



Application Bulletin

000-2029 REV. B

Communicating to the OPTimizer+ Using Fiber Optics

Purpose:

This document provides information about using fiber optic transceivers to communicate to the OPTimizer+ Circuit Breaker Monitor. It also recommends specific models of fiber optic transceiver.

Scope:

This bulletin applies to all INCON OPTimizer PLUS models. Earlier OPTimizer models do not support port powered transceivers.

Associated Reference Documents:

- 000-0500 OPTimizer+ User Guide (Section 4.2 Fiber-Optic Interconnection)

General Description:

In cases where a utility desires to remotely download circuit breaker event data it is necessary to leave a communication cable permanently connected to the OPTimizer+. Communication to the OPTimizer+ is done through its female 9 pin (DB9) serial port. For issues of isolation, fiber optic cables are preferred over metallic cables.

A fiber optic transceiver is required to convert the RS-232 communication to the fiber optic medium. The serial port on the OPTimizer+ has been designed to provide power to a port powered fiber optic transceiver (the SC-01 serial port has not). The opposite end of the fiber optic cable may be connected to another fiber optic transceiver, and then to a computer, phone modem, phone line switcher, port switcher, etc... The fiber optic cable may also be terminated directly into a data acquisition system or RTU that has fiber optic I/O ports.

Regardless of cable type, transceivers, modems, port switchers, data acquisition systems, or RTU's, **all communication to the OPTimizer+ must be done in ASCII**, using the standard OPTimizer+ commands found in the User Guide. The OPTimizer+ does not communicate directly with system integration protocols like DNP3 or MODBUS.

Recommended Fiber Optic Modems:

The following are recommended port powered fiber optic transceivers:

- Schweitzer Engineering Laboratories, Model SEL-2800, transmission range 500 meters, port powered
- Schweitzer Engineering Laboratories, Model SEL-2815, transmission range 15 kilometers, port powered
- B&B Electronics, Model 9PFLST, transmission range 4 kilometers, port powered

Procedure:

1. A Null Modem adaptor (male to female) will be required between the OPTImizer+ and the transceiver. Connect the transceiver to the OPTImizer using a Null Modem adaptor.
2. Connect the fiber optic cable coming from the “T” connection on the opposite device (transceiver or fiber optic port) to the “R” connection on the transceiver at the OPTImizer.
3. Connect the fiber optic cable coming from the “R” connection on the opposite device (transceiver or fiber optic port) to the “T” connection on the transceiver at the OPTImizer.
4. If the transceivers are not “port powered”, connect the appropriate power supply to the transceivers.
5. Communication should be ready to go. No other programming is needed. The fiber optic transceivers and cables act just like a metallic cable.

Features:

1. Asynchronous RS-232, full or half duplex
2. Supports TD, RD, RTS, & CTS signals
3. Data Rates up to 115.2 KBPS
4. ST connectors for fiber optic cables