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## Jumper Installation for +12V and Ground on Guide Port in the SG4

### Introduction

The SG-4 provides mechanically isolated relays to connect the +X, +Y, -X, and -Y signals to the Common input on the Guide Port. This is sufficient for most applications and all consumer telescope guide ports SBIG is familiar with.

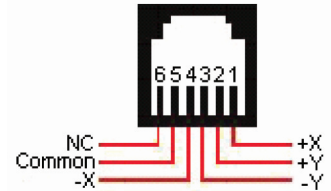
As shipped from the factory, the Guide Port pin-out is as shown here.

When one of the guide signals (+X, +Y, -X, -Y) activates, the SG-4 connects the signal to the Common pin on the Guide Port. The Common pin and the NC pin have no other connection to the internal electronics of the SG-4.

However, some systems, such as the SBIG Relay Box, may require power (+12V) and/or Ground on the Guide Port. The Common pin can be connected to the SG-4 Ground and the NC pin can be connected to the SG-4 +12V power signal if necessary.

This application note describes how to install jumpers in the SG-4 to connect +12V and Ground to the Guide Port.

**NOTE:** Be aware that this procedure is not recommended for most users and should only be done if you know for certain that you need +12V and/or Ground on the Guide Port. If you are not sure, DO NOT follow this procedure.



### Removing the SG-4 Rear Panel

The Rear Panel of the SG-4 must be removed to access the internal electronics. See Figure 1 for a photo of the SG-4 Rear Panel.

In order to remove the Rear Panel of the SG-4, a number of things must be removed from the camera. First, pull off the button cover from the Guide On/Off button (1).

Next, using needle-nose pliers, or similar, remove the nut from the Power In connector (2), and the I2C and RS-232 port nuts (3).

Finally, remove the four Phillips-head screws from the corners (4).

This will expose the circuit boards of the SG-4 as shown in Figure 2.

Behind the Guide Port on the right is a connector that accepts two jumpers to allow the connection of +12V and Ground to the Guide Port. A better view of the connector is shown in Figure 3.

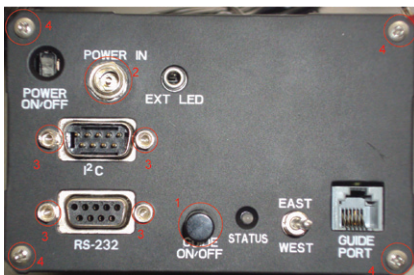


Figure 1

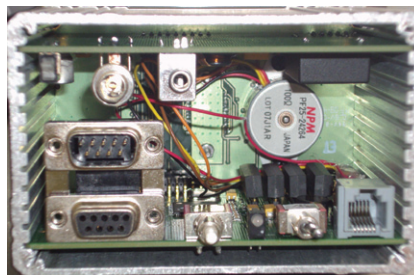


Figure 2

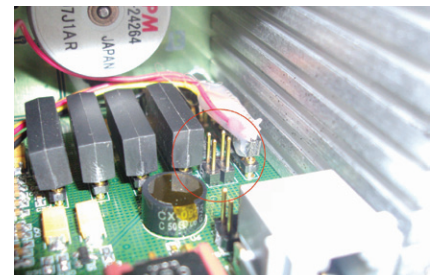


Figure 3

### Installing the Jumpers

Two small 0.1" Jumpers must be used on this connector to make the necessary connections. These jumpers can be obtained at most any electronics store, or can be purchased from SBIG for a small charge.

To connect the Common pin to the SG-4 Ground, one jumper should be installed on the rear two pins of the connector as

