



TECH II

OPERATING INSTRUCTIONS FOR THE TECH II MODEL TRAIN THROTTLE CONTROL 3000GS

CONGRATULATIONS! You have just purchased one of the most advanced model train throttle controls on the market, MRC's new TECH II Throttle Control Model 3000GS. The Model 3000GS gets its power from the fixed AC accessory output power from any power pack.

The Model 3000GS Throttle Control will convert the fixed AC input power to variable throttle controlled DC, which will provide you with Proportional Tracking Control (PTC), the latest in powerpack technology from MRC. PTC is the system that allows a tight connection between the locomotive and output voltage. The result is a level of performance previously unattainable. As you operate your layout with your new TECH II Throttle Control 3000GS you will grow to appreciate the engineering and thought that went into its design. The tight connection between the throttle control and locomotive, and the realism, will impress you and satisfy the most avid railroader. The TECH II Model train Throttle Control includes features such as: Automatic pulse, 300 degree throttle control, advanced NORYL[®] thermoplastic housing, advanced momentum circuitry, pump type spring loaded brake switch, reverse loop output controls, and much more.

If this is your first purchase of an MRC product, we wish to welcome you to the ever growing ranks of those who purchase and use the best in Model Railroading Power Supplies: MRC.

ELECTRICAL SPECIFICATIONS

INPUT VOLTAGE: REQUIRES A POWER SUPPLY WITH A FIXED AC OUTPUT VOLTAGE BETWEEN 14 TO 24 VOLTS

VOLTAGE: THIS THROTTLE CONTROL WILL PROVIDE VARIABLE DC VOLTAGE

POWER : CAN HANDLE UP TO 2.5 AMPERES DC

TERMINALS - TERMINALS 1-2 VARIABLE TRACK MAINLINE OUTPUT
TERMINALS 3-4 INPUT 14 TO 24 VOLTS AC
TERMINALS 5-6 VARIABLE REVERSE LOOP OUTPUT

SLOW SPEED CONTROL: Extremely slow speed control is accomplished by the use of automatic pulse. The pulses gradually disappear when they are no longer needed.

MODEL RECTIFIER CORPORATION
200 CARTER DRIVE, EDISON, N.J. 08817 U.S.A.

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CONTROLS:

MAINLINE DIRECTION SWITCH: The mainline direction switch reverses the polarity of voltage applied to the track and thereby reverses the direction of your locomotive. This switch should only be operated when the locomotive is not moving. THE SYMBOLS USED FOR THIS SWITCH ARE ARROWS INDICATING DIRECTION OF TRAIN TRAVEL AS SHOWN.



REVERSE LOOP DIRECTION SWITCH: Similar to the mainline direction switch in control, however, this switch is a completely separate direction control for a reverse loop section. THE SYMBOLS USED FOR THIS SWITCH ARE ARROWS INDICATING DIRECTION OF TRAIN TRAVEL AS SHOWN.

MOMENTUM SWITCH: The momentum switch in the Throttle Control 3000GS unit allows operation in either of two MODES. With the switch in the "off" position, a change in the throttle setting results in an immediate change in locomotive speed. With the momentum switch in the "on" position the locomotive moves slowly and gradually like a real locomotive. This switch can add substantially to your model railroading enjoyment. When a real locomotive is given an increase in the THROTTLE setting there is a lag until the pre-set speed is reached. The heavier the load of cars being drawn the longer the lag time or delay. Similarly, when braking a real locomotive, a considerable distance is needed in order to stop. Since lightweight models do not mimic this delay on their own, momentum circuitry, as in the Throttle Control 3000GS, is used to create it electrically. Different rates of acceleration can be obtained by varying the maximum position of the throttle. Setting the throttle on "FULL" will produce a fairly rapid acceleration, "90" more gradual, and so on.

THESE SYMBOLS ARE USE TO INDICATE THE MOMENTUM CIRCUITRY

THE SYMBOLS, AN EMPTY CAR (LIGHT LOAD) AND A "O" SYMBOL, INDICATE THE MOMENTUM SWITCH IS IN THE "OFF" POSITION.



THE SYMBOLS, A FULL CAR (HEAVY LOAD) AND A "●" SYMBOL, INDICATE THE MOMENTUM SWITCH IS IN THE "ON" POSITION.



PUMP TYPE BRAKE: The brake switch in the Throttle Control Model 3000GS is a spring load slide switch. To operate the brake, move the switch to the "ON" position and hold it there. Your locomotive will slow at a steady rate. If your throttle was left at a setting other than "OFF" releasing the brake will cause the locomotive to gradually accelerate to the speed determined by the throttle setting (as long as the momentum switch is on). Pumping the brake will allow for a more gradual deceleration.

THIS SYMBOL  IS USED TO INDICATE THE BRAKE SWITCH IS IN THE "OFF" POSITION.

THIS SYMBOL  AND A  SYMBOL ARE USED TO INDICATE THE BRAKE SWITCH IS ON.

THROTTLE CONTROL:

The throttle is used to set the speed of the locomotive you are controlling. The throttle should always be brought to the "Stop" position before reversing the locomotives.

THESE SYMBOLS ARE USED FOR THE THROTTLE POSITIONS



INDICATORS:

POWER MONITOR: The power monitor lamp is used to give an approximate indication of the output voltage. You will find this very useful in detecting short circuits, an open track conditions on your layout, etc. If the throttle is left in an "on" position and the light intensity increases as the locomotive continues to run, this indicates less current is being drawn. If the light becomes less intense, more current is being drawn. If the light goes out suddenly this indicates a short circuit. A sudden brightness of the light may signal an open circuit, meaning that power is no longer reaching your locomotive. This is probably due to dirt or oxidation on the track. A slight flickering of this light during operation is normal and does not indicate a problem.

THE SYMBOL IS USED FOR THIS POWER MONITOR INDICATION



When the throttle is turned "Counter Clockwise" the Power Monitor lamp is off. As you turn the throttle "Clockwise" the light become brighter.

OVERLOAD INDICATOR AND CIRCUIT PROTECTION:

The Throttle Control 3000GS unit is equipped with sensitive thermal circuit protection device. In the event of a short circuit or overload, the circuit protector will open. The overload indicator will light when this circuit protector is opened giving a visual indication of a problem. When this occurs, turn your unit off, correct the source of the short circuit or overload, turn the throttle to the stop position, wait 2 to 5 minutes for the circuit protector to reset, then turn the unit back on. If the overload indicator is still lit, or you have not waited long enough for the circuit protector to properly reset. If the power does come back but only for a short time and the overload indicator becomes lit again, you have not waited long enough for the circuit protector to reset. Since this cab control gets its power from a powerpack, the powerpack will have its own protection device. If a short circuit occurs this protection device may be the first to respond. If so follow the manufacturer's recommendations for "overloads" or "short circuits".

THIS SYMBOL  IS USED FOR THE OVERLOAD INDICATION

TERMINALS: The Model 3000GS features a 6 position screw type terminal board for simple, easy connections.

TERMINALS 1 AND 2: These terminals are for the AC input voltage from the accessory terminals on your power pack.

TERMINALS 3 AND 4: These terminals are for the MAINLINE TRACK hookup.

TERMINALS 5 AND 6: These terminals supply the same voltage as the Mainline Track terminals and are controlled by the Reverse Loop switch. (See instructions: "For wiring a Reverse Loop Section").

NOTE: When connecting to any terminal, care must be taken that wires do not touch more than one terminal at one time. Loose wires are a danger to your unit and layout; be certain wires are properly wrapped around terminal before tightening screws.

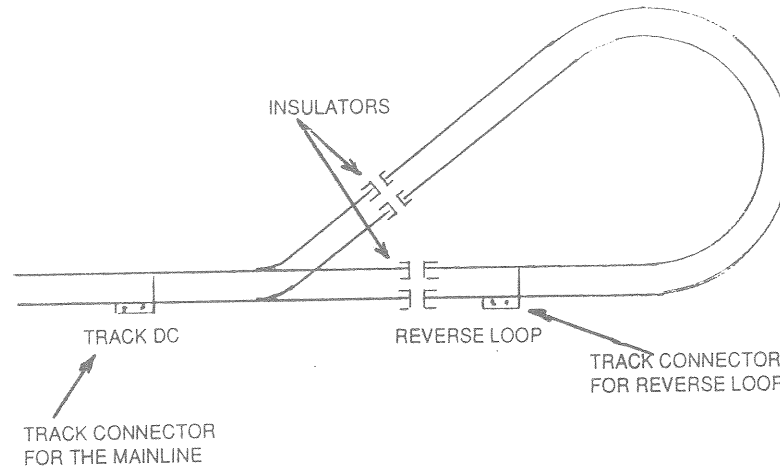
WIRING FOR A REVERSE LOOP SECTION (TURNING TRACK)

The reverse loop terminals are controlled by the throttle control and the reverse loop direction switch. The purpose of the reverse loop terminals is to simplify the wiring of the reverse loop section. Place the two wires from the reverse loop terminals to the reverse loop section track connector, maintain a similar wiring position by wiring the output terminals (TRACK DC & REVERSE LOOP) to the same positions on the each of the track connectors.

The Throttle Control 3000GS has been wired so that when the mainline direction switch and the reverse loop direction switch buttons are both in the same direction, both right or left, the DC output polarity to the TRACK DC and REVERSE LOOP terminals are the same.

With the direction switches both in the same position your train will enter into the reverse loop section. After the entire train is in the reverse loop section and before it begins to emerge from this section, the mainline direction switch must be reversed so that the locomotive will leave the reverse loop section with the wheels maintaining unchanged polarity. If this were not done, the locomotive could not return to the mainline. NOTE: THE REVERSE LOOP SECTION (TURNING TRACK): BOTH RAILS MUST BE COMPLETELY ISOLATED USING INSULATED RAIL JOINERS. (See the illustration)

WIRING A REVERSE LOOP SECTION - ILLUSTRATION



FOR YOUR PROTECTION ATTENTION!

1. Never reverse the locomotive without stopping it first. To do so will damage the locomotive engine.
2. Never connect locomotive to AC. This may damage your locomotive motor.
3. When a short circuit or current overload occurs and the protection device opens, turn your powerpack off and correct the short circuit or overload. Allow 2 to 5 minutes for the protection device to reset before turning your unit back on.
4. Avoid prolonged overloads and short circuits.
5. Do not store in a damp area.
6. For best performance, keep wheel and track surfaces clean. Intermittent and "jerky" operation are often caused by an oxide coating which has formed on the track or wheels.
7. Before returning your unit for repair or servicing, make certain it is defective. Do not shut down your layout unnecessarily.
8. If it is necessary to return your unit, repack it in its original carton and then in an outer carton, placing at least four inches of packing material on each side.

MAIL THE UNIT TO:

Model Rectifier Corporation
200 Carter Drive
Edison, NJ 08817

Be certain to send the unit Parcel Post or what ever method you decided INSURED and include a letter with your name and address printed clearly, describing the problem you are experiencing.

All of us at MRC would like to join in wishing you many happy years of model railroading with your new TECH II unit.

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