Sunny Roo / PowerCom Inverter - Protocol

Packet Format

Field	Length (Bytes)	Value
Start Of Packet	2	0xbbbb
Destination Address	1	00 for Broadcast from Inverter Nn for Address of inverter 00 for data from the inverter
Source Address ???	1	00 For initial broadcasts
Header	4	Varies
Command	1	Varies
Sub-Command	1	Varies
Length	1	
Data	Bytes indicated by Length	
Checksum	2	Sum of preceding bytes

Length

Where the length is greater than zero, this number of bytes follows in the packet payload

Checksum

The checksum is literally the sum of the previous bytes.

Data

The data is sent in Decimal Big Endian. That is, 00 01 is 1 and 80 00 is 32768.

Known Packets

Software to Inverter	
00 00 00 00 00 00	Request Serial Number from the Inverter
00 00 00 00 00 01	Logs into the inverter when followed by the Serial Number in the Data field
01 00 00 01 01 02	Requests data in Single PV String Output Format
01 00 00 01 01 04	Request Configuration Information

01 00 00 01 02 0n	Configure the inverter	
01 00 00 01 03 nn	Reset the inverter	00 = Reset F and H totals 01 = Reset Inverter

Inverter to Software		
00 00 00 00 00 80	Contains Inverter serial number in the Data field	
00 01 00 00 00 81	Log In OK	
00 01 01 00 01 82	Contains the Single PC String Output in the Data	
00 01 01 00 01 84	Configuration Information	
00 01 01 00 02 8n	Ack to configure the inverter	
00 01 01 00 03 nn ???	Ack to Reset	Payload of 01 06

Commands and Sub Commands

Command	Sub-Command	Description
00	00	Request for Serial Number
00	01	Log In based on Serial Number
00	80	Advise Serial Number
00	81	Log In Accepted
01	02	Request Single PV Format
01	04	Request Config Information
01	82	Single PV Format
01	84	Config Information
02	0n	Configure Inverter
02	8n	Ack to Configure Inverter
03	Nn	Reset Inverter

Single PV String Output

Request

bb bb 01 00 00 01 01 01 02 (00) [01 7b]

Response

bb bb 00 01 01 00 01 82 (2a) {DATA} [Checksum]

Data Point	Description	Units	Example
01	Heat Sink Temperature	0.1 C	1234 = 123.4 C
02	Panel 1 Voltage	0.1 V	1288 = 258.8 V
03	Panel 1 DC Current	0.1 A	44 = 4.4A
04	Working Hours High Word	6553.6 Hours	1 = 6553.6 Hours 2 = 13107.2 Hours
05	Working Hours Low Word	0.1 Hours	2765 = 276.4 Hours
06	Operating Mode	Lookup Table	
07	Tmp F-Value	0.1 C	645 = 64.5 C
08	PV1 F-Value	0.1 V	457 = 45.7 V
09	GFCI F-Value	0.001 mA	23456 = 23.456 A
10	Fault Code High		
11	Fault Code Low		
12	Line Current	0.1 A	45 = 4.5 A
13	Line Voltage	0.1 V	2345 = 234.5 V
14	AC Frequency	0.01 Hz	4997 = 49.97 Hz
15	AC Power	1 W	1234 = 1234 W
16	Zac	0.001 Ohms	47 = 0.047 Ohms
17	Accumulated Energy High Word	6553.6 kWh	1 = 6553.6 kWh 2 = 13107.2 kWh
18	Accumulated Energy Low Word	0.1 kWh	3472 = 347.2 kWh
19	GFCI F-Value Volts	0.1 V	2500 = 250.0 V
20	GFCI F-Value Hz	0.01 Hz	2343 = 23.43 Hz
21	GZ F-Value Ohm	0.001 Ohms	3264 = 3.264 Ohms

Operating Mode

Value	Description
0	Wait

1	Normal
2	Fault
3	Permanent

Fault Code High Word

Data	Mimic Display	Description
0x0001	Vac Slave Fail	
0x0002	Vac Master Fail	
0x0004	Zpv PE Fail	
0x0008	Offset Iac Fail	
0x0010	ENS Mess Fail	
0x0020	ENS Zac Fail	
0x0040	ENS Fac Fail	
0x0080	ENC Vac Fail	
0x0100	RLY2 Fail	
0x0200	RLY1 Fail	
0x0400	Zac Slave Fail	
0x0800	Zac Master Fail	
0x1000	Fac Slave Fail	
0x2000	Fac Master Fail	
0x4000	EEPROM Fail	
0x8000	Master Slave Fail	

Fault Code Low Word

Data	Mimic Display	Description
0x0001	GFCI Failure	
0x0002	DC Sensor Fault	
0x0004	Ref 2.5V Failure	
0x0008	ENS DCI Fault	
0x0010	ENS GFCI Fault	
0x0020	BUS Low Fail	
0x0040	Bus High Fail	
0x0080	Device Fault	
0x0100	Delta Z Fault	
0x0200	No Utility	
0x0400	GFCI Fail	
0x0800	Bus Fail	
0x1000	Reserved	
0x2000	Temperature Fail	
0x4000	Test Fail	
0x8000	Vpv Max Fail	

Configuration

Request

bb bb 01 00 00 01 01 01 04 (00) [Checksum]

Response

bb bb 00 01 01 00 01 84 (14) {DATA} [Checksum]

The {Data} is each of the values below in Item order.

Saving values to the Inverter

bb bb 01 00 00 01 02 0n 02 {DATA} [Checksum]

Response from the Inverter

bb bb 00 01 01 00 02 8n 02 01 06 [Checksum]

Item	Name	Protocol Value	Units
01	VPv	00	0.1 V
02	Tstart	01	1 Sec
03	Vac Min	04	0.1 V

04	Vac Max	05	0.1 V
05	Fac Min	06	0.01 Hz
06	Fac Max	07	0.01 Hz
07	Zac Max	08	0.001 Ohm
08	Dzac	09	0.001 Ohm
09	Tovr	0A	0.1 Sec
10	Tudr	0B	0.1 Sec
11	Treply	0C	0.1 Sec