



<b>Product Certificate Number</b>	<b>11630-CER-E1</b>
<b>Applicant</b>	Huawei Technologies España Parque Empresarial Las Tablas, Federico Mompou 5, Ed. 1 planta 2 28050 Las Tablas. Madrid, Spain.
<b>Series</b>	String Inverters SUN 2000-KTL, IA240 Series, EM24 DIN, CTD-1X,
<b>Model/</b>	SUN2000-36KTL, Moxa / IA240, Carlo Gavazzi / EM24-DIN.AV5.3.D.IS.X, Carlo Gavazzi / CTD-1X.200.5A.XXX
<b>Variant models</b>	Inverters: SUN 2000-28KTL, SUN 2000-33KTL-A, SUN 2000-42KTL
<b>Type of generating unit</b>	Three Phase Inverter / Control Manager / Power Analyzer / Current sensor
<b>Technical Data</b>	See page 2-6
<b>Standard</b>	<b>UNE 217001 IN: 2015:</b> Requisitos y ensayos para sistemas que eviten el vertido de energía a la red de distribución.

Having assessed the test report number: 11630-TR performed by Certification Entity for Renewable Energies based on the requirements of the EN ISO/IEC 17025:2005

The above-mentioned generating unit complies with the requirements of the: UNE 217001 IN: 2015: Requisitos y ensayos para sistemas que eviten el vertido de energía a la red de distribución.

This certification is according the CERE internal process PET-CERE-09 Rev 11 based on the requirements of the EN ISO/IEC 17065:2012. For this certification process the conformity assessment activities were based on:

- Testing of production samples selected by CERE.
- Audit of quality system according ISO 9001 with certificate number: ES13/14411 issued by a certification body accredited according EN ISO/IEC 17021.
- Inspection of the software implementation process.

This certificate cancels and supersedes the certificate number: 11630-CER.

Madrid, October 18, 2017. This certificate is valid until October 18, 2020

Miguel Martínez Lavin  
Certification Manager

Inverters: HUAWEI

Technical Specifications	SUN2000-28KTL	SUN2000-33KTL-A
<b>Input</b>		
Max. DC Usable Power	28200 W	30600 W
Max. Input Voltage	1000 V	1100 V
Max. Current per MPPT	18 A	22 A
Max. Short Circuit Current per MPPT	25 A	30 A
Max. input current (3 MPPTs)	54 A	200 V / 250 V
Min. Operating Voltage	200 V	480 V ~ 800 V
MPPT Voltage Range	480 V ~ 800 V	200 V ~ 1000 V
Rated Input Voltage	620 V	620 V
Max. Number of Inputs	6	8
Number of MPP Trackers	3	4
<b>Output</b>		
Rated AC Active Power	27500 W	30000 W
Max. AC Apparent Power	--	33000 VA
Max. AC Active Power (cos $\Phi$ = 1)	--	30000 W
Rated Output Voltage	227 V / 480 V, 3W+PE	230 V / 400 V, default 3W+N+PE
Rated AC Grid Frequency	50 Hz / 60 Hz	50 Hz / 60 Hz
Max. Output Current	33,5 A	48 A (@400V)
Adjustable Power Factor	0,8 LG ... 0,8 LD	0,8 LG ... 0,8 LD
<b>Protection</b>		
Input-side Disconnection Device	Yes	Yes
Anti-islanding Protection	Yes	Yes
AC Overcurrent Protection	Yes	Yes
DC Reverse-Polarity Protection	Yes	Yes
PV-array String Fault Monitoring	Yes	Yes
DC Surge Arrester	Type II	Type II
AC Surge Arrester	Type III	Type II
Insulation Detection	Yes	Yes
Residual Current Monitoring Unit	Yes	Yes

Technical Specifications	SUN2000-36KTL	SUN2000-42KTL
<b>Input</b>		
<b>Max. DC Usable Power</b>	40800 W	47900 W
<b>Max. Input Voltage</b>	1100 V	1100 V
<b>Max. Current per MPPT</b>	22 A	22 A
<b>Max. Short Circuit Current per MPPT</b>	30 A	30 A
<b>Min. Operating Voltage / Start Input Voltage</b>	200 V / 250 V	200 V / 250 V
<b>Full Power MPPT Voltage Range</b>	480 V ~ 850 V @380Vac / 400 Vac 580V~850V @480Vac	580 V ~ 850 V
<b>MPPT Operating Voltage Range</b>	200 V ~ 1000 V	200 V ~ 1000 V
<b>Rated Input Voltage</b>	620 V @380Vac / 400Vac 720V @480Vac	720 V
<b>Max. Number of Inputs</b>	8	8
<b>Number of MPP Trackers</b>	4	4
<b>Output</b>		
<b>Rated AC Active Power</b>	36000 W	42000 W
<b>Max. AC Apparent Power</b>	40000 VA	47000 VA
<b>Max. AC Active Power (cos <math>\Phi</math> = 1)</b>	Default 40000W; 36000W optional in settings	Default 47000W; 42000W optional in settings
<b>Rated Output Voltage</b>	220 V / 380 V, 230 V / 400 V, de- fault 3W+N+PE; 3W+PE optional in settings 227V/480V, 3W+PE	277 V / 480 V, 3W+PE
<b>Rated AC Grid Frequency</b>	50 Hz / 60 Hz	50 Hz / 60 Hz
<b>Max. Output Current</b>	60,8 A / 57.8 A / 48,2 A @380V/400V/480V	56,6 A
<b>Adjustable Power Factor</b>	0,8 LG ... 0,8 LD	0,8 LG ... 0,8 LD
<b>Protection</b>		
<b>Input-side Disconnection Device</b>	Yes	Yes
<b>Anti-islanding Protection</b>	Yes	Yes
<b>AC Overcurrent Protection</b>	Yes	Yes
<b>DC Reverse-Polarity Protection</b>	Yes	Yes
<b>PV-array String Fault Monitoring</b>	Yes	Yes
<b>DC Surge Arrester</b>	Type II	Type II
<b>AC Surge Arrester</b>	Type II	Type II
<b>Insulation Detection</b>	Yes	Yes
<b>Residual Current Monitoring Unit</b>	Yes	Yes

Control manager:

<b>Trademark/Model:</b>	<b>Moxa/IA240</b>
CPU	Moxa "ART" ARM9 32-bit CPU 192 MHz
RAM	64MB
Flash	16 MB
OS	Linux
LAN	Auto-sensing 10/100 Mbps x 2 with built-in 1.5 KV magnetic isolation protection; RJ45 Connector
Serial Ports	RS-232/422/485 x 4, RJ45 Connector
Serial Protection	15 KV ESD for all signals
Power input	12 to 48 VDC
Power consumption	7W
Operating temperature	-10 to 60°C, (14 to 140°F), 5 to 95% RH
Storage temperature	-20 to 80°C, (-4 to 176°F), 5 to 95% RH
Baudrate	50 bps to 921.6 kbps

Relay:

<b>Trademark/Model:</b>	<b>Moxa/loLogik E1214</b>
<b>Inputs and Outputs</b>	
Digital inputs	6 channels
Relay Outputs	6 channels
Isolation	3 k VDC or 2k Vrms
<b>Digital Input</b>	
Sensor Type	Wet Contact (NPN or PNP), Dry Contact
I/O Mode	DI OR Event Counter
Counter frequency	250 Hz
Digital Filtering Time Interval	Software Configurable
<b>Relay Output</b>	
Contact current rating	Resistive Load: 5 A @ 30 VDC, 250 VAC, 110 VAC
Breakdown voltage	500 VAC
Relay On/Off time	1500 ms (max.)

Power Analyzer:

<b>Trademark/Model:</b>	<b>Carlo Gavazzi/EM24-DIN.AV5.3.D.IS.X</b>
<b>Range codes</b>	
Rated Voltage	3x230 V (400) V
Current range	0,05 – 5 (10) A
Sampling rate	1600 samples/s @ 50 Hz
Operating temperature	-25°C to 55°C
Accuracy	0,5%

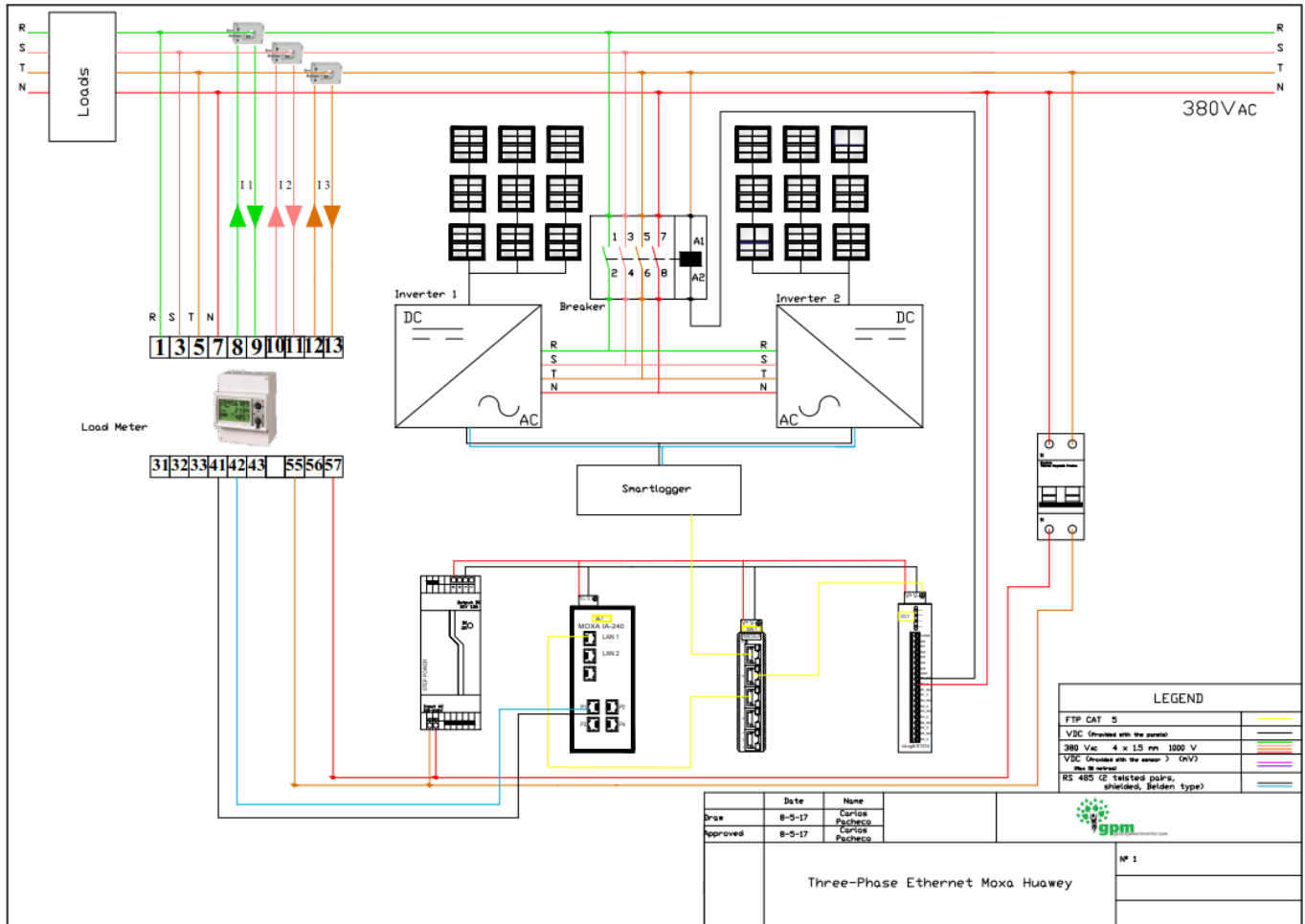
Current sensor:

<b>Trademark/Model:</b>	<b>Carlo Gavazzi/CTD-1X.200.5A.XXX</b>
<b>Input Specifications</b>	
Operating frequency	48 to 62 Hz
Rated primary current	200A
Max. System voltage	0.72 kV
Rated insulation level	3 kV/1min. @50 Hz
Insulation class	E (max 75 °C)
Short-time current rating	
I <sub>th</sub>	Typical 100I <sub>n</sub> /1s
I <sub>dyn</sub>	2.5 I <sub>th</sub>
<b>Output Specifications</b>	
Rated secondary current	5 A
Accuracy	0,5%

Switch of grid (Contactor):

<b>Trademark/Model:</b>	<b>Schneider/LC1DT80AF7</b>
Contactor application	Resistive load
Utilisation category	AC-1
System Voltage	690 V AC 25...400 Hz power circuit
I <sub>e</sub> rated operational current	80 A
U <sub>c</sub> control circuit voltage	110 V
Overvoltage category	III
I <sub>th</sub>	80 A
U <sub>i</sub> rated insulation voltage	690 V

Electrical Diagram:



The sample selected to test was representative of the production.  
The sample was selected in:

(1) Huawei Technologies España  
Parque empresarial Las Tablas, Federico Mampou 5, edificio 1 28050 Madrid

(2) Green Power Monitor  
Av. de Josep Tarradellas, 123-127  
08029 Barcelona, Spain

Sample Report Number:

(1) 11630-1-TM  
(2) 11630-2-TM

The inspection of manufacturing process was performed in:  
On October 5, 2017

Tempel Group  
Carrer del Cobalt, 4  
08907 L'Hospitalet de Llobregat  
Barcelona, Spain

Inspection Report Number:

11630-IF