



Description

WLAQ-1200 is a versatile, application specific, isolated acquisition system. It is composed of a remote analog interface (remote sensor) with 8 inputs and 2 outputs and a digital interface (host) connected to a PC via USB. The two parts are linked together with a pair of multimode optical fiber cables. One cable is driven by the host to supply power and commands to the sensor, while the other is used by the sensor to report status and data.

The electrical power for the sensor is converted from the optical power with a photovoltaic element. Since there is no electrical connection between the sensor and the host, this configuration is suitable for fire sensitive applications or running in strong electric or magnetic fields.

Principles of operation

The host starts a measurement sequence with the transmission of steady light. When the sensor's storage capacitor has enough charge, the on-board MSP430 microcontroller starts execution and signals its state to the host. Depending on the requirements of the application, the measurement sequence can be pre-programmed or it can be imposed by the host, optimizing power consumption and/or data rate. Conversion results are sent via the return path to the host which in turn make them accessible to the PC through the USB interface. The Host can be viewed either as a standard serial port or as a USB peripheral. For the serial port version a terminal emulator or standard Windows API functions could be used for communication. For the USB peripheral version a user mode DLL module is available.

Features

- Completely isolated
- No power supply needed for the remote sensor
- Reliable optical data communication

Applications

- Remote sensors
- Data loggers



Technical specifications

Analog interface (remote sensor)

Supply voltage	3V / 5 mA max., via optical fiber
Input/output range	0 ÷ 2.5V, DC coupled
Resolution	12 bit
Sample rate [†]	10 kSPS max.
Operating temperature	-40 ÷ 50°C
Weight	TBD

[†]Application specific.

Digital interface (host)

Supply voltage	5V / 150 mA max., USB powered
Optical output power	30 mW, class 3B
Wavelength	808 nm
Operating temperature	-10 ÷ 50°C
Weight	TBD

Functional diagram

