

“ART-5490” ON BOARD RECEIVER

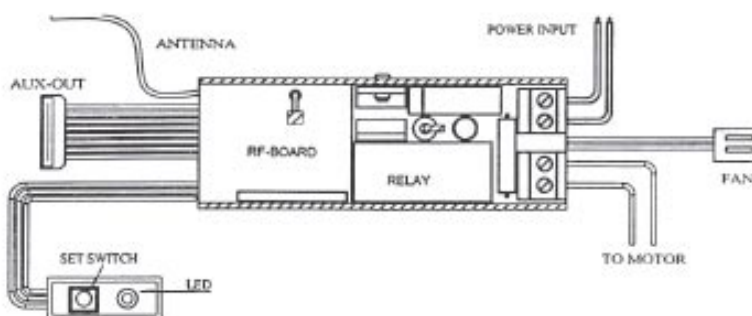
Features;

- 10 Channel multi frequency system
- Programmable momentum time control
- Programmable reverse delay time.
- High-resolution PWC(pulse width control) system
- Wide operating voltage range

Overview

ART-5490 is operated with a variety of advanced functions, such as automatically set-up for the radio frequency and momentum speed control , reverse time... Thus, all functions are programmed by a simple one touch set-up procedure.

ART-5490 CONNECTION DIAGRAM



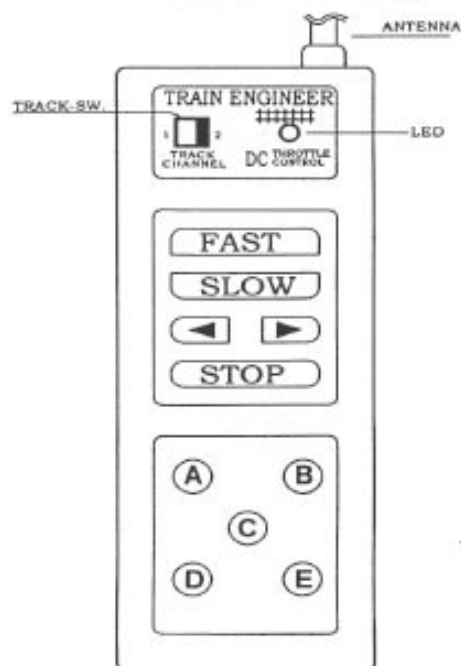
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Radio frequency; This system has 10 difference frequencies on the 27MHz band. Its frequencies are automatically set to match to your transmitter.

Momentum speed control; 5 choices of momentum speed can be programmed as described in the linking procedures.

TRANSMITTER



LINKING TO THE TRANSMITTER

1, The ART-5490 must be receiving track or battery power during the link up process. If necessary, use wire with alligator clips on each end to furnish power from the track or battery to the receiver.

2, The ART-5490, On Board Remote Control System can operate up to 10 trains in a given environment. By selecting the switch for Track #1 or Track #2 on the top left corner of transmitter, you may add 10 more trains for a total 20 trains operating independently.

Select Track #1 or Track #2 to the desired position. After this first step is accomplished you are ready to begin linking the transmitter to the On-Board Receiver.

3, On the transmitter, *Simultaneously* press the *A & B* keys on the alpha pad of your transmitter until a green LED light begins flashing. As soon as the LED begins to flash, release the *A & B* buttons and press any other button on the face of the transmitter. This will give a distinct ID code to the transmitter-receiver link up for that unit. If several transmitters(up to 10) are being in a given area, each will have their own ID code, *thereby preventing another transmitter from breaking in to the link up with your receiver.*

NOTE: When using with the 2000 or newer version of the Transmitter, set the Transmitter to Frequency 1 and follow linking instructions in the manual for the Transmitter. The Code Set button on the 5490 Receiver will act as the Code Set Button on the 5471 Receiver.

4, The momentum function is flexible and you must select the desired time for the locomotive to reach full speed or to slow down to a full stop.

To set momentum, select one of the A through E keys on the *transmitter* that matches the desired timing (see Table #1).

Simultaneously, press the **CODE SET** button(#2) on the receiver's Code Set Switch Harness, at which time the green **LED**(#1) will begin to flash, at which time you may release the buttons.

To set the **REVERSE TIME DELAY**, immediately press the key on the transmitter(A through E) that matches the desired Reverse Time Delay(see Table #2). This must be done within 3 seconds, while LED(#1) is still blinking.

The transmitter and the receiver are now linked. Even if a second receiver is linked to this transmitter, the link up is only to be done once. The second receiver needs only the Momentum and Reverse Time Delay functions added, as follows.

REVERSE TIME DELAY

In order to protect the locomotive's motor and gear box, this unit has a "REVERSE TIME DELAY" built into the circuitry. If the reverse button is accidentally pushed while the train is running, it will not suddenly change direction, but will slow down gradually, stop, and then proceed in the opposite direction, See **table #2** for the various options.

Table-1:

Key letter	Speed-up	Slow-down
#A	5	10
#B	10	15
#C	15	20
#D	20	25
#E	25	30

(Unit :seconds)

Table-2:

Key letter	Reverse Time Delay
#A	0.1
#B	0.5
#C	1.0
#D	1.5
#E	2.0

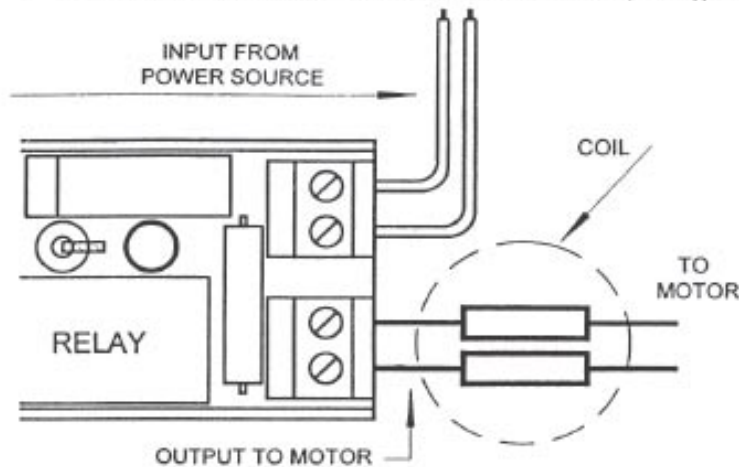
(Unit : seconds)

Technical specifications

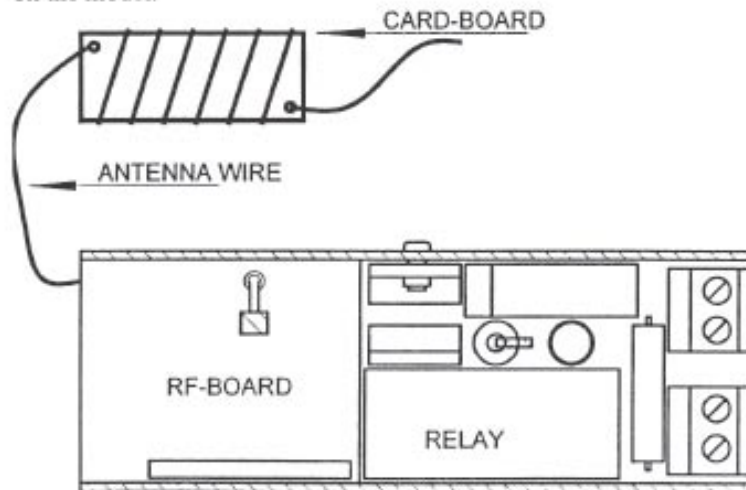
- Radio sensitivity 5uV/m at S/N -20 dB
- Radio frequency 27MHz PLL 10 channels
- PWC Frequency 15KHz
- Modulation FSK-FM
- Output current 2.5A
- Input power DC 12V- 22V
- Size 3.1' x 1.1' x 1.25'

TO MAXIMIZE THE RADIO CONTROL RANGE

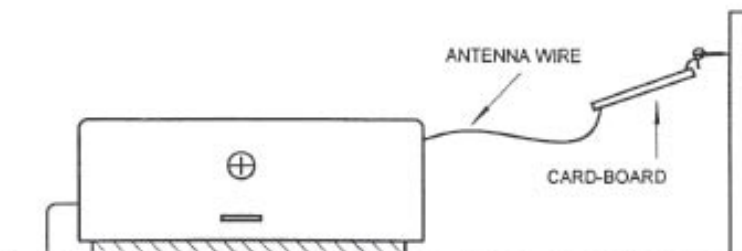
1. Use choke coils to cancel the motor electrical noise. (Coils supplied in package)



2. Use a piece of card-board and wrap the antenna wire as shown below. Do not cut the wire length and do not let the antenna touch any metal objects on the model.



3. Use a rubber band to hold the antenna wire in place to the end section of the model. This prevents the antenna from touching any metal parts.



- Note! Motor electrical noise is carried by the incoming wires that act as an antenna picking them up. By adding the Radio Frequency chokes as shown, the noise is cancelled out allowing full range reception of the incoming signal to the radio control system. This is different than R/C cars and boats where the receiver is not an integral part of the speed control block and, therefore, is more easily isolated by the use of 0.1 uF capacitors across the motor leads.
- The RF Chokes need to be installed by the user and the motor lead wires need to be soldered to the chokes. Each locomotive is different; So, the end user needs to plan the installation independently.