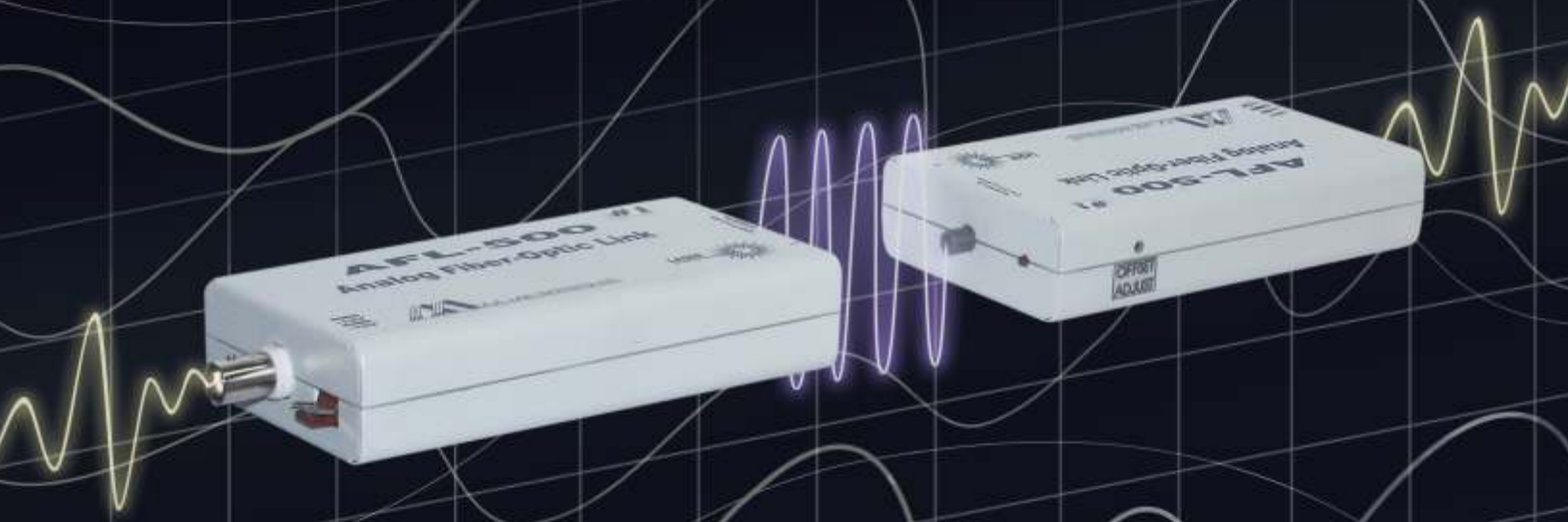
AFL-500

Analog Fiber Optic Link



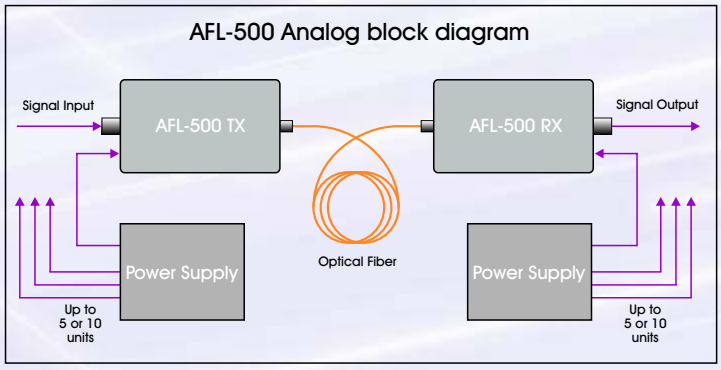
When you need to transfer a signal from a noisy environment or isolate it from high voltage sources. When accuracy and signal/noise ratio are important, when system reliability is crucial, no other signal isolation method compares with the AFL-500 analog fiber optic data link. By combining fiber-optics technology with advanced proprietary hardware, A.A. Lab-Systems provides researchers and industry the means to isolate a signal from electrically hostile environment, transmit it over up to 3 km. (60km optional) to the data acquisition system, while conditioning the signal-eliminating noise, generated by electrical machinery, line noise, ground loops and digital noise.

A.A. LAB SYSTEMS LTD.

The AFL-500 Analog Fiber Optic Link is an innovative product, for transmission and isolation of 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 and the transmitter, and to the signal output at the receiver, with up to 3km. of Multi Mode glass fiber between them (Single Mode fiber, up to 60Km).

Technical Specifications:

Input / Output Range	±1V standard, ±1V, ±100V optional
Linearity	0.1% min.
Frequency Response	DC to 20 KHz (-3dB) std. DC-30KHz. opt.
Output Noise	<1mV ptp (for 1:1 transmission ratio)
Supply Voltage	±15V floating power supply
Optical Fiber	62.5/125μm@MM or 9/125μm@SM
Transmission Range	Connector, up to 3000m. (9000 ft.) with glass fiber
Dynamic Range	86dB (±10V range)
Isolation Voltage	Input to output - infinite voltage Input/Output to mains - up to 2500V with battery operation - infinite voltage



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 transmit 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 gage, piezo, EEG&ECG, temperature, humidity, pressure, etc.)
- Isolates delicate test equipment from computer - generated noises and spikes: computer noise does not return to your system.
- Eliminates the forming of "ground loops" - when two 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 cables (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 60km. with high accuracy.

Accessories:

Power supply (110Vac or 220Vac), glass fiber, battery operated supply.

Example:
Transmitter / Receiver pair:
AFL-500 - C05 - 1V - 10V - D

- D: Differential (D,A,S)
- 10V: Output voltage range
- 1V: Input voltage range
- C05: No. of channels

Fiber: 62.5/125μm or 9/125μm glass fiber - specify length.

Power supply:
AFL-500 - 05 - 220V

- 220V: Line voltage
- 05: No. of channels (5 or 10)

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

Ordering Information:

The AFL-500 has a single-ended input in 3 ranges:
+10V (standard) or +1V, +100mV.
Single-ended (S) is standard input.
Differential input (D) may be ordered with input range of +10V, +1V, +100mV, +10mV, +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.

A.A. LAB SYSTEMS LTD.
Head office: 33 Hayetzira st. Ramat-Gan 52521, ISRAEL,Tel:972-3-5756327/8 Fax:972-3-5756326
U.S.A office: 9 Blossom Drive, Kennett Square, PA19348, Tel:(302)478-2881 Fax:(610)444-5544