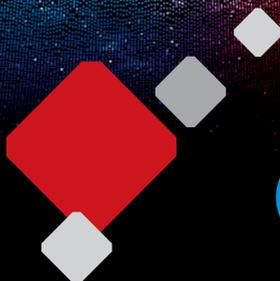


# X-LINE

POWER SUPPLY AND BATTERY CHARGER

The best source,  
so far.



**JFA**  
ELECTRÖNİKOS

## PRESENTATION

The X-Line Sources and Chargers of 40A, 60A, 70A, 120A, 150A and 200A are high-power supplies, in super compact format "SLIM", which allow to power and charge automotive batteries. They provide a maximum current of 40A, 60A, 70A, 120A, 150A and 200A at their output, respectively, and operate in 3 intelligent modes that manage battery charging. In addition, the line has the exclusive **X-LINE FUNCTION**.

They are designed for heavy use, being able to provide maximum power for an extended period of time, keeping the sound on and charging the batteries. Its super compact "SLIM" format is ideal for use in any project.

X-Line Sources and Chargers offer performance, INTELLIGENCE, DIAGNOSTIC functions and COMFORT items with the best design. They were designed and developed to be the most complete product on the market until then.

## MODES OF OPERATIONS AND FUNCTIONS

### PERFORMANCE

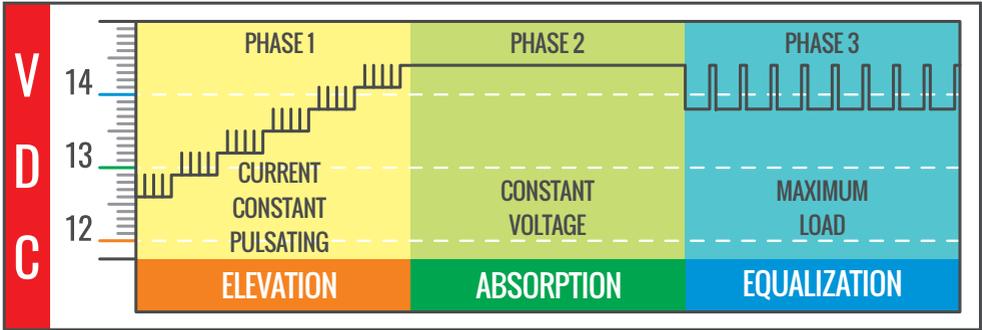
**X-LINE FUNCTION:** Unique to X-LINE chargers, it raises battery bank voltage to up to 15.2V for 30 seconds, allowing amplifiers to deliver maximum performance.

### INTELLIGENCE

**AUTO SCI MODE:** STORM Sources have auto sci operating mode, ideal for use when the system is turned on and the sound takes power from the batteries and the source or when a quick charge is required on the batteries.

In this mode, the STORM Source will maintain maximum output power (14.4V) whenever requested, and will automatically enter the PULSED SCI system (SMART CHARGE SYSTEM) when the batteries are charged, remaining into fluctuation.

**SLOW CHARGE MODE:** X-Line Sources have **SLOW BATTERY** charging mode, charging them in 3 phases (**LIFTING, ABSORPTION, EQUALIZATION**) indicated on the **CONTROL PANEL** by 3 LEDs. This function is ideal for recharging low-charge batteries and the sound system turned off. When using the **SLOW LOAD**, the battery is charged at 100% capacity and without suffering heating, as its smart charge curve is adjusted to the capacity of the battery or the Batteries Installed. You get a maximum efficiency in upload without Wear. Right Extend a life useful of battery beyond from enable still more load.



During **phase 1 (LIFTING)** the battery current is limited to a maximum of 20% of the current of the previously configured battery bank; which gradually increases the voltage of the battery cells without heating or overloading. This phase has 6 steps, which are indicated by **the firing frequency of LED 1 (ELEVATION)**, from 1 to 6Hz. When **LED 1 (ELEVATION)** lights up constantly, it means that this phase has already been performed. After the battery voltage is raised to 14.4V, the source automatically enters **phase 2 (ABSORPTION)**. In **phase 2 (ABSORPTION)**, the voltage remains constant at 14.4V while the battery absorbs charge, until the current reaches 4% of the bank value, previously configured, triggering **LED 2 (ABSORPTION)** constantly and automatically moving to **phase 3 (EQUALIZATION)**. In **phase 3 (EQUALIZATION)**, the voltage is reduced to 13.8V with pulses of 14.4V every 5 minutes. The battery is charged at its maximum capacity, because the equalization is done pulsatively.

**SOURCE MODE - Fixed Output Voltage:** X-LINE Sources allow the user to digitally choose between 6 voltage values at the source output (12.6V / 13.0V / 13.4V / 13.8V / 14.0V / 14.4V). This mode is ideal for battery-free systems, allowing you to power the amplifier or other devices with a stable voltage.

**DIAGNOSIS**

**CCA METER – Cold Start Current:** Função exclusiva das Fontes STORM, a medição de CCA - Corrente de Partida a Frio (Cold Cranking Ampere) - permite realizar uma análise da bateria em apenas 10 segundos, fornecendo o valor de CCA da bateria em amperes, que pode ser comparado com o CCA disponível no rótulo da bateria ou com medições anteriores. A função mede também a resistência interna (Ri) em mΩ (miliOhm) e a porcentagem comparativa da carga em relação a uma bateria nova.

**BATTERY CHECK-UP - Accumulated Charge Meter:** The STORM Sources display, in addition to working such as voltmeter and ammeter, informs the user how much cargo was accumulated by the battery during the charging cycle, letting you know if the battery is still in good working order.

## COMFORT

**SMART COOLER:** X-LINE sources feature an intelligent ventilation system with dynamic PWM control. When the source is turned on, the fan initiates a gradual acceleration, reduces the rotation to the appropriate value, and adjusts to the source's need. There is also a decrease in noise level, maintaining cooling and increasing the life of fans.

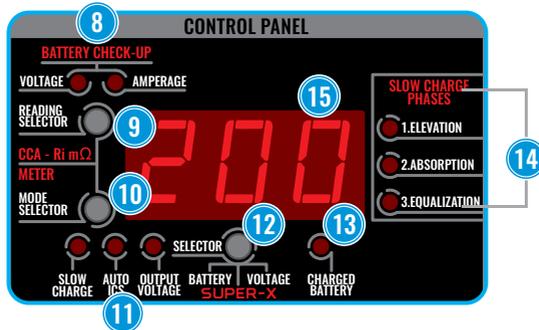
**SLIM FORMAT:** With the highest power density, X-LINE Sources have robust, modern and super compact design, taking up the smallest space in automotive sound design, which makes them ideal in any project.

## MAIN FEATURES



- 1. Control panel:** Displays all source information and allows you to configure all functions;
- 2. Ventilation:** Forced ventilation inlet from the source (do not block);
- 3. DC connector protection cover:** Protege as conexões de saída da fonte;
- 4. DC output connector:** Connects the battery terminals to the bus or equipment to be powered. Always check the correct connection polarity;
- 5. Fixation points:** Robust system, allowing to be firmemente fixados by the metal chassis;
- 6. AC Connection:** Connection of the Source to the power grid. Use compatible connection socket and do not use adapters and/or line machines;
- 7. Output from Ventilation:** Output ventilation of the Source. Do not obstruct.

## DASHBOARD FROM CONTROL



- 8. LED that indicates the voltage parameter **VOLTAGE**, **CURRENT** or **BATTERY CHECK-UP** (2 LEDs on);
- 9. **VOLTAGE**, **CURRENT** and **BATTERY CHECK-UP** readings selector key;
- 10. Selector switch of **SLOW LOAD**, **AUTO SCI** e **OUTPUT VOLTAGE**;
- 11. LEDs that indicate **SLOW LOAD**, **AUTO SCI** and **OUTPUT VOLTAGE**;
- 12. **BATTERY** capacity selector switch (when in **SLOW CHARGE** mode), **VOLTAGE** of the output (when in **VOLTAGE OUTPUT** mode) or triggering of the X-LINE function (press for 2 seconds);
- 13. **BATTERY CHARGED LED** indicator;
- 14. Indicator LEDs of the 3 loading phases of **SLOW LOAD** mode;
- 15. Voltage/current indicator display or hour ampere counter.

## INSTALLATION AND CONNECTIONS

X-LINE sources have a robust fixation system, allowing them to be firmly fixed by the metal chassis, giving greater resistance and safety in the installation (fig. 1).

To remove the protective cover from the DC connectors, pull it up by exposing the connecting screws to the output cables (fig. 2).



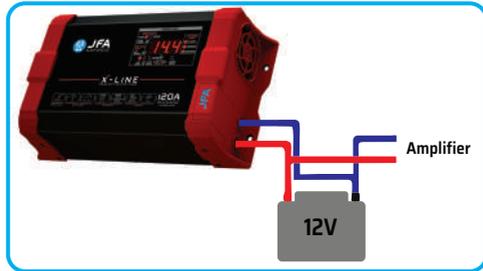
Fig. 1



Fig. 2

Each Source 40A, 60A, 70A, 120A, 150A and 200A can power about 2,000, 3,000, 3,500, 6,000, 7,500 and 10,000 Wrms of sound playing respectively, provided that a parallel battery is used to supply the peak consumption.

When connecting to the batteries, observe the correct polarity of the connection and use the appropriate cable gauge, according to the **MINIMUM GAUGE table OF THE CABLES FOR CONNECTION** (see page 11). In battery-powered systems, the source should always be connected to the battery and the battery to the amplifiers (the connection point should always be made in the battery post).

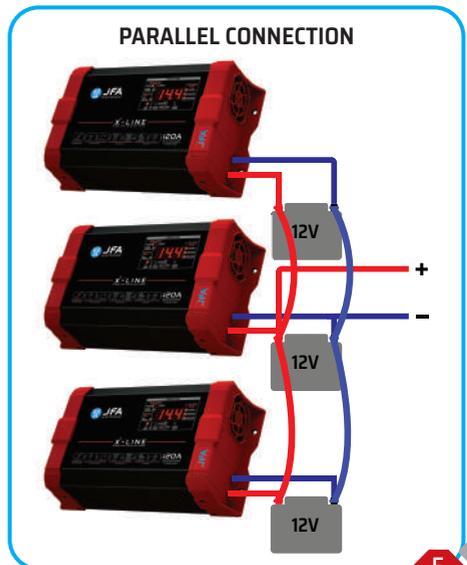
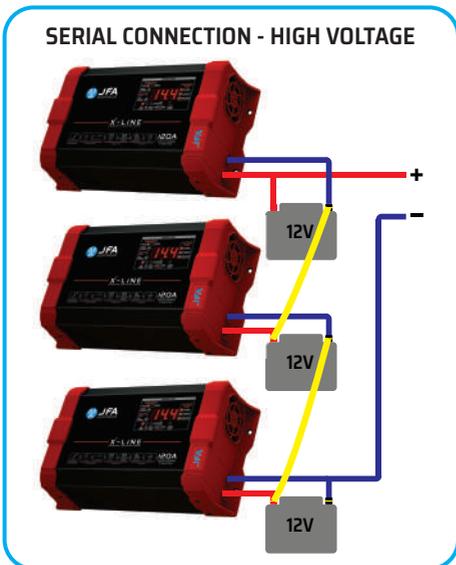


You can use as many Fonts (40A, 60A, 70A, 120A, 150A and 200A) that are required to power the sound, with reference that each one keeps about 2,000, 3,000, 3,500, 6,000, 7,500 and 10,000 Wrms of sound playing respectively.

Another important point to note is that, operating in parallel, the sources must be in the same **OPERATING MODE**, example:

**AUTO SCI MODE:** All sources must be in SCI.

**OUTPUT VOLTAGE MODE:** All sources must have the same output voltage.



## OPERATING MODES AND FUNCTIONS

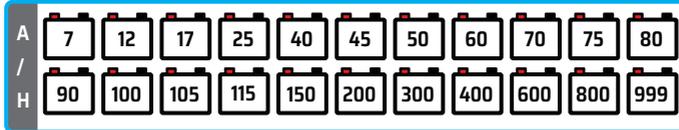
### MODE (REDLINE) SLOW LOAD - Smart Slow Load

To use Smart Slow Load mode, press the **SELECTOR MODE** until the LED indicative of **LOAD SLOW** Light. Press a key **SELECTOR BATTERY** e Select a capacity, in amperes, of the battery to be charged. Upon arriving in 999, the counter returns to the first value.



If your battery does not fit the options, use the nearest smallest value, and in case there is more than one battery in parallel in the system, add the amperage of all and select the capacity that most closely closes to that of the seat.

**The available options are:**



**IMPORTANT:** If there are more sources in parallel in the system, use only one of the sources in slow load mode and keep the other ones off.

### SCI MODE - Smart Fast Charge

To use AUTO SCI mode, press the **MODE SELECTOR** switch until the **Auto SCI (Smart Charging System)** LED lights up.

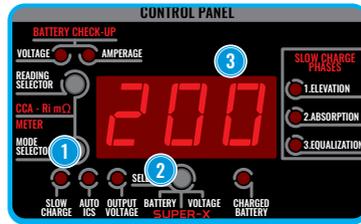
This mode allows the source output to operate at 14.4V when the system requests more (sound on playing or in a battery charge situation). In fluctuation, it operates with the tension from output in Cycles from 13.8V during 5 minutes e 14.4V during 10 Seconds.



THE **AUTO SCI** allows the battery to absorb a greater amount of charge and prevent excessive elevation of the potential of the plates, a chemical phenomenon caused by load stress (electrolysis), increasing the life and efficiency of the batteries.

**OUTPUT VOLTAGE MODE (Fixed Source Mode)**

To use in **FIXED OUTPUT VOLTAGE** mode, press the **SELECTOR** switch **MODE** until the LED **VOLTAGE OUTPUT** turns on.



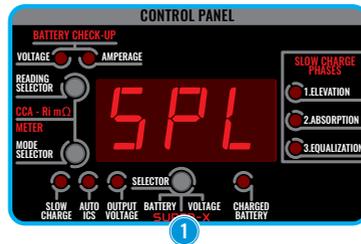
Immediately after, press the **VOLTAGE SELECTOR** switch and select the desired output voltage.

The options healthy:



**X-LINE FUNCTION**

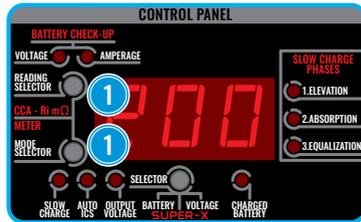
To select the **X-LINE** function, simply hold down the **BATTERY /VOLTAGE/X-LINE SELECTOR** switch for 2 seconds. When triggered, the display will show the **SPL** inscription **flashing** for 30 seconds. After this time, the display displays the **OFF** subscription and the font returns to its previous operating condition.



To disable the function, before time runs out, simply press the key again **BATTERY/VOLTAGE/STORM SELECTOR** while the function is running. The display displays the inscription **OFF** e a source Returns à its condition from operation previous.

### CCA METER FUNCTION (Cold Start Current Meter)

To perform CCA measurement, simultaneously press the SELECTOR **READING** and **SELECTOR MODE** keys.



When the **CCA METER** function is activated, the STORM Source disconnects from the AC power grid, disconnects the fan, and starts the battery test. When the display displays the CCA-BATXXX information, press the BATTERY SELECTOR switch to select the battery capacity to be tested. During this process, the display displays the word CCA flashing. After 10 seconds, the display displays the CCAXXX information, which can range between 20A and 999A, with the CCA value obtained in the reading and RiXXX (internal battery resistance) in mΩ the percentage of battery charge is displayed in comparison to a new battery (selected at the beginning of the test).

**This function can be used to test a battery bank that is within the maximum source specifications (for parallel connection, add CCA of each battery) however, it is more indicated that the test is done on individual batteries.**

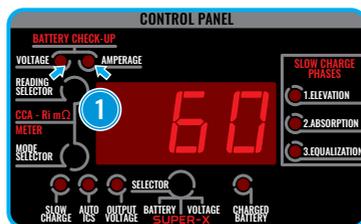
For proper operation, use 50mm<sup>2</sup> x 30cm cables for 200A and 150A sources; 35mm<sup>2</sup> x 30cm for 120A sources; and 16mm<sup>2</sup> x 30cm for 70A, 60A and 40A sources; and make sure that the supply terminals are correctly so in the terminals to the battery terminals.

### BATTERY CHECK-UP FUNCTION (Cumulative Charge Meter)

To perform a **BATTERY CHECK-UP**, proceed:

The battery must be discharged to approximately 11V voltage.

Turn on the source, press the key **SELECTOR READING** until the mode **BATTERY CHECK-UP** is active (**VOLTAGE** and **CURRENT LEDS ON**). To reset the counter, hold down the key **SELECTOR READING** by 5 Seconds.



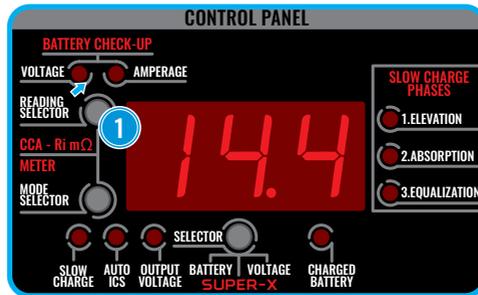
Connect the battery to the charger and wait the indication light **BATTERY LOADED** (charging time may vary depending on battery capacity and the source used). Read in display a quantity from Amps than a battery Accumulated during o process from load.

Verify the value obtained is close to the amount of amperes specified by the battery manufacturer (e.g. If the battery charged is 60A, the obtained value should be close to 60A). The lower, in relation to the value indicated by the manufacturer, the worse the battery status. If a battery bank is used in parallel, add the currents of the seat batteries.

**(Note: When the meter reaches 999 it must be reset to continue reading the accumulated charge on the battery).**

**VOLTAGE READING**

The X-LINE Source display allows you to view the output voltage (in Volts) that is being applied at that time to the system. To access this voltage value, press the **SELECTOR READING** switch until the **VOLTAGE INDICATOR LED** lights up.



**CURRENT READING**

The X-LINE Source display allows you to view the output current (in amperes) that is being applied at that time to the system. To access this current value, press the **SELECTOR READING** switch until the **CURRENT INDICATOR LED** lights up.



## CONSUMPTION - MINIMUM CABLE GAUGE - POWER

Model X-LINE	Max. Consumption entry	Network 127Vac	Network 220Vac	AC input cable (up to 10 meters)	DC output cable (up to 1 meter)	Max power. Output
40A	600W	5A	3A	2,5mm <sup>2</sup>	6mm <sup>2</sup>	40A
60A	900W	7A	4A	4mm <sup>2</sup>	10mm <sup>2</sup>	60A
70A	1050W	8A	5A	4mm <sup>2</sup>	16mm <sup>2</sup>	70A
120A	1800W	15A	8A	4mm <sup>2</sup>	25mm <sup>2</sup>	120A
150A	2250W	18A	10A	6mm <sup>2</sup>	35mm <sup>2</sup>	150A
200A	3000W	24A	14A	6mm <sup>2</sup>	50mm <sup>2</sup>	200A

## TECHNICAL SPECIFICATIONS

X-LINE 40A	
AC input	90 to 140Vac / 170 to 240Vac (Automatic Bi-volt)
Consumption with maximum load	600W
Maximum output current	40 Amperes
Selectable output voltage	12,6V / 13,0V / 13,4V / 13,8V / 14,0V / 14,4V
SCI - Intelligent charging system	13,8 / 14,4 cyclic
3-phase slow load system - Customizable	Elevation /Absorption/ Equalization
Smart cooler - Smart ventilation system	Dynamic control by PWM
Precision voltmeter / ammeter	99% / 96%
Protections	Excesso de carga / Curto na saída / Temperatura
Dimensions L x A x P (mm)	259 x 151 x 58
Weight Kg	1,420

X-LINE 60A	
AC input	90 to 140Vac / 170 to 240Vac (Automatic Bi-volt)
Consumption with maximum load	900W
Maximum output current	60 Amperes
Selectable output voltage	12,6V / 13,0V / 13,4V / 13,8V / 14,0V / 14,4V
SCI - Intelligent charging system	13,8 / 14,4 cyclic
3-phase slow load system - Customizable	Elevation /Absorption/ Equalization
Smart cooler - Smart ventilation system	Dynamic control by PWM
Precision voltmeter / ammeter	99% / 96%
Protections	Overload / Short at output / Temperature
Dimensions L x A x P (mm)	259 x 151 x 58
Weight Kg	1,440

<b>X-LINE 70A</b>	
AC input	90 a 140Vac / 170 a 240Vac (Automatic Bi-volt)
Consumption with maximum load	1050W
Maximum output current	70 Amperes
Selectable output voltage	12,6V / 13,0V / 13,4V / 13,8V / 14,0V / 14,4V
SCI - Intelligent charging system	13,8 / 14,4 cyclic
3-phase slow load system - Customizable	Elevation /Absorption/ Equalization
Smart cooler - Smart ventilation system	Dynamic control by PWM
Precision voltmeter / ammeter	99% / 96%
Protections	Overload / Short at output / Temperature
Dimensions L x A x P (mm)	259 x 151 x 58
Weight Kg	1,440

<b>X-LINE 120A</b>	
AC input	90 a 140Vac / 170 a 240Vac (Automatic Bi-volt)
Consumption with maximum load	1800W
Maximum output current	120 Amperes
Selectable output voltage	12,6V / 13,0V / 13,4V / 13,8V / 14,0V / 14,4V
SCI - Intelligent charging system	13,8 / 14,4 cyclic
3-phase slow load system - Customizable	Elevation /Absorption/ Equalization
Smart cooler - Smart ventilation system	Dynamic control by PWM
Precision voltmeter / ammeter	99% / 96%
Protections	Overload / Short at output / Temperature
Dimensions L x A x P (mm)	279 x 163 x 86
Weight Kg	2,050

<b>X-LINE 150A</b>	
AC input	90 a 140Vac / 170 a 240Vac (Automatic Bi-volt)
Consumption with maximum load	2250W
Maximum output current	150 Amperes
Selectable output voltage	12,6V / 13,0V / 13,4V / 13,8V / 14,0V / 14,4V
SCI - Intelligent charging system	13,8 / 14,4 cyclic
3-phase slow load system - Customizable	Elevation /Absorption/ Equalization
Smart cooler - Smart ventilation system	Dynamic control by PWM
Precision voltmeter / ammeter	99% / 96%
Protections	Overload / Short at output / Temperature
Dimensions L x A x P (mm)	289 x 172 x 95
Weight Kg	2,250

<b>X-LINE 200A</b>	
AC input	90 a 140Vac / 170 a 240Vac (Automatic Bi-volt)
Consumption with maximum load	3000W
Maximum output current	200 Amperes
Selectable output voltage	12,6V / 13,0V / 13,4V / 13,8V / 14,0V / 14,4V
SCI - Intelligent charging system	13,8 / 14,4 cyclic
3-phase slow load system - Customizable	Elevation /Absorption/ Equalization
Smart cooler - Smart ventilation system	Dynamic control by PWM
Precision voltmeter / ammeter	99% / 96%
Protections	Overload / Short at output / Temperature
Dimensions L x A x P (mm)	317 x 172 x 95
Weight Kg	2,650

<b>X-LINE 200A MONO</b>	
AC input	170 a 240Vac (mono-volt)
Consumption with maximum load	3000W
Maximum output current	200 Amperes
Selectable output voltage	12,6V / 13,0V / 13,4V / 13,8V / 14,0V / 14,4V
SCI - Intelligent charging system	13,8 / 14,4 cyclic
3-phase slow load system - Customizable	Elevation /Absorption/ Equalization
Smart cooler - Smart ventilation system	Dynamic control by PWM
Precision voltmeter / ammeter	99% / 96%
Protections	Overload / Short at output / Temperature
Dimensions L x A x P (mm)	317 x 172 x 95
Weight Kg	2,640