





Specification of the Test Object (Oggetto Del Test)	
CEI 11-20 (2004-08) e alla norma ENEL DK 5940 Ed. 2.2 (Aprile 2007)	
Automatic disconnecting facility for photovoltaic installations	
Rapporto prove numero.....:	08TH0114-YURA-DK5940_0
Testato da (nome e firma)	Frederic Schmitt 
Approvato da (nome e firma)	Andreas Aufmuth 
Data d'emanazione	2009-11-04
Testing Laboratory Name	Bureau Veritas Consumer Product Services GmbH
Nome del laboratorio di certificazione:	
Indirizzo	Businesspark A96, 86842 Türkheim, Germania
Prove effettuate in	Bureau Veritas Consumer Product Services GmbH
Indirizzo	Businesspark A96, 86842 Türkheim, Germania
Nome del Richiedente	Yuraku S.r.l.
Indirizzo	Via Galvani 36/38, 20019 Settimo Milanese (Mi), Italia
Specifica del test:	
Standard	Test in accordo alla norma italiana CEI 11-20 (2004-08) e alla norma ENEL DK 5940 Ed. 2.2 (Aprile 2007) e GUIDA PER LE CONNESSIONI ALLA RETE ELETTRICA DI ENEL DISTRIBUZIONE
Tipo di rapporto per il test.....:	ENEL DK 5940 Ed. 2.2 (Aprile 2007)
TRF creatore	INNOVA
Master TRF	30-agosto-2006
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Descrizione dell'oggetto del test	Solar inverter
Marchio	
Modell e/o referenza	YUR.POWER I4000
Numero di serie	Prototype
Versione Firmware.....:	M.CPU.VER.I 1.0
Valore nominale.....:	YUR.POWER I4000
Input Voltage-Tensione d'entrata:	100 – 500V _{CC}
Input Current- Corrente d'entrata:	20A _{CC}
Output Voltage - Tensione d'uscita:	230V _{CA}
Output current - Corrente d'uscita:	nom. 17,4A _{CA}
Output Power - Potenza d'uscita:	nom. 4000W _{CA}

**Copy of marking plate:
Copia della piastra della marcatura:**

Model : YUR.POWER I4000		Temperatura di funzionamento	-20~55°C
DC Tensione nominale	360V	Operating temperature range	
Nominal operating voltage		Grado di protezione	IP65
DC Range di tensione	100~500V	Enclosure	
Operating voltage range			
DC Corrente massima d'ingresso	20A		
Max. Input current			
AC Tensione nominale	230V	ENEL DK 5940 Ed. 2.2	
Nominal operating voltage			
AC Frequenza nominale	50Hz		
Nominal operating frequency			
AC Potenza nominale d'uscita	4000W		
Nominal output power			
AC Potenza massima d'uscita	4400W		
Max. Output power			
AC Corrente massima d'uscita	20A		
Max . Output current			

Display front:



History Sheet Storico del foglio			
Frederic Schmitt	2009-11-04	Initial report was written	Rev.0

Address of the manufacturer sites: Indirizzo dello stabilimento di produzione:
<p style="text-align: center;">Powercom Co., Ltd. 8F, NO. 246, Lien Chen Road, Chung Ho City Taipei Hsien, Taiwan, R.O.C.</p>

Particulars: test item vs. test requirements / Dettagli: oggetto del test vs requisiti del test	
Equipment mobility : mobilità dell'apparecchiatura..... :	For building-in
Operating condition : Modo d' operazione :	Continuous
Mains supply tolerance (%) : Tolleranza dell'alimentatore principale :	Input (Solar): 100-500Vdc Output (mains): 230Vac
Class of equipment : Classe del dispositivo..... :	Class I
Mass of equipment (kg)..... : Peso del dispositivo..... :	YUR.POWER I4000 21kg
Protection against ingress of water : Grado di protezione contro l'acqua :	IP65
Test case verdicts / Risultati dei test	
Test case does not apply to the test object : Il test non si applica all'oggetto del test..... :	N/A
Test item does meet the requirement : Il test rispetta il requisito..... :	P(ass)
Test item does not meet the requirement .. : Il test non rispetta il requisito..... :	F(ail)
Test:	
Date of receipt of test item : Data di Ricezione del test..... :	2008-04-29
Date(s) of performance of test : Data(e) di esecuzione del test..... :	2008-05-05 to 2008-05-13

General remarks:

The test result presented in this report relate only to the object(s) tested. This report shall not be reproduced, except in full, without the written approval of the applicant.

"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

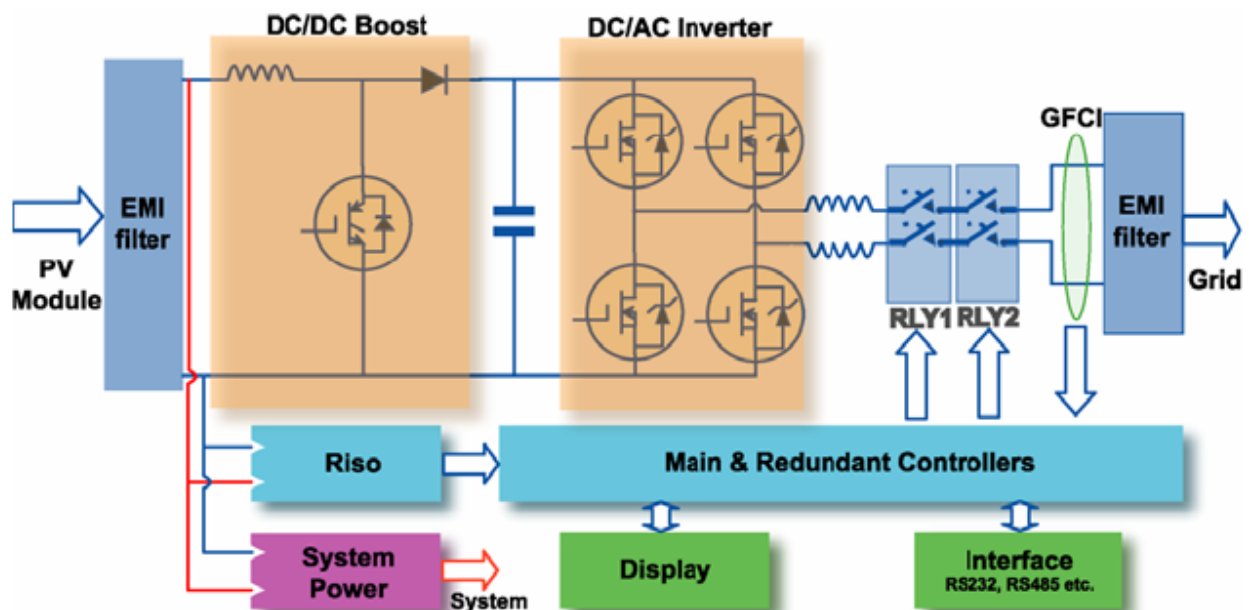
This Test Report consists of the following documents:

1. Test Report
2. ISO9001 certificate – Annex 1
3. EMC Test Report – Annex 2
4. Datasheet of the relays – Annex 3
5. Pictures of the units – Annex 4
6. Test equipment – Annex 5

General product information: / Informazione generali sul prodotto:

The Solar converter converts DC voltage into AC voltage.

The input and output are protected by capacitors and varistors to earth. The unit is providing EMC filtering at the input and output towards mains. The unit does not provide galvanic separation from input to output but provides a RCMU and an insulation measurement DC – PE. The output is switched off by two independent relays in series to assure, that the output circuit will also operate in case of one error. The whole control system is build up redundant.

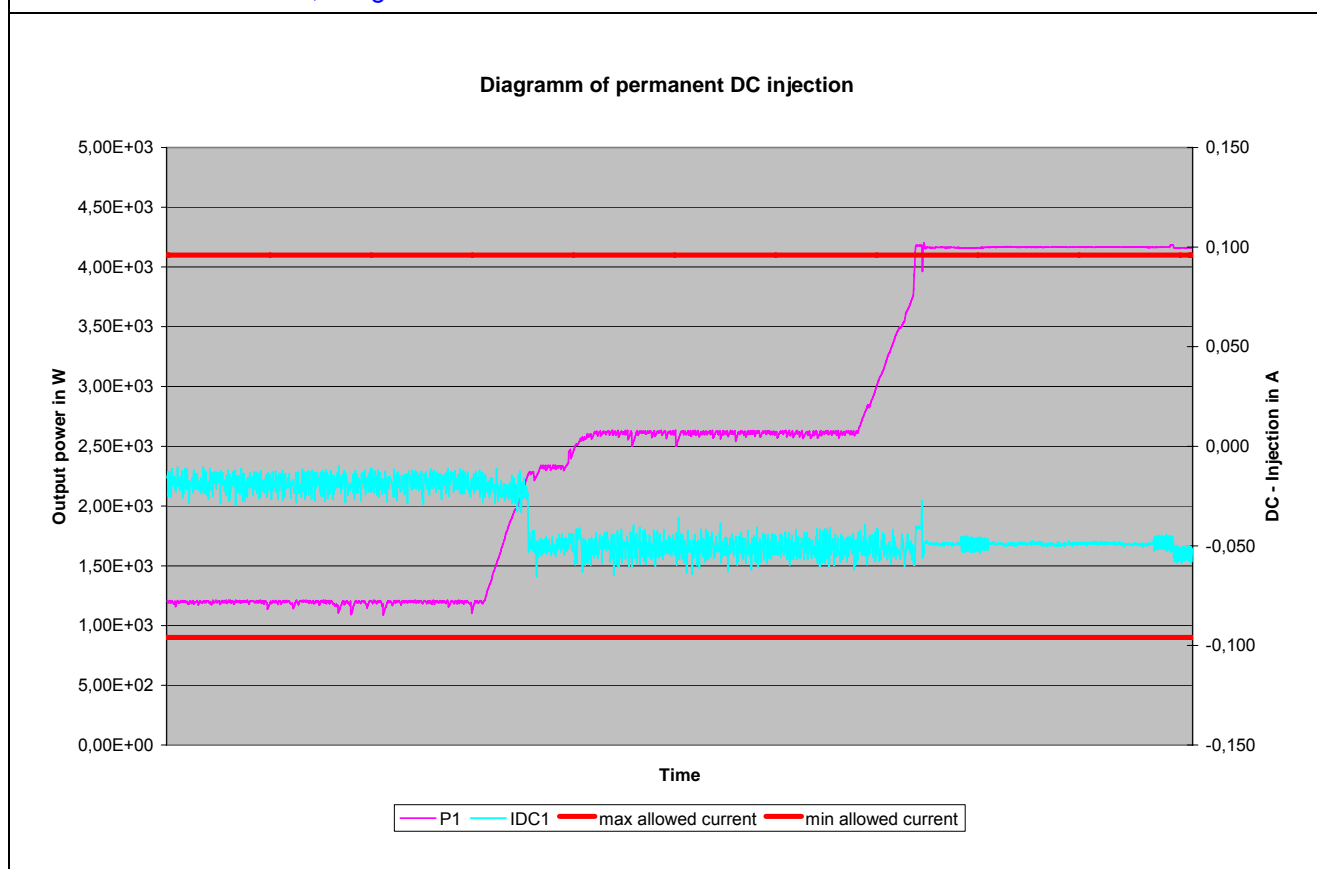


TEST SHEET:**C4.1 CEI 11-20 V1, 5: Criteria of connection to the public network
(CEI 11-20 V1, 5: Criteri di collegamento alla rete pubblica)****C4.1.1 CEI 11-20 V1, 5.1: Production installations in Cat I networks – Power Factor
(CEI 11-20 V1, 5.1:Funzionamento in parallelo alla rete pubblica di I categoria –
Fattore di Potenza)**

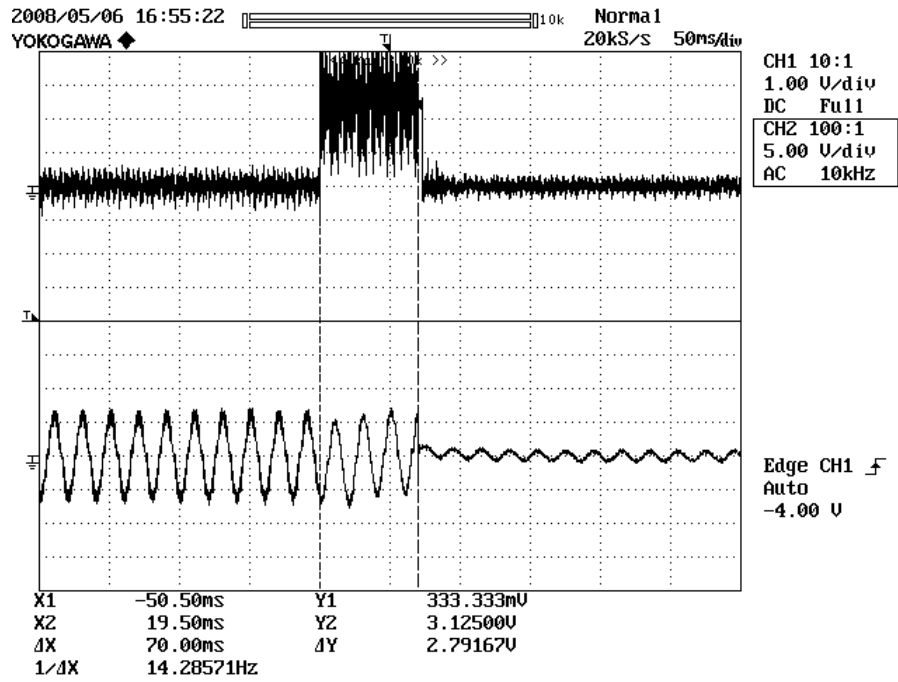
Power factor test (Fattore di potenza)				P	
Operating conditions: (Condizioni di funzionamento)		Power factor: (Factor di potenza)	Reactive Power: (Potenza reattiva)		
Grid voltage: (V)	Output Power: (%)	Measurement: (Misurazione) [1]	Measurement: (Misurazione) (kvar)	Limiting value: (Valore limite) (Kvar)	
YUR.POWER I4000					
230V	100% P _N	0,999i	0,213	1,0	
230V	50% P _N	0,995i	0,193	1,0	
230V	20% P _N	0,975i	0,185	1,0	
230V	10% P _N	0,919i	0,173	1,0	
Limits of CEI 11-20 V1, Section 5.1					

8. Protection against DC components in the output current (8. Criteri generali di allacciamento)

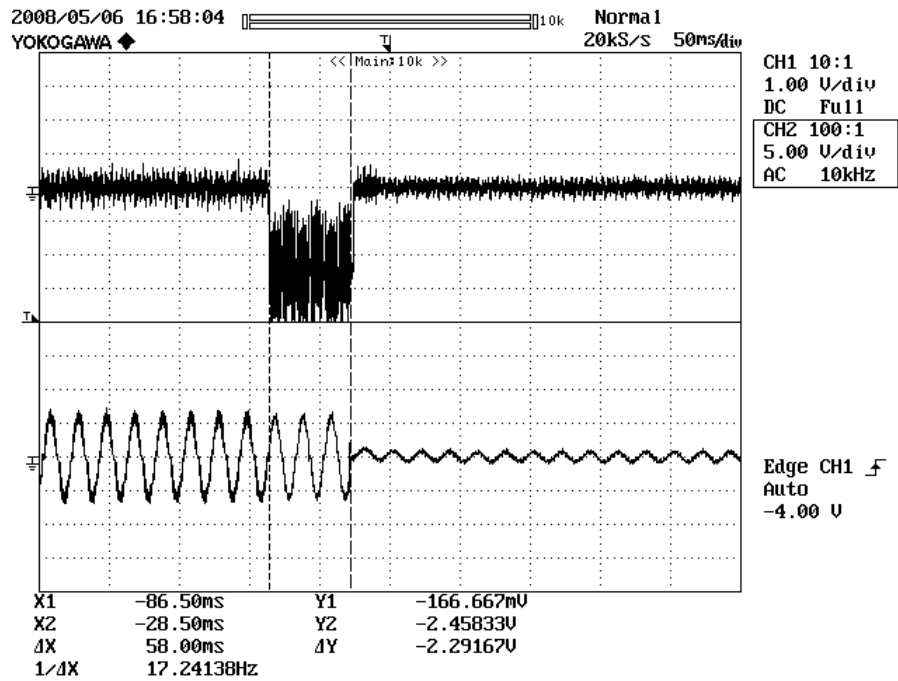
Protection against DC-Injection, $I_{DC} < 0,5\%$ of I_{max}, within max. 0,1s (Protezione corrente continua, 0,5% della corrente massima, max. 0,1 s)				P
Grid voltage: (Vac)	Idc polarity (Polarita c.c.)	Measurement: (Misurazione) (mA)	Limiting value: (Valore limite) (mA)	Disconnection time (Tempo de intervento)
YUR.POWER I4000				
230V	+	85mA	87mA	70ms
230V	-	38mA	87mA	58ms
Limits of DK5940 Ed. 2.2, Allegato AIB 2.3.1.1				



Positive DC injection



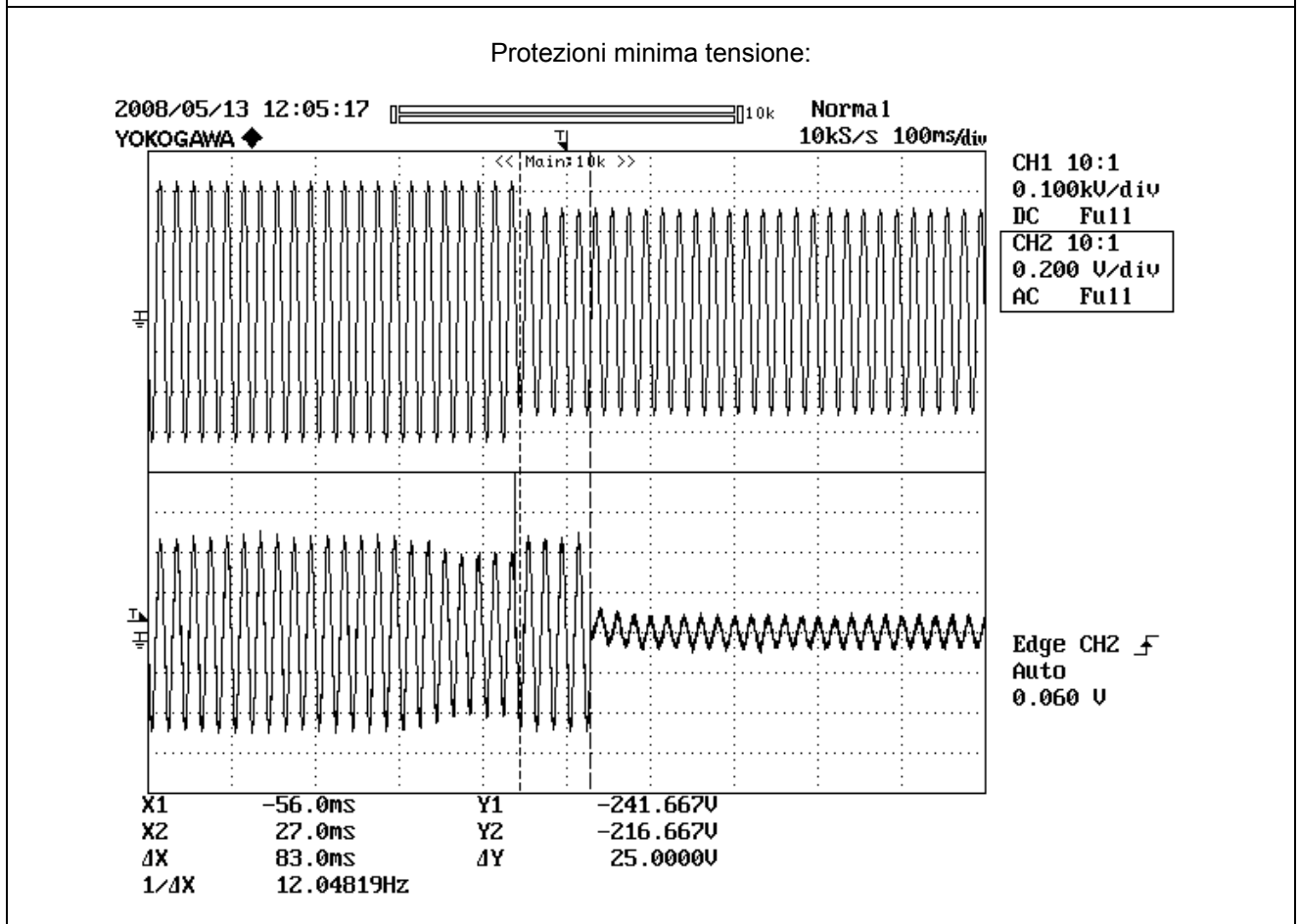
Negative DC injection



9.4 Automatic protection –test results
(Protezioni di interfaccia – risultati di prova)

9.5 Massima tensione e minima tensione					P			
Condizioni di funzionamento:	Frequenza: 50Hz							
	Protezioni minima tensione				Protezioni massima tensione			
Parametro	Voltaggio	Tempo di intervento (ms)			Voltaggio	Tempo di intervento (ms)		
Valore limite	0,8 U_N (184 V_{AC})	<= 200			1,2 U_N (276 V_{AC})	<= 100		
Valore misurato	188,2V _{ac}				271,1V _{ac}			
Tempo di sconnessione	195 -> 181V	75ms	79ms	79ms	270 -> 279V	87ms	96ms	85ms
	230 -> 181V	74ms	83ms	72ms	230 -> 279V	84ms	79ms	87ms
Tempo di riconnessione	>= 5s	209s			>= 5s	209s		

Note: Limits of DK 5940, ED. 2.2 (Aprile 2007), Table 3



Protezioni massima tensione:

2008/05/13 12:19:58
YOKOGAWA

10k

Normal
10kS/S 100ms/div



CH1 10:1
0.100kV/div
DC Full
CH2 10:1
0.200 V/div
AC Full

Edge CH2 \uparrow
Auto
0.060 V

X1	-79.0ms	Y1	220.833V
X2	17.0ms	Y2	-241.667V
ΔX	96.0ms	ΔY	-462.500V
1/ ΔX	10.41667Hz		

9.5 Massima frequenza e minima frequenza						P		
Condizioni di funzionamento :	Qualunque livello di potere di uscita							
	Protezioni minima frequenza				Protezioni massima frequenza			
Parametro	Frequenza (Hz)	Tempo di intervento (ms)			Frequenza (Hz)	Tempo di intervento (ms)		
voltaggio di uscita		~80%U _N	U _N	~120%U _N		~80%U _N	U _N	~120%U _N
Valore limite	49,7	senza ritardo intenzionale			50,3	senza ritardo intenzionale		
Valore misurato		49,80Hz	49,80Hz _Z	49,80Hz		50,21Hz	50,21Hz _Z	50,21Hz
Tempo di sconnessione	50,00 → 49,00	senza ritardo intenzionale			50,00 → 51,00	senza ritardo intenzionale		
Tempo di riconnessione	>= 5s	209s			>= 5s	209s		
Note: Limits of DK 5940, ED. 2.2 (Aprile 2007), Table 2								

9.5 Frequency derivative (Rate of Change of Frequency) test (Derivata di frequenza)

Frequency derivative protection –Frequency variation = + 0,5Hz/s (increasing) (Protezioni derivata di frequenza, , valore d'intervento 50,3Hz)				N/A
Operating conditions: (Condizioni di funzionamento)		Disconnection time: (Tempo di intervento)		
Grid voltage: (V)	Power: (%)	Measurement: (Misurazione) (Hz)	Measurement: (Misurazione) (ms)	Limiting value: (Valore limite) (s)
230V	(10% P _N)			senza ritardo intenzionale
230V	(50% P _N)			
230V	(100% P _N)			
Limits of DK 5940 Ed. 2.2 (Aprile 2007), Table 2				

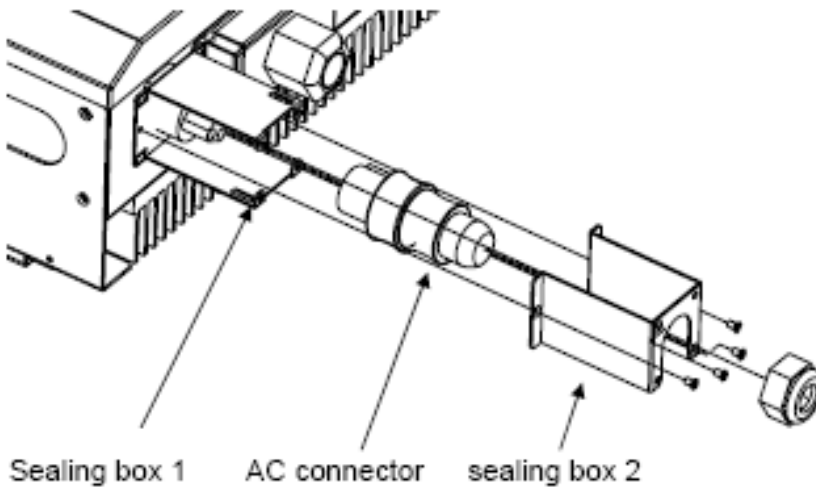
Frequency derivative protection –Frequency variation = - 0,5Hz/s (decreasing) (Protezioni derivata di frequenza, valore d'intervento 49,7Hz)				N/A
Operating conditions: (Condizioni di funzionamento)		Disconnection time: (Tempo di intervento)		
Grid voltage: (V)	Power: (%)	Measurement: (Misurazione) (Hz)	Measurement: (Misurazione) (ms)	Limiting value: (Valore limite) (s)
230V	(10% P _N)			senza ritardo intenzionale
230V	(50% P _N)			
230V	(100% P _N)			
Limits of DK 5940 Ed. 2.2 (Aprile 2007), Table 2				

9.2.1 Sigillatura del sistema di misura dell'energia prodotta ed incentivata (Sealing of the system to protect against misuse)

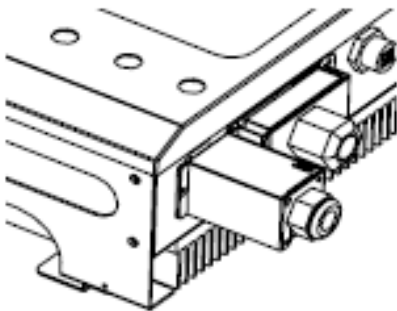
5. Sealing wire

We provide a sealing box to ENEL service personal (the local installer) to seal the AC output connector.

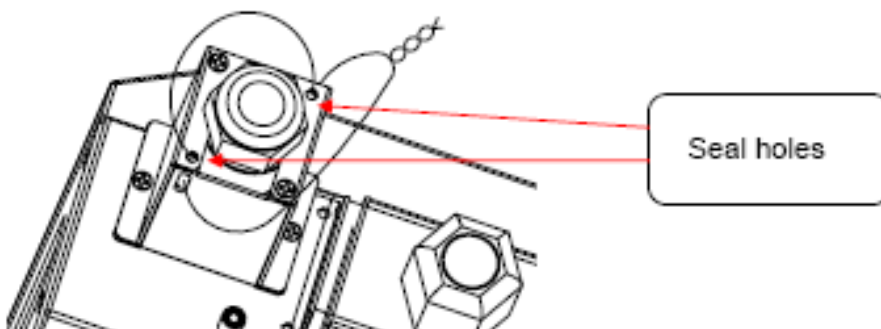
1. Please insert the sealing box 1 to AC connector.



2. Please insert the AC connector and sealing box 2.



3. Turn the screw to tighten it.



4. The seal wire through the two seal holes and tighten it.

**ALLEGATO AIB:
APPARECCHIATURE DI INTERFACCIA CON LA RETE BT**

2.1.3 Verifiche

Auto Test Function

In “Working Mode” press the button over 3sec. The LCD will show “Setting”. Then the PV inverter will enter “Function Setting Mode”, after that toggle the button, you will see the following setting items:

- Contrast Set
- Language Set
- Auto Test Set

When you see the “Auto Test Set”, press the button over 3seconds, LCD will show “Setting” then PV inverter will start “Auto Test Procedure”.

During the “Auto Test Procedure”, if user press button over 3 seconds, LCD will show “Escape Auto Test” then PV inverter will finish “Auto Test Procedure”

The “Auto Test Procedure” start with the over voltage from 270V to 229V. After this step the relays are opened. On LCD will show “OK 229V – 0,05S”. At next step the PV inverter will start with the under voltage from 190V to 230V. The Relays are opened. The result was show on LCD “OK 230V – 0,05S”. In the following step the test will start with upper and lower frequency check. After the test the relays are opened and the result was show on LCD “OK 49,9Hz – 0,05S” (upper frequency) and “OK 50Hz – 0,05S” (lower frequency).

The summary result will show on LCD “Test Pass”.

During the “Auto Test Procedure” the PV inverter will not supply with current into the grid.

3.1 Protezione di interfaccia (PIB)

Rigidità dielettrica			P
Location	Tensione di prova	Breakdown Yes/No	
Relay RY1 RY2 (Song Chuan 841-P-2A-C-H)	2kV c.a.	No	
AC to PE	1,5kV c.a.	No	
DC to PE	1,5kV c.a.	No	
Prova ad impulso			P
Location	Tensione di prova 1,2/50µs surge impulse	Breakdown Yes/No	
Relay RY1 RY2 (Song Chuan 841-P-2A-C-H)	2kV CM	No	
Relay RY1 RY2 (Song Chuan 841-P-2A-C-H)	1kV DM	No	
Misura delle resistenze degli isolamenti			P
Location	Tensione di prova	Limite	Resistenza di isolamenti
Relay RY1 RY2 (Song Chuan 841-P-2A-C-H) between input/output contacts	500V c.c.	100MOhm	>150MOhm
Prove di assestamento			P
Temperatura	Umidità relativa	Durata	
55°C	50%	16h	
40°C	93%	4 giorni	
-10°C	10%	10h	
-10°C -> +40°C	---	3h @ -10°C, 3h @ +40°C	
After the test there was no abnormal function of the inverter.			
Prove ad apparato funzionante			P
Temperatura	Umidità relativa	Durata	
55°C	50%	16h	
40°C	93%	4 giorni	
-10°C	10%	10h	
-10°C -> +40°C	---	3h @ -10°C, 3h @ +40°C	
During the test there was no abnormal function (no derating, no disconnection and no hazard) of the inverter.			
Prove di sovraccaricabilità dei circuiti voltmetrici di misura			P
Tensione	Durata		
$\geq 130\%U_N$	permanente		
$\geq 200\%U_N$	1s		
The PV inverter will start after the test as usual.			

Annex 1 – ISO9001 certificate



Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2000

This is to certify that:

Powercom Co., Ltd.
8F, No. 246, Lien Chen Road
Chung Ho City
Taipei County
Taiwan

科風股份有限公司
台灣
台北縣
中和市
連城路246號
8樓

Holds Certificate No: **FM 33690**

and operates a Quality Management System which complies with the requirements of ISO 9001:2000 for the following scope:

The design and manufacture and servicing of UPS and AVR.

For and on behalf of BSI:

Managing Director BSI Taiwan, Dr. Yi Min Gao

Originally registered: 15/03/1996

Latest Issue: 14/08/2007

Expiry Date: 13/08/2010



Page: 1 of 2

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract. An electronic certificate can be authenticated [online](#). Printed copies can be validated at www.bsi-global.com/CientDirectory or telephone +886 (02)2656-0333.

Taiwan Headquarters: 5th Floor, No.39, Ji-Hu Rd., Nei-Hu Dist., Taipei 114, Taiwan, R.O.C.
BSI Taiwan is a subsidiary of British Standards Institution.



Certificate No: **FM 33690****Location**

Powercom Co., Ltd.
8F, No. 246, Lien Chen Road
Chung Ho City
Taipei County
Taiwan

科風股份有限公司
台灣
台北縣
中和市
達城路246號
8樓

Registered Activities

The design and manufacture and servicing of UPS and AVR.

Originally registered: **15/03/1996**Latest issue: **14/08/2007**Expiry Date: **13/08/2010**

Page: 2 of 2

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Taiwan Headquarters: 5th Floor, No.38, Ji-Hu Rd., Nei-Hu Dist., Taipei 114, Taiwan, R.O.C.
BSI Taiwan is a subsidiary of British Standards Institution.

Annex 2 – EMC Report

(The whole Report is stored by Bureau Veritas Consumer Product Services GmbH Tuerkheim)

Certificate of Compliance

Product Name : PV Inverter
Model Number : SLK-4000-DE
Applicant : POWERCOM CO., LTD.
Address : 8F, No. 246, Lien Chen Road, Chung Ho City, Taipei Hsien, Taiwan,
R.O.C.
Report Number : C-P180-0707-259
Issue Date : August 10, 2007
Applicable Standards : EN 61000-6-3:2001
EN 61000-3-2:2000
EN 61000-3-3:1995+A1:2001
EN 55014-1:2000+A2:2002
EN 61000-6-2:2001
- IEC 61000-4-2:1995
- IEC 61000-4-3:1996
- IEC 61000-4-4:2004
- IEC 61000-4-5:1995+A1:2000
- IEC 61000-4-6:1996
- IEC 61000-4-8:1993
- IEC 61000-4-11:1994

One sample of the designated product has been tested in our laboratory and found to be in compliance with the EMC standards cited above. We therefore certify that the sample tested is able to declare conformity with the EMC Directive 2004/108/EC.



TAF 0905
NVLAP Lab Code 200575-0
IC Code 4699A
VCCI Accep. No. R-1527, C-1609, T-131



Central Research Technology Co.
EMC Test Laboratory
11, Lane 41, Fushuen St., Jungshan Chiu,
Taipei, Taiwan, 104, R.O.C.
Tel: 886-2-25984568
Fax: 886-2-25984548

(Tsun-Yu Shih/ General Manager)

Date: August 10, 2007

Annex 3 – Datasheet of the relays



SONG CHUAN



841



»» Features

- Heavy duty 30A 240VAC, 25A 240VAC power type.
- AC & DC coils are both available.
- PCB terminals and quick terminal types.
- Optional for special large contact gap 3.8mm version.
SPNO-ST & DPNO-ST contact configuration.

»» Type List

Terminal style	Contact form	Enlarge spacing type	Designation			
			Dust cover	Flux tight	Flanged cover	Sealed type washable
S (Quick terminal & socket terminal)	1A (SPDM)	-----	841-S-1A-D	841-S-1A-C	841-S-1A-C1	841-S-1A-S
		H	841-S-1A-D-H	841-S-1A-C-H	841-S-1A-C1-H	841-S-1A-S-H
	2A (DPDM)	-----	841-S-2A-D	841-S-2A-C	841-S-2A-C1	841-S-2A-S
		H	841-S-2A-D-H	841-S-2A-C-H	841-S-2A-C1-H	841-S-2A-S-H
P (PCB terminal)	1A (SPDM)	-----	841-P-1A-D	841-P-1A-C	-----	841-P-1A-S
		H	841-P-1A-D-H	841-P-1A-C-H	-----	841-P-1A-S-H
	2A (DPDM)	-----	841-P-2A-D	841-P-2A-C	-----	841-P-2A-S
		H	841-P-2A-D-H	841-P-2A-C-H	-----	841-P-2A-S-H

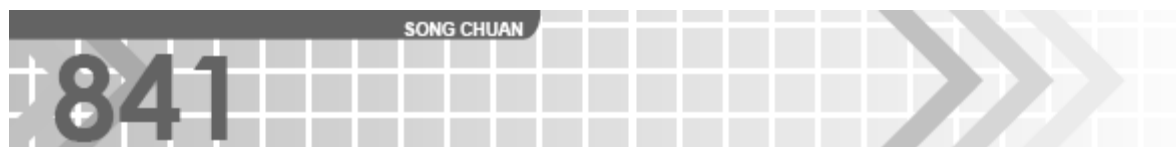
»» Ordering Information

841 - S - 1A - F - C - H
 1 2 3 4 5 6

- | | |
|--|--|
| <p>1. 841 -- Basic series designation</p> <p>2. S -- Quick terminal & Socket terminal
P -- PCB terminals</p> <p>3. 1A -- Form A, single-pole, double-make (SPDM)
2A -- Form A, double-pole, double-make (DPDM)</p> <p>4. Blank -- Standard type
F -- Class F</p> | <p>5. C -- Flux tight
D -- Dust cover
V -- Sealed type
S -- Sealed type washable
C1 -- Flanged cover
D1 -- Dust cover with flange
S1 -- Plastic sealed washable with flange</p> <p>6. Blank -- Standard type
H -- Enlarged insulation spacing type</p> |
|--|--|

»» Contact Rating

Load type	1A (SPDM)	2A (DPDM)
Rated load (Resistive)	30A 220VAC	25A 220VAC
Max. Switching Current	30A	25A
Max. Switching Voltage	277VAC	277VAC
Max. Switching Capacity	6600VA	5500VA



»» Coil Rating (DC)

Rated voltage (V)	Rated current $\pm 10\%$ at 23 °C (mA)	Coil resistance $\pm 10\%$ at 23 °C (Ω)	Max. continuous voltage at 70 °C	Pick up voltage(Max) at 23 °C	Drop out voltage(Min) at 23 °C	Power consumption at rated voltage
3	838	4.7	160 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 1.92W
6	319	18.8				
12	160	75				
24	80	300				
48/50	40/41.6	1200				
100	19.2	5200				
110	17.4	6300				
200	9.5	21000				

»» Coil Rating (AC)

Rated voltage (V)	Rated current $+15/-20\%$ at 23 °C (mA)	Max. continuous voltage at 70 °C	Pick up voltage(Max) at 23 °C	Drop out voltage(Min) at 23 °C	Power consumption at rated voltage
8	275	160 % of rated voltage	80 % of rated voltage	10 % of rated voltage	approx. 1.7VA ~ 2.7VA
12	138				
24	74				
48/50	39/40				
100/120	18.7/22.1				
200/240	9.1/10.8				

»» Specification

Contact material	AgSnO alloy	
Contact resistance ⁽¹⁾	100 m Ω Max.	
Operate time ⁽¹⁾	30 ms Max.	
Release time ⁽¹⁾	30 ms Max.	
Insulation resistance ⁽¹⁾	1000 M Ω Min. (DC 500V)	
Dielectric strength ⁽¹⁾	Between open contact	: AC 2000V , 50/60Hz 1 min.
	Between contact and coil	: AC 4000V , 50/60Hz 1 min.
	Between contact circuits	: AC 2000V , 50/60Hz 1 min.
Vibration resistance	Operating extremes	10~55Hz , amplitude 1.5 mm
	Damage limits	10~55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G



SONG CHUAN

841

Life expectancy	Mechanical	5,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 900 operations/hr)
Operating ambient temperature	-55~+70°C (no freezing)	
Weight	Approx. 90 g	

Note : (1) initial value.

»» Safety Approval

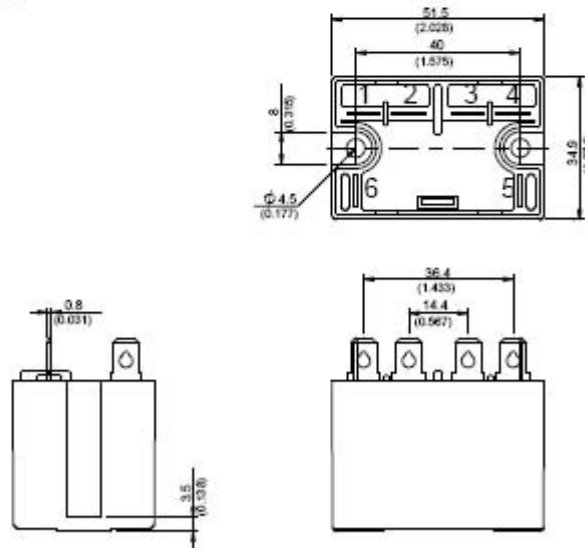
Certified	UL / CUL	TUV
File No.	E88991	R8853713

»» Safety Approval Rating

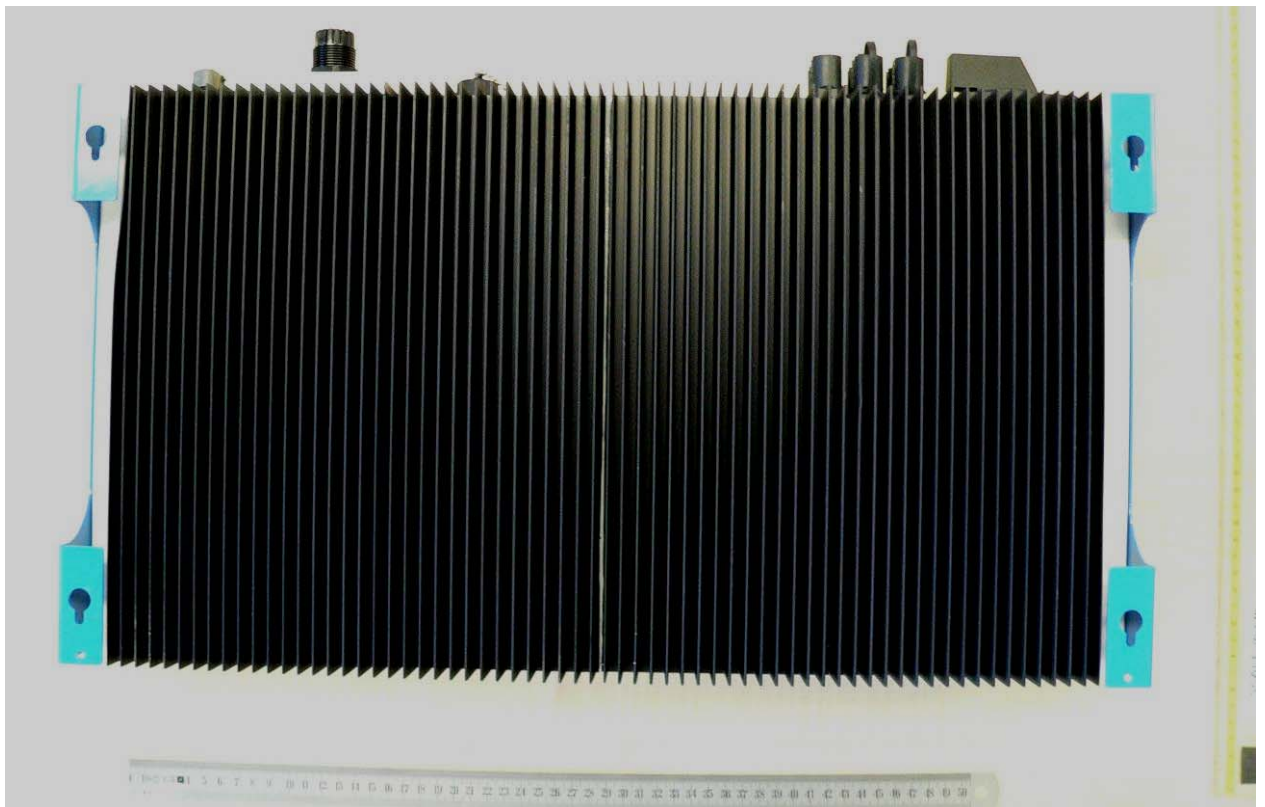
UL / CUL		TUV	
1A	2A	1A	2A
30A 277VAC TV-10 10A 277VAC 1.5HP 20FLA, 125VAC 3HP 14.1FLA, 277VAC	25A 277VAC TV-10 10A 277VAC 1HP 16FLA, 125VAC 2HP 9.98FLA, 277VAC	30A 250VAC 25A 250VAC cosφ0.4 30A 125VAC cosφ0.4	25A 250VAC 25A 250VAC cosφ0.4

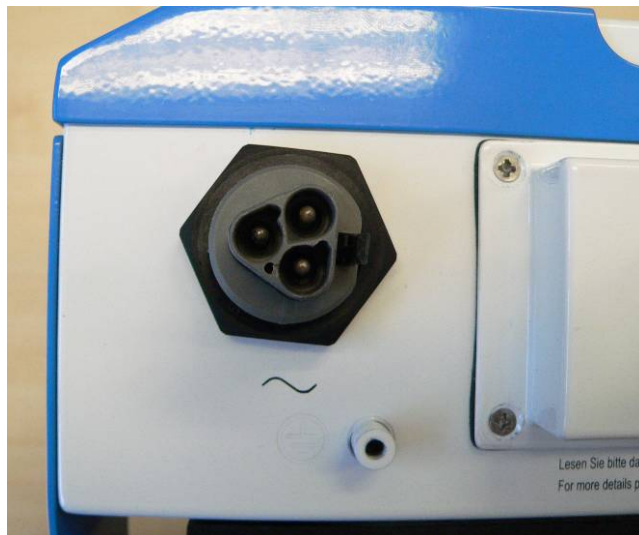
»» Outline Dimensions

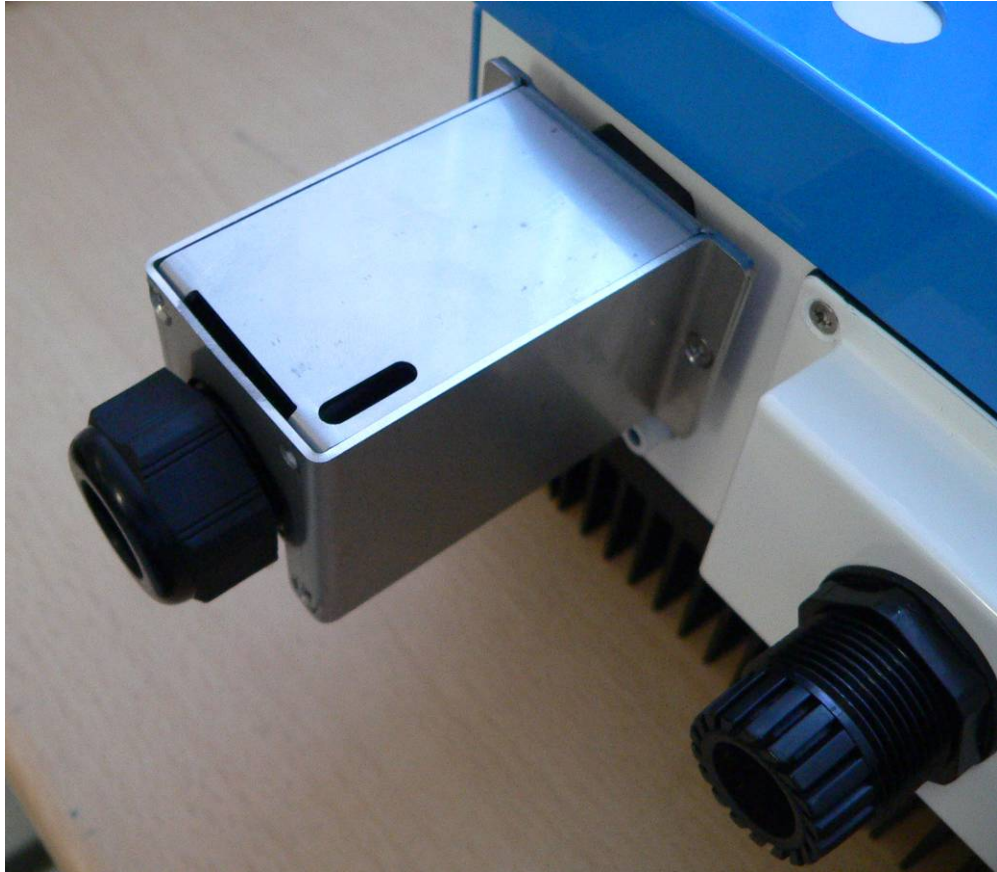
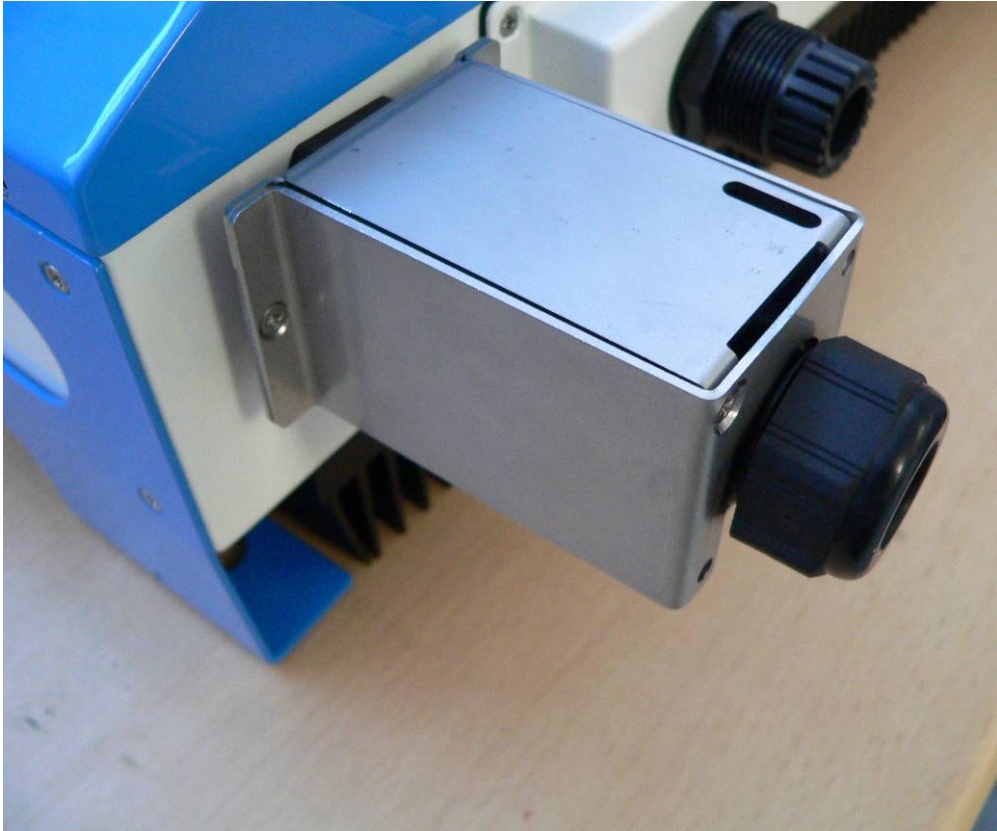
◆841-S-2A-C



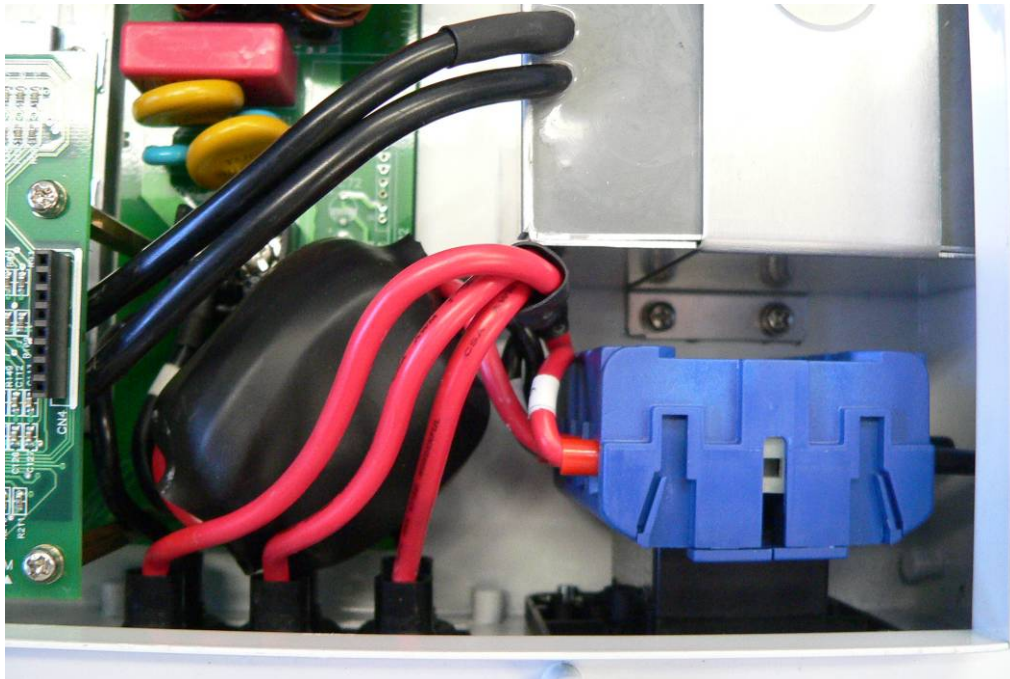
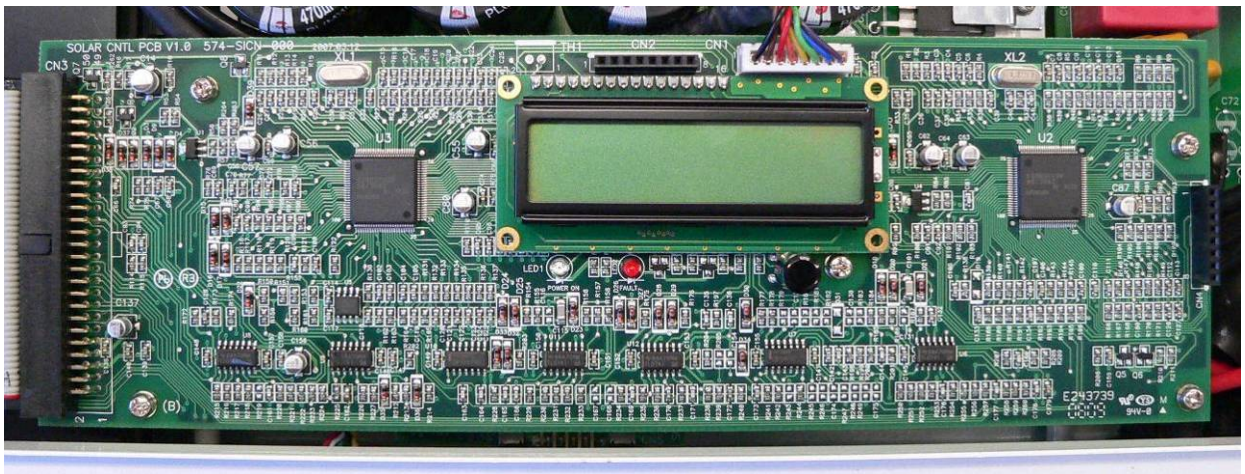
Annex 4 – Pictures of the unit











Annex 5 – Test Equipment list

Device	Internal Nr.	Manufacturer	Type	Serial Nr.	Last Calibration	Next Calibration
Multimeter	032	HP	973A	JP40014434	Mrz 2008	Mrz 2009
Multimeter	033	HP	973A	JP40014433	Mrz 2008	Mrz 2009
Multimeter	034	HP	971A	JP40010737	Apr 2008	Apr 2009
LCD DMM	083	Voltcraft	ME-42	AJ104830	Mrz 2008	Mrz 2009
Current Clamp	110	Chauvin Arnoux	YPAC12	118609YDV	Mai 2007	Mai 2008
Doppelrohr-Schiebwiderstand	233	REO	82388	-	-	-
Doppelrohr-Schiebwiderstand	234	REO	82388	-	-	-
Doppelrohr-Schiebwiderstand	235	REO	82388	-	-	-
Doppelrohr-Schiebwiderstand	236	REO	82388	-	-	-
DC Power Supply	237	Voltcraft	PS 152 A	R33/CPG 4573-01	-	-
Electronic load	299	Statron	Typ 3229.0	0508022	-	-
AC Source	323	Chroma	6590	0225	-	-
Digital oscilloscop	324	Yokogawa	DL1620	91EB06225	Apr 2008	Apr 2009
Oscilloscope	333	Yokogawa	DL 1620	91F424384	Apr 2007	Apr 2008
Power Meter	334	Zimmer	LMG 500-3	00930605	Juli 2007	Juli 2008
DC Power Supply	363	PCE	A12KW	E00126314	-	-
DC Power Supply	364	PCE	A12KW	E00126318	-	-
3-Phasen Trenntrafo	446	Statron	5316.1	9507001	-	-
Differentialastkopf	495	Yokogawa	19/7019-21	071236	Mai 2007	Mai 2008
Oscilloscope	615	Tektronix	DPO7254	BO55878	30.12.2007	30.12.2008
Differentialastkopf	616	Tektronix	P5210	BO14994	11.12.2007	11.12.2008