Electron


# RS-232 Converter for RS-485

Catalogue

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## INTRODUCTION

The RS232 to RS485 converter is a device designed to allow communication between equipment that uses different serial interface standards. While the RS232 standard is widely used for short-distance communication, RS485 offers a more robust and efficient solution for long-distance connections and industrial environments. With this converter, it is possible to connect devices with RS232 interfaces to RS485 networks, ensuring stable and high-performance communication in applications that require greater resistance to electromagnetic interference and transmission at multiple points.

The Converters were built in compliance with strict quality standards and use state-of-the-art electronic components (SMD), their hardware was designed to withstand severe working conditions, and can be installed directly in power substation panels. Meets the levels of demands, supportability and reliability according to IEC, DIN, IEEE, ABNT standards.

## KEY FEATURES

- **Long Distance Connectivity:**
  The RS485 standard allows communication at distances of up to 1,200 meters, making it ideal for industrial environments or where there is a need for remote control of devices.

- **Multidrop/Multimaster:**
  Supports the connection of multiple devices on a single communication line, allowing up to 32 devices per bus (can be extended with repeaters).

- **High Immunity to Interference:**
  RS485 is more resistant to electromagnetic interference compared to RS232, making it suitable for noisy environments.

- **Universal Compatibility:**
  It works perfectly with devices that use the RS232 interface, facilitating integration between ancient and modern technologies.

- **Differential Mode Transmission:**
  RS485 operates in differential mode, ensuring greater signal integrity in long-distance transmissions.

- **Compact and Rugged Design:**
  Equipment designed for industrial applications, with a sturdy structure and easy installation.

## TECHNICAL DATA

| Conversor RS232 x RS485 | |
|---|---|
| **Operating Voltage** | 9 to 24 Vdc |
| **Operating Temperature** | -20°C to +70°C |
| **Maximum cable length** | 1200 meters |
| **Baud Rate** | 9600 |
| **Isolation** | 1.5 KV / 60 Hz / 1 minute |
| **RS-232 Connection** | DB-9 (female) |
| **Connection** | DIN rail 35 mm |

Table 1 – Technical data

## DIMENSIONS


Image 1 – dimensions

## SPECIFICATIONSFOR ORDER

- RS-232 Signal Converter for RS-485: CRS

## IMPORTANT RECOMMENDATIONS

***Before putting the equipment into operation, check the following recommendations**:*

***Device Compatibility**: Make sure that the devices you want to connect are compatible with the RS485 standard. This standard is typically used in industrial environments, and is ideal for long-distance and multi-drop communications, where multiple devices share the same communication line.*

***Verification of Communication Parameters**: Both the connected devices and the converter must be configured with the same communication parameters (baud rate, parity, stop bits, etc.) to avoid errors in data transmission.*

***Transmission Distance**: RS485 supports communications up to 1,200 meters, but for longer distances, or in environments with a lot of interference, it is recommended to use high-quality, shielded, and properly grounded cables.*

***Use of Termination Resistors**: In long-distance RS485 communications, it is important to install termination resistors (usually 120 ohms) at the ends of the bus to avoid signal reflections that could hinder communication.*

***Electrical Insulation**: Consider using electrically insulated converters, especially in industrial settings, to protect equipment from electromagnetic interference and voltage surges.*

***Correct Polarity**: RS485 is differential, which means there is a pair of wires for the positive and negative signal. Make sure to properly connect the A(+) and B(-) to avoid signal reversal.*

## WARRANTY TERM

CRS Electron has a warranty period of two years from the date of sale stated on the invoice, with coverage for any manufacturing defects that make it unsuitable or unsuitable for the applications for which it is intended.

*Disclaimer of Warranty*

The warranty does not cover transportation expenses for technical assistance, freight and insurance for shipment of a product with evidence of defect or malfunction. The following events are also not covered: Natural wear and tear of parts due to continuous and frequent use, damage to the outside caused by falls or improper packaging; attempt to repair/break a seal with damage caused by persons not authorized by Electron and in disagreement with the instructions that are part of the technical description.

*Loss of Warranty*

The product will automatically lose its warranty when:

• The instructions for use and assembly contained in this manual and the installation procedures contained in the NBR 5410 Standard are not observed;

• Subjected to conditions outside the limits specified in the respective technical descriptions;

• Violated or repaired by a person other than Electron's technical team;

• The damage is caused by a fall or impact;

• Infiltration of water or any other liquid occurs;

• Overload occurs that causes degradation of the components and parts of the product.

*Use of the warranty*

To enjoy this warranty, the customer must send the product to Electron along with a copy of the purchase invoice properly packaged so that there is no damage in transport. For an emergency service, it is recommended to send as much information as possible, regarding the defect detected. This will be analyzed and subjected to full functional tests.

The analysis of the product and its eventual maintenance will only be carried out by the technical team at the headquarters of Electron do Brasil.