



Parrot Wireless 4-20mA cable replacement - Quick start guide

This manual provides step-by-step instructions for setting up and operating a radio transmitter and receiver system that transmits a 4-20mA current loop signal wirelessly. The radio receiver mirrors the 4-20mA input received by the transmitter, acting as a cable replacement. Please note that all Parrot devices are pre-paired and fully calibrated.

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** IMPORTANT SAFETY INFORMATION**

- Please read this document entirely before beginning.
- Installation and use of this information and this system is to be performed by a competent, trained person only.
- Danger of electric shock.
- Always power down the system before making or changing wiring connections.
- Ensure all connections are secure to prevent accidental shorts or open circuits.

System Overview

- The transmitter accepts a 4-20mA current loop input and operates at nominal 24V DC (+/- 10%).
- The receiver outputs (at a set interval – default 10 minutes) a 4-20mA signal that mirrors the transmitters' input.
- All units include a switch, for the transmitter this will immediately measure the loop current and send the value to the receiver. For the receiver this will send a request to the transmitter to measure the loop current and return it.
- To enable fault relay visit menu A fault relay output is available on the receiver. By default, the relay is Normally Closed (energised) when data is being received successfully and will only be Opened (de-energised) when 2.5 transmit intervals have passed with no transmission being received.
- The system is designed for remote analogue signal transmission, commonly used in industrial process control.



System Wiring and Setup

1. Power Supply Connection for Transmitter

- Connect the positive terminal of the 24V DC power supply to the positive power input of the transmitter.
- Connect the negative terminal of the power supply to the transmitter's power ground.

2. 4-20mA Input Signal Connection for Transmitter

- Connect the signal source (e.g., sensor or controller) output to the transmitter's 4-20mA input terminals (not polarised).
- Ensure correct polarity: the current should flow from the signal source, through the transmitter, and return to the signal source or ground, as per your loop configuration.

3. Radio Link

- Ensure both transmitter and receiver are powered and within radio communication range.
- Each transmitter and receiver are supplied as a paired is set, with a standard address.
- For operating environments where multiple pairs of devices are operational, it may be necessary to change the standard address of some of the paired devices (see item 4 for address pairing).

4. Instruction for changing standard address pairing of a transmitter / receiver pair

- Remove front covers of both the transmitter and receiver to expose USB serial connection.
- Plug in USB cable to units and connect to Laptop / PC then open any serial terminal emulator (such as Real Term)
- For PC interface set operating speed to 9600bps with no flow control and 8-N-1.
- When the system starts it will enter the top-level menu system (pressing ESC twice will refresh the terminal to enter the menu system from an idle device or new terminal connection).
- From top level menu select option 3, this will take you to the radio parameter menu.
- From the radio parameter menu select option 2, "set address by characters". Addresses may be set by any 2-characters such as S1 or aB in either upper or lower case. NB. The preset standard address is set to II (capital i, i not one one).
- Both Transmitter and Receiver need to be set to the same address.

5. Power Supply Connection for Receiver

- Connect the positive terminal of the 24V DC power supply to the positive power input of the receiver.
- Connect the negative terminal of the power supply to the receivers' power ground

6. Receiver Output Connection

- Connect the receiver's 4-20mA output terminals to the load device (e.g., PLC analogue input, meter). To minimise noise from signal source, place the transmitter as close as possible to the sensor.
- A fault relay Output is available on the receiver by enabling in the menu, setting to "Y" on both the transmitter & receiver (default is N for off). The relay is energised when packets are being received. It will be de-energised when 2.5 transmit periods have passed with no transmission being received
- The receiver output will mirror the input signal received by the transmitter, providing a faithful reproduction of the original 4-20mA value.

Basic Operation

- When powered, the transmitter regulates the current in the loop based on the input signal (4mA = 0%, 20mA = 100% of measured parameter).
- The receiver outputs a 4-20mA signal identical to the transmitter's input, allowing remote monitoring or control.
- The system is robust against electrical noise and voltage drops over long distances, making it suitable for industrial environments.

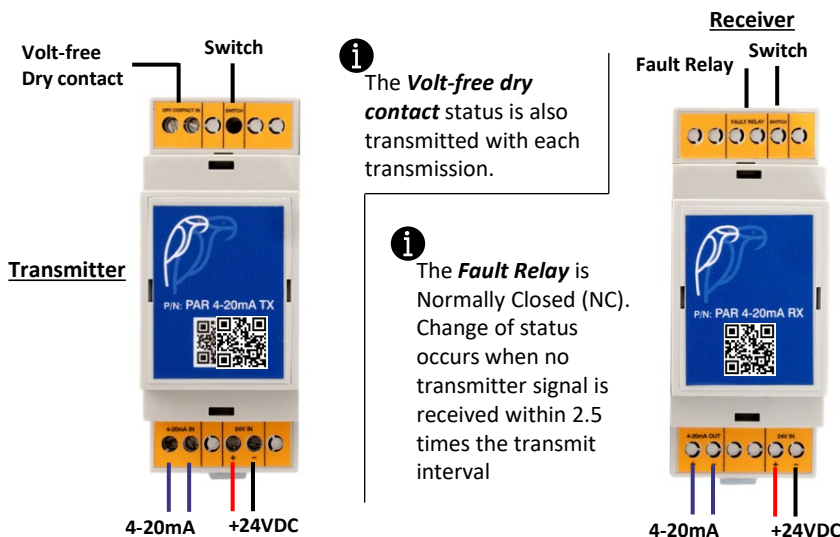
Important Notes

- Only one transmitter should be present in each current loop.
- To minimise noise from signal source, use shielded twisted-pair wiring for long sensor cable runs.
- The 4mA "live zero" allows for fault detection: if the loop current drops below 4mA, it typically indicates a wiring or device failure.

Troubleshooting

- No output at receiver: Check power supplies, radio link status, and wiring continuity.
- Incorrect output current: Verify correct input signal, wiring polarity, and that only one transmitter is present in the loop.
- Signal loss or noise: Ensure adequate radio signal strength and use shielded cables for wired segments.

By following these instructions, your radio transmitter and receiver system will reliably transmit 4-20mA analogue signals for remote monitoring or control in industrial applications.



i The fault relay can be wired in series with the receiver output to reduce the output current to zero under fault conditions, if required.

LED's

- White** Startup up test
- Blue** Transmission in progress
- Green** Successful Transmission
- Red** Error either no loop current or no successful transmission