User's manual

TRU-10-10

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The TRU-10-10 is a radio receiver with digital outputs. It operates in the ISM 868 MHz radio band. It is intended to be used with the TRP-10 and TRP-10-10 devices to create a radio "bridge" to transmit pulses.

The TRU-10-10 has two separated pulse outputs.

Table des matières

I - Hardware

I.1 Connection

The TRP-10-10 has two pulse outputs

I.1.1 Device's connectors

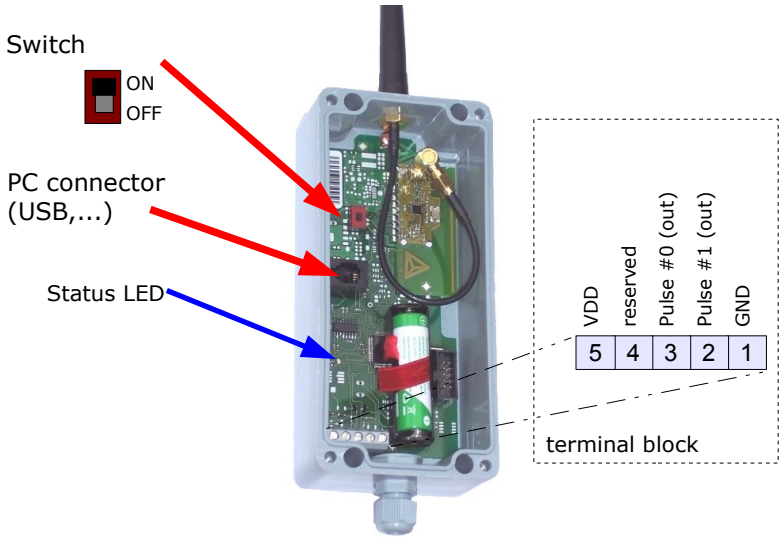

Illustration 1: TRU-10-10 connections

I.1.2 Power supply

The TRU-10-10 device is powered from an external power supply (5 to 15V)

I.1.2.1 Power consumption

Typical power consumption is 15 to 20 mA

I.1.3 Power-up

To power on the device, set the switch to the ON position. The blue LED will blink twice.

I.1.4 PC connection

It is possible to modify several parameters from a PC. Tetraedre can provide the software. A special serial cable is required (to be ordered separately)

I.1.5 Electrical interface

The following illustration provides a simplified schematics of the interface.

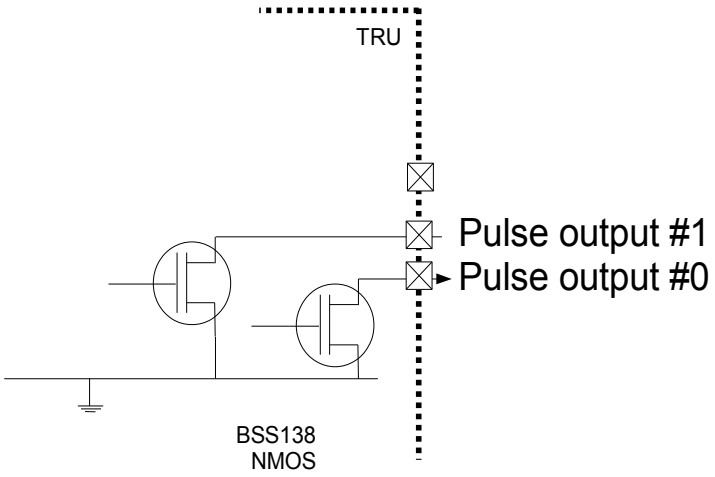

Illustration 2: Simplified electronic interface schematic

The TRU-10-10 generates pulses on the gate on a NMOS transistor. The output is an open-drain output. Maximal drain-source voltage allowed is 50V and 0.2A of maximal current.

The output frequency of the generated pulses is 130 Hz.

II - Operations

II.1 Principle of operation

II.1.0.1 Pairing

The TRU is intended to re-generate pulses counted by a TRP-10 or TRP-10-10 device.

The TRU must be configured to use the same radio frequency than the TRP. The serial number filter value must be given with the serial number of the TRP. Manufacturer ID must also match the TRP's.

II.1.0.2 Radio listening

The TRU is listening always to radio. When a valid radio message (including correct CRC,...) is received from the paired TRP, the blue LED toggle.

II.1.1 Pulse generation

You need to configure the TRP with the following parameters:

- interface_1=7 (PULSE_0_ABS)
- media_1=10
- interface_2=8 (PULSE_1_ABS)
- media_2=16

In this configuration, the TRP will send a message containing the absolute pulse counter.

When the TRU is powered-up, it will listen to radio until it receives the first absolute counter from the TRP. It will store its value in its own PULSE_0_ABS and PULSE_1_ABS counter.

For each following message, it will re-generate pulses on the output #0 and increment PULSE_0_ABS counter until it reaches the value newly received per radio. It will also re-generate pulses on the output #1 and increment PULSE_1_ABS counter until it reaches the value newly received per radio.

III - Contact information

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