

SIGNAL ISOLATION

AT THE SPEED OF LIGHT

When you need to transfer a signal from a noisy environment or isolate it from high voltage sources, when accuracy and Signal/Noise ratio are important, when system reliability is crucial, no other signal isolation method compares with the AFL-500 Analog Fiber-Optic Data Link. By combining Fiber-Optics technology with advanced proprietary hardware, A. A. LAB SYSTEMS provides researchers and industry the means to isolate a signal from an electrically hostile environment, transmit it over up to 1 Km to the Data Acquisition system, while conditioning the signal-eliminating noise generated by electrical machinery, line noise, ground loops and digital noise.



AFL-500 ANALOG FIBER OPTIC DATA LINK

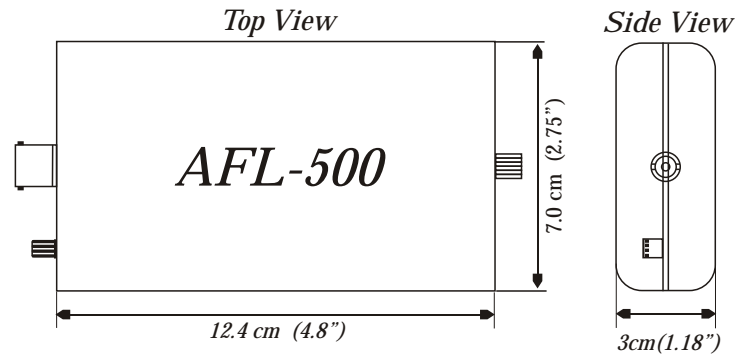
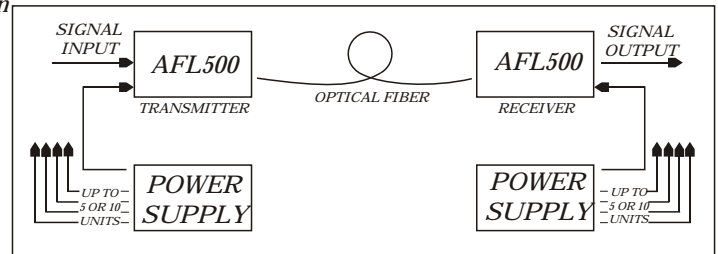
The AFL-500 Analog Fiber Optic Link is an innovative product, for transmitting and isolation analog signals. The link consists of an Analog Fiber Transmitter; the AFL-500/TX, connected via an optical fiber to the Analog Fiber Receiver - the AFL-500/RX. The link is connected between the signal source at the transmitter, and to the signal output at the receiver; with up to 1Km of glass fiber between them.

The Analog Fiber Link offers many advantages:

- Low noise communication of analog or digital data (like RS-232 interface), especially important in electrically noisy environments and for transmission to long distances.
- For medical tests: patient is optically isolated from data acquisition system and from any other high voltage source.
- Optional instrumentation amplifier input stage, provides a differential input, with an adjustable gain of 10-2,000, for direct connection of any sensor (strain gauge, piezo, EEG&ECG, temperature, humidity, pressure, etc.).
- Isolates delicate test equipment from computer - generated noises and spikes: noise from computer does not return to your system.
- Eliminates the forming of "ground loops" - when 2 instruments are connected to different power lines or have a difference between ground voltage levels or when few signal sources are connected to a main unit with different ground signal (data acquisition).
- Total protection of signal processor's input stage from accidental sensor malfunction (short to mains or a shock from a lightning).
- Replaces bulky coaxial cables with compact fiber-optic cables - especially important when rewiring existing ducts.
- Transfers analog signals to distances of up to 1 Km, with high accuracy.

Technical Specifications:

Input/output range: $\pm 1V$ standard, $\pm 1V$, $\pm 100mV$ optional
 Linearity: 0.1% min.
 Frequency response: DC to 20Khz (-3dB).
 Output noise: $< 1mV$ ptp (for 1:1 transmission ratio)
 Supply voltage: $\pm 15V$ floating power supply
 Optical fiber: glass 62.5/125 μm with ST or SMA
 Transmission range: connector
 up to 1000m (3000Ft) with glass fiber
 Dynamic range: 86 dB ($\pm 10V$ range)
 Isolation voltage: Input to output - infinite voltage
 Input/output to mains - up to 2500V
 with battery operation - infinite voltage



ACCESSORIES:

Power Supply (110V or 220V), Glass Fiber Battery operated supply.

Ordering Information:

The AFL - 500 has a single-ended input in 3 ranges:
 $\pm 10V$ (standard) or $\pm 1V$, $\pm 100mV$.

Single Ended(S) is standard input.

Differential input (D) may be ordered with input range of $\pm 10V$, $\pm 1V$, $\pm 100mV$, $\pm 10mV$, $\pm 1mV$ or adjustable (A)

A stabilized power supply is also needed for each side, it can supply up to 5 (optionally 10) receivers or transmitters.

Example:

Transmitter/Receiver Pair:

AFL-500 - CO5-1V-10V - D

— differential (D, A, S)
 — output voltage range
 — input voltage range
 — no. of channels

Fiber: 125/62,5 μm glass fiber-specify length.

Power Supply:

AFL-500 - 05 - 220V

— Line Voltage
 — no. of channels (5 or 10)

AFL-500 - battery operated power supply (9V to 15V input)

