AJ

SINE WAVE INVERTER
SINUS-WECHSELRICHTER
ONDULEUR SINUSOÏDAL
INVERSOR SINUSOIDAL

User's and installer's manual
Betriebs- und Montageanleitung
Manuel d'utilisation et de montage
Manual de usuario y de montaje

AJ 275-12
AJ 350-24
AJ 400-48

AJ 500-12
AJ 600-24
AJ 700-48

AJ 1000-12
AJ 1300-24

AJ 2100-12
AJ 2400-24

Studer Innotec SA 2015 – V3.0
4091

ENGLISH DESCRIPTION

INTRODUCTION

The AJ series sine wave inverters have been designed to meet industrial and domestic needs. They meet the highest requirements in terms of comfort, safety and reliability.
Any device designed for the public electrical grid of 230 V 50 Hz can be connected to them (up to the nominal power of the inverter).
The AJ series is the perfect source of voltage in any place where the public grid is not available.
This document is an essential part of the inverter and must always be carried with it and be available for anyone working on the installation.
Should you have any doubt or question, do not hesitate to contact your specialist salesperson who will give you the best advice.

WARNING

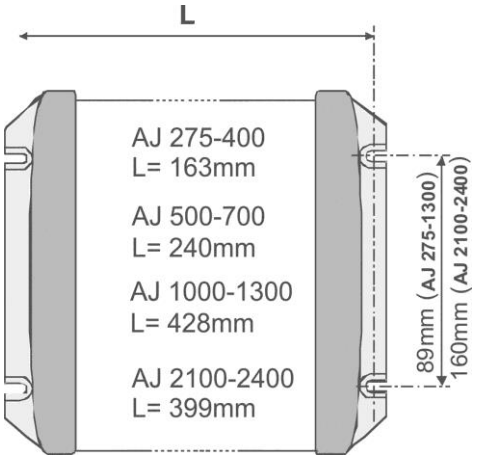
A deficient assembly could result in damage to the device, cause function failures or potential damage to the users.
The working device generates a high voltage which might be lethal in case of contact. So, any manipulation of the inverter must be carried out with utmost care and meet the local rules.
THE OWNER MUST NOT MANIPULATE ANY PIECE INSIDE THE INVERTER.
Opening the inverter or using it incorrectly will result in the immediate loss of the warranty.
The inverter AJ is to be used only with a lead battery. As for the use of batteries, follow the manufacturer's instructions.
No current or voltage generating device (public grid, generator, ...) may be connected to the output of the inverter because this could result into its destruction.

INSTALLATION

The AJ sine wave inverter is an electronic device, for which some caution must be taken when installing it:
Place where the inverter is to be installed:
Out of reach for unauthorized persons, especially children.
In a dry place (max. 95% humidity), and in any case with no condensation.
Not directly on top of the batteries.
No easily inflammable material should be placed directly underneath or close to the AJ.
Ventilation must be free, and a space of 10 cm. on each side is needed for good evacuation of the internal heat.

Mounting the inverter

The inverter shall be mounted on a nonflammable surface by screws (diameter max. 4 mm for AJ 275-AJ 1300 or max. 8 mm for AJ 2100 and 2400) using the four holes provided. The fixing screws are not supplied with the inverter. It may be fixed in any position.



CONNECTION

The connection of the inverter should be done with utmost care for a good operation of the system. The technical data and connection's description are either under one side of the inverter or onto the cable connection side. First connect the consumer devices and install a plug so as to prevent any further contact once the 230 V voltage is present.
Installation is to be made only by authorized persons.

CONNECTING THE CONSUMER DEVICES

The AJ is supplied with a 230 V cable to be connected to the consumer devices. This connection must be done observing the following colours:

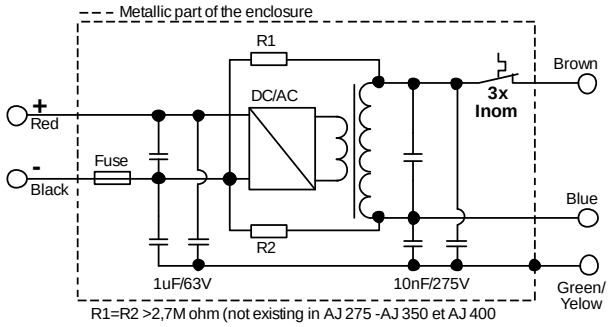
- Yellow-green: earth
- Brown: phase
- Blue: neutral

Once the consumer devices are connected, make sure that they are turned off before connecting the battery.

Note

An Inverter constitutes a voltage source independent from the grid and could be considered in the same way as a generator set. The voltage in between the phase and the neutral is 230V. An appropriate divisor establishes a 115V voltage in between neutral and earth, and between the phase and earth. According to the local prescriptions or particular requirement, (example: use of a ground fault detector) a true neutral may be established by connecting the neutral and the earth wire together (yellow - green and blue).

EQUIVALENT DIAGRAM

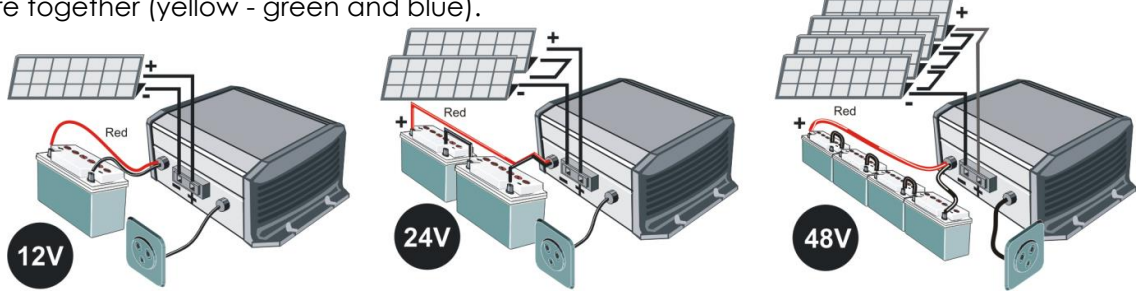


CONNECTING THE BATTERY

Once the consumer devices are connected, make sure that the installations instructions of the 230V has been followed with utmost care before connecting the battery.
The battery cables are supplied with the inverter and already connected in it.
Connect the battery observing carefully the polarity.
The AJ inverter, **except AJ 2100-12**, is protected against reverse polarity by a fuse, but should the polarity be reversed, the inverter must be sent to the manufacturer for control.
Connect the battery using the following colours:

- BLACK cable: negative pole (-)
- RED cable: positive pole (+)

For AJ 275-12 (-S) to 700-48 (-S), a bicoloured cable is used. Go for the dominant colour.
When connecting the battery, there is a spark (Danger of explosion!), because of the charging of the internal filtering capacitors.
A fire security fuse must be installed on the battery.



Check that the cables are well adjusted and well tightened.
As long as it is possible, do not extend the cables supplied with the batteries. Extending them may increase the losses and lead to a malfunction of the inverter.
Once the inverter is connected to the batteries, a 230 V voltage is present at the output of the inverter.

USE

CONTROL AND INDICATORS

Control switch on/off

There is a switch on the inverter to activate or deactivate it. Use this function to save the energy of the batteries when you are not using the inverter.
Note:
The solar charge controller remains in operation even when the inverter is off.

"Functioning" indicator (green LED 1)

A green light on the inverter indicates its functioning mode:

Illuminated: A 230 V voltage is present at the output, the inverter is on.

Blinking:

_ _ _ _ _ No load (stand-by).

__ __ __ __ __ The 230 V voltage has been cut due to an alarm; the inverter will automatically resume function when the failure has disappeared (see the failure table p. 9).

Off : The 230 V voltage is NOT present at the output, the inverter is off.

B.L.O. indicator (green LED 2)
Led only on AJ 275-12 to 700-48

This indicator is illuminated only if the enhanced Battery Lifetime Optimizer function (description p. 9) is activated.
Activation/Deactivation described in p. 8.

ACOUSTIC INDICATOR

The AJ inverter has an acoustic indicator for the following cases:
Intermittent beeps:
There is a failure in the inverter and the output voltage will be interrupted.
Overheat:
The acoustic indicator beeps 3°C before cutting the voltage. Reduce the consumption in order to lower the inverter temperature and to avoid the output voltage is cut off.
Low battery voltage:
The indicator beeps during a minute before the interruption. Reduce the consumption in order to get the battery voltage rise and to avoid that the output voltage is cut off.
Continuous beep for two seconds:
You have pushed the ON/OFF switch to restart the inverter. The output voltage will be immediately present after the acoustic signal.

The acoustic warnings can be deactivated as per the procedure described p. 8.

ALARM BY VOLTAGE FLICKERING

When the acoustic indicator is deactivated or when the inverter is out of hearing, it can be useful to be warned of an imminent inverter stop due to an "overheat" or a "battery under voltage". If this function is activated (see p. 8 for Activation/Deactivation of functions), the output voltage will flicker slightly (max. 20%), leading to a variation of the lights intensity and therefore indicating the imminent stop of energy supply.
The user can then choose to reduce his consumption in order to secure the supply to priority loads (for instance lighting).

MODEL WITH STAND-BY SYSTEM

The inverters from the AJ 500-12 are equipped with a stand-by system (also available in the models AJ 275-12/350-24/400-48 with the option -S).
The stand-by is an energy saving system which turns off the inverter intermittently when no consumer is detected. In this mode the functioning indicator (green LED 1) blinks, showing the intermittent presence of the voltage.
The detection threshold is set by default at 2 W. On models from AJ 500-12 onwards it is possible to deactivate this function or to modify the threshold by adjusting the yellow Turning Knob marked Stand-by.
Adjusting the switching-on level is as follows: Switch off all consuming devices; turn the

Turning Knob to the right (clockwise) until the LED is blinking, switch ON the smallest consuming device (i.e. mobile phone charger); turn the Turning Knob slowly to the left until LED is lit continuously. Check that the inverter goes back in stand-by mode when you remove the load. If not, this means that the load is too small to be detected.
If the stand-by is not required, turn the Knob fully to the right.
The minimal load detected can be adjusted between 1 and 20 W. In most cases this adjustment is not necessary. This adjustment is made with a small screw driver in the hole marked stand-by. In the full counter clockwise position, the sensibility is minimal (20 W). Do not push on the screw driver.
NOTE: In this mode the output voltage is intermittently present at the output!

ACTIVATION / DEACTIVATION OF FUNCTIONS:

The following functions of the AJ range can be freely enabled or disabled by the user:

1. Acoustic warning of imminent stop of the inverter according to p. 6.
2. Battery lifetime optimizer function as described p. 9.
3. Imminent stop alarm by voltage flickering as described p. 6.

The state « activated » or « deactivated » of the functions is indicated by the buzzer with a continuous push on the on/off key after a duration given for each function as per the table below:

- Single « beep » short = function activated
- Double « beep » short = function deactivated

	Function	**Duration of impulse (onto on/off)**	**Default setting**
1.	Acoustic alarm	5 seconds	Activated
2.	Battery Lifetime Optimization (B.L.O.)	10 seconds	Deactivated
3.	Alarm by voltage flickering	15 seconds	Deactivated

The state is reversed if the on/off key is released within 2 seconds following the buzzer sound.
To consult the state of functions without having any effect on them or changing their programming it is possible to maintain the on/off key pushed on. Beyond 20 seconds the buzzer will sound continuously to indicate the end of the sequence and will stop by the release of the key.

SAFETY

The inverter is electronically protected. It is protected against reverse polarity by an internal fuse, except for AJ 2100-12 inverter, which must be protected by an external fuse. The next table displays the various possible default cases and their consequences.
Caution: the inverter is not protected against the connection of an AC source (generator or grid) at its output. Such connection will cause a major failure and should be avoided.

Battery protection by LVD - Low voltage disconnection battery protection:

The battery is protected from deep discharge by stopping the inverter if the battery reaches a voltage lower than 0.87*Unom (10.5, 21 or 42 V) during more than 1 minute. An acoustic signal or a voltage flickering (if authorized) is activated during 1 minute before the inverters stops. The inverter must then be restarted manually. It will restart automatically if the battery voltage is back to a value higher than 1.04*Unom (12.5, 25 or 50 V).The inverter will stop immediately (with no delay) if the battery voltage is lower than 0.75*Unom (9, 18 or 36 V).

The table below will show you the different causes of inverter stopping.

CAUSE	CONSEQUENCE	SOLUTION
Low battery voltage, Voltage < 0.87*Unom	Inverter temporary stopped, the green indicator blinks.	Automatic restart when the battery voltage rises at 1.04*Unom.
Deep discharged battery 0.75*Unom	Inverter stopped	Inverter should be manually restarted when the battery has reached =0.87*Unom
Overheating	Inverter temporary stopped, the green indicator blinks.	Automatic restart when the temperature reaches the normal range.
Battery overvoltage 1.33*Unom	Inverter stopped.	Wait until the battery voltage reaches the correct level. Push the ON/OFF button to reactivate the inverter. 1.25*Unom
Short circuit at the output	Inverter stopped.	Eliminate the short circuit. Push the ON/OFF button to reactivate the inverter.
Overload	Inverter stopped.	Use the inverter only in the range of its nominal power. Regular use in overload power diminishes the lifetime of the inverter. Push the ON/OFF button to reactivate the inverter.
Battery reverse polarity	Internal fuse broken down.	Back to manufacturer for testing.

BATTERY LIFETIME OPTIMIZER – BLO

Cycling a battery in permanent charging mode from 0 to 30% is often a cause of early aging of batteries, particularly in solar home systems.
In order to enhance the battery lifetime, the AJ inverters are equipped with a unique function that will readjust the low voltage disconnection (LVD) threshold according to the behavior of the user consumption. This allows a full recharge of the battery.
This function can be activated at any time as per the procedure described p. 8.
An indicator (green LED 2) only available on from AJ 275-12 to 700-48 is lit or blinks when this function is activated. The number of blinks indicates the LVD currently applied.

If this indicator is lit continuously, this means that the use of the battery is correct and that it was well charged. The LVD is then set at 0.87*unom (10.5, 21or 42V) as per the model. This also means that you have the widest availability of the energy stored and that your battery is likely to last longer.
If the indicator is blinking one or several times, this means that the use of the battery is restricted and that the disconnection voltage was set according to the table below (+/- 2%).

12V	24V	48V	LED	Comments
10.5	21	42	0 x (ON)	This is also the LVD level when BLO is deactivated
11V	22V	44	1 x off	-
11.4	22.8	45.6	2 x off	Level at BLO activation
11.6	23.2	46.4	3 x off	-
11.8	23.6	47.2	4 x off	-
12	24	48	5 x off	-
12.2	24.4	48.8	6 x off	-

This strategy will off course restrict the use of the battery and drive the user to reduce his consumption or to increase the production (by an additional charger connected to a backup generator for instance).
When the battery voltage is higher than 1.08*Unom (13 V, 16 V, 52 V) during 2 hours, the LVD is progressively stepped down by a decrement of 33 mV/cell (0.4 V @ 12 V). This process insures that the average charge of the battery is sufficient (over 50 %) to assure its optimized lifetime.
This function is particularly useful in solar home systems where the battery is sized in 3-5 times the daily average production. For instance a 200 W solar system producing 800 Wh/day connected to a 200-300 Ah / 12 V battery.
If the battery is sized so as to be fully discharged and charged every day, it may be possible that the restriction of use implied by the permanent increase of LVD is not wished. We recommend then to deactivate the Battery Lifetime Optimizer.

Maintenance

The inverters of the AJ series do not need any special maintenance. The casing may be cleaned with a damp cloth (not wet).
In the case of malfunction or mechanical deformation, the inverter should be sent back to the manufacturer for control carefully packed in its original packing.

Before deciding to send back the inverter, check the following points:

- The battery is loaded and is in accordance to the nominal input voltage of the inverter.
- The consumer devices do not have any defect or overload for the inverter (to make sure, disconnect them).

Should you contact your salesperson, note the following points before calling:
(You will find this information on the label underneath the inverter or at the cable side)

- Exact model
- Serial number
- Power of the inverter
- Nominal input voltage of the inverter

In case the inverter should not be sent back in its original packaging, it should be packed in a stiff carton box and be well protected on all sides by means of an anti-shock and isolating layer of min. 5 cm thickness. A weak protection may cause damages to the inverter during transport and are not covered by the warranty.

WARRANTY LIMIT

The warranty period is 5 years.
It does not cover damages arising from a use not conforming to the user manual, not described in it or resulting from any other inappropriate use like:

- Battery reverse polarity
- Inadequate input voltage (overvoltage)
- Back-feeding at the inverter output by public grid, generator or any other source.
- Mechanical shock or deformation especially by transport due to an inadequate package.
- Contact with liquid or oxidation by condensation.

Use in inappropriate environment (dust, corrosive vapour, humidity, high temperature ...).

LIMITS OF MANUFACTURER LIABILITY

Studer Innotec SA cannot control the installation, use and maintenance of the inverter. Thus, we are not responsible for damages, costs or losses resulting from an installation which is not in accordance with the regulations or from inappropriate use or maintenance.
The customer is always responsible for the use of the Studer inverters.
This device has not been designed and is not warranted for use in life support equipment or any other critical device with potential risks of important harm to people or to the environment. We do not accept any responsibility for any violation of patent rights or other third person rights resulting from the use of the inverter.
Studer Innotec SA keeps the right to modify its products without previous notice.

JT8 REMOTE CONTROL FOR AJ 1000-12 TO 2400-24

Functions on remote control are the same as control and indicator on the inverter (see chapter Use p. 6).
Remote control must be connected to the inverter with the original Studer 10 m cable or any RJ11/6p 1:1 cable up to 50 m.

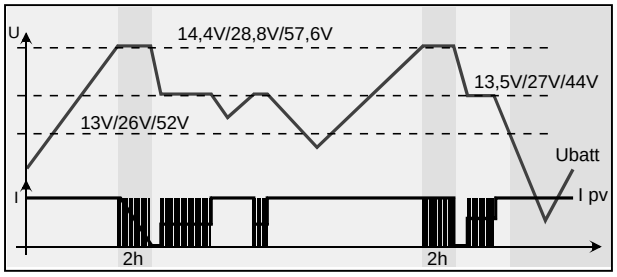
MODELS WITH BUILT-IN SOLAR CHARGER (OPTION – S)

The solar charge controller built in option in the inverter AJ is meant for charging a battery exclusively from a solar generator.
Any other source of current needs an external and suitable charge controller.
The maximum (open) voltage of the solar generator is 23 V for 12 V systems, 46 V for 24 V systems and 90 V for 48 V systems.
Connect firstly the inverter to the battery before connecting the solar generator. The adjustment mode is an I/Uuo ("floating") shunt and it guarantees optimal charge conditions along the battery lifetime.
The yellow indicator displays the functioning mode:

Illuminated: The solar charge is at its maximum.

Not illuminated: the solar generator is not connected or the battery is fully charged, or the solar generator does not get solar irradiation.

Blinking: The battery is more than 95% charged and the charger is in "floating" mode to complete the charge. The blinking frequency varies as per the capacity of the battery and the power of the solar generator.



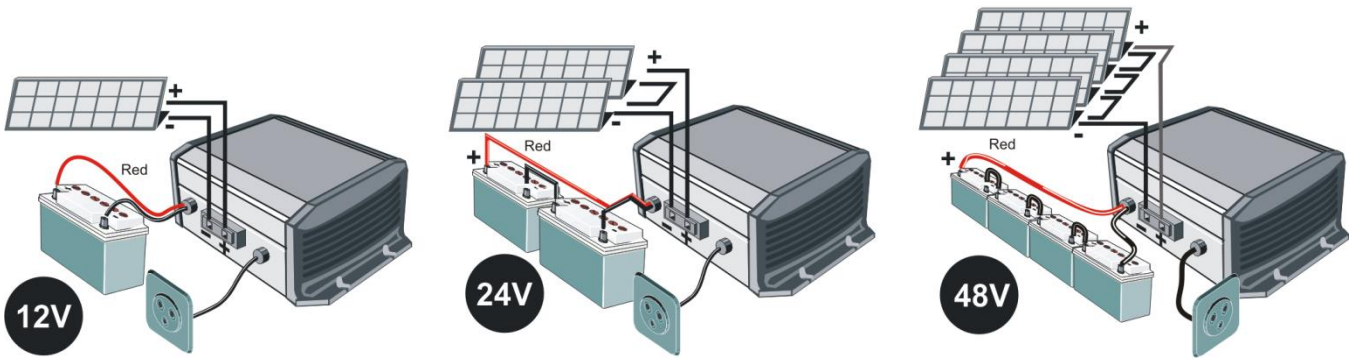
NOTE: Since the solar charge controller integrated in the AJ is of PWM type, it is necessary to use 36 or 72 cell PV modules (12V or 24V respectively). All other types of PV modules require an MPPT charge controller (i.e VarioTrack or VarioString).

CONNECTION OF THE MODULES AJ 2100/2400-S

On AJ 2100-S/2400-S inverters, a preinstalled cable (2 x 6mm2) replaces the terminals.
Wiring should be done through a connecting box.

- Positive (+) pole to the brown or red cable
- Negative (-) pole to the blue or black cable

Examples



TECHNICAL DATA

Model		AJ 275-12	AJ 350-24	AJ400-48	AJ 500-12	AJ 600-24	AJ 700-48
Inverter							
Nominal battery voltage		12Vdc	24Vdc	48Vdc	12Vdc	24Vdc	48Vdc
Input voltage range		10.5 – 16Vdc (24Vdc max.)	21 – 32Vdc (44Vdc max.)	42 – 64Vdc (24Vdc max.)	10.5 – 16Vdc (20Vdc max.)	21 – 32Vdc (40Vdc max)	42 – 64Vdc (24Vdc max.)
Continous power at 25ºC		200VA	300VA	300VA	400VA	500VA	500VA
Power 30 min. at 25ºC		275VA	350VA	400VA	500VA	600VA	700VA
Power 5 min. at 25ºC		350VA	500VA	600VA	575VA	675VA	900VA
Power 5 sec.at 25ºC		450VA	650VA	1000VA	1000VA	1200VA	1400VA
Maximum asymmetric load		150VA	150VA	200VA	250VA	300VA	300VA
Max. efficiency (%)		93%	94%	94%	93%	94%	94%
Cos φ max.		0.1 – 1 up to 200VA	0.1 – 1 up to 300VA	0.1 – 1 up to 300VA	0.1 – 1 up to 400VA	0.1 – 1 up to 500VA	0.1 – 1 up to 500VA
Detection of the load		2W (only with the solar option –S)			Adjustable: 1 → 20W		
Current of chort-circuit 2 sec. (exit)		2.3Aac (4.6Aac*)	3.2Aac (6.4Aac*)	4.6Aac (9.2Aac*)	5.2Aac (10Aac*)	5.7Aac (11.4Aac*)	7Aac (14Aac*)
Output voltage		Sine wave 230Vac (120Vac*) ±5%					
Frequency		50Hz (60Hz*) ±0.05% (crystal controlled)					
Distortion THD (resistive load)		< 5% (at Pnom. & Uin nom.)					
Consumption Stand-by		0.3W**	0.5W**	1.1W**	0.4W	0.6W	1.5W
Consumption „ON" no load		2.4W	3.5W	5.2W	4.6W	7.2W	12W
Overheat protection (±5ºC)		Shut down at 75ºC, Auto-restart at 70ºC					
Overload and short circuit protection		Automatic disconnection with 2 restart attempts					
Reverse polarity protection by internal fuse		60A	40A	25A	120A	90A	60A
Deep discharge battery protection		Shut off at 0.87 x Unom, Automatic restart at Unom.					
Max. battery voltage		Shut off at >1.33 x Unom, Automatic restart at < Umax					
Acoustic alarm		Before low battery or overheating disconnection					
General data							
Weight		2.4 kg	2.6 kg		4.5 kg		
Dimensions hxwxl (mm)		142x163x84			142x240x84		
Protection index IP		IP 30 conforms to DIN 40050					
Certification ECE-R 10 (E24)		●	●	Not available	●	●	Not available
EC confirmity		EN 61000-6-1, EN 61000-6-3, EN 55014, EN 55022, EN 60950-1					
Operating temperature		-20ºC up to +50ºC					
Relative humidity in operation		95% without condensation					
Ventilation forced		From 45ºC ±5ºC					
Acoustic level		< 45 dB (with ventilation)					
Warranty		5 years					
Approximate correction of Pnom		-1.5%/ºC as from +25ºC					
Recommended battery capacity		> 5 x Pnom/Unom (recommended value in Ah)					
Length cables (Battery/left AC)		1.2m /1m		1.5m / 1m			
Options		**AJ 275-12**	**AJ 350-24**	**AJ400-48**	**AJ 500-12**	**AJ 600-24**	**AJ 700-48**
Solar regulator	Voltage max	25Vdc	45Vdc	90Vdc	25 Vdc	45Vdc	90Vdc
	Current max.	10Adc			15Adc		
	Principle	3 floating stages (I/U/UO)					
	Absorption voltage	14.4Vdc	28.8Vdc	57.6Vdc	14.4Vdc	28.8Vdc	57.6Vdc
	Floating voltage	13.6Vdc	27.2Vdc	54.4Vdc	13.6Vdc	27.2Vdc	54.4Vdc
Plug for remote control (RCM)		●	●	●	●	●	●

Model		AJ 1000-12	AJ 1300-24	AJ2100-12	AJ 2400-24
Inverter					
Nominal battery voltage		12Vdc	24Vdc	12Vdc	24Vdc
Input voltage range		10.5 – 16Vdc (24Vdc max.)	21 – 32Vdc (44Vdc max.)	10.5 – 16Vdc (20Vdc max.)	21 – 32Vdc (40Vdc max)
Continous power at 25ºC		800VA	1000VA	2000VA	2000VA
Power 30 min. at 25ºC		1000VA	1300VA	2100VA	2400VA
Power 5 min.at 25ºC		1200VA	2000VA	2450VA	2800VA
Power 5 sec. at 25ºC		2200VA	2800VA	5000VA	5200VA
Maximum asymmetric load		500VA	600VA	1000VA	1200VA
Max. efficiency (%)		93%	94%	92%	94%
Cos φ max.		0.1 – 1 up to 800VA	0.1 – 1 up to 1000VA	0.1 – 1 up to 2000VA	0.1 – 1 up to 2000VA
Detection of the load		Adjustable: 1 → 20W			
Current of chort-circuit 2 sec. (exit)		10Aac (20Aac*)	13Aac (26Aac*)	26Aac (52Aac*)	30Aac (60Aac*)
Output voltage		Sine wave 230Vac (120Vac*) ±5%			
Frequency		50Hz (60Hz*) ±0.05% (crystal controlled)			
Distortion THD (resistive load)		< 5% (at Pnom. & Uin nom.)			< 3% (at Pnom. & Uin nom.)
Consumption Stand-by		0.7W	1.2W	0.7W	1.2W
Consumption „ON“ no load		10W	13W	16W	16W
Overheat protection (±5ºC)		Shut down at 75ºC, Auto-restart at 70ºC			
Short circuit protection		Automatic disconnection with 2 restart attempts			
Reverse polarity protection by internal fuse		125A	100A	Not protected	150A
Deep discharge battery protection		Shut off at 0.87 x Unom, Automatic restart at Unom.			
Max. battery voltage		Shut off at >1.33 x Unom, Automatic restart at < Umax			
Acoustic alarm		Before low battery or overheating disconnection			
General data					
Weight		8.5 kg		19 kg	18 kg
Dimensions hxwxl (mm)		142x428x84		273x399x117	
Protection index IP		IP 30 conforms to DIN 40050		IP 20 conforms to DIN 40050	
Certification ECE-R 10 (E24)		●	●	●	●
EC confirmity		EN 61000-6-1, EN 61000-6-3, EN 55014, EN 55022, EN 60950-1			
Operating temperature		-20ºC up to +50ºC			
Relative humidity in operation		95% without condensation			
Ventilation forced		From 45ºC ±5ºC			
Acoustic level		< 45 dB (with ventilation)			
Warranty		5 years			
Approximate correction of Pnom		-1.5%/ºC as from +25ºC			
Recommended battery capacity		> 5 x Pnom/Unom (recommended value in Ah)			
Length cables (Battery/left AC)		1.5m /1m		1.7m / 1m	
Options		**AJ 1000-12**	**AJ 1300-24**	**AJ2100-12**	**AJ 2400-24**
Solar regulator	Voltage max	25Vdc	45Vdc	25Vdc	45 Vdc
	Current max.	25Adc		30Adc	
	Principle	3 floating stages (I/U/UO)			
	Absorption voltage	14.4Vdc	28.8Vdc	14.4Vdc	28.8Vdc
	Floating voltage	13.6Vdc	27.2Vdc	13.6Vdc	27.2Vdc
Remote control JT8 supplied with 5 m cable		●	●	●	●

DECLARATION OF EC CONFORMITY, CE

Manufacturer name: Studer Innotec SA

Adress: Rue des Casernes 57, CH - 1950 Sion

Material: Sine wave inverter

Product name: **AJ Series**

Models number:

AJ 275-12(-S)	AJ 500-12(-S)	AJ 1000-12(-S)
AJ 350-24(-S)	AJ 600-24(-S)	AJ 1300-24(-S)
AJ 400-48(-S)	AJ 700-48(-S)	AJ 2100-12(-S)
		AJ 2400-24(-S)

The devices of the product range above meet the requirements specified in the following EC directives and norms:

Security: **Low voltage directive 2006/95/EC**

- EN 50178:1997

EMC: **EMC directive 2004/108/EC**

- EN 61000-6-2:2005
- EN 61000-6-3:2007
- EN 61000-3-2:2006
- EN 61000-3-12:2005

RoHS: **RoHS directive 2002/95/EC**

Signatory: Roland Studer

Date: 05.05.2011

Studer Innotec SA
Rue des Casernes 57
1950 Sion – Switzerland

Tél : +41(0) 27 205 60 80
Fax : +41(0) 27 205 60 88

info@studer-innotec.com
www.studer-innotec.com