

SERIE 2

2SPM - 2SPT - 2SPTE

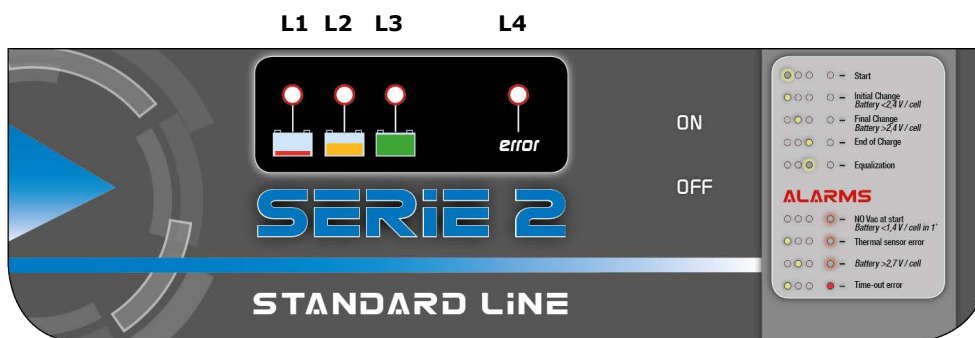
User Manual

- IT **Manuale d'uso e manutenzione**
- EN **Use and maintenance manual**
- FR **Manuel d'utilisation et d'entretien**
- ES **Manual de utilizzo y mantenimiento**
- DE **Gebrauchs- und Wartungsanleitung**
- RU **Инструкция по эксплуатации и Техобслуживанию**
- RO **Manual de utilizare și de întreținere**
- CS **Návod k použití a údržbě**
- LT **Eksploatacijos bei priežiūros žinynas**
- PL **Instrukcja użytkowania i konserwacji**

Series 2 – Use and maintenance manual

- This set of battery chargers is planned for flooded lead acid battery recharging
- The battery charger is designed for an intermittent working, this means that they will have to rest for the same amount of hours they worked
- Before charging, read the instruction
- For indoor use. Do not expose to rain
- Disconnect the supply before making or breaking the connections to the battery

WARNING: Explosive gas! Prevent flames and sparks and provide adequate ventilation during charging.



LED	Color	Signal	
L1	Green	Battery on	The battery is present or the charge has started
L2	Yellow	Final Charge	The gassing level has been achieved (2,4 V/cell)
L3	Green	Battery Charged	The battery is charged. The battery charger has stopped
L4	Red	Alarm	There is a fault or an anomaly
	Black	ON/OFF	Switch to start or stop the battery charger

1. WARNINGS - SAFETY

Read the electric data on the charger identification plate and check they are in conformity with your electric system and the battery it should recharge:

1. Mains voltage. Usually, it is 400V-50Hz for the three-phase systems and 230V-50Hz AC for single-phase systems.
2. The Battery voltage. Its voltage rating must correspond with voltage battery charger
3. The maximum charging current. For the correct value, please refer the special capacity/current table, available at our office.

If charger electric data were not in according with your electric system or your battery you must NOT connect them. Do not try to repair failures, please call our Service.

Note: Measure by a tester the real AC voltage during the charge and check it is the same as the voltage set by the plug on the power transformer. The power transformer has 4 plugs: -5% 380V (220V) | NOM 400V (230V) | + 5% 420V (240V) | +10% 440V (250V) (only some specific models) |, please match the voltage to the nearest value.

- The electrical connection and the replacement of the charger’s plugs must be done by skilled staff. The electrical safety is assured only when the plug is connected to an efficient ground.
- Protect the power supply cables with slow fuses or magnetothermal switch (D curve). We suggest using power socket with a rotary switch to avoid plug extraction.
- Do not disconnect the battery plug before the Battery Charger is switched off by the ON/OFF button located on the door. To prevent casual or voluntary disconnection, we suggest you to use mechanical blocks or auxiliary contacts to disconnect the charger from AC-main.
- Do not open the Battery Charger before checking the power plug is disconnected, the main switch is off and the battery is disconnected.
- If the power cables or the Battery Charger are worn or even if they are partially damaged, please replace them by specialised personnel.

2. OPERATION

Battery Charger follows a cycle called **Wa**, defined by the DIN 41774 rule (**maximum charging time: 13 hours**). Any charge can be interrupted and restarted at the same point for a countless time, using the ON/OFF switch situated on control panel. The charging memory is deleted only after disconnecting the battery.

The main functions are identified by a fixed light led.
The leds L1 L2 L3 show battery condition, while the led L4 shows charger alarm condition.

LED symbols key:

- * flashing light
- off
- fixed light

Charging phases visualisation (LED)

	L1	L2	L3
Initial test – (5 seconds to the start)	*	○	○
Initial charge. Voltage battery < 2,4 V/cell. When the Battery Charger is switched on, if the battery is fully discharged, the nominal current is given. Gradually the voltage goes up while the current goes down. Reaching the gassing's level (2,4V/cell), the current is at 50% of its nominal level. The first phase is finished. This phase last minimum 30 minutes even if the battery's voltage is beyond the gassing point.	●	○	○
Final charge. Voltage battery > 2,4 V/cell. The charge continues for a fixed time of 3 hours . At the end of this phase voltage can achieve the maximum value of 2,65V/cell. If this happens the current is at 25% of its nominal value. The charge is finished and the Battery Charger is switched off. In this phase the acid is gassing. This is absolutely normal.	○	●	○
Battery Charged	○	○	●
Equalisation and preservation phase. Equalisation phase: the battery charger goes automatically on for 5 minutes each hour. This cycle is repeated for 15 times. Preservation phase: the battery charger goes on for 5 minutes every 15 hours. This cycle is repeated until the Battery Charger is switched off.	○	○	*

Alarm signals and error search

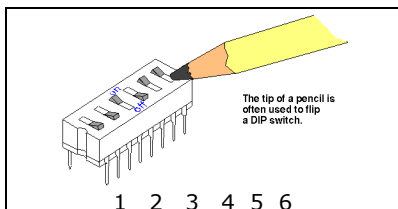
	L1	L2	L3	L4
The battery charger's switch is in the OFF position The battery is not connected to the Battery Charger or its voltage is too low. The fuse protecting the diode bridge is burnt. The battery plug is damaged. A battery cable is interrupted.	○	○	○	○
<i>Battery connected, battery charger's switch in ON position, but there's no AC voltage or Voltage battery < 1,4 V/cell after 1 minute to the start.</i> Battery is connected, the battery charger's switch is in the OFF position but the AC main plug is disconnected or the main switch is off. One or more fuses are burnt because they are too weak or there was a short circuit. <i>Warning: if during the operation of the charger the AC main current drops, the charger doesn't show any alarm (the led signals the charging phase of that moment). When the AC main reverts the charger restarts his regular operation.</i>	○	○	○	*
<i>The thermal probe opened the circuit of the power transformer.</i> If transformer is at room temperature the probe is faulty (usually is Normally Closed), otherwise wait its restoration within 20 minutes.	●	○	○	*
Voltage battery > 2,70 V/cell	○	●	○	*
<i>The maximum time has been exceeded (time out error). The battery has not reached 2,40 V/cell within 10 hours.</i> Battery not fitted for the this charger, sulphated or a cell is interrupted and the battery does not reach the gassing point (2,40 V/cell). A diode on the bridge is burnt and the current is not enough to charge the battery. Main voltage is too low or a phase is missing. Wrong card setting.	●	○	○	●

Quick Test

Maximum time alarm checks by quick cycle. The internal timer changes the hours in minutes and the minutes in seconds. If you wish to **enter in Quick Test** simply put the dipswitch 1 in ON position **BEFORE** switching on the card. Then carry out the standard operation to start the charger. Since there are two variable, the results can be as follows:

If the battery is charged the gassing point is quickly achieved (L2 on). First phase can take between ½ minute and 9 minutes, the second phase has a fixed duration of 3 minutes. Maximum time required 13 minutes.	○	○	●	○
The battery is not charged. 10 minutes are not enough to reach the gassing point, so after this time interval, the Battery Charger sets on "Phase 1 time alarm".	●	○	○	●

Dipswitch battery voltage setting on the electronic board



Quick Test	Yes	● × × × × ×	
	No	● × × × × ×	
Equalisation / preservation	Yes	× ● × × × ×	
	No	× ● × × × ×	
Voltage battery (V)	12	× × ● ● ● ●	Jumper insterted
	24	× × ● ● ● ●	
	36	× × ● ● ● ●	
	48	× × ● ● ● ●	
	60	× × ● ● ● ●	
	72	× × ● ● ● ●	
	80	× × ● ● ● ●	
96	× × ● ● ● ●		

× uninterested

3. INSTALLATION

The operation must be made with the electrical power disconnected.

1. Put the Battery Charger in a suitable place, allowing an adequate air change.
2. Connect the plugs, being very careful in earthing the AC side. Do not invert the battery polarity in comparison with the Battery Charger.
3. Check the data on the charger identification plate, they must correspond with the mains and battery data.
4. Check the power cables and the battery are well earthen.
5. Check there are no short circuits on plugs and cables.
6. Connect the plug to AC mains.
7. Connect the battery plug.
8. Push the start button.

4. MAINTENANCE

The maintenance schedule depends on use and operating conditions but, generally, it should not exceed three months.

The maintenance operations have to be made by specialised personnel, in compliance with safety rules.

Please, follow the instructions in paragraph 4.1 "Put the equipment out of service"

4.1 Put the equipment out of service

When you want to do a routine or extraordinary maintenance on your Battery Charger, or you do not want to use it for a long time or there is a fault, you must keep it out of service.

Please follow these instructions:

1. Switch off the Battery Charger
2. Rotate the AC mains switch in "off" position and disconnect the plug.
3. Disconnect the battery plug.

Should you wish not to use your Battery Charger for a time, please do not expose it to heat or atmospheric agents, but keep it in a dry, safe place. The AC main plug and the battery plug must be raised from the ground and secured.

4.2 Routine Maintenance

1. Clean carefully the AC and battery cables. Check they are not damaged or burnt. In this case, replace them immediately.
2. Check the AC mains and battery plugs. If they are crushed or burnt or damaged, replace them immediately.
3. Electrical equipment must not be exposed to dust and humidity. Clean the Battery Charger. Should it be too dirty or damp, put it in a safer place.

4.3 Extraordinary Maintenance

1. Follow the checklist of "Routine maintenance".
2. Open the Battery Charger. Clean carefully the dust, on the printed circuits by a clean brush, on the other components by a blow of compressed air; stay at 20 cm (8 inch) at least.
3. Check the screws and electrical connections are well tightened.
4. Check the fuses, the fuse holders and the moving mechanical parts (contactor).

**GARANZIA/WARRANTY/GARANTIE/GARANTÍA/GARANTIE/ГАРАНТИЯ/
GARANȚIE/ZÁRUKA/GARANTIJA/GWARANCJA**

Durata	La normale durata della garanzia è di 12 mesi. Ulteriori estensioni devono essere definite in fase d'ordine
Decorrenza	La data di spedizione dallo stabilimento A.T.I.B. Elettronica rappresenta la data di decorrenza
Copertura	La A.T.I.B. Elettronica si impegna a: <ul style="list-style-type: none"> • Fornire gratuitamente i materiali difettosi. • La loro sostituzione è gratuita presso il proprio stabilimento di Longhena, mentre è a pagamento se effettuata presso la sede del cliente finale. • I costi di spedizione dei materiali in sostituzione sono a carico del cliente
Decadenza	La garanzia decade qualora <ul style="list-style-type: none"> • Non siano state osservate le istruzioni contenute nel presente manuale di istruzioni • Sia accertato l'uso improprio o la manomissione del prodotto • Il carica batteria sia utilizzato al di fuori dei parametri definiti dalle specifiche del prodotto o dall'ordine

Duration	Atib Elettronica guarantees these products for one year. Extended guarantee must be defined in advance
Starting date	The delivery date from Atib Elettronica is considered the starting date of the warranty
Covering	<ul style="list-style-type: none"> • Defective components will be repaired or replaced free of charge • Labour is free of charge nearby our factory. If carried out at customer/users's site it will be on chargeable basis. • Delivery costs of replacement components are at consignee's expense
Loss of right	Warranty is not valid in case of: <ul style="list-style-type: none"> • The instruction of this manual is not observed • Improper use, violation or modification of the charger. • Charger being used outside the defined parameters in accordance with product specifications and/or order details.

Durée	La normale durée de la garantie est de 12 mois. Extensions éventuelles doivent être concordées à la commande
Début	La garantie démarre à la date d'expédition du magasin A.T.I.B. Elettronica.
Couverture	La A.T.I.B. Elettronica s'engage à: <ul style="list-style-type: none"> • Fournir gratuitement les pièces défectueuses. • Le remplacement de ces pièces est gratuit si réalisé dans son usine de Longhena-Italie, Si elle est faite chez le client sera payante. • Les coûts du transport des pièces demeurent à la charge du client.
Déchéance	La garantie sera annulée si: <ul style="list-style-type: none"> • On n'a pas suivi les instruction de ce manuel. • On aura détecté une utilisation non conforme du chargeur ou sa manumission • On trouve que le chargeur est utilisé au delà des paramètres définis lors de la commande.

Duración	La normal duracion de la garantía es de 12 meses. Ulteriores extensiones deberían ser establecidas al pedido
Entrada en vigor	La fecha de entrega desde el almacén A.T.I.B. Elettronica representa la fecha de entrada en vigor
Cobertura	La A.T.I.B. Elettronica se encarga de: <ul style="list-style-type: none"> • Proceder gratuitamente los recambios de los materiales fallados. • Su sustitución es gratuita en los almacenes ATIB en Longhena, mientras que de deberá de pagar si es efectuada en las instalaciones del cliente. • Los gastos de expedición de los recambios son a cargo del cliente
Anulación	La garantía es anulada si: <ul style="list-style-type: none"> • No se han observado las instrucciones contenidas en el manual de instrucciones • Es evidente el utilizo impropio o maltratamiento del producto • El cargador de batería se ha utilizado fuera de los parámetros definidos de las características técnicas ó del pedido

Dauer	Die standard Garantie ist 12 Monate, wenn nicht anders schriftlich vereinbart
Laufzeit	Die Garantie start mit Lieferdatum von unserem Werk
Bedingungen	A.T.I.B. Elettronica verpflichtet sich, dass <ul style="list-style-type: none"> • die Ersatzteilen kostenlos geliefert werden (die Transportkosten werden von Kunden bezahlt) • der Ersatz der Teilen ist nur bei unserem Werk kostenlos
Gültigkeit	Die Garantie geht verlustig, wenn <ul style="list-style-type: none"> • alle Informationen dieser Bedienungsanleitung nicht befolgt worden sind • das Gerät aufgebrochen wurde • die Benutzung des bestellten Gerätes nicht für die genaue Aufwendung verwendet wird

Срок действия	Срок действия гарантии составляет 12 месяцев. Дополнительные продления должны оговариваться при размещении заказа.
Вступление в силу	Датой вступления в силу является дата отправки продукции с завода А.Т.І.В. Elettronica.
Покрытие	Компания А.Т.І.В. Elettronica обязуется: <ul style="list-style-type: none"> • Бесплатно заменить дефектные материалы. • Их замена является бесплатной на нашем заводе в Барбариге, оплачивается по месту расположения заказчика. • Расходы по отправке заменяемых материалов оплачивается заказчиком.
Утрата	Гарантия утрачивается в следующих случаях: <ul style="list-style-type: none"> • При несоблюдении инструкций, содержащихся в данном руководстве. • При установлении несоответствующего использования или несанкционированного вмешательства в продукцию. • При использовании зарядного устройства вне параметров, установленных спецификациями на продукцию или заказом.

**GARANZIA/WARRANTY/GARANTIE/GARANTÍA/GARANTIE/ГАРАНТИЯ/
GARANȚIE/ZÁRUKA/GARANTIJA/GWARANCJA**

Durață	Perioada de garanție normală este de 12 luni. La comandă trebuie să fie definite extensii suplimentare
Începutul	Data expedierii de la uzina A.T.I.B. Electronica reprezintă data de începere a garanției
Acoperire	A.T.I.B. Electronica garantează: <ul style="list-style-type: none"> • Oferă gratuit materialele defectate • Înlocuirea materialelor defectate la uzina din Barbariga este gratuită, dar dacă sunt efectuate direct la client atunci nu sunt gratuite • Costurile de transport ale materialelor de înlocuire vor fi suportate de client
Expirarea	Garanția este nulă atunci când: <ul style="list-style-type: none"> • Nu s-au observat instrucțiile din acest manual • Se stabilește o folosință incorectă sau manipularea a produsului • Dacă încărcătorul este utilizat în afara parametrilor definite de specificațiile produsului sau comandă. • Dacă numărul de cicluri de încărcare este mai mare de 365 pe an pentru încărcătorul standard (un maxim de cicluri de încărcare una pe zi) și 730 pe an pentru încărcătoare HF și Wowo standard (maxim de până la două cicluri de încărcări pe zi). • Dacă un defect este detectat din cauza lipsei de întreținere, atât ordinare cât și extraordinare a dispozitivului.

Doba trvání	Atib Elettronica zaručuje tyto produkty po dobu jednoho roku. Rozšířená záruka musí být definována předem
Počáteční datum	Datum dodání od společnosti Atib Elettronica se považuje za počáteční datum záruky
Krytina	<ul style="list-style-type: none"> • Vadné součásti budou bezplatně opraveny nebo vyměněny • V blízkosti naší továrny je práce zdarma. Pokud bude provedeno na webu zákazníka / uživatele, bude zpoplatněno. • Náklady na dodání náhradních komponent jsou na náklady příjemce
Ztrata práva	Záruka neplatí v případě: <ul style="list-style-type: none"> • Pokyny v této příručce nejsou dodržovány • Nesprávné použití, porušení nebo úprava nabíječky. • Nabíječka se používá mimo definované parametry v souladu se specifikacemi produktu a / nebo podrobnostmi objednávky.

Garantis laikotarpis	Atib Elettronica suteikia vienerių metų garantiją savo produktams. Garantijos pratęsimas turėtų būti iš anksto apibrėžtas.
Pradžios data	Garantijos galiojimo pradžia laikoma įkrovos stendo pristatymo data iš Atib Elettronica.
Įsipareigojimai	<ul style="list-style-type: none"> • Sugedę komponentai bus ištaisyti arba pakeisti nemokamai • Netoliese mūsų gamyklos darbas yra nemokamas. Jei tai atliekama kliento / vartotojo svetainėje, tai bus mokama. • Pakaitinių komponentų pristatymo išlaidos apmokamos gavėjo sąskaita
Garantijos praradimas	Garantija negalioja, jei: <ul style="list-style-type: none"> • Nesilaikoma šios instrukcijos nurodymų • Netinkamas įkroviklio naudojimas, pažeidimas ar modifikavimas. • Įkroviklis naudojamas ne pagal nustatytus parametrus pagal produkto specifikacijas ir (arba) išsamią užsakymo informaciją.

Trwanie	Atib Elettronica udziela na te produkty rocznej gwarancji. Gwarancja przedłużona musi być zdefiniowana z góry.
Data początkowa	Termin dostawy od Atib Elettronica jest uważany za datę rozpoczęcia gwarancji
Pokrycie	<ul style="list-style-type: none"> • Wadliwe elementy zostaną naprawione lub wymienione bezpłatnie • Praca w pobliżu naszej fabryki jest bezpłatna. Jeśli zostanie przeprowadzona w siedzibie klienta/użytkowników, będzie odpłatna. • Koszty dostawy części zamiennych na koszt odbiorcy
Utrata prawa	Gwarancja nie obowiązuje w przypadku: <ul style="list-style-type: none"> • Instrukcje zawarte w niniejszej instrukcji nie są przestrzegane • Niewłaściwe użytkowanie, naruszenie lub modyfikacja ładowarki. • Ładowarka używana poza określonymi parametrami zgodnie ze specyfikacją produktu i/lub szczegółami zamówienia.

Wa CURVE

Battery Voltage (V)	12	12.0	12.3	12.6	12.9	13.2	13.5	13.8	14.1	14.4	14.7	15.0	15.3	15.6	15.9
	24	24.0	24.6	25.2	25.8	26.4	27.0	27.6	28.2	28.8	29.4	30.0	30.6	31.2	31.8
	36	36.0	36.9	37.8	38.7	39.6	40.5	41.4	42.3	43.2	44.1	45.0	45.9	46.8	47.7
	40	40.0	41.0	42.0	43.0	44.0	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
	48	48.0	49.2	50.4	51.6	52.8	54.0	55.2	56.4	57.6	58.8	60.0	61.2	62.4	63.6
	60	60.0	61.5	63.0	64.5	66.0	67.5	69.0	70.5	72.0	73.5	75.0	76.5	78.0	79.5
	72	72.0	73.8	75.6	77.4	79.2	81.0	82.8	84.6	86.4	88.2	90.0	91.8	93.6	95.4
	80	80.0	82.0	84.0	86.0	88.0	90.0	92.0	94.0	96.0	98.0	100	102	104	106
	96	96	98	101	103	106	108	110	113	115	118	120	122	125	127
V/cell		2.00	2.05	2.10	2.15	2.20	2.25	2.30	2.35	2.40	2.45	2.50	2.55	2.60	2.65
Nominal current (A)	10	10.0	9.4	8.8	8.1	7.5	6.9	6.3	5.6	5.0	4.5	4.0	3.5	3.0	2.5
	20	20.0	18.8	17.5	16.3	15.0	13.8	12.5	11.3	10.0	9.0	8.0	7.0	6.0	5.0
	30	30.0	28.1	26.3	24.4	22.5	20.6	18.8	16.9	15.0	13.5	12.0	10.5	9.0	7.5
	40	40.0	37.5	35.0	32.5	30.0	27.5	25.0	22.5	20.0	18.0	16.0	14.0	12.0	10.0
	50	50.0	46.9	43.8	40.6	37.5	34.4	31.3	28.1	25.0	22.5	20.0	17.5	15.0	12.5
	60	60.0	56.3	52.5	48.8	45.0	41.3	37.5	33.8	30.0	27.0	24.0	21.0	18.0	15.0
	70	70.0	65.6	61.3	56.9	52.5	48.1	43.8	39.4	35.0	31.5	28.0	24.5	21.0	17.5
	80	80.0	75.0	70.0	65.0	60.0	55.0	50.0	45.0	40.0	36.0	32.0	28.0	24.0	20.0
	90	90.0	84.4	78.8	73.1	67.5	61.9	56.3	50.6	45.0	40.5	36.0	31.5	27.0	22.5
	100	100	93.8	87.5	81.3	75.0	68.8	62.5	56.3	50.0	45.0	40.0	35.0	30.0	25.0
	120	120	113	105	97.5	90.0	82.5	75.0	67.5	60.0	54.0	48.0	42.0	36.0	30.0
140	140	131	123	114	105	96.3	87.5	78.8	70.0	63.0	56.0	49.0	42.0	35.0	
%		100	93.8	87.5	81.3	75	68.8	62.5	56.3	50	45	40	35	30	25



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