

Pedestal & Dwarf 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-4 and PL-5 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 either two PL-4 dwarf signals or one PL-5 pedestal signal. The module 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 signal 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 nine 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 upper and lower halves; these halves correspond to the top and bottom components of a PL-5 pedestal signal, or two separate PL-4 dwarf signals. Each half features a pad labeled “P”, this is for the red positive wires from the signals. For each half, four pads labeled “A” through “D” are provided for installing the remaining yellow wires. A pad labeled “T” is also provided as a test point to identify which wire corresponds to which lamp. Note the diagram printed in the lower right corner of the module; this indicates which labeled pad matches which lamp.

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 wire the signal in place, first solder the red wire to the labeled “P” pad. Then, connect DC power to the labeled “Power” pins, taking care not to connect it backwards. Then, carefully hold one of the yellow wires to the labeled “T” pad and observe which lamp illuminates on the signal. Carefully solder this wire to the correct pad, then repeat the process for the remaining pads. If the signal features blanked out lamps and therefore has fewer wires, simply omit those connections.

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 “-”.

With power connected, the signals can now be illuminated by selecting the desired aspects on the labeled pins on the right side of the module. 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. Note that in addition to the four standard aspects, a fifth “D” pin is provided for the lower signal. This can be used for specific aspects on the PL-5 signal, in which only the lower “D” lamp is illuminated along with a separate aspect on the upper half. 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.