

High frequency sine wave inverter RS232 communication protocol

1. Query command:

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- 1.32 QBVO query battery overvoltage protection point 51 42 56 4F 6D 70 0D
- 1.33 QOLBY Query Overload Go Bypass 51 4F 4C 42 59 CD AF 0D
- 1.36 QBV TU Query battery low mains setting voltage value 51 42 56 54 55 18 D2 0D
- 1.37 QOPM Query Parallel Mode 51 4F 50 4D A5 C5 0D
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- 1.42 QBEQI query charging setting parameters (3K valid, 5K invalid) 51 42 45 51 49 2E A9 0D

Second, the setting command: **┐**

2.1 P*a buzzer alarm on/off (*=>E: on; *=>D:Off).

2.2 P*b battery inverter mode overload to bypass function on/off (*=>E: on; *=>D:Off).

2.3 P*j Set Energy Saving Mode On/Off (*=>E: On; *=>D: Off) (5K valid, 3K invalid, not valid when paralleled).

2.4 P*k Set LCD buttonless operation after 1 minute to return to the main interface function (*=>E: On; *=>D:Off).

2.5 P*u overload restart function on/off (*=>E: on; *=>D:Off).

2.6 P*V overtemperature restart function on/off (*=>E: on; *=>D:Off).

2.7 P*x Display backlight on/off after 1 minute of buttonless operation (*=>E: Always-on; *=>D: Off).

2.8 P*y input source change alarm function on/off (*=>E: on; *=>D:Off).

2.9 P*z Set computer communication software fault recording function on/off (*=>E: on; *=>D:Off).

2.10 PCP** Set the charging source priority

2.11 POP** Set output source priority

2.12 PGR** Set UPS mode (**=>00:APL mode)/(**=>01:UPS). mode).

2.13 PBT** Set Battery Type (**=>00:AGM)/(**=>01:FLOODED)/ (**=>02: USER)

2.14 F** set output frequency (**=>50:50Hz)/(**=>60:60Hz).

2.15 MNCHGC*** Set the maximum charging current (setting range: 10, 20...110, 120).

2.16 MUCHGC** Set the maximum charging current of the mains (setting range: 02, 10, 20...50, 60).

2.17 PBCV**.* Set the voltage at which the battery returns to mains charging when the mains is normal (setting range: 22.0, 22.5...25.0, 25.5).

2.18 PBDV**.* Set the voltage at which the battery will resume discharging when the utility power is normal

2.19 PCVV**.* Set CV fast charge charging voltage setting range (25.0...31.5) Battery type is USER can only be set

2.20 PBFT**.* Set the float voltage setting range (25.0...31.5) to be set when the battery type is USER

2.21 PSDV**.* Set the discharge cut-off voltage setting range (21.0.....24.0) only when the battery type is USER

2.22 PBVO**.* Set the battery overvoltage protection point (3K setting range 24.0-33.0) (5K setting range 48.0-60.0).

2.26 **PF** restores default settings of 50 46 26 BD 0D

2.27 **REEP** restores default settings

2.30 POLBY** Set overload-to-bypass mode (00: overload does not turn bypass/01: overload-to-bypass mode).

2.31 PBP** Set the buzzer switch (00: Turn off buzzer/01: Turn on buzzer).

2.32 POPM** Set the parallel mode (00: no parallel/01: single-phase parallel/02:3P1, /03:3P2/04:3P3).

2.33 PUPSTYPE Set UPS type? (00: What type?) /01: What type?)

2.34 **PLCDV**** Set the LCD screen version to 0 by default; 1 is another display

2.35 **PPVOKC*** Set solar charging when normal (0: Stand-alone normal charging; 1: All normal time charge) (3K effective, 5K invalid).

2.36 **PSPB*** Set solar charging when normal (0: Stand-alone normal charging; 1: All normal time charge) (3K effective, 5K invalid).

2.37 **PBEQE*** set the equalization function (default 0: disable the equalization function; 1: Enable the equalization function) (3K effective, 5K invalid).

2.38 PBEQT setting average charge time (default 60 minutes: 5-900 + 5 per gear) (3K valid, 5K invalid)

2.39 PBEQP set the number of days between charging intervals (default 30 days: 0-90 + 1 per gear) (3K valid, 5K invalid) 

2.40 PBEQV.*** Set the average charging voltage (default 29.20V, 25.00-31.50+0.1V per gear) (3K active, 5K invalid)

2.41 PBEQOT set the average charge timeout (default 120 minutes: 5-900 + 5 per gear) (3K valid, 5K Invalid)

2.42 PBEQA* set the average charge function to activate immediately (default 0: disable immediate activation; 1: Activate now) (3K works, 5K does not).

Baud Rate Start bit Data bit Parity bit Stop bit
2400 1 8 N 1

1.1 **QPIGS<CRC16><CR>: Device general status parameters inquiry**

Computer: QPIGS <CRC16><CR> **Query real-time data** 51 50 49 47 53 B7 A9 0D

Device: (BBB. B CC.C DDD.D EE. E FFFF GGGG HHH III JJ. JJ KKK OOO TTTT EEEE UUU. U WW. WW PPPP b7b6b5b4b3b2b1b0 QQ VV MMMM b10b9b8<CRC16><CR>

(000.0 00.0 229.8 50.0 0023 0005 000 436 54.80 000 100 0046 0000 000.0 00.00 00000 00010000 00 00 00000 010 (old: SUNSEE 5K).

(000.0 00.0 230.1 50.0 0008 0008 000 363 51.80 000 096 0038 00.0 000.0 00.00 00000 00010000 00 00 00000 010 0 01 0000 (new: SUNPOLO 5K) 10 more places

(000.0 00.0 229.9 50.0 0002 0002 000 362 25.80 000 041 0029 0000 000.0 00.00 00000 00010000 00 00 00 00000 010 (new: SUNSEE PLUS 3K).

	Data	Description	Notes	Axpert
a	(	Start byte		
b	BBB. B	Grid voltage	B is an Integer number 0 to 9. The units is V.	
C	CC.C	Grid frequency	C s an Integer number 0 to 9. The units is Hz.	
D	DDD.D	AC output voltage	D is an Integer number 0 to 9. The units is V. When bypassed, it is displayed as a bypass output voltage.	
E	EE. E	AC output frequency	E is an Integer number from 0 to 9. The units is Hz.	
F	FFFF	AC output apparent power	F is an Integer number from 0 to 9. The units is VA	
G	GGGG	AC output active power	G is an Integer ranging from 0 to 9. The units is W.	
H	HHH	Output load percent	DEVICE: HHH is Maximum of W% or VA%. VA% is a percent of apparent power. W% is a percent of active power. The units is %.	
I	III	BUS voltage	I is an Integer ranging from 0 to 9. The units is V.	
j	JJ. JJ	Battery voltage	J is an Integer ranging from 0 to 9. The units is V.	
k	KKK	Battery charging current	K is an Integer ranging from 0 to 9. The units is A.	
o	OOO	Battery capacity	O is an Integer ranging from 0 to 9. The units is %.	
P	TTTT	Inverter heat sink temperature	T is an integer ranging from 0 to 9. The units is °C (NTC A/D value for Axpert 1~3K) Note: The machine model is VP model and the unit needs to be changed to 0.1°C	
r	EEEE	PV Input current for battery.	E is an Integer ranging from 0 to 9. The units is A.	
t	UUU. U	PV Input voltage 1	U is an Integer ranging from 0 to 9. The units is V.	
u	WW. WW	Battery voltage from SCC	W is an Integer ranging from 0 to 9. The units is V.	

w	PPPPP	Battery discharge current	P is an Integer ranging from 0 to 9. The units is A.	
x	b7b6b5b4 b3b2b1b0	Device status	b7: add SBU priority version, 1:yes,0:no b6: configuration status: 1: Change 0: unchanged Reply to the QPIRI command to query the changed rating information and clear the zero b5: SCC firmware version 1: Updated 0: unchanged b4: Load status: 0: Load off 1:Load on b3: battery voltage to steady while charging b2: Charging status(Charging on/off) b1: Charging status(SCC charging on/off) b0: Charging status(AC charging on/off) b2b1b0: 000: Do nothing 110: Charging on with SCC charge on 101: Charging on with AC charge on 111: Charging on with SCC and AC charge on	Keep b6~b4, b2 ~ b0, reserve other
y	QQ	Battery voltage offset for fans on	Q is an Integer ranging from 0 to 9. The unit is 10mV.	
z	VV	EEPROM version	V is an Integer ranging from 0 to 9.	
	MMMMM	PV Charging power	M is an Integer ranging from 0 to 9. The unit is watt.	
	b10b9b8	Device status	b10: flag for charging to floating mode b9: Switch On b8: reserved	

1.2 **QPIRI**<CRC16> <CR>: Device general status parameters inquiry

Computer: 51 50 49 52 49 F8 54 0D;-**QPIRI** <CRC16> <CR> for rating information

Device: (BBB. B CC.C DDD.D EE. E FF. F GGGG HHHH II.I JJ. J KK. **K** LL.L MM.M N OO PPP Q R S T UU V W XX.X Y Z<CRC16><CR>

SUNSEE 5K:

(230.0 **21.7** 230.0 **50.0** 21.7 **5000** 4000 **48.0** 46.0 **42.0** 56.4 **54.0** 0 30 060 0 0 **2** 6 **01** 0 0 54.0 0 1

SUNPOLO 5K:

(230.0 **22.6** 230.0 **50.0** 22.6 **5200** 5200 **48.0** 46.0 **42.0** 56.4 **54.0** 0 30 060 1 0 **2** 9 **00** 0 0 54.0 0 1 **000**

SUNSEE 3K:

(230.0 **13.0** 230.0 **60.0** 13.0 **3000** 3000 **24.0** 23.0 **21.0** 28.2 **27.0** 0 25 **50** 0 0 **2** 6 **01** 0 0 54.0 0 1

SUNSEE PLSU 3K: 2 bits more than **SUNPOLO 5K**

(230.0 **13.9** 230.0 **50.0** 13.9 **3200** 3200 **24.0** 23.0 **21.5** 28.2 **27.0** 0 30 **060** 1 0 0 **9** **01** 0 0 27.0 0 1 **000** 0

	Data	Description	Notes	Axpert
A	(	Start byte		

B	BBB. B	Rated Grid voltage	B is an Integer number 0 to 9. The units is V.	
C	CC.C	Rated input current	C is an Integer number 0 to 9. The units is A.	
D	DDD.D	Rated AC output voltage	D is an Integer number 0 to 9. The units is V. Only 230V, cannot be set to 220V The 120V model can be set to 110V	
E	EE. E	Rated AC output frequency	E is an Integer number from 0 to 9. The units is Hz.	
F	FF. F	Rated output current	F is an Integer number 0 to 9. The units is A.	
G	GGGG	Rated AC output apparent power	G is an Integer number from 0 to 9. The units is VA	
H	HHHH	Rated AC output active power	H is an Integer ranging from 0 to 9. The units is W.	
I	II.I	Rated Battery voltage	I is an Integer ranging from 0 to 9. The units is V.	
J	JJ. J	Battery voltage Low-end to mains switching point	J is an Integer ranging from 0 to 9. The units is V. (3K setting range 22-25.5V default 23V; 5K setting range 44-51V default 46V).	
K	KK. K	Battery voltage shutdown point	K is an Integer ranging from 0 to 9. The units is V. (3K setting range 21.0-24.0V default 21.0V; 5K setting range 40.0-48.0V, default 42.0V).	
L	LL.L	Battery voltage Fast charging point CV	L is an Integer ranging from 0 to 9. The units is V. (3K setting range 24-29.2V default 28.2V; 5K setting range 48-58.4V default 56.4V).	
M	MM.M	Battery voltage Floating point FLV	M is an Integer ranging from 0 to 9. The units is V. (3K setting range 24-29.2V default 27V; 5K setting range 48-58.4V default 54V).	
N	N	Battery type	N is the battery type: AGM is 0, FLD is 1, USE is 2	
O	OO	Input current for battery	O is an Integer ranging from 0 to 9. The units is A. Set the maximum charging current of the mains to 60A (set range 2-60A, default 30A).	
P	PPP	Input current for battery	P is an Integer ranging from 0 to 9. The units is A. (5K solar 80A + utility 60A), the default setting is 60A	
Q	Q	Input range	Q Input range: 0: APL mode (90-280V); (Switching time 8-20mS). 1: UPS mode (170-280V); (Switching time 5-15mS).	
R	R	Load power source priority	R Power source priority for the load: 0: UTL mode (mains priority) [default]. 1: SOL mode (solar first). 2: SBU mode (S solar 1, B battery 2, U mains 3).	
S	S	Charging source priority	S is the charging source priority: 0: CUT: (utility first). 1: CSO: (solar first).	

			2: SUN: (solar & utility, solar and utility [default]). 3: OSO: (solar only solar charging).	
T	T	? Up to T devices can be paralleled	T :(default 6) may be the maximum number of 6 units that can be paralleled	
U	UU	?	U: (default 01).	
V	V	?	V: (default 0).	
W	W	Parallel mode	W: (0: no parallel/1: single-phase parallel/2:3P1/3:3P2/4:3P3).	
X	XX.X	Battery voltage High-end inverter switching point	X is an Integer ranging from 0 to 9. The units is V. (3K range 24-29V + FUL; When setting FUL=00.0V 5K range 48-58V+FUL default 54V; FUL = 00.0V).	
Y	Y	Solar operating conditions during paralleling	Y Solar charging working conditions when parallel the machine 0: ONE (solar rechargeable on a single unit when paralleled). 1: ALL (all machines can only be charged if they have solar energy when they are paralleled).	
Z	Z	The maximum charging power of solar energy is automatically adjusted	Z: (default 1: SbE automatically adjusts according to load; 0: Sbd solar maximum charging power is the maximum charging power of the battery).	

1.3 QMOD<CRC16><CR>: Device general status parameters inquiry

Computer: 51 4D 4F 44 49 C1 0D;-QMOD<CRC16> <CR> Query working mode




Device: (B <CRC16><CR>


	Data	Description	Notes	Axpert
A	(	Start byte		
B	B	Working status	B (BAT) battery inverter mode, L (LINE) mains bypass mode S (STANDBY) IS THE ON/OFF WAITING STATE P (POWER UP) IS THE POWER-ON STATE D (POWER DOWN) IS THE STATE OF IMMINENT SHUTDOWN F(FAULT) is the fault state	

1.4 **QPIWS**<CRC16><CR>: Device general status parameters inquiry

Computer: 51 50 49 57 53 B4 DA 0D;-**QPIWS**<CRC16> <CR> **query status word**

Device: (01000100000000000000000000000000<CRC16> <CR>

	Data	Description	Notes	Axpert
A	(	Start byte		
B0	Device	B0: 1: ; 0: None	b7b6b5b4b3b2b1b0	Device
B1	status	B1: 1: Fault; 0: None	B1: 1 at faulty time,	status
B2		B1, B2: 1: fault 8, BUS is too high; 0: None	buzzer long sound,	
B3		B1, B3: 1: Fault 52, BUS too low; 0: None	red light long on.	
B4		B1, B4: 1: Fault 9, BUS soft start failure; 0:	B2:  One second	
B5		None	flashes, the buzzer	
B6		B5: 1: Abnormal mains; 0: The utility power is	rings long, and the red	
B7		normal	light is always on.	
B8		B1, B6: 1: fault 5, output short circuit; 0:	B3:	
B9		None	B4:	
B10		B1, B7: 1: fault 58, output voltage too low; 0:	B5: Do not call the	
B11		None	police	
B12		B1, B8: 1: fault 6, output voltage is too high; 0:	B6:  One second	
B13		None	flashes, the buzzer	
B14		B1, B9: 1: fault 2, inverter overtemperature; 0:	rings for a long time,	
B15		None	and the red light is	
B16		B10: 1: fault 1, fan abnormality; 0: None	always on.	
B17		B1, B11: 1: fault 3, battery overvoltage, ; 0:	B9:  One second	
B18		None	flashes, the buzzer	
B19		B12: 1: Fault 4, battery undervoltage; 0: None	rings for a long time,	
B20		B13: 1: ; 0: None	and the red light is	
B21		B14: 1: Under voltage shutdown; 0: None	always on.	
B22		B15: 1: fault 10, mains undervoltage; 0: None	3K inverter greater	
B23		B16: 1: fault 7, overload, ; 0: None	than 80	
B24		B17: 1: ? Restart flag bit? ; 0: None	overtemperature, fault	
B25		B1, B18: 1: fault 51, inverter overcurrent; 0:	2; 0: Less than 60	
B26		None	degrees after	
B27		B1, B19: 1: fault 53, inverter soft start failure;	overtemperature	
B28		0: None	becomes 0.	
B29		B1, B20: 1: Fault 11, self-test failure; 0: None	5K is greater than 85	
B30		B1, B21: 1: fault 55, output DC composition is	overtemperature,	
B31		too high; 0: None	greater than 90	
		B1, B22: 1: Fault 56, open battery,; 0: None	shutdown	
		B1, B23: 1: fault 57, current sensor failure; 0:	B10: The display icon	
		None	flashes every second	
			when the warning is	

		<p>B1, B24: 1: Battery short circuit; 0: None</p> <p>B25: 1: ; 0: None</p> <p>B26: 1: ; 0: None</p> <p>B27: 1: ; 0: None</p> <p>B28: 1: ; 0: None</p> <p>B29: 1: ; 0: None</p> <p>B30: 1: ; 0: None</p> <p>B31: 1: ; 0: None</p>	<p>given, the buzzer rings 3 times a second, and the red light flashes for 2 seconds, when B1: for At 1 hour, a second flashes, the buzzer rings for a long time, and the red light is always on.</p> <p>B11: One second flashes, the buzzer rings long, and the red light is always on.</p> <p>B12: Flashes with the buzzer every second, and flashes the red light in 2 seconds.</p> <p>B14: No fault is displayed, no alarm is provided</p> <p>Note: When a fault occurs and the B1 bit is not 1, it is a warning signal display icon When there is a fault and the B1 bit is 1, the fault signal display icon </p>	
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1.5 QVFW<CRC16><CR>: Device general status parameters inquiry

Computer: 51 56 46 57 62 99 0D QVFW<CRC16> <CR> query the firmware version number of the main chip

Device:(VERFW:00017.03<CRC16> <CR> (BBBBBBCCCCC.CC<CRC16> <CR>

	Data	Description	Notes	Axpert
A	(	Start byte		
B	BBBBBB	VERFW:	B	
C	CCCCC.CC	00017.03	C	

1.6 QVFW2<CRC16><CR>: Device general status parameters inquiry

Computer: 51 56 46 57 32 C3 F5 0D QVFW2<CRC16> <CR> Query SCC chip firmware version

number

Device:(VERFW2:00005.11<CRC16> <CR> (BBBBBBBCCCCC.CC<CRC16> <CR>

	Data	Description	Notes	Axpert
A	(	Start byte		
B	BBBBBBB	VERFW2:	B	
C	CCCCC.CC	00005.11	C	

1.7 QMCHGCR<CRC16><CR>: Device general status parameters inquiry

Computer: 51 4D 43 48 47 43 52 0DQMCHGCR<CRC16> <CR> Query the total charge current setting range

Device: (010 020 030 040 050 060 070 080 090 100 110 120 130 140<CRC16> <CR>)(5KVA).

Device: (010 020 030 040 050 060 070 080 090 100 110 120<CRC16> <CR> (3KVA).

NOTE: SUNSEE PLUS 3K IS FOLLOWED BY 120.1 MORE POINT FOR A TOTAL OF 51 BITS.

(BBB CCC DDD EEE FFF GGG HHH III JJJ KKK LLL MMM NNN OOO<CRC16> <CR>

	Data	Description	Notes	Axpert
A	(Start byte	A	
	BCDEFGH IJKLMNO	010: 10A	B	
		020: 20A	C	
		030: 30A	D	
		040: 40A	E	
		050: 50A	F	
		060: 60A	G	
		070: 70A	H	
		080: 80A	I	
		090: 90A	J	
		100: 100A	K	
		110: 110A	L	
		120: 120A	M	
		130: 130A	N	
		140: 140A	O	

1.8 QMUCHGCR<CRC16><CR>: Device general status parameters inquiry

Computer: 51 4D 55 43 48 47 43 52 26 34 0D

QMCHGCR<CRC16> <CR> Query AC charging current setting range

Device: (002 010 020 030 040 050 060<CRC16> <CR> (3KVA/5KVA same)).

(BBB CCC DDD EEE FFF GGG HHH<CRC16> <CR>.)

	Data	Description	Notes	Expert
A	(	Start byte	A	
	BCDEFGH	002: 2A 010: 10A 020: 20A 030: 30A 040: 40A 050: 50A 060: 60A	B C D E F G H	

1.9 QFLAG<CRC16><CR>: Device general status parameters inquiry

Computer: 51 46 4C 41 47 98 74 0D **QFLAG**<**CRC16**> <**CR**> **Flag bits for setting status updates**

SUNSEE 5K:(EakxyDbjuvz<CRC16> <CR>)/(EaxyDbjkuvz /(EabkxyzDjuv

```
(BBBBBBBBBBB<CRC16> <CR> 28 45 61 62 6A 6B 75 76 78 79 7A 44 FE 51 0D
```

SUNPOLO 5K: (EakxyDbdjuvz has 1 more bit.)

SUNSEE PLUS 3K: (EakxyDbcdjuvz has 2 more bits.)

	Data	Description	Notes	Expert
A	(	Start byte	A	
	BBBBBBBBBBBB	EakxyDbjuvz	B: E represents the enabled setting items: akxy D stands for forbidden settings: bjuvz (a/b/j/k/u/v/x/y/z has the meaning of setting instructions 2.1-2.9)	

1.10 QSID<CRC16><CR>: Device general status parameters inquiry

Computer: 51 53 49 44 BB 05 0D QSID<CRC16><CR> Query device ID

Device: (1455355535553555355535<CRC16><CR>

(BBBBBBBBBBBBBBBBBBBB<CRC16><CR>

	Data	Description	Notes	Expert
A	(	Start byte	A	
	BBB..... BBBB	(1455355535553555355535 (1492331605104473005535	5KVA serial number: (1455355535553555355535 3KVA series number: (1492331605104473005535	

1.11 QRI<CRC16> <CR>: Device general status parameters inquiry

Computer: 51 52 49 D8 CE 0D;-QRI <CRC16> <CR> for rating information (same as the SCC directive).

Device: (RIBBB. B CC.C DD EEE. E FFF. F GGG. G HHH. H III.I<CRC16><CR>

28 52 49 30 32 34 2E 30 20 31 32 2E 30 20 30 32 20 30 35 30 2E 30 20 30 32 38 2E 32 20 30 32 37 2E 30 20 30 33 32 2E 30 20 30 35 35 2E 30 78 FF 0D

3KVA:(RI024.0 12.0 02 050.0 028.2 027.0 032.0 055.0<CRC16><CR>

5KVA:(RI048.0 12.0 04 060.0 056.4 054.0 060.0 065.0<CRC16><CR>

	Data	Description	Notes	Axpert
A	(	Start byte		
B	BBB. B	Rated battery voltage	B is an Integer number 0 to 9. The units is V.	
C	CC.C	Single cell battery voltage	C s an Integer number 0 to 9. The units is V.	
D	DD	Number of battery units	D is an Integer number 0 to 9. The units is PCS	
E	EEE. E	Rated AC output frequency	E is an Integer number from 0 to 9. The units is Hz.	
F	FFF. F	Battery voltage Fast charging point CV	L is an Integer ranging from 0 to 9. The units is V. (3K setting range 24-29.2V default 28.2V; 5K setting range 48-58.4V default 56.4V).	
G	GGG. G	Battery voltage Floating point FLV	M is an Integer ranging from 0 to 9. The units is V. (3K setting range 24-29.2V default 27V; 5K setting range 48-58.4V default 54V).	
H	HHH. H	Battery high voltage protection point	H is an Integer ranging from 0 to 9. The units is V.	
I	III.I	Set the maximum charging current to +5A	I is an Integer ranging from 0 to 9. The units is A.	

1.12 QID<CRC16><CR>: Device general status parameters inquiry

Computer: 51 49 44 D6 EA 0D QID<CRC16><CR> Query device ID

Device:3k:(92331605104473<CRC16><CR>-5k:(55355535553555<CRC16><CR>

(BBBBBBBBBBBB<CRC16><CR>

	Data	Description	Notes	Axpert
A	(	Start byte	A	
	BBB..... BBBB	(55355535553555 (92331605104473	5KVA series number: (55355535553555 3KVA series number: (92331605104473	

1.13 QMD<CRC16><CR>: Query machine information

Computer: 51 4D 44 1A 2E 0D QMD<CRC16><CR>

SUNSEE 3K: (#####INVERTEX3K ###3000 99 1/1 230 230 02 12.0<CRC16><CR>

SUNSEE 5K: (#####INVERTEX5K ###5000 99 1/1 230 230 04 12.0<CRC16><CR>

(#####BBBBBBBBBBBB ###CCCC DD E/E FFF GGG HH II.I<CRC16><CR>

28 23 23 23 23 23 49 4E 56 45 52 54 45 58 33 4B 20 23 23 23 33 30 30 30 20 39 39 20 31 2F 31 20 32 33
30 20 32 33 30 20 30 32 20 31 32 2E 30 87 D3 0D

1.14 QMN<CRC16><CR>: Find machine model

Computer: 51 4D 4E BB 64 0DQMN<CRC16><CR>

Device: (BB-CCCC<CRC16><CR>

SUNSEE 3K: (VM-3000<CRC16><CR> 28 56 50 2D 33 30 30 30 36 0C 0D -SUNSEE 5K did not answer

SUNON 3K: (VMII-3000<CRC16><CR>

SUNON 5K: (VMII-5 000<CRC16><CR>

SUNON PLUS 3K: (VMIII-3000<CRC16><CR>

SUNON PLUS 5K: (VMIII-5000<CRC16><CR>

SUNPOLO 5K: (MKS2-520 0<CRC16><CR>

SUNSEE PLUS 3K:(KING-3200<CRC16><CR>

SVP Series (1-3K): (VP-3000<CRC16><CR>

1.15 QGR<CRC16> <CR>: Query UPS mode (01:UPS/00:APL).

Computer: 51 47 52 87 12 0D;-QGR<CRC16><CR>

Device: (BB<CRC16><CR>28 30 30 1C A1 0D

(00<CRC16><CR> 3K and 5K replies are the same

1.16 QBV<CRC16> <CR>: Query battery voltage and capacity

Computer:51 42 56 38 63 0D;-QBV<CRC16><CR>

Device: (BB. B CCC <CRC16><CR>28 32 33 2E 31 20 30 33 35 20 9F 72 0D

3K: (23.1 035 <CRC16><CR>-23.1 battery voltage, 035% battery capacity

5K: (54.1 100<CRC16><CR>-54.1 battery voltage, 100% battery capacity

1.17 QBT<CRC16> <CR>:// Query battery type

Computer: 51 42 54 18 21 0D;-QBT<CRC16><CR>

Device: (BB<CRC16><CR>28 30 30 1C A1 0D

(00<CRC16><CR> (00:AGM/01:FLOODED/02:USER).

1.18 QBP<CRC16> <CR>: // Query buzzer switch status

Computer: 51 42 50 58 A5 0D;-QBP<CRC16><CR>

Device: (BB<CRC16><CR>28 30 31 0C 80 0D

(01<CRC16><CR> (00:off/01:on).

1.19 QOP<CRC16> <CR>: Query output source priority

Computer: 51 4F 50 2E F9 0D;-QOP<CRC16><CR>

Device: (BB<CRC16><CR>28 30 30 1C A1 0D

(00<CRC16><CR> (00: mains/01:solar/02:solar, battery, mains).

1.20 QCP<CRC16> <CR>: Query charging source priority

Computer: 51 43 50 6B 94 0D;-QCP<CRC16><CR>

Device: (BB<CRC16><CR>28 30 32 3C E3 0D
(02<CRC16><CR> (00: mains/01: solar/02: mains and solar/03: solar only).

1.21 QCVV<CRC16> <CR>: Query the charging CV voltage

Computer: 51 43 56 56 D9 58 0D;-QCP<CRC16><CR>
Device: (BB<CRC16><CR>28 32 38 2E 32 94 E4 0D
3K:(28.2<CRC16><CR> //5K:(56.4<CRC16><CR>

1.22 QBFT<CRC16> <CR>: Query float voltage

Computer: 51 42 46 54 CD 59 0D;-QBFT<CRC16><CR>
Device: (BB.B<CRC16><CR>28 32 37 2E 30 98 97 0D
3K:(27.0<CRC16><CR> //5K:(54.0<CRC16><CR>

1.23 QBVO<CRC16> <CR>: Query battery overvoltage protection points

Computer: 51 42 56 4F 6D 70 0D;-QBVO<CRC16><CR>
Device: (BB.BB<CRC16><CR>28 33 33 2E 30 32 E3 0D
3K:(33.0<CRC16><CR> //5K:(60.0<CRC16><CR>

1.24 QOLBY<CRC16> <CR>: Query overload to bypass

Computer: 51 4F 4C 42 59 CD AF 0D;-QOLBY<CRC16><CR>
Device: (BB<CRC16><CR>28 30 30 1C A1 0D
(00<CRC16><CR> (00: not allowed/01: allowed).

1.25 QUPSTYPE<CRC16> <CR>: Query UPS type? Not controlled by the restore setup command

Computer: 51 55 50 53 54 59 50 45 FD B8 0D;-QUPSTYPE<CRC16><CR>
Device: (BB<CRC16><CR>28 30 30 1C A1 0D
(00<CRC16><CR> - (01<CRC16><CR>

1.26 QBVTU<CRC16> <CR>: Query the voltage value of the battery low mains setting voltage

Computer: 51 42 56 54 55 18 D2 0D;-QBVTU<CRC16><CR>
Device: (BB<CRC16><CR>28 32 33 4A A0 0D
3K:(23<CRC16><CR> // 5K:(51<CRC16><CR>

1.27 QOPM<CRC16> <CR>: Query parallel mode

Computer: 51 4F 50 4D A5 C5 0D;-QOPM<CRC16><CR>
Device: (BB<CRC16><CR>28 30 30 1C A1 0D
(00<CRC16><CR> (00: no parallel/01: single-phase parallel/02:3P1,/03:3P2/04:3P3).

1.28 QOPC<CRC16> <CR>: Query output current

Computer: 51 4F 50 43 44 0B 0D;-QOPC<CRC16><CR>
Device: (BBB. B CCC.C DDD.D<CRC16><CR>

28 30 30 30 2E 38 20 30 30 30 2E 34 20 30 30 30 2E 30 AB 2A 0D

(000.8 000.4 000.0<CRC16><CR>//000.8A; 000.4A; 000.0A

1.29 **QBEQI**<CRC16> <CR>: Query the setting parameters (3K valid, 5K invalid)

Computer: 51 42 45 51 49 2E A9 0D ;-QBEQI<CRC16><CR>

Device: (B CCC DDD EEE FFF GG. GG HHH III J KKKK<CRC16><CR>

28 30 20 30 36 30 20 30 33 30 20 30 35 30 20 30 33 30 20 32 39 2E 32 30 20 30 30 30 20 31

32 30 20 30 20 30 30 30 29 0C 0D

3K:(0 060 030 050 030 29.20 000 120 0 0000<CRC16><CR>

	Data	Description	Notes	Axpert
A	(	Start byte		
B	B	Battery charge function flag	0: (EdS) Disable the ho-charge function; 1: EEN enables the equalization function	Default 0
C	CCC	Battery homogenization time	The default is 60 minutes, 5-900 minutes, +5min per gear	Default 60
D	DDD	Number of days between battery charges	The default is 30 days, 0-90d +1d per gear	The default is 30 days
E	EEE	Maximum charging current	Maximum charging current mains + solar (02-120A) default 60A	Default 60A
F	FFF	Number of days between battery charges	The default is 30 days, 0-90d +1d per gear	The default is 30 days
G	GG. GG	Battery voltage Float voltage default 29.20V	G is an Integer ranging from 0 to 9. The units is V. (Setting range 25.00-31.50V) 0.1V per gear, default 29.20V	Default 29.20V
H	HHH	?	?	Default 000
I	III	Battery charge timeout	The default is 120 minutes, 5-900 minutes, +5min per gear	Default 120
J	J	Battery charging immediately activates the flag	0: (AdS) prohibits immediate equalization; 1: (AEN) Enable immediate equalization	Default 0
K	KKKK	?	?	Default 0000

二、Set the command

2.1 P*a sets the buzzer on/off

Computer: 50 45 61 D0 70 0D - PEa<CRC16> <CR>-open buzzer

Computer: 50 44 61 E3 41 0D - PDa<CRC16> <CR>-off buzzer

Device: (ACK<CRC16> <CR>){Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.2 P*b set the overload to bypass in battery inverter mode when the utility power is normal

Computer: 50 45 62 E0 13 0D - PEb<CRC16> <CR> - Overload to bypass in battery inverter mode

Computer: 50 44 62 D3 22 0D - PDb<CRC16> <CR> - Overload does not turn bypass in battery inverter mode

Device: (ACK<CRC16> <CR>){Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.3 P*j set the energy-saving mode on (5K active, 3K invalid)

Computer: 50 45 6A 61 1B 0D - PEj<CRC16> <CR>t-enabled

Computer: 50 44 6A 52 2A 0D - PDj<CRC16> <CR> - disabled

Device: (ACK<CRC16> <CR>){Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.4 P*k settings LCD display 1 minute after returning to the default interface

Computer: 50 45 6B 71 3A 0D - PEk<CRC16> <CR> - enabled

Computer: 50 44 6B 42 0B 0D - PDK<CRC16> <CR> - disabled

Device: (ACK<CRC16> <CR>){Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.5 P*u set overload restart on/off

Computer: 50 45 75 82 C5 0D - PEu<CRC16> <CR> - Overload restart

Computer: 50 44 75 B1 F4 0D - PDu<CRC16> <CR> - Off overload restart

Device: (ACK<CRC16> <CR>){Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.6 P*V set overtemperature restart on/off

Computer: 50 45 76 B2 A6 0D - PEv<CRC16> <CR>t overtemperature restart

Computer: 50 44 76 81 97 0D - PDv<CRC16> <CR> - Turn off and restart overtemperature

Device: (ACK<CRC16> <CR>){Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.7 P*x sets display backlight on/off

Computer: 50 45 78 53 68 0D - PEx<CRC16> <CR>-open display backlight

Computer: 50 44 78 60 59 0D - PDx<CRC16> <CR>-off display backlight

Device: (ACK<CRC16> <CR>){Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.8 P*y sets input source change alarm on/off

Computer: 50 45 79 43 49 0D -PEy<CRC16> <CR>] Open input source change alarm

Computer: 50 44 79 70 78 0D - PDy<CRC16> <CR> - Off input source change alarm

Device: (ACK<CRC16> <CR>){Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.9 P*z sets computer communication software fault record on/off

Computer: 50 45 7A 73 2A 0D -PEz <CRC16> <CR>t) enabled

Computer: 50 44 7A 40 1B 0D - PDz<CRC16> <CR> - disabled

Device: (ACK<CRC16> <CR>{Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.10 PCP** Set charging source priority

Computer: 50 43 50 30 30 8d 7a 0d -PCP00<CRC16> <CR>- (mains).

Computer: 50 43 50 30 31 9d 5b 0d -PCP01<CRC16> <CR>- (Solar First).

Computer: 50 43 50 30 32 ad 38 0d - PCP02<CRC16> <CR>- (mains and solar).

Computer: 50 43 50 30 33 bd 19 0d -PCP03<CRC16> <CR>- (solar only).

Device: (ACK<CRC16> <CR>{Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.11 POP**Set output source priority

Computer: 50 4f 50 30 30 c2 48 0d -POP00<CRC16> <CR>- (mains priority).

Computer: 50 4f 50 30 31 d2 69 0d -POP01<CRC16> <CR>- (solar first).

Computer: 50 4f 50 30 32 e2 0b 0d - POP02<CRC16> <CR>v (solar, battery, mains).

Device: (ACK<CRC16> <CR>{Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.12 PGR** Set UPS mode

Computer: 50 47 52 30 30 29 eb 0d PGR00<CRC16> <CR>v (APL mode).

Computer: 50 47 52 30 31 39 ca 0d - PGR01<CRC16> <CR>- (UPS mode).

Device: (ACK<CRC16> <CR>{Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.13 PBT**Set Battery Type (AGM)

Computer: 50 42 54 30 30 27 0e 0d -PBT00<CRC16> <CR>-(AGM).

Computer: 50 42 54 30 31 37 2f 0d-PBT01<CRC16> <CR>- (FLOODED).

Computer: 50 42 54 30 32 07 4c 0d-PBT02<CRC16> <CR>-(USER).

Device: (ACK<CRC16> <CR>{Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.14 F** Set the output frequency

Computer: 46 35 30 63 3e 0d -F50<CRC16> <CR>-(50Hz).

Computer: 46 36 30 36 6d 0d] F60<CRC16> <CR>-(60Hz).

Device: (ACK<CRC16> <CR>{Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.15 MNCHGC*** set the maximum charging current (60A) setting range (10, 20...110, 120) every 10A gear

Computer: 4D 4E 43 48 47 43 30 36 30 D4 2E 0D-MNCHGC060<CRC16> <CR>t line (3KVA).

Computer: 4D 4E 43 48 47 43 30 30 36 30 8B AC 0D] MNCHGC0060<CRC16> <CR>-enabled (5KVA).


Device: (ACK<CRC16> <CR>{Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.16 MUCHGC* Set the maximum charging current of the mains (30A)**

(Setting range: 02, 10, 20...50, 60) 2A Later, every 10A gear

Computer: 4d 55 43 48 47 43 30 33 30 c0 c0 0d] MUCHGC030<CRC16> <CR>t, enabled

Device: (ACK<CRC16> <CR>{Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.17 PBCV.* Set the voltage (22.5V)  at which the battery returns to mains charging when the mains power is normal**

(Setting range: 22.0, 22.5...25.0, 25.5). Every 0.5V gear

Computer: 50 42 43 56 32 32 2e 35 23 77 0d] PBCV22.5<CRC16> <CR>nb. Enabled

Device: (ACK<CRC16> <CR>){Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed


2.18 PBDV.* Set the voltage (28V)  for the battery to resume discharge when the utility power is normal**

Set the range (24.0, 24.5...28.5, 29.0, FULL) FULL to send 00.0 to a full 00.0, preceded by a stop of 0.5V

Computer: 50 42 44 56 32 38 2E 30 7C 52 0D/PBDV28.0 <CRC16> <CR>] enabled

Device: (ACK<CRC16> <CR>){Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed


2.19 PCVV.* Set CV charging voltage (28.4V) battery type to USER (user-defined mode) can be set**

The setting range (25.0...31.5) is every 0.1V, and the setting voltage value cannot be less than the float voltage 

Computer: 50 43 56 56 32 38 2E 34 15 73 0D/PCVV29.5 <CRC16> <CR>] enabled

Device: (ACK<CRC16> <CR>){Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.20 PBFT.* Set the float voltage (26.8V) battery type to USER (user-defined mode) can only be set**

The setting range (25.0.....31.5) is every 0.1V, and the setting voltage value cannot be greater than the CV voltage 

Computer: 50 42 46 54 32 36 2E 38 29 98 0D/PBFT26.8 <CRC16> <CR>] enabled


Device: (ACK<CRC16> <CR>){Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.21 PSDV.* Set the discharge cut-off voltage (22.4V) only when the battery type is USER (user-defined mode).**

Set the range (21.0.....24.0) every 0.1V 

Computer: 50 53 44 56 32 32 2E 34 21 09 0D/PSDV22.4<CRC16> <CR>t body enabled

Device: (ACK<CRC16> <CR>){Answer Setup Successful or (NAK<CRC16> <CR>) Answer Setup Failed

2.22 PBVO.* Set the battery overvoltage protection point (3K setting range 24.0-33.0) (5K setting range 48.0-60.0) **

Computer: 50 42 56 4F 33 32 2E 31 E0 E4 0D/PBVO32.1<CRC16> <CR>t-enabled

Device: (ACK<CRC16><CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.25 PSAVE<CRC16><CR> Save Settings?

Computer: 50 53 41 56 45 6D 30 0D

Device: (ACK<CRC16><CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.26 PF<CRC16><CR> restore default settings.

Computer: 50 46 26 BD 0D

Device: (ACK<CRC16><CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.27 REEP<CRC16><CR> Restore default settings.

Computer: 52 45 45 50 C6 C2 0D

Device: (ACK<CRC16><CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.30 POLBY<CRC16><CR> Set overload-to-bypass mode (00: overload-to-bypass / 01:Overload-to-bypass mode)**

Computer:50 4F 4C 42 59 30 31 BF 8B 0D

Device: (ACK<CRC16><CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.31 PBP<CRC16><CR>** Set buzzer switch (00: Turn off buzzer/01: Turn on buzzer) **⌵**

Computer: 50 42 50 30 30 FB CE 0D

Device: (ACK<CRC16><CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.32 POPM<CRC16><CR>** Set parallel mode (00: no parallel/01: single-phase parallel/02:3P1, /03:3P2/04:3P3).

Computer: 50 4F 50 4D 30 30 1D 04 0D **⌵**

Device: (ACK<CRC16><CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.35 PPVOKC*<CRC16> <CR>: set solar charging when normal (0: Charge when the stand-alone machine is normal; 1: All normal time charge).

Computer: 50 50 56 4F 4B 43 30 7B 56 0D -PPVOKC0<CRC16><CR> (3K has answers, but does not have this function).

Device: (ACK<CRC16> <CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.36 PSPB*<CRC16> <CR>: Set the maximum charging power of solar energy to

automatically adjust (0: the maximum power of solar energy is the maximum charging power of the battery; 1: The maximum power of solar energy is automatically adjusted to the maximum power according to the load power and battery charging power) **⌵**

Computer: 50 53 50 42 31 E8 C7 0D -PSPB1<CRC16><CR> (3K has answers, but does not have this feature).

Device: (ACK<CRC16> <CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.37 PBEQE*<CRC16> <CR> set the equalization function (default 0: disable the equalization function; 1: Enable the equalization function) **⌵**

50 42 45 51 45 30 5A 32 0D -PBEQE*<CR> (3K valid, 5K invalid).

Device: (ACK<CRC16> <CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.38 PBEQT<CRC16> <CR> set the average charging time (default 60 minutes: 5-900 + 5 per gear).

⌵


50 42 45 51 54 31 30 30 9E 80 0D -PBEQT100<CR> (3K valid, 5K invalid).

Device: (ACK<CRC16> <CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.39 PBEQP<CRC16> <CR> Set the number of average charging interval days (default 30 days: 0-90 + 1 per gear). **⌵**


50 42 45 51 50 30 39 30 D9 D9 0D -PBEQP090<CR> (3K valid, 5K invalid).

Device: (ACK<CRC16> <CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.40 PBEQV.**. <CRC16> <CR> set the average charging voltage (default 29.20V, 25.00-31.50+0.1V per gear). **


50 42 45 51 56 32 35 2E 31 35 7B 8B 0D -PBEQV25.15<CR> (3K valid, 5K invalid).

Device: (ACK<CRC16> <CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.41 PBEQOT<CRC16> <CR> set the average charge timeout (default 120 minutes: 5-900 +5 per gear). 

50 42 45 51 4F 54 32 30 30 B7 76 0D -PBEQOT200<CR> (3K valid, 5K invalid).

Device: (ACK<CRC16> <CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

2.42 PBEQA* <CRC16> <CR> set to activate the charge function immediately (default 0: disable immediate activation; 1: Activate now) 

Computer: 50 42 45 51 41 30 96 F6 0D -PBEQA0<CR> (3K valid, 5K invalid).

Device: (ACK<CRC16> <CR> - Answer Setup Successful or (NAK<CRC16> <CR> - Answer Setup Failed

3. Answer instructions

3.1 (NAK<CRC16><CR>: Device general status parameters inquiry

Computer: Invalid instruction <CRC16> <CR>

Device: (NAK<CRC16> <CR>-No Response (BBB<CRC16> <CR>

	Data	Description	Notes	Axpert
A	(	Start byte	A	
	BBB	NAK	Device B answers an invalid command	

3.2 (ACK<CRC16><CR>: Device general status parameters inquiry

Computer: Effective instruction <CRC16> <CR>

Device: (NAK<CRC16> <CR>-No Response (BBB<CRC16> <CR>

	Data	Description	Notes	Axpert
A	(	Start byte	A	
	BBB	ACK	Device B responds to a valid command	