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Analog Backplane Extender

Introduction

The Keithley Instruments Model 3706-BKPL Analog Backplane Extender allows external analog signal connections directly to the Model 3706 backplane. This is useful as a DMM calibration input and for external instruments such as the Series 2600 System SourceMeter™, function generators, and counters, as well as to daisy-chain additional Model 3700s in series.

This instruction sheet contains information about features, terminal block wiring, and installation and removal of the Model 3706-BKPL.

WARNING *The following information is intended for qualified service personnel. Do not make connections unless qualified to do so.*

To prevent electric shock that could result in serious injury or death, observe the following safety procedures:

- *Before removing or installing the Analog Backplane Extender on the mainframe, make sure the mainframe is turned off and disconnected from power.*
- *Before making or breaking connections, make sure power is removed from all external circuitry.*
- *Do not connect signals that may exceed the maximum specifications of the model or external wiring.*
- *All wiring must be rated for the maximum voltage in the system. For example, if 300V is applied to the backplane extender, all module wiring must be rated for 300V.*

Maximum Signal Levels

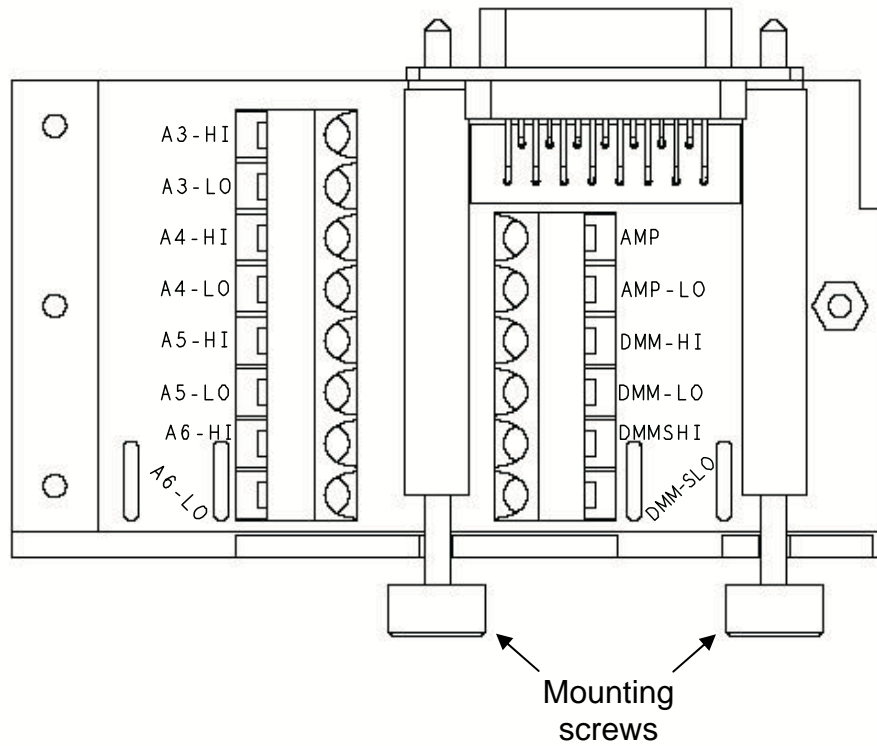
Input: DMM-HI / LO, DMM-SHI / SLO, and A3-HI / LO through A6-HI / LO: 300V DC or 300V RMS (425V peak for AC waveforms) 3A, 60W, 125V between any terminal to terminal or terminal to chassis.

Input: AMP and AMP-LO: 3ADC or 3A RMS (4.25A peak for AC waveforms), 250V peak between terminals or terminals to chassis.

CAUTION The analog backplane extender is rated for connections to circuits rated for Category I only, with transients rated less than 1500V peak. Do not connect to CAT II, CAT III, or CAT IV circuits. Connections to circuits higher than CAT I can cause damage to the equipment or expose the operator to hazardous voltages.

Figure 1 shows a top-down view of the circuit board for the Model 3706-BKPL.

Figure 1
Model 3706-BKPL Analog Backplane Extender



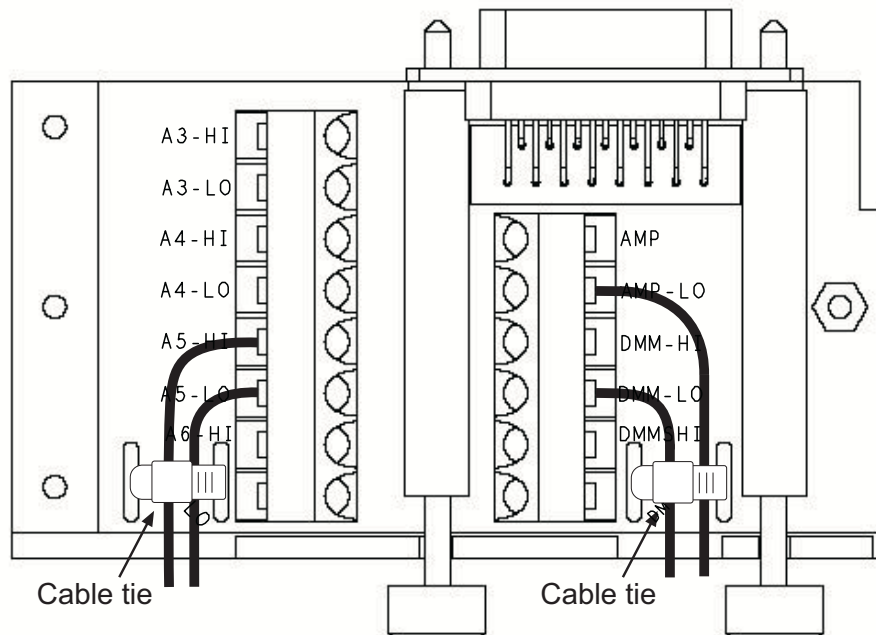
Example circuit board terminal block wiring

It is not necessary to remove the circuit board from the bottom cover to wire the analog backplane extender.

CAUTION Avoid handling circuit board surfaces and terminal blocks. Contaminants from hands may degrade analog backplane extender performance.

Figure 2 shows how to wire the Analog Backplane Extender and where to use cable ties for cable strain relief.

Figure 2
Example of routing and securing cables with ties



NOTE Terminals and strain relief rated for #24 through #16 AWG wire sizes.

Installation and removal instructions

Figures 3 and 4 show how to install the top cover on a circuit board and how to install the analog backplane extender.

Reverse the installation process to remove the Model 3706-BKPL. For example, start with Figure 4 and follow the instructions in reverse.

WARNING Before powering-up the Series 3700 after installing the Model 3706-BKPL, verify that the analog backplane extender is properly installed and the mounting screws are tightly fastened. If the mounting screws are not properly secured, an electrical shock hazard may be present.

Figure 3
Installation of top cover and location of mounting screws

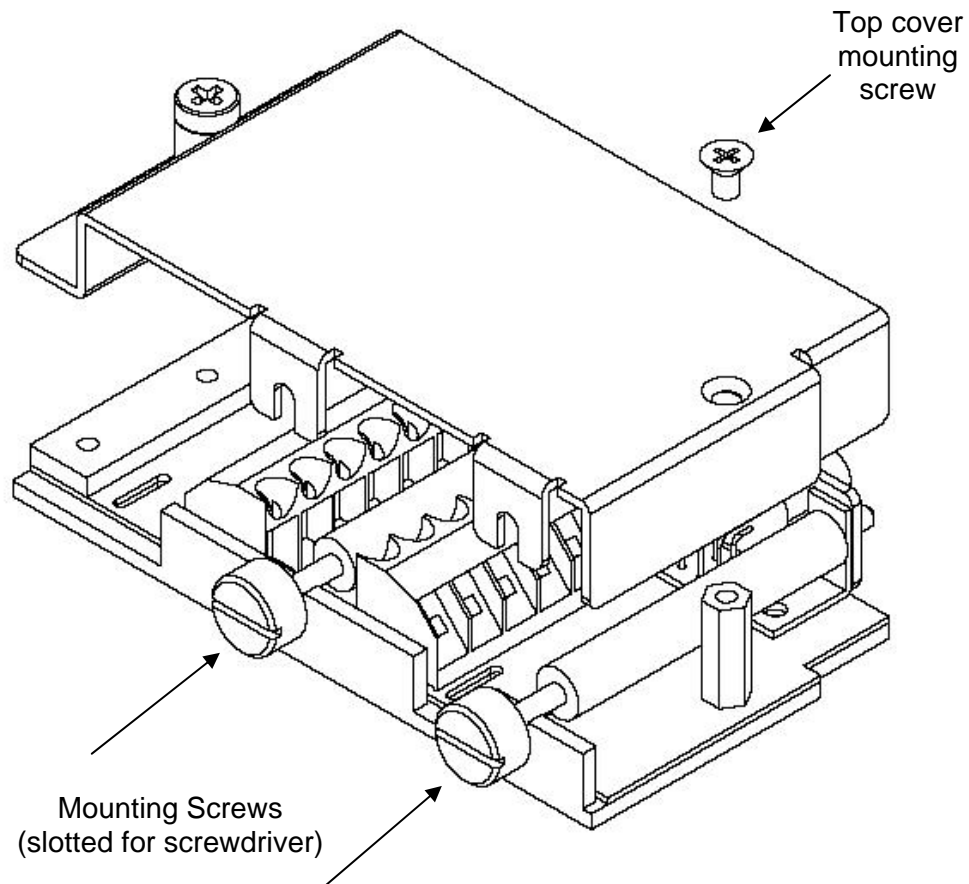
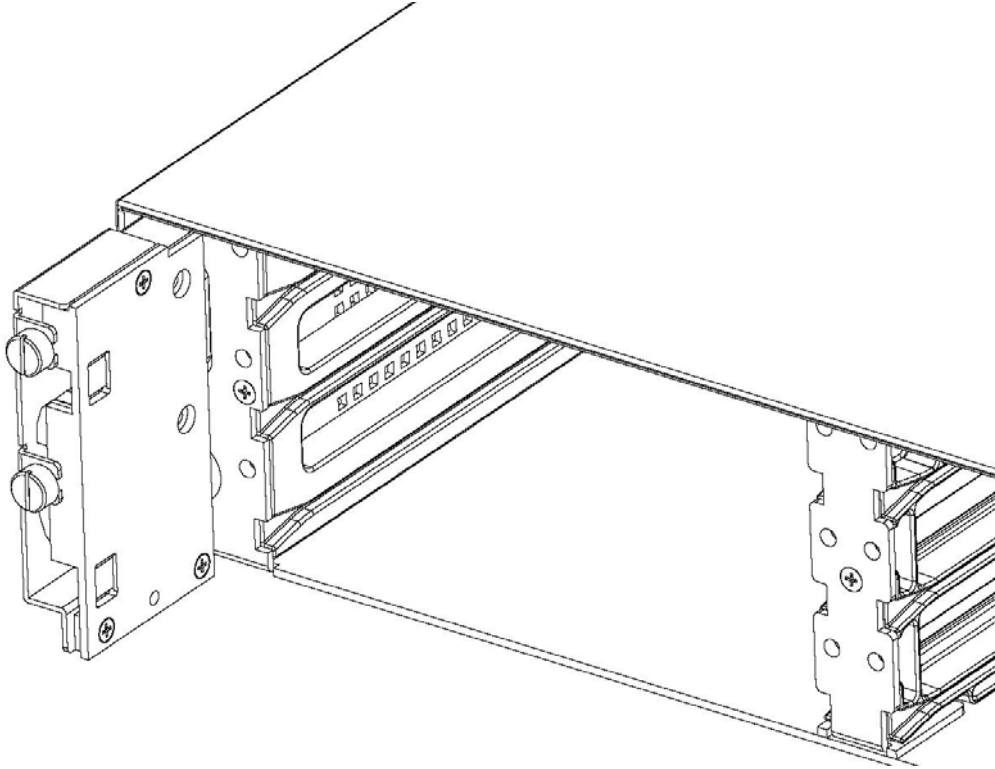


Figure 4
Analog backplane extender installation to the Series 3700



CAUTION DO NOT OVER-TIGHTEN THE MOUNTING SCREWS! Over-tightening
will damage the extender.
