




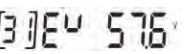







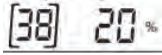




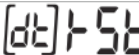







21	Battery stop charging voltage when grid is available	Options available for 24 V model	
			Setting range is from 22.0 V to 29.0 V. Increment of each click is 0.1 V.
		Options available for 48 V model	
			Setting range is from 44.0 V to 58.0 V. Increment of each click is 0.1 V.
22	Auto turn page		If selected, the display screen will auto turn the display page.
			If selected, the display screen will stay at the latest screen a user selects.
23	Backlight control	Backlight on	Backlight off (default)
24	Alarm control	Alarm on (default)	Alarm off
25	Beeping while primary source is interrupted	Alarm on	Alarm off (default)
27	Recording error code	Recording enabled (default)	Recording disabled
28	Solar power balance: when enabled, solar input power will be automatically adjusted according to the connected load power	Solar power balance enabled	If selected, the solar input power will be automatically adjusted according to the following formula: max. input solar power = max. battery charging power + connected load power when the machine is in Off-Grid workstate.
		Solar power balance disabled (default)	If selected, the solar input power will be the same as max. battery charging power no matter how many loads are connected. The max. battery charging power will be based on the setting of current in program 11 (max. solar power = max. battery charging power).

29	Battery saving mode	Saving mode disabled (default) 	If disabled, no matter if connected load is low or high, the on/off status of inverter output will not be effected.
		Saving mode enabled 	If enabled, the output of inverter will be off when connected load is pretty low or not detected.
30	Battery equalization	Equalization enabled 	Equalization disabled (default) 
		Options available for 24 V model 	Setting range is from 24.0 V to 29.2 V. Increment of each click is 0.1 V.
31	Battery voltage equalization	Options available for 48 V model 	Setting range is from 48.0 V to 58.4 V. Increment of each click is 0.1 V.
		60 min (default) 	Setting range is from 5 min to 900 min. Increment of each click is 5 min.
33	Battery equalization time	120 min (default) 	Setting range is from 5 min to 900 min. Increment of each click is 5 min.
34	Battery equalization timeout	30 days (default) 	Setting range is from 0 to 90 days. Increment of each click is 1 day.
35	Equalization interval	Enabled 	Disabled (default) 
36	Equalization activated immediately	If equalization function is enabled in program 30, this program can be set up. If "Enabled" is selected in this program, it is to activate battery equalization immediately and LCD home screen will show " ". If "Disabled" is selected, it will cancel equalization function until next activated equalization time arrives, based on program 35 setting. At this time, " " will be shown on LCD home screen too.	
37	BMS control method	Voltage method (default) 	State-Of-Charge (SOC) method 

38	Battery stop discharging percent when SOC is available	20% (default) 	Setting range is from 20% to 100%. Increment of each click is 1%.
39	Battery stop charging percent when SOC is available	95% (default) 	Setting range is from 20% to 100%. Increment of each click is 1%.
40	BMS communication	(default) 	When the communication between BMS and converter is faulted, the converter still charge or discharge from the battery.
			When the communication between BMS and converter is faulted, the converter stop charging or discharging from the battery.
After pressing and holding "MENU" button for 6 seconds, the device enters the reset mode. Press "UP" or "DOWN" button to select a program. Then, press "ENTER" button to exit.			
SET	Reset	(default) 	Setting reset disabled.
			Setting reset enabled.

Error Codes









Error Code	Cause	LCD Indication
01	Fan is locked when inverter is off	
02	Inverter transformer overtemperature	
03	Battery voltage is too high	
04	Battery voltage is too low	
05	Output short-circuited	

06	Inverter output voltage is too high	
07	Overload time out	
08	Inverter bus voltage is too high	
09	Bus soft start failed	
11	Main relay failed	
21	Inverter output voltage sensor error	
22	Inverter grid voltage sensor error	
23	Inverter output current sensor error	
24	Inverter grid current sensor error	
25	Inverter load current sensor error	
26	Inverter grid overcurrent error	
27	Inverter radiator overtemperature	
31	Solar charger battery voltage class error	
32	Solar charger current sensor error	
33	Solar charger current is uncontrollable	
41	Inverter grid voltage is low	

42	Inverter grid voltage is high	[42] 
43	Inverter grid under frequency	[43] 
44	Inverter grid over frequency	[44] 
51	Inverter overcurrent protection error	[51] 
52	Inverter bus voltage is too low	[44] 
53	Inverter soft start failed	[52] 
55	Over DC voltage in AC output	[53] 
56	Battery connection is open	[55] 
57	Inverter control current sensor error	[56] 
58	Inverter output voltage is too low	[57] 

Warning codes

Warning code	What happened	Icon flashing
61	Fan is locked when inverter is on	[61] 
62	Fan 2 is locked when inverter is on	[62] 
63	Battery is overcharged	[63] 
64	Low battery	[64] 

67	Overload	
70	Output power derating	
72	Solar charger stops due to low battery	
73	Solar charger stops due to high PV voltage	
74	Solar charger stops due to overload	
75	Solar charger overtemperature	
76	PV charger communication error	
77	Parameter error	

Troubleshooting

Problem	LCD/LED/Buzzer	Explanation/Possible cause	What to do
Unit shuts down automatically during startup process.	LCD/LEDs and buzzer will be active for 3 seconds.	The battery voltage is too low (< 1.91 V/cell).	1. Recharge battery. 2. Replace battery.
No response after power on.	No indication.	1. The battery voltage is too low by far (< 1.4 V/cell). 2. Battery polarity is reversed.	1. Check if batteries and the wires are connected properly. 2. Recharge battery. 3. Replace battery.
Mains exists but the unit works in battery mode.	Input voltage is displayed as 0 on the LCD screen and green LED flashes.	Input protector is tripped.	Check if AC breaker is tripped or AC wiring is connected properly.
	Green LED flashes.	Insufficient quality of AC power (Shore or Generator).	1. Check if AC wires are not too thin and/or too long. 2. Check if the generator (if applied) is working correctly or check if input voltage range setting is correct (Appliance Wide).
When the unit is turned on, internal relay switches on and off repeatedly.	LCD display and LED flashes.	Battery is disconnected.	Check if battery wires are connected properly.

Buzzer beeps continuously and red LED is on.	Error code 07	Overload error. The inverter is overloaded by 110% and the time is up.	Reduce the connected load by switching some equipment off.
	Error code 05	Output short-circuited.	Check if wiring is connected properly and remove abnormal load.
	Error code 02	Internal temperature of inverter component is above 90 °C.	Check whether the air flow of the unit is blocked or whether the ambient temperature is too high.
	Error code 03	Battery is overcharged.	Return to the repair center.
		The battery voltage is too high.	Check if spec and number of batteries meet requirements.
	Error code 01	Fan fault.	Replace the fan.
	Error code 06/58	Abnormal output (inverter voltage below 202 V AC or higher than 253 V AC).	1. Reduce the connected load. 2. Return to the repair center.
	Error code 08/09/53/57	Internal components failed.	Return to the repair center.
	Error code 51	Overcurrent or surge.	Restart the unit. If the error occurs again, return the device to the repair center.
	Error code 52	Bus voltage is too low.	
	Error code 55	Output voltage is unbalanced.	
	Error code 56	Battery is not connected properly or fuse is burnt.	Check connection and whether the battery is connected properly. If the error still occurs, return the unit to the repair center.

Datasheet

Table 1: Inverter Mode Datasheet

INVERTER MODEL	1 kW	2–3 kW 24 V	3 kW 48 V
Rated Output Power	1000 W	2000 W/3000 W	3000 W
Output Voltage Waveform	Pure Sine Wave		
Output Voltage Regulation	230 VAC		
Output Frequency	60 Hz or 50 Hz		
Peak Efficiency	90%		
Overload Protection	5s@≥150% load; 10s@110~150% load		

Nominal DC Input Voltage	12 VDC	24 VDC	48 VDC
Cold Start Voltage	11.5 VDC	23 VDC	46 VDC
Low DC Warning Voltage			
@ load < 20%	11 VDC	22 VDC	44 VDC
@ 20% ≤ load < 50%	10.7 VDC	21.4 VDC	42.8 VDC
@ load ≥ 50%	10.1 VDC	20.2 VDC	40.4 VDC
Low DC Warning Return Voltage			
@ load < 20%	11.5 VDC	23 VDC	46 VDC
@ 20% ≤ load < 50%	11.2 VDC	22.4 VDC	44.8 VDC
@ load ≥ 50%	10.6 VDC	21.2 VDC	42.4 VDC
Low DC Cut-off Voltage			
@ load < 20%	10.5 VDC	21 VDC	42 VDC
@ 20% ≤ load < 50%	10.2 VDC	20.4 VDC	40.8 VDC
@ load ≥ 50%	9.6 VDC	19.2 VDC	38.4 VDC
High DC Recovery Voltage	14.5 VDC	29 VDC	58 VDC
High DC Cut-off Voltage	15 VDC	30 VDC	60 VDC

Table 2: Charge Mode Datasheet

Utility Charging Mode				
INVERTER MODEL		1 kW	2–3 kW 24 V	3 kW 48 V
Charging Current @Nominal Input Voltage		~ 60 A	~ 60 A	~ 60 A
Floating Charging Voltage	AGM/ Gel/LEAD Battery	13.7 VDC	27.4 VDC	54.8 VDC
	Flooded Battery	13.7 VDC	27.4 VDC	54.8 VDC
Bulk Charging Voltage (CV Voltage)	AGM/ Gel/LEAD Battery	14.4 VDC	28.8 VDC	57.6 VDC
	Flooded Battery	14.2 VDC	28.4 VDC	57.6 VDC
Charging Algorithm		3-Step (Flooded Battery, AGM/Gel Battery), 4-Step (LI)		

Solar Charging Mode			
INVERTER MODEL	1 kW	2–3 kW 24 V	3 kW 48 V

Charging Current	50 A	50/60 A	80 A
System DC Voltage	12 VDC	24 VDC	48 VDC
Operating Voltage Range	15–30 VDC	30–130 VDC	60–130 VDC
Max. PV Array Open Circuit Voltage	75 VDC	145 VDC	145 VDC
Standby Power Consumption	2 W		

Joint Utility and Solar Charging			
INVERTER MODEL	1 kW	2–3 kW 24 V	3 kW 48 V
Max Charging Current	70 A	120 A	120 A
Default Charging Current	60 A	80 A	80 A

Table 3: General Specification

INVERTER MODEL	1 kW	2–3 kW	3 kW 48 V
Safety Certification	CE		
Operating Temperature Range	-10 °C to 50 °C		
Storage Temperature	-15 ~ 60 °C (5 ~ 140 °F)		
Dimensions (D*W*H), mm	320.5 x 224 x 95.1 (12.6 x 8.8 x 3.7 in)	420 x 288 x 122 (16.5 x 11.3 x 4.8 in)	468 x 330 x 119 (18.4 x 13 x 4.7 in)
Net Weight, kg	5 (11 lb)	9 (19.8 lb)	10 (22 lb)

General warranty conditions

- CSG S.A., with its seat in Cracow (33 Kalwaryjska St., 30-509 Cracow, Poland), hereinafter referred to as the Guarantor, guarantees proper and failure-free operation of the product throughout the warranty period.
- The warranty period shall last for 12 months and is calculated from the date of delivering the product to the Purchaser.
- Territorial scope of warranty protection covers the European Union, countries of the European Economic Area, the United Kingdom, Russia, Ukraine, Turkey and Albania.
- The warranty does not exclude, limit or suspend the rights of the Purchaser resulting from the implied warranty for defects. Territorial scope of warranty protection covers the European Union, countries of the European Economic Area, the United Kingdom, Russia, Ukraine, Turkey and Albania.
The warranty does not exclude, limit or suspend the rights of the Purchaser resulting from the implied warranty for defects.
- In order to benefit from the warranty, contact the seller via e-mail: support@greencell.global.
The handling of the complaint will be accelerated by a completed complaint form available at: www.greencell.global.
- The Guarantor will inform the Purchaser about the method of processing the warranty complaint (i.e., acceptance or refusal of acceptance) within 14 days from the receipt of the product. In case the Guarantor acknowledges the validity of the complaint, the defect of the product will be removed by the Guarantor within 14 days from the date of informing the Purchaser of the validity of the complaint. The Guarantor decides how to remove the defect of the product, taking into account the Purchaser's request in the complaint form, if possible. If removal of defects due to the degree of difficulty requires a large amount of work or additional measures, this period may be extended, but the Guarantor will make every effort to repair the product as soon as possible.
- In the case of acknowledging the validity of the complaint, the Guarantor covers the cost of delivery of the defective product to the Guarantor service and the cost of delivery of the repaired or replaced product to the Purchaser.
- The Guarantor's liability covers only defects resulting from causes inherent in the product.
- Applies to batteries, rechargeable batteries and products containing batteries/rechargeable batteries: Batteries are subject to natural wear and tear. In the event of a reduction in battery capacity, a reduction in battery capacity below 70% of the nominal value may be grounds for warranty.
- The warranty does not cover a product:
 - with broken warranty seal;
 - damaged by external factors (damage caused by lightning, surges in low voltage installation and power supply network, flooding, fire, intentional mechanical and thermal damage, etc.);
 - damaged due to improper use or use inconsistent with the manual;
 - damaged due to improper connection of other peripheral devices;
 - with traces of unauthorized repairs, unauthorized modifications or design changes.