

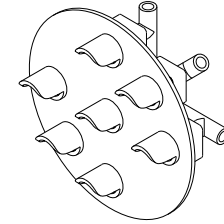
PL-2 Target Signal Interface Module

Little Lights Scale Model Details

By D5 DEM Model Smiths®

<https://modelsmiths.d5dem.com/>

service@d5dem.com



Congratulations on your purchase of this interface board used for illuminating our position light signals! This guide walks through the setup process. Once installed, this board seamlessly interfaces between our PL-2 target signals and many systems used to control signals on a model railroad.

Contents and Required Supplies

This kit includes one module which is used to operate a single upper/lower PL-2 signal pair. In addition to the module itself, two jumpers are included to control operation of the center signal lamp. The module also comes with three separate header strips which can be used to interface with control and power electronics.

Installation of this interface requires a soldering iron and solder. An iron with a good, fine tip works best. A bench top vise may also aid in assembly. Additionally, four #4 screws and an appropriate screwdriver are recommended for fixing the circuit board to the underside of the layout. Alternatively, hot glue may be used to fix the module to the layout.

Installation

This module should be installed only after the PL-2 models are fixed to the layout. In most situations, the signal wires should be routed beneath the layout, at which point they can be soldered to the interface module.

First, determine if you want to use the header pins for connecting to control circuitry and power. If the header pins are required, insert them into the circuit board and solder them in place from the backside. Take care not to leave solder bridges which would create short circuits. If the header pins are not required, then solder permanent wires to the circuit board which can be routed to power and control circuitry. Make sure to connect the "+" and "-" power connections, as well as all eight labeled aspect connections.

Next, fix the circuit board to the layout using #4 screws or hot glue. If possible, mount the circuit board to a vertical surface, as this will make the next steps easier. Make sure to install the module close enough to the signal location so the wires reach.

After that, it is time to solder the signal wires to the module. The module is split into right and left halves; the left half corresponds to the upper PL-2 signal, while the right half corresponds to the lower PL-2 signal. Pads labeled A through D indicate lamp positions on the signal face, which correspond to different aspects the signal can display. On the upper signal, the A pads are for the horizontal lamps, B pads are for the upper diagonal lamps, C pads are for the vertical lamps, and the D pad is the center lamp. On the lower signal, the A pads are for the upper diagonal lamps, B pads are for the vertical lamps, C pads are for the lower diagonal lamps, and the D pad is for the center lamp. On both signal types, the lamps are indicated by wire length; the A lamps have the shortest wires while the D pads have the longest wires. Each half of the module also has a large pad labeled with a "P". This is for the positive power connection, which corresponds to the red wires on the signal.

Next to the labeled pads are pairs of round holes through the circuit board. These can be used as strain reliefs to reduce the chance of breaking wires. Simply route the correct wire down through the first hole, then back up through the second hole. Then, the exposed wire end can be soldered to the labeled pad. This step is not strictly necessary, however this may help if the module is installed in a high traffic area.

To connect the signal, first twist all the red wires together, then solder them to the "P" pad. Then, find the two shortest yellow wires and solder one to each "A" pad. Find the next longest wires, and solder one to each "B" pad. Repeat this with the "C" pads, and solder the single longest yellow wire to the "D" pad. If your signal has missing aspects, simply omit those connections on the module.

In case it is difficult to identify the wire lengths, a provision for testing each light is provided. After soldering the red wires to the "P" pad, connect power to the module. Then, select one of the yellow wires in question and hold it against the pad labeled "T". This test pad will illuminate the light on the signal, allowing for identification. This process can be repeated for all yellow wires.

After connecting the upper signal head, repeat the process for the lower signal head.

Operation

It is quite simple to control this module to illuminate signals in realistic aspects. First, connect power to the pins labeled "Power". The module is designed for use with DC power between 5 and 12 volts. Note that exceeding 12 volts DC may damage the module. Connect positive power to the pin labeled "+" and negative power (ground) to the pin labeled "-".

Next, operation of the center light for each signal must be selected. Each half of the module features a trio of pins labeled as "Center". These pins are used to select the operation mode for the center light of each signal head. By placing the included jumper across the left two pins, labeled "Dep." for dependent, the center light will illuminate with the outer lights for each aspect. Alternatively, by placing the jumper across the right two pins labeled "Ind." for independent, the center light is manually controlled. This is not uncommon for the lower signal head, and may be required for the upper signal head depending on the situation.

With power connected and the operation mode of the center light selected, the signals can now be illuminated by selecting the desired aspects on the "Upper Signal" and "Lower Signal" pins. To select one of the labeled aspects, simply connect negative power (ground) to one of the labeled pins. This should cause the corresponding lamps on the signal head to illuminate. This standard "active low" control scheme can be used to interface with commercially available DCC signal controllers. Alternatively, the signal can be fixed to display a static aspect, or it can be wired to a switch for manual control.

Final Note

If you have any problems when installing this module, or something becomes damaged in the process, please contact us. We want to make sure you get the most out of your purchase, so we will set things right. You can use the contact form available on our website, or you can email us directly at service@d5dem.com.