OPERATION & INSTALLATION MANUAL

Go Radio Model No. TR1000

December, 2006

Table of Contents

1 General Information

1.1 Scope

This manual contains information necessary to install, operate and maintain the GoRadio TR1000 system. Read all OSHA related guidelines for your industry before operating this product.

FCC I.D.: URLBRP64MS

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that might cause undesired operation.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

1.2 System Description

1.2.1 General

The TR1000 System is a wireless remote control system for light industrial use. It consists of one 115/230 VAC powered receiving assembly and one hand-held battery powered 8-button transmitter unit.

1.2.2 Control Functions

There are 8 control functions on the transmitter in mutually exclusive pairs. These functions are labeled:

START / STOP
UP / DOWN
EAST / WEST
NORTH / SOUTH

There are 8 control relays and 9relay outputs in the Receiving Assembly. These outputs are labeled:

COMMON / START
UP / DOWN
EAST / WEST
NORTH / SOUTH

The START relay has both Normally Open (N.O.) and Normally Closed (N.C.) outputs. The COMMON relay is in series with all the other relays. The COMMON relay is fused at

10 amps nominal. It is connected between the COMMON input and the input of all other relays as well as its own MAIN output.

The receiving assembly is labeled showing the relay connections and the wiring of the exit cable. This includes the power, and all wiring to and from the relays.

1.3 Warranty

The manufacturer warrants the delivered system to be free of defective material and workmanship. It will remedy any such defect within one year of first party purchase at no charge to the purchaser upon return to the factory.

Defects caused by improper installation, maintenance, misuse, tampering, neglect, accident, or use in violation of manufacturer's written instructions shall not be covered in this warranty. Manufacturer guarantees the system will perform as outlined in this manual.

Transfer of this warranty is acceptable and recommended. Please notify the factory of any and all transfers.

2 Operation

2.1 Receiving Equipment

Normal operating procedure is to leave the receiving assembly energized at all times. The unit is energized by connecting the appropriate wires to a 115/230 Volt, 50-60 Hz, single-phase, AC source. The color of these wires is indicated on the label. All fuses (see Appendix 5.1) of the proper type need to be installed and intact. (The proper fuses are initially installed at the factory). If these conditions are properly met, a LED (indicated by the label as the one between X1 and X2) should be illuminated. The receiving assembly is ready to operate.

2.2 Transmitter

The hand-held transmitting unit is powered by two AA batteries. See the Installation section for more details. The transmitter is ready to operate after the batteries are installed.

2.3 Operating Procedure

Verify the receiving assembly is energized as previously mentioned. Also, verify the transmitter has good batteries installed properly.

The transmitter LED is illuminated ONLY while a pushbutton is being pressed. This conserves battery life. When the LED is illuminated it is either GREEN or RED. A RED color indicates that no signal is being transmitted due to improper operation as defined below.

Press the transmitter START pushbutton. The receiving unit activates.

Two relays are affected by the START pushbutton. The START relay will energize momentarily while the START pushbutton is depressed. This relay will de-energize when the START pushbutton is released. A LED will illuminate while the START relay is energized.

The COMMON relay is affected by the START pushbutton as well. This relay will energize, and remain energized until the STOP relay is pressed. A corresponding LED will light while the relay is energized.

The transmitter STOP button takes precedence over all other buttons. If any other button or combination of buttons is pressed while the STOP button is held the STOP signal is transmitted to the receiving unit.

The START pushbutton must be pressed before any other pushbutton. If not, the transmitter LED will illuminate RED while any other pushbuttons is depressed.

The transmitter LED is always illuminated as GREEN when the STOP button is being pressed either by itself or in combination with any other buttons.

Once the START pushbutton is pressed, the transmitter is ready for use. The LED will illuminate GREEN when any pushbutton is pressed. The directional pushbuttons operate the corresponding relay outputs in a mutually exclusive fashion as described below.

The following pushbutton pairs are considered to be mutually exclusive:

START and STOP
UP and DOWN
EAST and WEST
NORTH and SOUTH

Pressing transmitter buttons with this pairing illuminate the transmitter LED as RED and indicates no signal is being transmitted.

ALL receiver relays except for the COMMON relay remain energized ONLY while the corresponding button on the transmitter is being pressed.

Machinery can now be operated by pressing the desired pushbuttons.

In the event of an emergency operation, press the STOP pushbutton. Remove the batteries, shut off main power to machinery and discontinue operation. Consult distributor for instructions.

Upon completion of use, press the STOP pushbutton and return the transmitter unit to its designated storage area. Remove the batteries if machinery will not be in use for a long period of time.

3 Installation

3.1 Scope

Proper installation is critical to the safety and proper operation of the TR1000 system and the attached equipment.

3.2 Receiving Assembly Installation

Inside the receiving assembly, next to the transformer, a "jumper" connection is installed for **115 VAC power input.**. If 230 VAC is required, move the "jumper" to the silkscreen markings for 230 VAC operation.

All receiving assembly fuses are factory installed. (3 fuses). **See Appendix 6.1 for the fuse information**.

Verify the antenna connection into the case is tight.

Verify the strain-relief nut is tight with all threads properly aligned and mated.

Install the receiving unit in a secure manner by the four shock-absorbing standoffs.

Properly wire the unit to its power and relay connections as indicated by the label on the receiving unit and the specifications indicated in this manual.

Connect the factory provided antenna to the receiver connection.

Apply 115/230 volt, 60 Hz, single phase, AC power. **(Be sure the receiver is configured for the proper AC voltage!)**

The unit is now operational.

3.3 Transmitter Installation

The hand-held transmitter units are shipped without the AA batteries installed. The user is responsible for properly installing two AA batteries per transmitter unit.

Use alkaline 1.5 volt DC batteries. The combination battery voltage of two cells is never to exceed 3.6 volts DC. Voltage in excess of 3.6 volts DC violates factory specifications and can damage the transmitter. BE SURE the batteries are installed correctly.

The unit will NOT operate until the batteries are properly installed. The battery receptacle is marked to indicate proper polarities.

Verify no pushbuttons are pressed while installing the batteries. If a pushbutton is pressed while installing the batteries, the transmitter LED will flash RED continuously until the batteries are removed and then re-installed. If this problem continues, return the transmitter to the factory for repair.

4 Maintenance

4.1 Preventive Maintenance

Preventive maintenance generally consists of keeping the proper batteries with enough capacity properly installed in the hand-held transmitter units and enough spare batteries in stock. Also stock spare fuses for the receiving unit.

Normal care and handling of the units keep them from excessive temperature extremes and corrosive environments. Periodically monitor the cases to keep dirt and other foreign matter out.

Make sure all case and wiring connections are properly connected and tightened.

It is a good idea to periodically activate all the relays and monitor proper operation of the attached equipment at least once a month.

4.2 Corrective Maintenance

Corrective maintenance normally consists or replacing batteries and occasionally replacing one or more of the three fuses in the receiving unit.

A damaged antenna may need replaced or cable mended. Any problems more complex than that will usually require intervention by factory personnel.

4.3 Replaceable Parts

The only user replaceable parts are the batteries, fuses, cables, and antenna.

5 Specifications

5.1 Electrical

5.1.1 Transmitter

5.1.1.1 Operating Battery range

The specified operating battery range of two AA batteries in series is: 2.0 volts minimum to 3.6 volts maximum

5.1.1.2 Measured current

Typical measured current draw is 1 mA with no pushbuttons pressed, and 2 mA with one or more buttons pressed.

5.1.2 Receiving Assembly

5.1.2.1 Operating Voltage

5.1.2.1.1 115 VAC, single phase, 50-60 Hz

Inside the receiver case and near the transformer make sure the two jumpers are installed as indicated for 115 VAC operation (default setting at factory).

5.1.2.1.2 230 VAC, single phase, 50-60 Hz

Inside the receiver case and near the transformer make sure ONE jumper is installed as indicated for 230 VAC operation.

5.1.2.2 AC Operating Current

Typical measured current in mA RMS (Root Mean Squared) at 115 VAC. (Currents at 230 VAC should be approximately half of those at 115 VAC)

Number of Relays ON	Current in mA (RMS)
0	12
1	24
2	31
3	38
4	44

5.1.2.3 Relay Specifications

5.1.2.3.1 Relay current

The maximum total relay current is limited by the fuse that is in common with all relays to a cumulative total of 10mA maximum.

5.1.2.3.2 Relay voltage

The maximum specified voltage to be switched by any relay is 250 VAC RMS or 250 VDC.

5.2 Temperature

5.2.1 Operating

Commercial temperature range of 0 to 70 degrees Celsius (32 to 158 degrees Fahrenheit)

5.2.2 Storage

Commercial temperature range of 0 to 70 degrees Celsius (32 to 158 degrees Fahrenheit)

5.3 Environmental

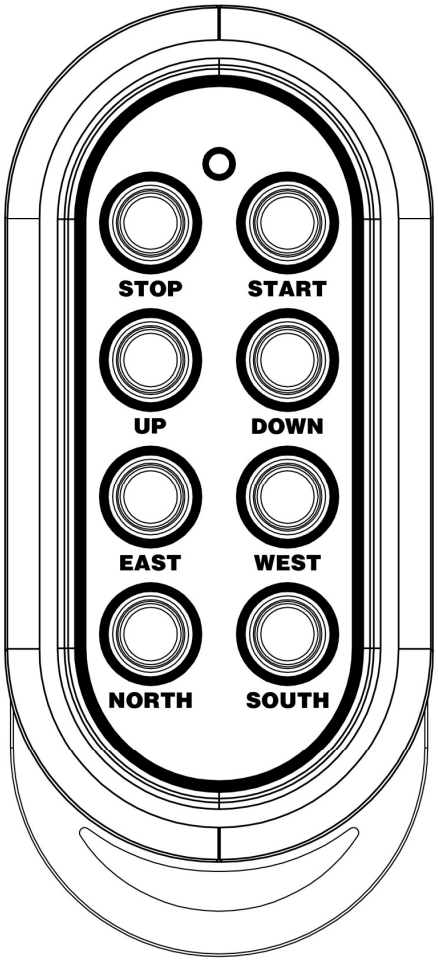
The Receiver is specified for NEMA 4 level usage and the transmitters for NEMA 3R (outdoor usage). Exposure standards need to be consistent with the standards for the injection-molded glass-filled nylon plastic cases and with the molded ABS plastic relays.

6 Appendices

6.1 Fuses

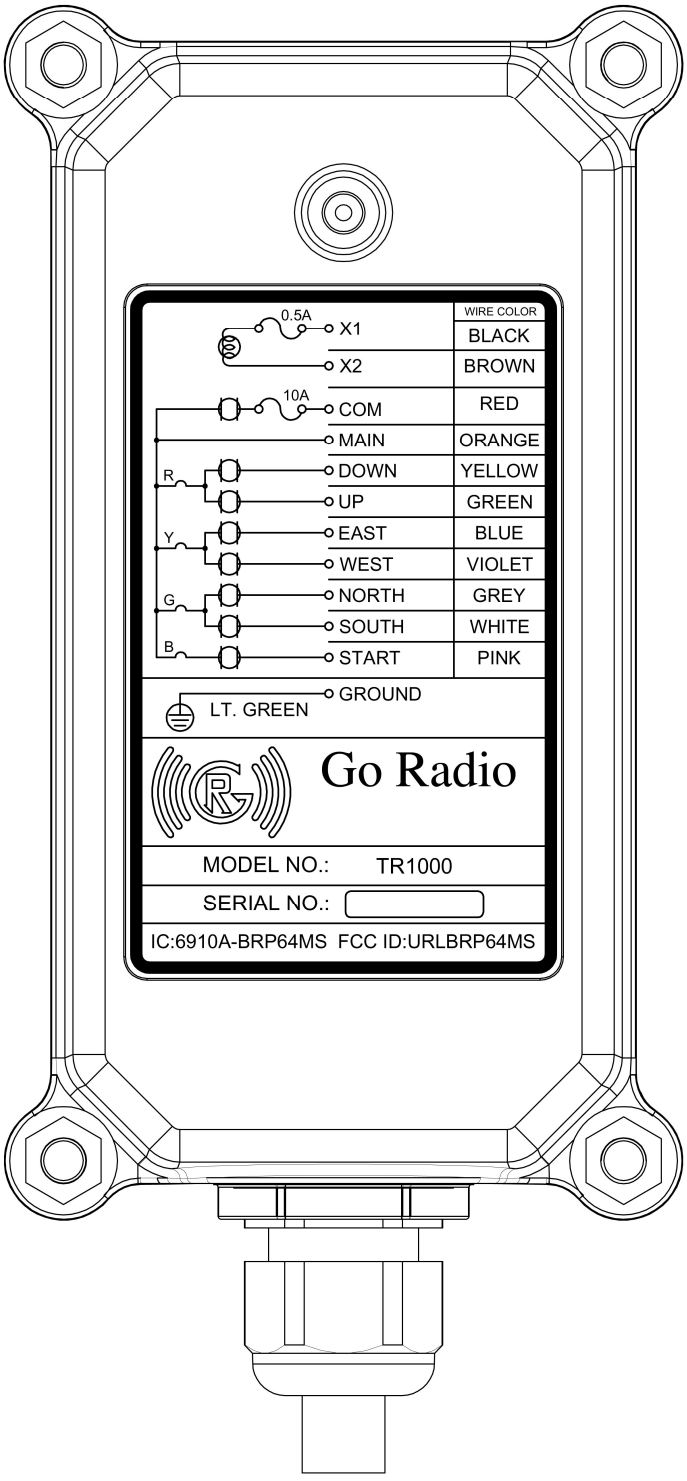
All fuses are for the receiving unit and are "fast-acting" 2AG form factor. There are no user replaceable fuses in the transmitter unit. The listed manufacturer part number is a **Littelfuse** number. Any equivalent part by another manufacturer should work as well.

Reference	Use	Manuf#	Current rating
F1	AC Power	225.375P	0.375 Amps max
F2	Regulated DC	225.375P	0.375 Amps max
F3	COMMON Fuse	225010P	10 Amps max



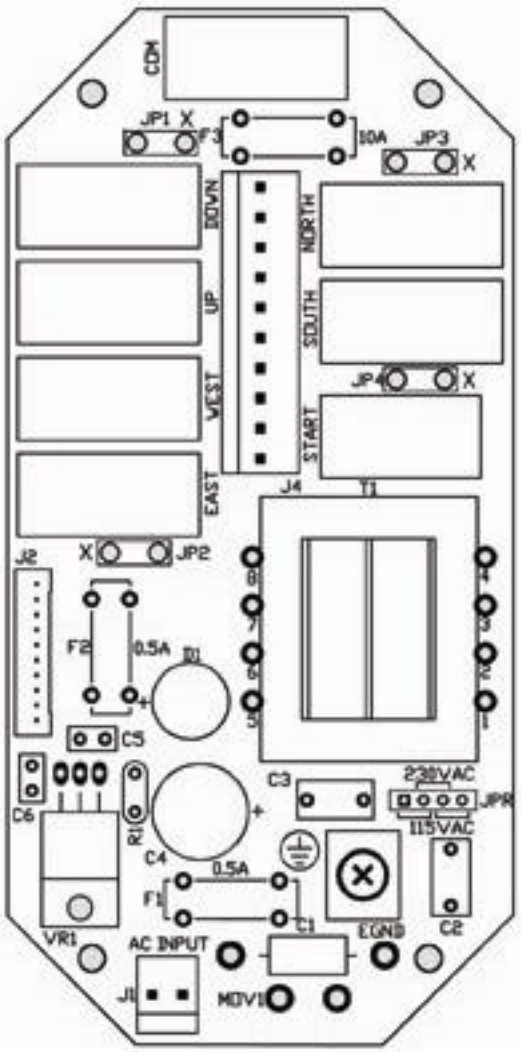
FRONT VIEW BACK VIEW

TRANSMITTER



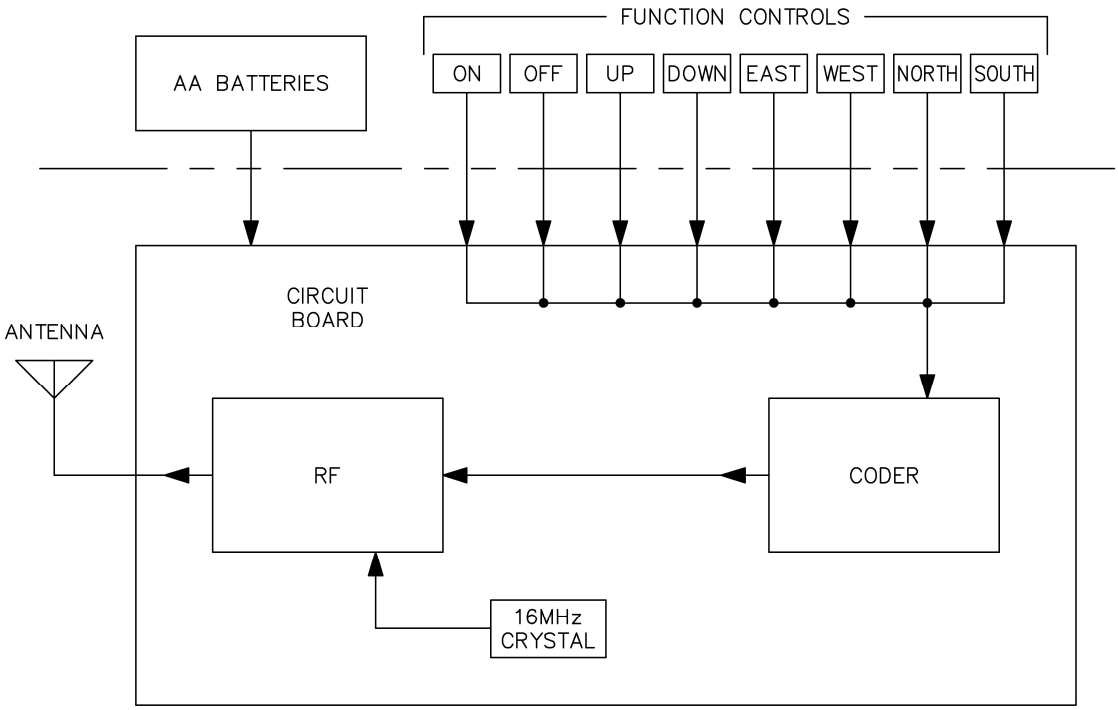
FRONT VIEW

RECEIVER

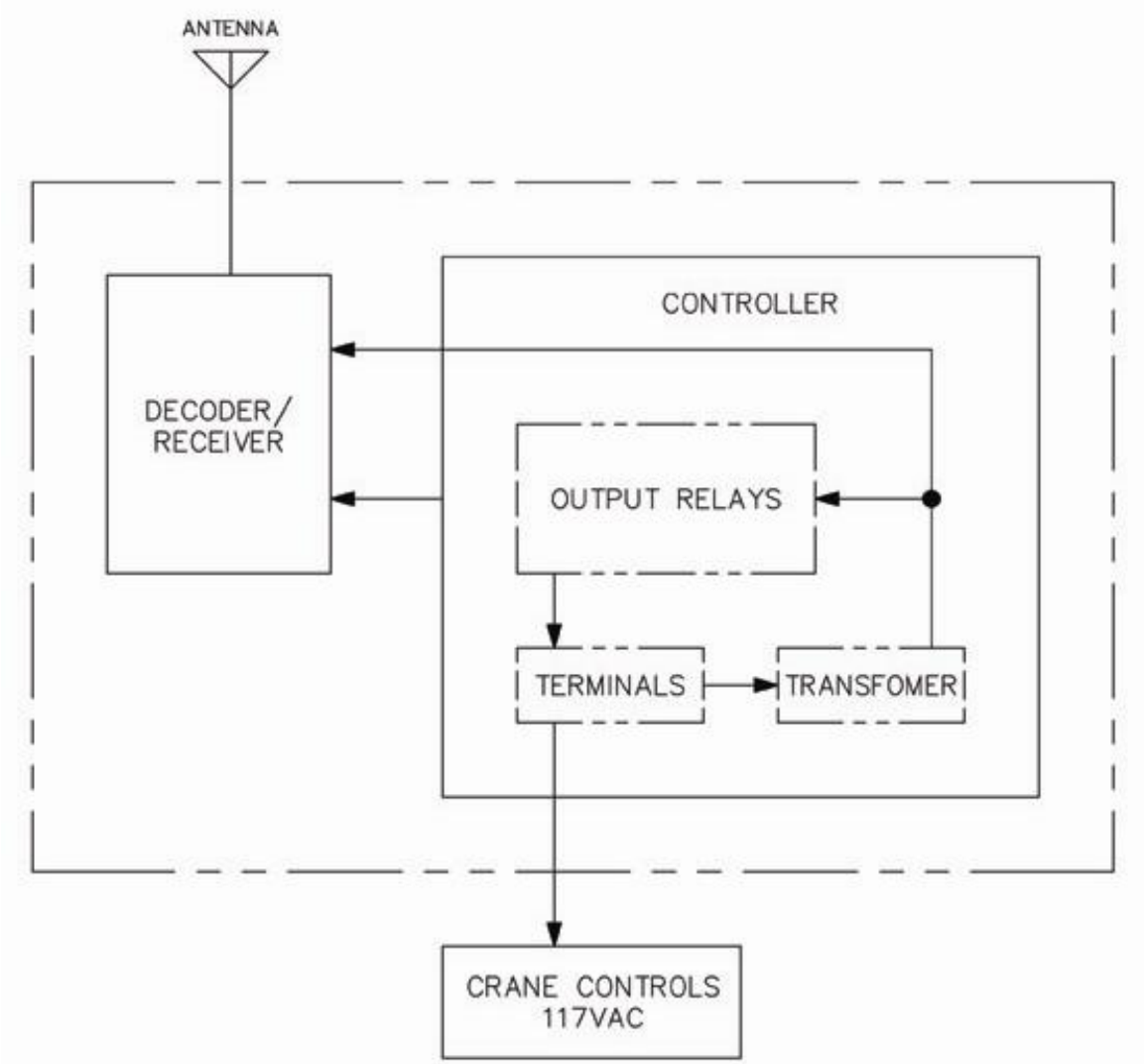


FRONT VIEW

RELAY MODULE



BLOCK DIAGRAM, TRANSMITTER



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