/M1 /Huawei		: SUN2000-6KTL- M0/M1 /Huawei		: SUN2000-8KTL- M0/M1 /Huawei		: SUN2000-10KTL- M0/M1 /Huawei
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Manufacturer's Name	: Huawei Technologies Co., Ltd.																								
Manufacturer's Address	: Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C.																								

Statement Content:

According to “**TOR Erzeuger: Anschluss und Parallelbetrieb von Stromerzeugungsanlagen des Typs A und von Kleinsterzeugungsanlagen**” established by local regulator and procedures for use relevant equipment certificates (NC RfG, Article 41, letter a,f,g) established by relevant system operator. Huawei SUN2000 Inverter as a Power Park Modules (PPM) component comply with requirements listed in **Table 1** for type A power generation modules.

Listed features are supported by default or will require manual adjustment based on user manual during first commissioning (highlighted). All settings are password protected and consecutive changes will be logged by the device.

For grid code <<Austria>>				
Protection parameters				
Parameter	Default value	TOR Type A value	Adjustable range	Unit
10 minute OV protection	255.3	255.3	[230.0, 345.0]	V
10 minute OV protection time	100	100	[50, 7200000]	Ms
Level-1 OV protection	264.5	264.5	[230.0, 345.0]	V
Level-1 OV protection time	100	100	[50, 7200000]	ms
Level-1 UV protection	184.0	184.0	[34.5, 230.0]	V
Level-1 UV protection time	200	1500	[50, 7200000]	ms
Level-2 UV protection	None	57,5	[34.5, 230.0]	V
Level-2 UV protection time	None	500	[50, 7200000]	ms
Level-1 OF protection	51.50	51.50	[50.00, 60.00]	Hz
Level-1 OF protection time	100	100	[50, 7200000]	ms
Level-1 UF protection	47.50	47.50	[40.00, 50.00]	Hz
Level-1 UF protection time	100	100	[50, 7200000]	ms
Reconnection parameters				
Parameter	Default value	TOR Type A value	Adjustable range	Unit
Grid connection duration after power grid recovery	300	60	[0, 7200]	s
Grid reconnection voltage upper limit	250.7	250.7	[230.0, 312.8]	V
Grid reconnection voltage lower limit	195.5	195.5	[103.5, 218.5]	V
Grid reconnection frequency upper limit	50.05	50.10	[50.00, 56.00]	Hz
Grid reconnection frequency lower limit	47.50	47.50	[42.50, 50.00]	Hz
Soft start time after grid failure	600	600	[20, 900]	s

Supported features					
Parameter	Default value	TOR Type A value	Adj. range	Unit	Comment
LVRT	Disable	Enable	Disable/Enable	-	-
LVRT triggering threshold	184.0	184.0	[115.0, 230.0]	V	-
LVRT reactive power compensation factor	2.0	0	[0.0, 10.0]	-	no current injection
Overfrequency derating (LFSM-O)	Enable	Enable	Disable/Enable	-	-
Trigger frequency of over frequency derating	50.20	50.20	[45.00, 55.00]	Hz	-
Cutoff frequency of overfrequency derating	51.50	51.50	[45.00, 55.00]		-
Cutoff power of overfrequency derating	48	48	[0, 100]	%	40%/Hz
Reactive power control¹	Disable	Enable	Disable/Enable	-	-
Power factor fix control	1	1	(+/-) 0.80 – 1.00	-	Default for grid code Austria set cos φ =1
cos φ – P/Pn characteristic curve	Adjustable	5.3.4.1 ²	(+/-) 0.80 – 1.00	-	P/Pn [%] - cos φ
<i>cosφ – P/Pn characteristic curve</i> The setting parameter can be adjusted manually:			Point	cos φ	P/Pn (%)
			P0	1	0
			P1	1	0
			P2	1	50
			P3	-0,95	100
Q-U characteristic curve*	Adjustable	5.3.4.2 ²	(+/-) 60% Sn	-	U/Un – Q/S
<i>Q-U characteristic curve</i> <i>*Available with Smartlogger device</i> The setting parameter can be adjusted manually:			Point	Q/Sn (%)	U/Un (%)
			P0	43,6	92
			P1	0	96
			P2	0	105
			P3	-43,6	108
Reactive Power Fix Control	Adjustable	5.3.4 ²	(+/-) 60% Sn	-	Q fix
Voltage derating (Active power derating for voltage rise)	Disable	Enable	Disable/Enable	Available from 01.01.2020	
Voltage derating start point	None	253,0	[230, 312.8]	V	5.3.6 ²
Voltage derating stop point	None	257,6	[230, 312.8]	V	5.3.6 ²

¹Reactive power control response based on TOR D4 test report: PT1 (3tau = 10s); parameters are fixed (adjustable step-response will be implemented)

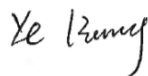
²According to: TOR Erzeuger: Anschluss und Parallelbetrieb von Stromerzeugungsanlagen des Typs A und von Kleinsterzeugungsanlagen

Table 1

On behalf of Huawei Technologies

Yours Faithfully,

Signed:



Date: 6.02.2020

Liang, Ye
Director of Inverter Solution Sales & Marketing, Europe