

RC-TRS-TX Operational Description

RC-TRS transmitters (RC-TRS-TX) can be provided in several control configurations, dependign on customer's requirements. Basically, control configurations differ in the number and type of actuators. Figure 1 shows the available actuators, while table outlines the actuators available in the various control configurations.

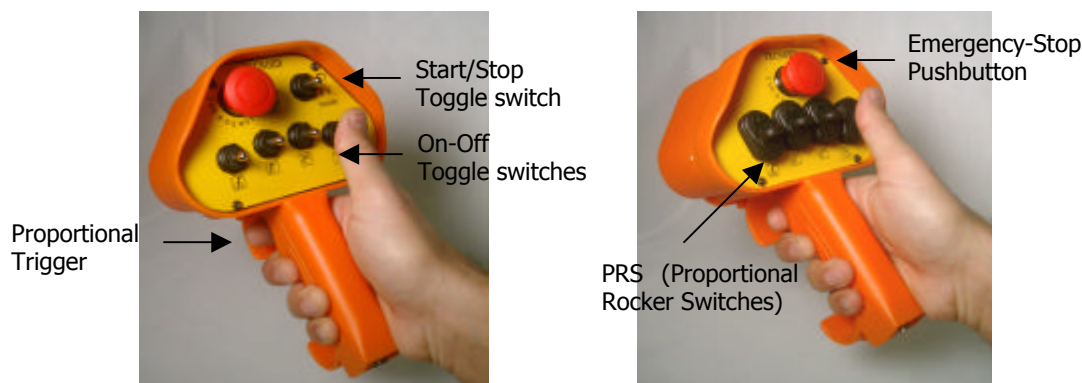


Figure 1 – Types of actuators available in the RC-TRS transmitters.

| CONTROL CONFIGURATION | On-Off switches | Start/Stop switch | Proportional trigger | PRS | Emergency-Stop |
|-----------------------|-----------------|-------------------|----------------------|-----|----------------|
| RC-TRD-4F | 4 | No | No | - | Yes |
| RC-TRD-5F | 5 | No | No | - | Yes |
| RC-TRD-6F | 6 | No | No | - | Yes |
| RC-TRD-7F | 7 | No | No | - | Yes |
| RC-TRR-4F | 4 | No | Yes | - | Yes |
| RC-TRR-5F | 5 | No | Yes | - | Yes |
| RC-TRR-6F | 6 | No | Yes | - | Yes |
| RC-TRR-7F | 7 | No | Yes | - | Yes |
| RC-TRE-4S | 4 | Yes | Yes | - | Yes |
| RC-TRE-5S | 5 | Yes | Yes | - | Yes |
| RC-TRE-6S | 6 | Yes | Yes | - | Yes |
| RC-TRM-4F | 4 | No | No | 4 | Yes |
| RC-TRM-5F | 5 | No | No | 5 | Yes |
| RC-TRM-6F | 6 | No | No | 6 | Yes |
| RC-TRM-4S | 4 | Yes | No | 4 | Yes |
| RC-TRM-5S | 5 | Yes | No | 5 | Yes |
| RC-TRM-6S | 6 | Yes | No | 6 | Yes |

Table 1 - RC-TRS Control Configurations description

SPECIFICATIONS

| | |
|-------------------|----------------------------------|
| Housing material | Fiber enforced polycarbonate |
| Weight | < 0.7 kg (with batteries) |
| Antenna | internal |
| Temperature range | -25°C ÷ +70°C |
| Power supply | battery pack (4 x NiMH cells) |
| Operating time | 10 – 12 hrs continuous operation |
| Battery charger | Built-in |
| Diagnostics | Battery charge state (green led) |

OPERATIONAL DESCRIPTION

TRD, TRR and TRE Control Configurations

- Toggling any of the switches starts RF transmission with the corresponding function(s) activated.
- For TRR and TRE configurations: use the proportional trigger to control the function's speed. For safety reasons, the proportional trigger can only be actuated after the function has been activated with the corresponding toggle switch.
- The start/stop function is not subject to proportional regulation.
- Release the toggle switches in order to stop transmission and deactivate the corresponding function(s).
- When the Emergency-Stop pushbutton is pressed, RF transmission is enabled but no functions can be activated.
- Any time a toggle switch is actuated, the green led displays the battery status: the led on indicates that the unit can operate properly, while the blinking led indicates that batteries must be recharged.
- In order to recharge batteries, connect the service cable to the receiver unit: the green led turns on and batteries are automatically recharged. When battery charge is complete, the battery charger turns automatically off.
- When battery charge is in progress, all the functions are available to the operator.
- A short beep of the buzzer indicates that the RF unit has been turned on.

TRM Control Configuration

- Moving any of the proportional rocker switches (PRS) from its neutral position starts RF transmission with the corresponding function(s) activated.
- Use the same PRS to control the function's speed.
- Release the PRS in order to stop transmission and deactivate the corresponding function(s).
- When the Emergency-Stop pushbutton is pressed, RF transmission is enabled but no functions can be activated.
- Any time a PRS is actuated, the green led displays the battery status: the led on indicates that the unit can operate properly, while the blinking led indicates that batteries must be recharged.
- In order to recharge batteries, connect the service cable to the receiver unit: the green led turns on and batteries are automatically recharged. When battery charge is complete, the battery charger turns automatically off.
- When battery charge is in progress, all the functions are available to the operator.
- A short beep of the buzzer indicates that the RF unit has been turned on.

RF Module

The RC-TRS-TX features an UHF FM-narrowband transmitter with PLL synthesizer and microcontroller. The narrow band FM modulation (direct FSK) enables efficient use of the available RF spectrum.

In about 90 ms after the transmitter is connected to a power source, PLL is locked and data can be transmitted without further control or synchronization.

Different modules can operate in a 25 kHz channel spacing scheme. The operating channel is factory set, and can be changed only by authorized personnel. One of 11 available channels can be selected using a 4-bit switch that is placed on the PCB. The following table outlines the correspondance between switch setting and operating frequency.

| CH NO. | F0 (MHz) | SWITCH 1 | SWITCH 2 | SWITCH 3 | SWITCH 4 |
|--------|-------------|-------------|-------------|-------------|-------------|
| CH1 | 458.525 | ON | ON | ON | ON |
| CH2 | 458.550 | OFF | ON | ON | ON |
| CH3 | 458.575 | ON | OFF | ON | ON |
| CH4 | 458.600 | OFF | OFF | ON | ON |
| CH5 | 458.625 | ON | ON | OFF | ON |
| CH6 | 458.650 | OFF | ON | OFF | ON |
| CH7 | 458.675 | ON | OFF | OFF | ON |
| CH8 | 458.700 | OFF | OFF | OFF | ON |
| CH9 | 458.725 | ON | ON | ON | OFF |
| CH10 | 458.750 | OFF | ON | ON | OFF |
| CH11 | 458.775 | ON | OFF | ON | OFF |

Notice: Turn off the power of the module when setting the frequency channel of the transmitters. The status of the switches will be read by the CPU when power is turned on. It is not possible to change the channel setting while the power is on (the device operates at fixed frequency).