

# Linker - Selections and Connections

**Normal Setting**  
Scans all 8 frequencies

Fixed on Frequency 7  
*All other frequencies ignored*

Fixed on Frequency 6  
*All other frequencies ignored*

Fixed on Frequency 5  
*All other frequencies ignored*

Fixed on Frequency 4  
*All other frequencies ignored*

Fixed on Frequency 3  
*All other frequencies ignored*

Fixed on Frequency 2  
*All other frequencies ignored*

Fixed on Frequency 1  
*All other frequencies ignored*

Fixed on Frequency 0  
*All other frequencies ignored*

## Mode and Frequency Select

**Antenna**  
The threaded aluminum rod is the Linker's antenna. It is shipped unattached for protection.

Always touch a metal object before touching the antenna to discharge any accumulated static electricity.

Gently screw in the antenna through the hole in the top of the case. The antenna should be finger tight for best performance – don't over tighten.

Do not obstruct, cover, or otherwise allow anything to touch the antenna.

Do not carry or pull on the Linker by its antenna.

**Placement Suggestions:** Higher is usually better for maximum range. To keep wiring to a minimum, consider locating the Linker near a cluster of Activators. Multiple linkers may be used without interfering with each other.

**DC POWER INPUT** allows either an external DC power supply to be plugged in or a 12 volt battery to be connected.

The DC power socket mates to a standard 2.0mm ID DC power plug.

CVP's DCPS120 power supply plugs directly into the socket. The variable DC output should be set to about 18 volts for best operation of LGB snap action turnout motors. If using solenoids or relays, set the DCPS120 output voltage to the voltage rating of the solenoid or relay.

If using a battery, proper polarity must be observed. Reversing the polarity will not damage the Linker but it also will not work.

The Linker **does not** automatically turn off after a period of no use. Be sure to disconnect the battery if not used.

**Do not use both inputs at the same time.**

Additional wiring and connection tips are in the Activator's installation booklet.



Several Linkers may share a DCPS120 power supply.

**SCAN RATE** potentiometer (pot) sets the rate at which the Linker scans each of the 8 frequencies. With the pot rotated to the LO setting, there is a better chance of receiving throttles that are a long distance from the receiver. However, there is a better chance of missing activation commands especially when many frequencies are active.

With the pot set to HI, activation commands are almost instantly received and acted upon. However, distant throttles might not be received.

For most applications, place the pot in the middle of its rotation range. This provides a good balance between remote reception and fast activation.

**PW-OK LED** turns on when power is applied.

**DCC-GP LED** turns on whenever valid throttle signals are detected. This light may flash on and off which is normal. This indicates some frequencies are not in use.

**FLT-ER LED** turns on any time there is a short circuit or overload on the output wires. In normal operation, this LED is off. During a short circuit the alarm buzzer will also sound. When the short or overload is corrected, the buzzer and LED will turn off.

**Output pairs A or B** connect to the remote Activators. Use one or both at the same time.

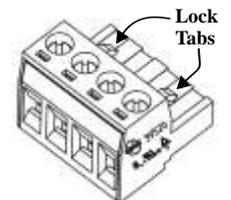
The pluggable header accepts wire sizes ranging from 12AWG to 26AWG. If using stranded wire, it must be twisted and tinned. Cut the stripped and tinned wire so that it is completely inside the clamp area and keep the insulated portion outside the clamp for a good connection.

To remove the plug from the socket, gently rock the plug back and forth horizontally to release the locking tabs.

Replacement plugs are available from CVP Products.

### Heavy Duty Wiring is Required

Inadequate wiring will not allow the short circuit sensor to work correctly and can pose a safety hazard. There is almost no limit to the length of wire between the Linker and the Activators. However, if going very long distances, consider the use of #12AWG or #14AWG wire.



**Your Throttle May Need A Software Upgrade** Check your T9000 throttle software revision number. It must show revision 1.3 or higher. If not, it will need to be returned to CVP Products for a free software upgrade. You pay the shipping charges to return the throttle to CVP. CVP will pay for the return shipping.

For the RF1300 throttle, check that the label on top of the chip says GTX-8A. If not, or if you are not sure, call us for a free chip to upgrade to the latest software. Instructions and the new chip will be sent at no charge.

Setup switches shown in default position

# Hookup Diagram

Antenna is not shown but must be attached during use



All Activators share the same two wires that come from a single Linker. However, there may be more than one Linker and each Linker will have its own Main Bus. Individual Linkers can not be paralleled nor can they share a Main Bus.

The A terminal pair are physically tied to the B terminal pair inside the box. Use either pair or both at the same time.

**For all hookup wires**, strip insulation back about 1/4 inch, twist strands together and tin. Never allow bare wires to touch.

**For very long wire runs**, use #14AWG or large wire. Solid or stranded wire is OK.

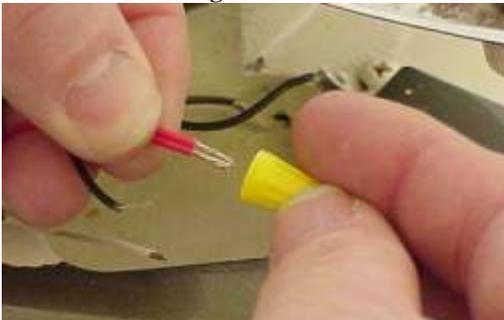
**Use two different colors** to avoid wiring errors.

To Activator #1

**When making connections** from the "main bus wires" to Activators, use twist-on connectors (wire-nuts) or solder the joints and wrap with electrical tape.

To Activator #2

Using Wire-Nuts

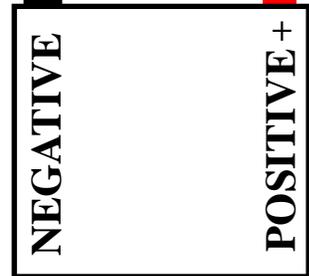


A Good Solder Job

A Bad Solder Job



Main Bus  
NEGATIVE  
POSITIVE +  
To All Activators



Any style or brand of 12 volt battery can power the Linker.

Use a battery rated at 2 Amp/hours (Ahr) or more. The larger the Ahr rating, the longer the battery will last between recharges.

The positive or plus terminal ALWAYS connects to the + terminal of the Linker.

Multiple Linkers may share a battery or power supply.

If using the DCPS120 Power Supply, simply plug it into the DC power jack. Set the DC voltage to 18V for maximum throwing power.

**Do not plug in a power supply if a battery is being used. Use either a battery or a power supply - never use both at the same time.**

Your local hardware store contains a wealth of supplies for low voltage outdoor wiring. These are ideal for use with the Linker and Activator.

— CVP PRODUCTS —



# The Linker™ Hookup and Operation



### CAUTION - DESIGNED FOR USE WITH THE ACTIVATOR

The Linker is specially designed to work with the CVP Activator. Using it with any other device may damage the Linker and/or the attached device. All warranties are voided if devices other than an Activator are connected to the Linker.

### CAUTION - DO NOT USE UNREGULATED POWER SUPPLIES

The Linker is designed for use with a high current battery or an external, regulated, DC power supply. It is the battery voltage or the external power supply voltage value that sets the peak voltage delivered to the Activator and its switch machines or other loads. For external power supplies, the recommended setting is 18 Volts if controlling LGB switch machines. A lower voltage is OK. Higher voltages may damage switch machines or other loads controlled by the Activator.

### WARNING

The Linker is not a toy and is not designed to be operated by children. Read and follow all directions and installation instructions. Do not allow the Linker to become wet. If a DC power supply other than a battery is used, it is strongly recommended that the external power supply be connected to a tested and functioning Ground Fault Interrupter (GFI) outlet. CVP Products shall not be responsible for any claim or loss of any nature arising directly or consequentially from the use, application or modification of equipment described.

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