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INSTRUCTIONS

FSD301A and FSD302A
FIBER SUBSYSTEM DATALINK

Introduction

The FSD301A and FSD302A Fiber Subsystem Datalinks are adapters used to communicate between a computer host and an Intelligent Electronic Device (IED) that has RS232 outputs.

Features

- Pin compatible with MSP, DLP-C, DLP-D, ALPS, DGP, DFM, and DLM
- Can be used as DCE or DTE (DIP Switch selectable)
- Built-in protection if polarity for input power is reversed
- Will work with any RS232 (DTE or DCE) device if external +5Vdc is applied to Pin 11 or Pin 18 or +12Vdc is applied to Pin 9.

NOTE: FSD301A and FSD302A models are similar EXCEPT for the following difference: ***FSD301A is a Non-inverting Fiber Optic Datalink, whereas FSD302A is an Inverting Fiber Optic Datalink.***

Application

The Fiber Subsystem Datalink is installed between the computer host and a Power Line Monitoring Device to provide communication in applications unsuitable for RS-232 cables.

The FSD301A and FSD302A can be used at both the computer host and the IED ends. IEDs that do NOT have Multi-mode Glass Fiber Optic Outputs (DLP-C, DLP-D, ALPS, DGP, DFM, DLM, etc.) require two FSD adapters: one at the computer host and the other at the relay. Relays that are equipped with Multi-mode Glass Fiber Optic Outputs (DFP12********, MCP1**4******* and DTP1**4********) require only one FSD at the host. Figure 1 shows the connection of a computer to a relay using the FSD301A adapters.

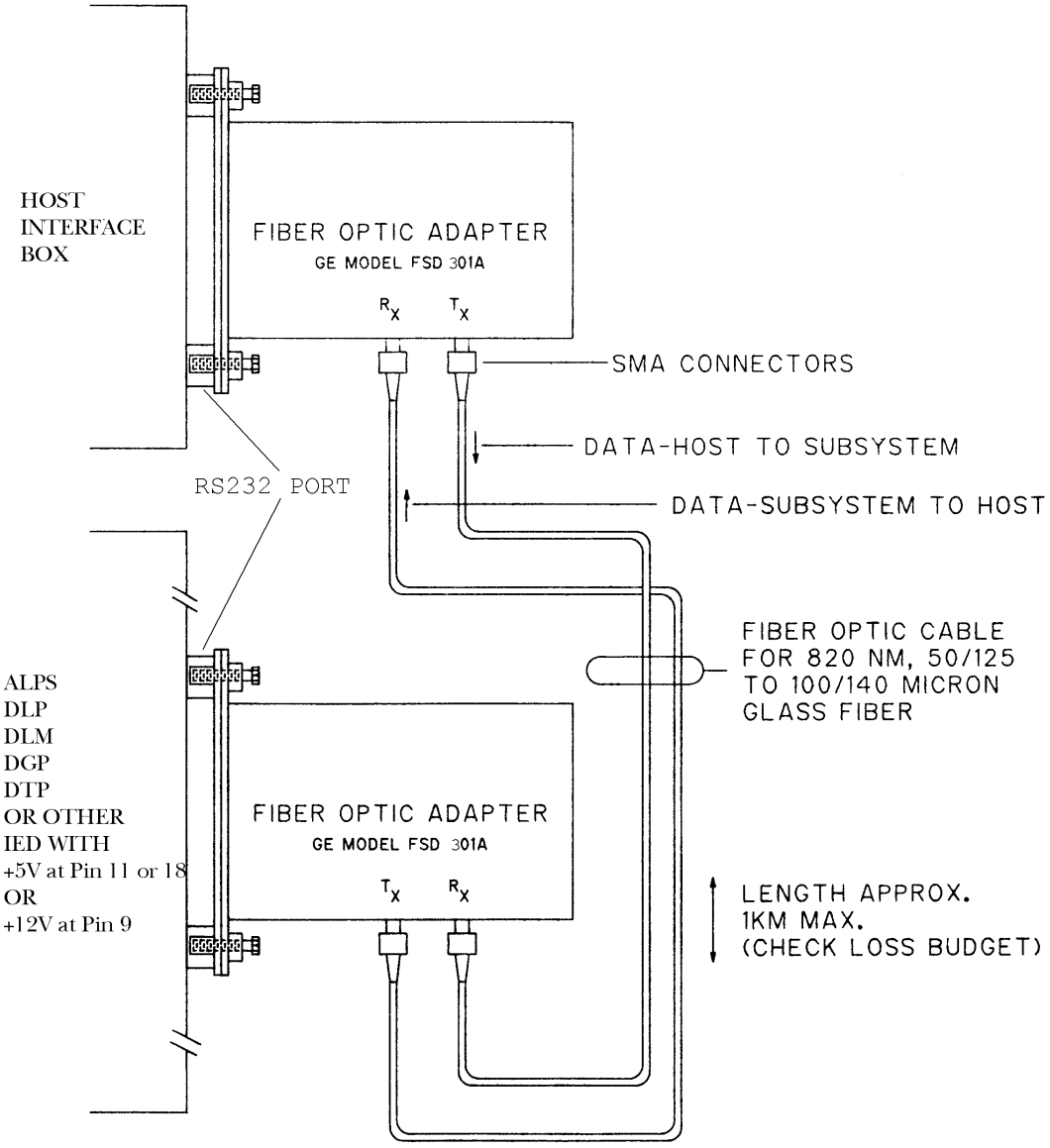


Figure 1 FSD301A Fiber Datalink Connections

The FSD301A and FSD302A use 2 optic fibers (see figure 1):

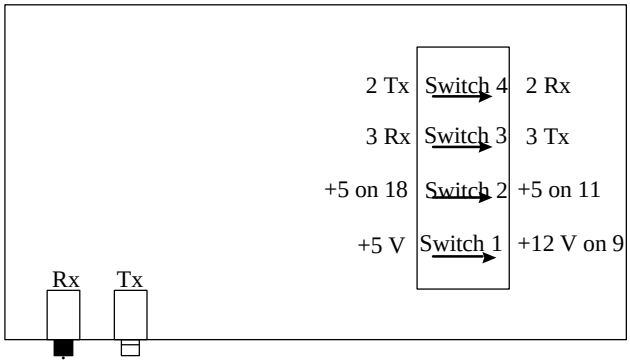
- 1 Optical data transmitter
- 1 Optical data receiver

The FSD301A and FSD302A use 4 switches for proper configuration:

- Switch 1 configures the input DC power to the unit, 5 or 12 Volts.
- Switch 2 designates where the 5 Volt power is supplied (NOTE: if a 12 Volt source is used, switch 2 has no effect).
- Switches 3 and 4 assign pins for transmitting and receiving. Switch 3 is associated with pin 3, and switch 4 is associated with pin 2.

Figure 2 illustrates a few typical switch settings. Note that switches 2 and 3 must be set as a pair.

TYPICAL FSD301A AND FSD302A SWITCH SETTING FOR MSP and ALPS
(Factory Default)



TYPICAL FSD301A AND FSD302A SWITCH SETTING FOR DLP and DGP

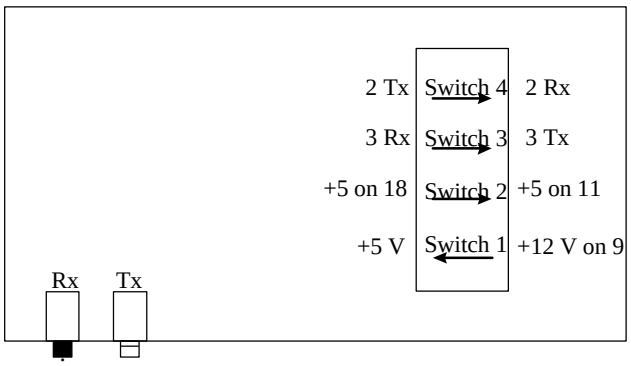


Figure 2 Typical FSD301A and FSD302A Switch Settings

Based on the setting of a DIP switch inside, the FSD301A and FSD302A will accept +5Vdc at either pin 11 or Pin 18 or it will accept +12Vdc at Pin 9. This is the input power for the FSD. Please check the instruction book for DLP-C, DLP-D, ALPS, DGP, DFM, and DLM, to determine the DIP Switch setting required.

Specifications

Power:
- Rated Voltage: +5 Vdc or +12Vdc
- Rated Current: 0.15A

Electrical Interface:
- Standard: RS-232
- Connector: DB25P

Signal	FSD301/302 Pins
TD	2 or 3 DIP SW Settable
RD	3 or 2 DIP SW Settable
RTS	4
CTS	5
DSR	6
GND	7
DCD	8
+12Vdc input	9 DIP SW Settable
+5Vdc input	11 or 18 DIP SW Settable
DTR	20
Time Sync Pulse	25

Notes: 1. Pins 4 and 5 are jumpered internally.
2. Pins 6, 8 and 20 are jumpered internally.

Optical Interface:
- Connector: SMA905
- Cable required: 820nm, 50/125 to 100/140µm duplex fiber cable.
  Maximum cable length = 1000m depending on connector loss.
- Transmitter Hewlett Packard HFBR-1404
- Receiver Hewlett Packard HFBR-2402
- Transmitter drive 20mA.

Baud Rate: DC to 19200 bps

Temperature:
- Storage -40C to +80C
- Operating -20C to +65C

Hardware Description

The FSD is enclosed in a metal case that mounts directly to the RS232 connectors on the MSP, DLP-C, DLP-D, ALPS, DGP, DFM, and DLM. The unit is secured with captive mounting screws on the RS-232 connector.

Net Weight: 0.18 lbs (0.082 kg)

Dimensions:

Height: 0.74” (18.80 mm)
Width: 3.32” (84.45 mm)
Depth: 2.09” (53.03 mm)

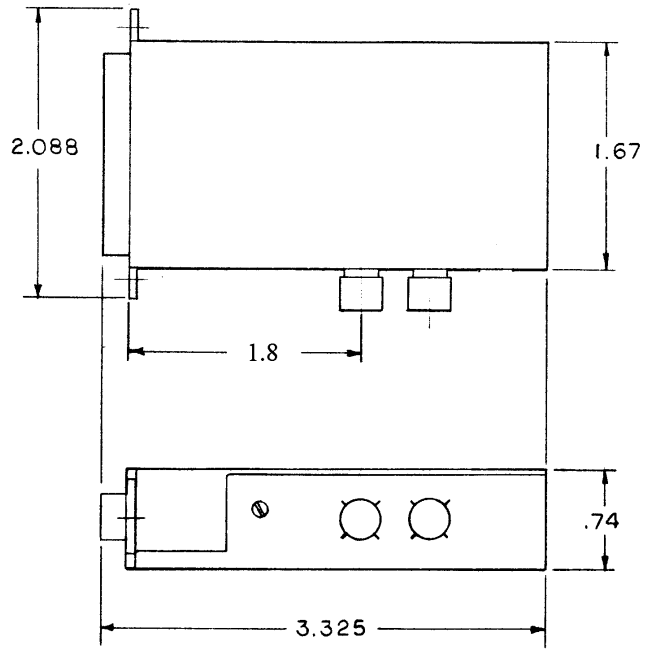


Figure 3 (0286A3780) Fiber Subsystem Outline

Installation

The adapters use 820 nm optical signals in 50/125 duplex fiber cable, which provide a MAXIMUM RANGE OF ONE KILOMETER. Using the information provided in the **Specification** section of this document and the figures for other losses (splices and connectors) found in the Hewlett Packard literature, the user can compute the usable range. This is advisable if the optical cables are long and is a normal part of designing a fiber optic installation. The proper cables and installation techniques must be used for indoor duct runs, vertical runs in walls, suspended runs, and buried runs, to avoid damage to the optical fibers. Except for the simplest installations, it is desirable to have expert engineering assistance.

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