

Sinewave Inverters

Jazz 1500VA

User's manual



1 Warranty

RIPEnergy is not manufacturer of these units . All technical information's, data's and dimension's rely on information's given by the manufacturer. Therefore RIPEnergy AG is not responsible for the data's provided in this manual. Should work take place, which is not in accordance with guidelines, local rules, instruction's or specification's, damage may occur. All of these matters will lead to loss of warranty. RIPEnergy AG can not accept any liability for damages or costs arising due to the use of these inverters.

2 Distributor's address



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3 Retail dealer's address / Date of purchase

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4 General Information

Thank you for choosing a product supplied by RIPLEnergy AG. The product you have bought is manufactured to meet the highest quality standards. Our manufacturers have a very long experience in manufacturing of high end electronic equipment.

5 Use of this manual

This user's manual contains the information you need to install and operate this inverter correctly. Check that you have the correct manual for your unit.

It is valid for the following units :

Sinewave Inverter Jazz 1500-12-230 and 1500-24-230 and 1500-48-230



Read the manual carefully before installing or operating the inverter. If you do not understand or are uncertain about any operation or information, please contact your dealer. He will be able to help you with an explanation or will demonstrate the operation.



The user must always have access to the user's manual. The latest version of the manual is provided and can be downloaded from the homepage of RIPLEnergy AG.



These inverters must be only installed by qualified, authorized and trained personnel familiar with the locally applicable standards and taking into consideration all relevant safety guidelines and measures!

Never remove the type number plate. Important technical information required for service or delivery of spare parts can be derived from the type number plate.



Modifications or breaking the warranty label without a written permission from RIPLEnergy AG means that warranty is lost immediately!

Always contact your dealer first if you have any problems.

6 Limitation of liability

RIPLEnergy AG is not responsible or liable for any loss, damage or costs arising from operating these inverters.

The products supplied by RIPLEnergy AG are not for application's in any medical equipment intended for use as a component of any life support system. If products are used in such systems, a specific written agreement between the manufacturer, RIPLEnergy AG and the installer/manufacturer of the system is needed. In addition, the manufacturer of the system must agree to indemnify RIPLEnergy AG from any claims arising from use of products supplied by RIPLEnergy AG in the life support equipment.

7 Warranty specifications (short form)

The inverters are built for RIPLEnergy AG in accordance with the legally applicable standards. During production, and prior to delivery, all products are tested and inspected. RIPLEnergy AG is looking to find the best available products on the market. Good quality parts and the latest technology of the units will ensure a long lasting and trouble free operation of these units.

If any problem occurs during warranty period, please contact your dealer first. He is able to serve you with instructions and explain to you how to send the unit to the nearest service center, if necessary.

Warranty can only be guaranteed if you enclose a document (Invoice or delivery documents) to the defective units.

Damage attributable to normal wear and tear, overload or improper handling or installation is not covered by the warranty.

Modifications or breaking the warranty label without a written permission from RIPLEnergy AG means that the warranty is lost immediately!

Always return the units in its original package and completely assembled. A short description of the failure/problem will help us to serve you better (see also instructions on item 20).

RIPLEnergy AG is not paying for costs arising from transport of the unit or damage that arises during the time the unit is unserviceable. The general terms of delivery and terms of sale of RIPLEnergy AG are valid.

8 Unpacking

After unpacking, carefully check the inverter for possible damage. If any damage due to transport is visible immediately contact your dealer for further instructions.



Keep the original packing in case you need it to transport the inverter later.

9 Environmental protection

RIPLEnergy AG continually commits a considerable part of its resources towards minimizing the environmental impact of its products. The inverter is manufactured with valuable materials and is easy to recycle.

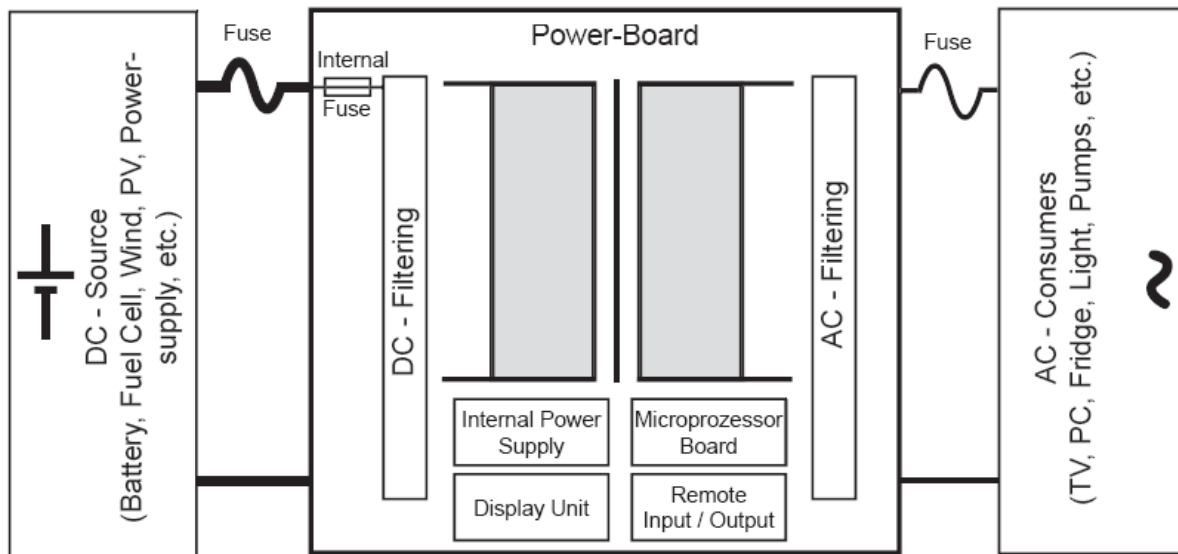
10 Description of the inverter

The model Jazz 1500VA pure sine wave inverter supplies a 230VAC output voltage either from a 12V, 24V or 48VDC power source. The shape of the output voltage is pure sine wave - clean power as from the grid.

The inverter design is based on state of the art high frequency technology. All functions are controlled by a microprocessor. Extra input and output filtering to reduce EMI to extremely low levels. Reliability features include an input fuse, thermal shutdown, current limiting and output short circuit shutdown with automatic recovery.

The input and output is fully isolated. The superb overload capability supplies short time peak power to start heavy equipment such as pumps and compressors.

11 Block Diagram



12 Safety Information

12.1 General information

Read the manual carefully before installing or operating the inverter. If you do not understand or are uncertain about any operation or information please contact your dealer. Before installation you must be aware of local standards and rules applicable to use such equipment. For installation and use of the inverter pay attention to local applicable standards, all relevant safety guidelines and measures. These rules may be different to the information's provided in this manual.

High voltages up to 1200V inside the inverter! Never open the enclosure. High voltage may harm or even kill persons or animals. Never touch wires or blank connectors. Do not operate the inverter with damaged or substandard wiring.

Warning! While sleep mode is active the inverter AC-Output is active and high voltage is present at the AC-Output. To detect a load the inverter is sending 230VAC-Pulses to the AC-Output.

Check local standards for lightning protection of inverter systems.

No other inverter output, AC-Generator or other AC-Source may be connected to the inverters AC-Output. The inverter will be destroyed immediately!

The enclosure may heat up to 80°C! Never obstruct louvers nor place other items on the inverters enclosure. If ventilation is not sufficient the unit may overheat and an automatic shut off may occur.

Even if DC-Wiring is not longer connected to the batteries, inbuilt large capacitors may hold Dc-Voltage for an extended period of time. The inverter may only be opened by skilled and authorized personnel.

Modifications or breaking the warranty label without a written permission from RIPLEnergy AG means that warranty is lost immediately!

The inverter contains components which can produce arks and sparks. To prevent fire or explosion, do not install or operate in compartments containing batteries or flammable materials. Never use or operate the unit where there is danger of gas- or dust explosion.

After automatic shut down of the inverter because of any failure the inverter may switch ON automatic again. The OFF period is depending on what causes the shut down and may vary from only seconds to several minutes.

12.2 Working with batteries

Using batteries in a wrong way may result in danger for personnel, animals or the environment. Check information from battery manufacturer for safe installation and operation.

If battery acid contacts skin or clothing, wash immediately with soap and water. If acid contacts eyes, immediately flush with running cold water for at least 20 minutes and get medical attention as soon as possible.

Never smoke or allow a spark or flame in vicinity of batteries.

Do not drop metal tools on batteries. The resulting spark or short circuit may cause an explosion.

Remove personal metal items such as rings, bracelets, necklaces and watches when working with batteries.

13 Planning and mounting the inverter

This section will provide you information's about configuring and installing your inverter. Make sure that you are aware of local rules and safety measurements.

13.1 Required power draw

Before connecting your appliances to the inverter, always check the power draw required. The inverter is affordable to supply surge power for a short time, so as to start up electrical equipment such as pumps, motors, etc. Some equipment needs more power while starting up.

The inverter is protected against overload and will switch off automatically when overload is applied. As ambient temperature is above 20°C the inverters nominal power may be smaller due to reduced cooling.

Using the inverter in high altitudes may also reduce nominal power of the inverter because of less heat discharge. As a rule of thumb, the reduction of nominal power is approximately 1.5% per 100m elevation.

13.2 Installation

These units must be only installed by qualified, authorized and trained personnel familiar with the locally applicable standards and taking into consideration all relevant safety guidelines and measures!

Before installing the unit check for correct DC-Voltage and power level of the inverter.

The Inverter may be installed in any position. Install the inverter in a dry, well ventilated and dust free location. It must be installed out of reach for unauthorized personnel especially children's. Do not install the inverter in the same compartment as the batteries.

Never use or install the inverter in locations where there is gas or explosive danger!

For proper cooling of the Inverter ensure that the airflow is not obstructed and keep a clearance distance of 2.5cm to other units. If the inverter is installed in a closed compartment the nominal power may be reduced.

In order to keep the battery cables as short as possible (max. 3m) locate the inverter close to the DC-Distribution or Battery. Be aware that during charging of batteries an explosive gas can be generated.

13.3 DC-Wiring

Position of the switch on the front panel must be OFF.

Caution! First connect the assembled DC-Cables to the inverter and in a second step connect it to the battery! Always connect first the neutral wire with the battery!

A high power fuse must be installed direct to the battery to protect the DC-Wiring. DC – current according to the table below.

Not installing a fuse may result in melting or even burning DC-Cables in case of excessive overload or failure of the inverter.

The way of wiring has influence on the EMC behaviour of the system. Most problems using inverter are because of unprofessional wiring. Lay the cables in a metal duct. If this is not possible the cables should be twisted and lay parallel to a metal bar.

To thin cable or loose connections can cause dangerous overheating of cables or terminals. Always use DC cables of the correct size to avoid fire and other damage.

To define the size of cable, we provide a “Cable Size Calculator” on our website for free use.

You may use the following recommendations for best performance of inverter:

Inverter	DC-Cable AWG / mm2	Inline fuse (A)
1500-12-110	#2 / 35	200
1500-12-230	#2 / 35	200
1500-24-110	#2 / 35	130
1500-24-230	#2 / 35	130
1500-48-110	#4 / 25	80
1500-48-230	#4 / 25	80

Connect the assembled DC-Cables to the terminals of the inverter. (Positive cable to inline fuse and negative cable to battery).

Torque to tighten the terminal screws is 12-13 Nm.

Connect the other end of assembled DC-Cables with care to the battery/inline fuse. If possible use coloured cables. Red colour means battery positive, while black is used for battery negative. Reversing positive and negative will cause major damage to the inverter and is not covered by warranty.

Note: Large capacitors in the units may hold DC-Voltage for a long period of time. Also a spark may occur while connecting the DC-cables or inserting the DC-Fuse after installation. This is normal.

If you connect other consumers to the battery contact your dealer.

13.4 AC-Wiring

Use the included AC-Connector to connect the AC-Load to the output of inverter.

Even the inverter is protected against overload and short circuit, we recommend to use an AC-Circuit breaker of correct size.

For safe operation it is necessary to connect earth (PE) and neutral (N) of the inverter output to central ground of the inverter.

Even more safe is to use a 15mA or 30mA earth leakage switch in the AC-Installation.

13.5 Grounding

The earth wire protection is only possible if the inverter enclosure is also connected to earth. Use a . 8-10mm² cable (AWG 8) and connect it to the earth terminal of the inverter. This is also important for lightning protection.

14 Remote control unit

The optional available remote control unit enables remote control of the inverter. The remote control unit must be connected to the RS232C port, located on the rear side of the inverter. Before using the remote control unit the main switch of the inverter must be in the "ON" position.

We recommend to use the optional available remote panel "Standard". The cable to connect this unit to the inverter is included when you order such a remote unit. Please refer to the appropriate section of this manual, how to configure and operate the inverter with the remote panel.

The inverter is programmable while using the same RS232C port. Also refer to the section about RS232 in the appropriate appendix of this manual.

15 Configure the inverter prior to operation

15.1 Frequency setting

The AC-Frequency may be selected by DIP-Switch S4 on the front panel as follows.

AC-Frequency (Hz)	S3
50 (factory setting)	ON (up)
60	OFF (down)

To activate the new selected value, the inverter must be turned ON and OFF (Reset) .

15.2 Output voltage selection

Use the DIP-Switch S1 and S2 to adjust the output voltage to your application.

Output Voltage (VAC)	S1	S2
200	ON (up)	ON (up)
220	OFF (down)	ON (up)
230 (factory setting)	ON (up)	OFF (down)
240	OFF (down)	OFF (down)

To activate the new selected value, the inverter must be turned ON and OFF (Reset) .

15.3 Sleep mode/ Power saving mode (automatic load detection)

Detailed information's about this mode you will find in the appendix of this manual.

The factory setting is: enabled.

Caution! If the inverter is detecting a load it may take a few seconds before the output power is available (delayed). Be careful when working with machinery (we recommend to disable the sleep mode).

16 Operation

The Inverter is controlled by a single three position switch located on the front panel of the inverter.

Engaging

Switch to "ON-Position". The inverter starts with a self test. All LED's will glow for a short time. At the begin and at the end of this test, you will hear a "beep". The green LED will illuminate. The Inverter is ready to use.

Power down

Switch to „OFF-Position“. All LED's are dark. The inverter output is OFF or Standby (with activated sleep mode). Warning! If sleep mode is active, the inverter AC-Output is loaded with a 230VAC test puls every 800ms!

Remark

Even if the inverter is switched to off, it is not disconnected from the battery. It still draws very little power from the battery. If you don't need the inverter for an extended period disconnect it from the battery to avoid low discharge of battery.

17 LED-Display

17.1 Status LED

Power saving LED steady green Sleep mode disabled, AC-Output OK

Power saving LED flashing slow green Sleep mode enabled, Standby

OVP LED Cut Off caused by DC-Over voltage

UVP LED Cut Off caused by DC-Low voltage

OVER LOAD LED..... Cut Off caused by overload

OVER TEMP LED Cut Off caused by over temperature

17.2 Input Level LED

Remark: The DC-Input voltage may be less then the battery voltage. The longer and thinner the DC-Cables, voltage drop in the cable is higher when the load is big.

The battery voltage bar graph indicates the voltage at the input terminals of the power inverter. At low input current, this voltage is very close to the battery voltage. At high input current, this voltage will be lower than the battery voltage because of the voltage drop across the cable and connections. Ideally, the voltage should remain in the green Ares of the bar graph. If the voltage goes into the red area at top and bottom of the graph, inverter may shutdown.

17.3 Load Level LED

The Load Level bar graph indicates the power drawn from the power inverter by the load. For long term operation, the watt indicator should remind in the green & orange area of the bar graph. Short term operation is possible with watt indicator in the red area. If the watt indicator rises to high values the bar will flash and the inverter will shutdown to protect itself.

18 Technical data

1500VA

Electrical (output)

Nominal VAC	220 - 230 - 240 (selectable) +/- 3%
Output Frequency	50Hz - 60Hz (selectable) +/- 0.05%
Nominal power	1500VA continous
Nominal current	6.5A (230VAC @ nominal Power)
Power for 3 min.	1750VA
Peak Power	2000VA
Output Waveform	Pure Sinewave
Protection circuitry	Short circuit, Overload, Overtemperature
Indicators	Overload, Overtemperature, Loadlevel (Red / Orange / Green)
Power Factor	0.4 - 1 (COS Phi)

Environmental Specifications

Operating Temp. Range	-10° to +40°C @ maximum output Derating Linearly 4% per °C from 40°C
Humidity	0 - 95% Relative Humidity (non-condensing)
Audible Noise	NONE, 0db @ 1m (Fan OFF)
Fan	Load and temperature controlled (65°C ON, 45°C OFF)
Isolation	Input-Output 1100VDC, Input-Case 1100VDC Output-Case 500VDC

Electrical (input)

Nominal voltage (VDC)	12	24	48
Voltage range (VDC)	10 - 16	20 - 32	42 - 62
Amps @ Pnom (A)	139	67	33
Protection circuitry	Overvoltage, Low voltage		
Idle current 230V ON (A)	2.1	1.05	0.54
Idle current sleep (A)	0.125	0.06	0.03
Efficiency max.	90%	93%	95%
Efficiency @full load	86%	89%	90%
Indicators	Overvoltage, Lowvoltage, Battery level (Red / Orange / Green)		

Mechanical Specifications

Length	39.0 cm
Width	27.5 cm
Height	10.5 cm
Clearance	2.5 cm all around
Material	Aluminium
Finish	Black Anodize / Powder Epoxy Coat
Weight	7.0 Kg
Connections	DC-clamps, AC-connector (Connector supplied with inverter)
Warranty	2 years
Standards	Approval to CE, e-Mark

19 Trouble shooting

Warning – Never remove the cover of the inverter! Do not self repair the inverter, no serviceable parts are inside the unit.

No function	<p>Check LED-Display to identify the reason. According the failure indicated by the display see sections below to solve the problem. Check wiring for correct size, damage or loose screws. Check batteries, battery fuse or fuse installed on AC-output. If switch is in remote position but no remote control unit is connected , switch it to the „ON-Position“.</p>
DC-Low voltage	<p>The battery voltage dropped below 1.75V/Cell. Check battery fuse. Charge the battery – if charging is not solving the problem maybe the battery is defect. The wiring may be too thin or check installation for loose connections. Note: If battery voltage rises above 2.1V/Cell, the inverter restarts automatically.</p>
DC-Over voltage	<p>The battery voltage is above 2.55V/Cell. Remove the battery charger and stop charging the battery. Note: If battery voltage is dropping below 2.5V/Cell the inverter restarts automatically.</p>

Over temperature	<p>If load is smaller than nominal power of inverter – check if ventilation of the inverter is blocked. Maybe the ambient temperature is too high. If load is exceeding nominal power of inverter – reduce the load.</p> <p>Note: The inverter will switch on automatically if temperature of the inverter is within normal operating temperature range.</p>
Overload	<p>Reduce load. Remove unnecessary consumers. Reset the inverter with the front panel switch OFF than ON.</p>
Other failures	<p>Check system for correct grounding or contact your dealer.</p>

V/Cell: The nominal voltage using lead acid batteries is 2VDC/Cell. Example: A 12V-Battery contains 6 single cells, a 24V-Battery contains 12 single cells etc.

20 Overview protection features and automatic recovery after failure

Model	DC-Input					Over-temperature	
	Overvoltage (VDC)		Low voltage Alarm	Low voltage (VDC)		Shut-down	Restart
	Shut-down	Restart		Shut-Down	Restart		
1500-12-110 1500-12-230	16.7	12.2	10.2	9.5	12.6	85°C	45°C
1500-24-110 1500-24-230	33.4	30.4	20.4	19.0	25.2		
1500-48-110 1500-48-230	63.0	50.8	41.6	40.0	50.4		

21 Maintenance

Only little maintenance is required to keep your inverter and system operating reliable. The inverter must be switched off during maintenance and/or repair activities. It also must be secured against unexpected and unintentional switching on. Therefore switch off the connection between batteries and inverter and be sure that third parties cannot reverse the measures taken.

The following Steps must be undertaken at least once a year. Check cable and wires for damage and if they are still firmly connected. Defects such as loose connections ore damaged cables etc. must be corrected immediately. Keep the inverter dry, clean it from dust in order to ensure good heat discharge.

22 Further assistance and sending the unit for repair

In the rare case the unit is not working contact your dealer providing him some details as:

1. Check Battery voltage, wiring and display for possible failures.
2. Note: Type of unit and serial number.
3. Now call your dealer or nearest service center.
They will help you with further instruction's.
4. If he is recommend to send the unit for repair use the original packing.
Include a copy of invoice (Warranty repair is only possible with a copy of invoice or certificate showing date of purchase) and a short notice about your system and the failure observed.
5. In case you have to send the unit above state borders please make sure to fill the correct papers needed for customs. To reduce time and save money contact the consignee how to declare the delivery. Arising costs for customs has to be paid by the sender.

An actual list of authorized service center will be provided at our homepage www.ripenergy.ch

23 Manual Appendices

23.1 Power saving mode

When an inverter is powered on and is running in idle condition (there is no load or the load connected to the inverter has been switched off), it will still draw some power from the batteries in order to keep the system alive.

This inverter features a power saving "sleep" mode to conserve the battery power during idle conditions. When this mode is enabled, the inverter senses the output power being drawn and if this is less than 2 to 15 watts, the inverter shuts down the output power. Only few systems of the inverter are kept alive to reduce power consumption from the batteries to a very low value of only about 1.5 watts. As soon as a load is switched on, the inverter wakes up from its "sleep" condition and restores the output power after a response time of about 8 seconds. Please note that on waking up from the power saving "sleep" mode, the inverter requires some time to prepare all the systems before it can start delivering power to the load. Hence, the output power will not be available immediately but after a time lag of approx. 15 to 18 sec.

If using a hand tool or other appliance with a trigger, keep the trigger pressed for some time till the power is available to drive the tool / appliance.

Caution! If the inverter is detecting a load it may take a few seconds before the output power is available (delayed). Be careful when working with machinery (we recommend to disable the sleep mode).

The power saving "sleep" mode can be enable or disabled with the help of the power on / off switch or with the help of the optional remote control. Procedure to switch between the two states is given below.

The factory setting is „enabled“.

23.1.1 Power saving "sleep" mode, enabled

The front plate has a green LED marked "power saving" for indication of enabled state of power saving "sleep" mode (here-in-after referred to as the green LED). The power saving "sleep" mode is enabled in either of the following indications (when inverter is in on condition)

The green LED flashing sequence is flash-flash-gap-flash-flash-gap.....(Power saving "sleep" mode, idle condition or no load).

The green LED is continuously lighted (Power saving "sleep" mode, but load is operating)

Following indications will be observed when the inverter is powered on and subsequently loaded and unloaded condition (the initial condition is that the inverter is switched off and all loads are disconnected).

Switch on the inverter. There will be 2 beeps and the green LED will start flashing with a flashing sequence of flash-flash-flash.....After about 3 seconds, there will be 1 beep, the green LED will stop flashing and it will light continuously. Output power will be available after about 15 to 18 sec from the time the green LED stops flashing. After the output power is available, the inverter searches if any load is connected. If the load is less than 2 to 15 watts, the output power is shutdown after about 15 seconds. The green LED will start a flashing sequence of flash-flash-gap-flash-flash-gap.

If a load is connected to the output, the inverter will switch ON and the green LED will change to a continuous light.

23.1.2 Power saving "sleep" mode, disabled

The power saving "sleep" mode is disabled when the green LED marked "power saving" is off. In this mode the output power is always ON.

Following indications will be observed when the inverter is powered on and subsequently loaded and unloaded when power saving "sleep" mode is in disabled condition (the initial condition is that the inverter is switched off and all loads are disconnected).

Switch on the inverter. There will be 2 beeps and green LED will start flashing with a flashing sequence of flash-flash- flash.....After about 3 seconds, there will be 1 beep and the green LED will switch off. Output power will be available after about 15 to 18sec form the time the green LED switches off. The output power will be always available, even in no load, idling situation. The green LED will be off all the time.

23.1.3 Changing between enabled and disabled status of power saving "sleep" mode

You can change the mode using the power on/off switch on the front plate of the inverter or with the help of the optional remote control (refer to section remote control).

Switching between the modes using the power on/off Switch on the front plate of the inverter is done as follows:

This procedure acts as a toggle i.e. if the inverter was in enabled mode before the procedure, it will switch to disabled mode after the procedure, an vis versa.

1. Switch OFF the inverter
2. Switch off or disconnect all loads.
3. Switch on the inverter again. There will be 2 beeps and green LED will start flashing with a flashing sequence of flash-flash-flash.....(it will flash for approx. 3 seconds). The power ON/OFF switch should be switched off and on again during the time (approx. 3s) the green LED is flashing
4. While still flashing, switch off the power ON/OFF switch and immediately switch it on again. This will complete the switching procedure.
5. The inverter will continue its power on sequence and switch over to the new mode.

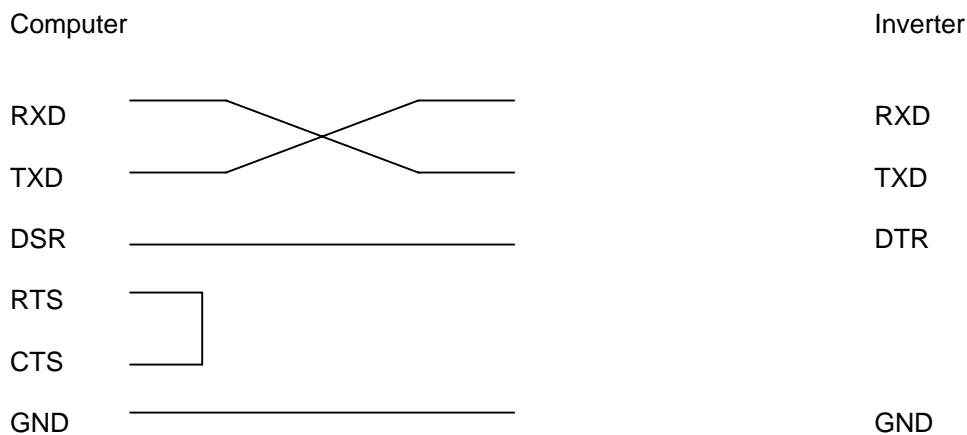
23.2 Operation of RS232 Serial Port

23.2.1 Hardware design

This unit uses a 9-pin D-Connector and three pins are used for RS232 signal lines:

Pin2: Receive Data (RXD)
 Pin3: Transmit Data (TXD)
 Pin4: Data Terminal Ready (DTR)

23.2.2 How to connect to your computer



Pin6:	Data set ready	(DSR)
Pin7:	Request to send	(RTS)
Pin8:	Clear to send	(CTS)
Pin5:	Ground	(GND)

23.2.3 RS232 interface and ASCII code for asynchronous serial transmission control

The byte structure is: START BIT - 8BIT DATA - STOP BIT
Baud rate: 1200, 2400 or 4800 (Set by DIP-Switch)
Parity Check: NONE (not settable)
Data- and StopBit: Not settable

Interface Command

The buffer size used for the RS232 port is 12-bytes. This unit will ignore all bytes more than this value. during transmission, the inverter will indicate it is ready to receive data from computer by the DTR line. A computer has to check the DTR line before sending any information. The inverter is normally ready to receive data while operating.

When a LF character (ASCII code 0AH) is received, the inverter would finish reception by clearing the DTR status and begin to interpret the received information. The inverter would execute the received command (AND/OR data) if it is correct.

Irrespective of whether the command is accepted or not, the inverter will always send back a response signal to the computer and set DTR to ready for receiving more incoming information.

23.2.4 Setting of Baud Rate

The baud rate of the RS232 interface is determined by DIP Switch S5 and S6 .

S5	S6	BAUD RATE
ON (up)	ON (up)	1200
OFF	ON	2400
ON	OFF	4800
OFF (down)	OFF (down)	4800 (factory setting)

Note: You have to reset the inverter after adjustment to activate the new settings.

23.3 Illustration of the RS232 operation

23.3.1 RS232 commands

Command format: This inverter uses high-level language commands with a CR (0DH) and a LF (0AH) at the end of the command. The inverter will interpret and execute the command only after these two characters are received.

After execution of the command, it would send a response string to the computer.

The response string is as follows:

= > CR LF: Command executed successfully

? > CR LF: Command error, not accepted

! > CR LF: Command correct but execution error (e.g. parameters out of range)

23.3.2 Command format

This unit supports the following commands. There should always be a CR (0DH) and a LF (0AH) appended to the command while sending the command to the inverter.

PWRS command

Power saving function control, Format: PWRS <value>

A space (ASCII code 20H) is needed Between PWRS and <value>.

<value> can be one of the following:

"0" Power saving disable

"1" Power saving enable

"2" Inquire the status of saving the response information would be either "0" (disable) or "1" (enable)

POWER command

Power ON/OFF control, Format: POWER <value>

A space (ASCII code 20H) is needed between PWRS and <value>.

<value> can be one of the following:

"0" Power off, power consumption < 2W, restart time <5 sec

"1" Power off, power consumption < 20W, restart time <2 sec

"2" Power on

"3" Inquire the status of power on/off status, the response information would be either "0"(OFF) or "1"(OFF) or "2"(ON).

To query the inverter STATUS

Status command, Format: STUS?

No need to add any other parameters.

To respond the result be hexadecimal code replaced by 2 ASCII codes that is between 00~FF (0~255), then convert the Hex code to the binary digit after obtaining 8 bytes digit.

That can be one of the following:

"B2" OLP

"B4" OTP (Loading > 100% / 3 min)

"B0" UVP (LSB) (Loading > 110%)

"B1" OVP

"B3" FLP

"B5" BATT Too Low

"B6" BATT Too High

"B7" LOAD Too High (MSB)

To query BATTERY LEVEL

Battery level command, Format: BATT?

No need to add any other parameters.

To respond the result be Hexadecimal code replaced by 2 ASCII codes and is between 00 ~ 0B, then convert into Decade digit after obtaining a digit, between 0~11, that can be one of following:

Hex code	Decade code	Indication
00	0	LED 1 flashing (Battery voltage low)
01	1	< 10VDC, LED 1 glows steady
02	2	Ca. 10VDC, LED 2 glows steady
03	3	> 10VDC, LED 3 glows steady
04	4	Ca. 11VDC, LED 4 glows steady
05	5	> 11VDC, LED 5 glows steady
06	6	Ca. 12VDC, LED 6 glows steady
07	7	Ca. 13VDC, LED 7 glows steady
08	8	Ca. 14VDC, LED 8 glows steady
09	9	Ca. 15VDC, LED 9 glows steady
0A	10	Ca. 16VDC, LED 10 glows steady
0B	11	LED 10 flashing (Battery voltage to high)

To query LOAD LEVEL

Load level command, Format: LOAD ?

No need to add any other parameter.

Respond: The same as for BATT? but <value> means one of following:

Hex code	Decade code	Indication
00	0	Load < 5%, All LED's "OFF"
01	1	Load < 15%, LED 1 glows steady
02	2	Load < 25%, LED 1~ LED 2 glows steady
03	3	Load < 35%, LED 1~ LED 3 glows steady
04	4	Load < 45%, LED 1~ LED 4 glows steady
05	5	Load < 55%, LED 1~ LED 5 glows steady
06	6	Load < 65%, LED 1~ LED 6 glows steady
07	7	Load < 75%, LED 1~ LED 7 glows steady
08	8	Load < 85%, LED 1~ LED 8 glows steady
09	9	Load < 95%, LED 1~ LED 9 glows steady

23.4 Remote Control Option

23.4.1 System Configuration:

1. Plug the 9-pin D-SUB connector of the remote controller in the RS-232 port of the inverter.
2. Check the setting of DIP-SW S5 & S6. The BAUD-RATE should be set to 4800bps (S5 & S6 OFF, down position).
3. Turn on the switch of the inverter. You will hear two short beeps. All LED's will be ON and one second later, there will be one short beep again.
4. The amber, green and Red LED's of remote controller will be on for 0.5 second then off. The amber LED is blinking every 2~3 seconds.

Remote control LED'S:

LED Color	Sleep mode is:	AC-Output
Green "ON"	Enabled	ON
Green "flashing"	Enabled	OFF (Stdby)
Amber "ON"	Disabled	ON
Amber "flashing"	Disabled	OFF

23.4.2 Operation

Set SLIDE SW "ON" (Keypads will not work if SLIDE SW is set "OFF").

Remote ON/OFF: Pressing a button for one second will change (toggle) the output ON/OFF mode and the display of LEDs will be changed accordingly.

23.4.3 Changing the power saving mode via remote control panel

Press the button for 2 seconds and the colors of LED will change. Keep pressing the button and the colors will be toggling between Amber and green every 2~3 seconds.

The color of LED will determine the mode of operation. Green indicates that power saving mode is enabled and amber indicates power saving mode is disabled.

Release the button when the LED indicating the desired status is reached.

The operation power saving enable / disable does not change the power ON/OFF mode.

Despite the setting of power saving mode, when a power OFF command is set by pressing a button, the power will be turned OFF and the power saving mode will be set to disable automatically (amber LED will flash for 2~3 seconds). When the power is turned ON, the power saving mode will restore the previous setting.