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INSTRUCTIONS

MODEL AVX-S1-P1-MSHC

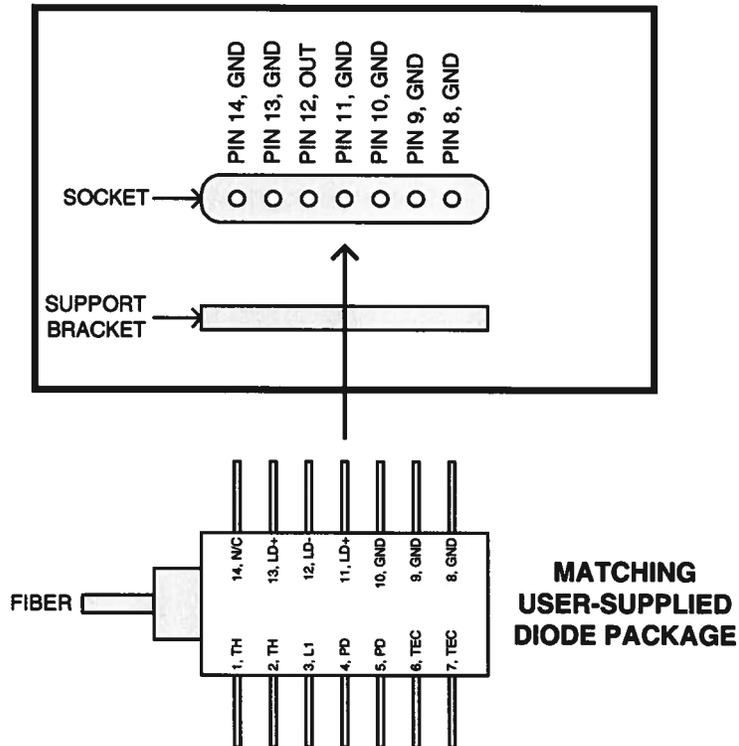
PLUG-IN SOCKET OUTPUT MODULE

FOR USE WITH THE

AVO-9C-C-HC-N-P2-MSHB-MD

SERIAL NUMBER: 10930

AVX-S1 OUTPUT MODULE, SOCKET VIEW



WARRANTY

Avtech Electrosystems Ltd. warrants products of its manufacture to be free from defects in material and workmanship under conditions of normal use. If, within one year after delivery to the original owner, and after prepaid return by the original owner, this Avtech product is found to be defective, Avtech shall at its option repair or replace said defective item. This warranty does not apply to units which have been disassembled, modified or subjected to conditions exceeding the applicable specifications or ratings. This warranty is the extent of the obligation assumed by Avtech with respect to this product and no other warranty or guarantee is either expressed or implied.

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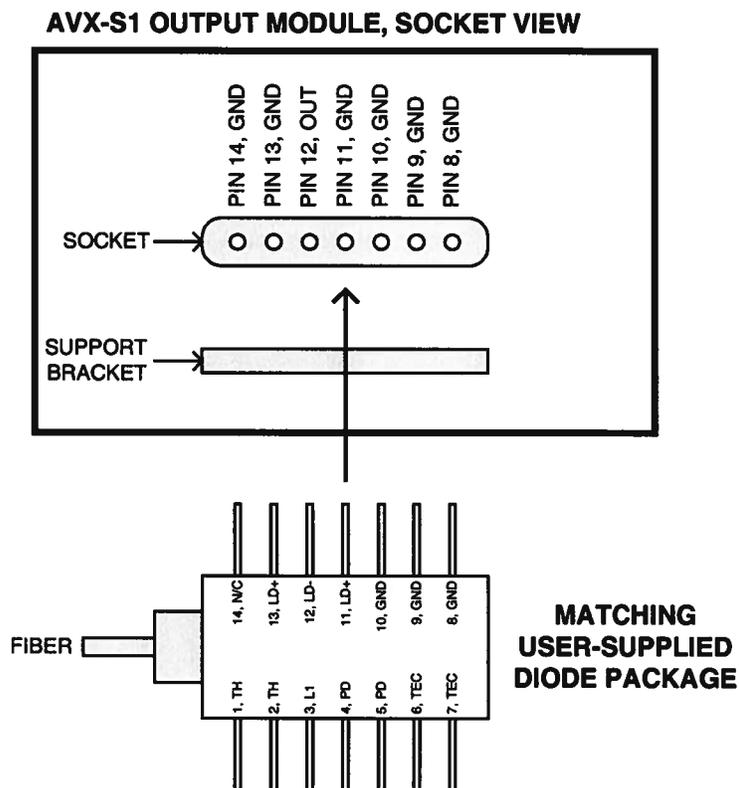
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Manual Reference: T:\instructword\avx-s\AVX-S1-P1-MSHC,sn10930.sxw.
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INTRODUCTION

The AVX-S1-P1-MSHC output module is designed for use with the Avtech AVO-9C-C-HC-N-P2-MSHB-MD (S/N 10698). The AVX-S1-P1-MSHC may be used in place of the output module originally supplied with the AVO-9C-C-HC-N-P2-MSHB-MD (S/N 10698).

The AVX-S1-P1-MSHC is specifically designed to accommodate the Fujitsu FLD5F6CX-H butterfly-package diode with the pinout illustrated below:

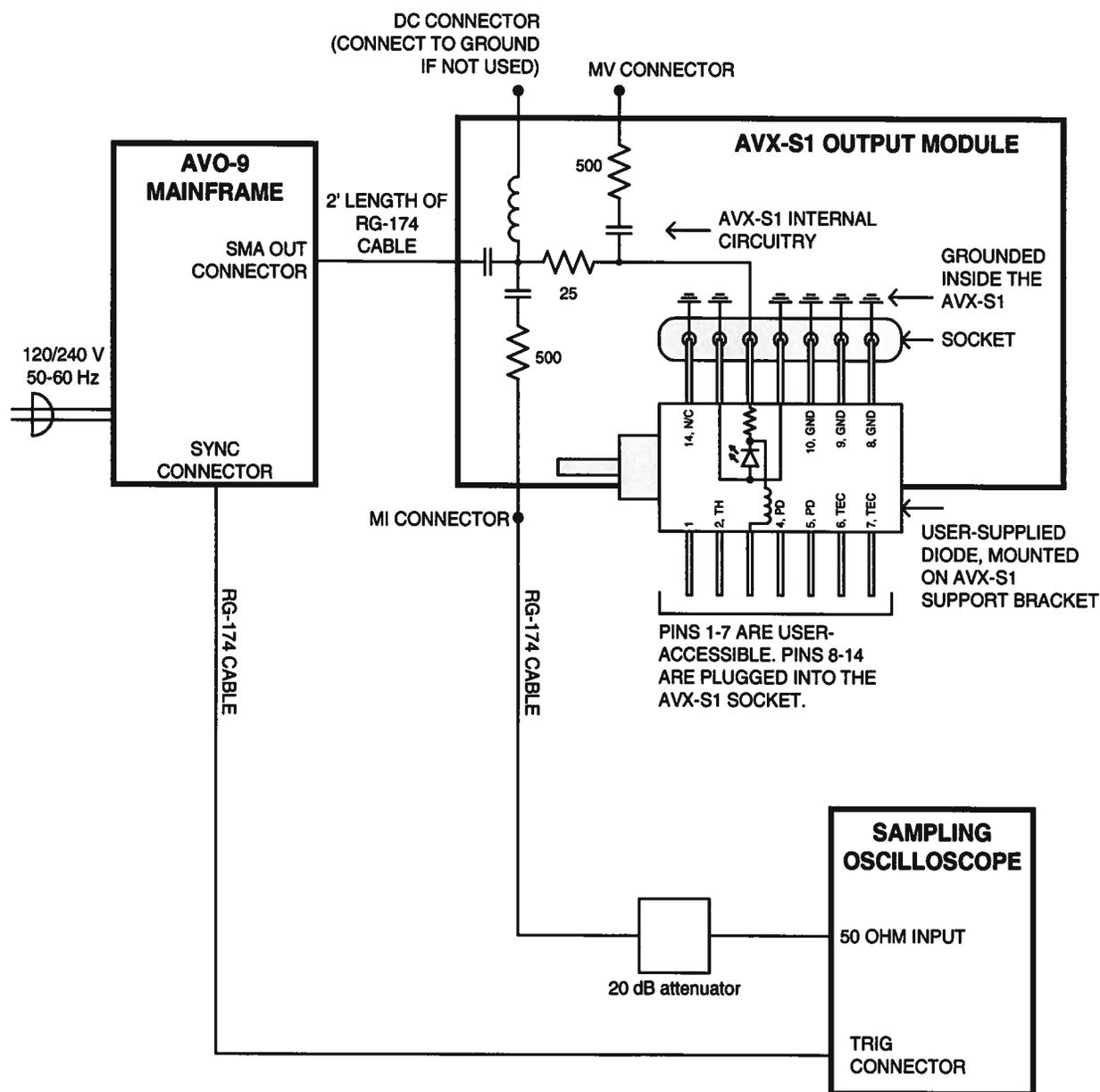


Note: the AVX-S1-P1-MSHC generates a negative voltage at the mainframe output. The output module drives the cathode of the laser diode; the anode is grounded.

GENERAL INFORMATION

BASIC TEST ARRANGEMENT

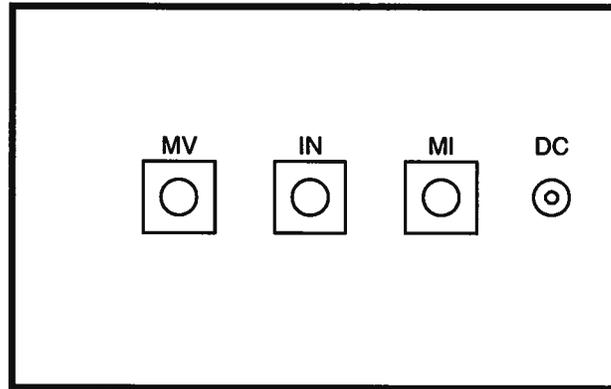
To fully test the instrument, and for normal operation, the output module must be connected as shown below:



The diode load is inserted into the socket on the output module, as shown above.

An oscilloscope may be used to monitor the MI and MV outputs, the locations of which are shown in the figure above. A forward DC bias may be applied to the laser diode by

connecting a DC potential of 0 to -5 Volts to the DC solder terminal. The application of a small forward bias often yields a more ideal diode current waveform (as observed on the MI port). The DC port must be shorted to ground if a bias is not applied. Note, however, that it may be more appropriate to add the DC offset through the externally-accessible pin 3 of the diode, because this will bypass the internal diode resistance, thus reducing power dissipation.



AVX-S1 OUTPUT MODULE, CONNECTOR VIEW

INSTALLING THE DIODE

To install the diode in the output module socket, align the diode so that pins 8-14 are facing the socket, and the mounting flange of the diode is underneath the main body of the diode. Gently and slowly insert the diode into the socket. Insert it far enough that the mounting holes on the diode align with the mounting holes on the support bracket. Secure the diode to the support bracket using four 2-56 screws.

It is recommended that pins 8-14 be trimmed from their normal length to a shorter length of 7 mm. This will make it easier to insert and remove the diode.

AMPLITUDE CONTROL

When using the output module, the pulse current through the diode load is given by:

$$I_{\text{DIODE}} \approx (V_{\text{SET}} - V_{\text{DIODE}}) / 50\Omega$$

where V_{SET} is the amplitude setting on the mainframe (between 0 and 7V), and V_{DIODE} is the forward voltage drop across the diode (typically 2 or 3V). The maximum output current is 100 mA.

The -HC current-doubling feature of the AVO-9C-C-HC-N-P2-MSHB-MD is not active when this output module is used, due to the high impedance (25 Ω) of the Fujitsu FLD5F6CX-H diode. The current-doubling feature is only compatible with diodes whose impedance is less than 12 Ω .


OTHER INFORMATION

Please refer to the Avtech AVO-9C-C-HC-N-P2-MSHB-MD (S/N 10698) manual for further information.



June 9/04