



RS232 • Ethernet • Wireless 802.11B Ethernet • USB • 4-20mA • RS485 • Fiber Optic

Fiber Optic Communications Option

OVERVIEW

Doran's Fiber Optic Option provides full duplex bi-directional serial data communications for:

- Intrinsically Safe (IS) Hazardous areas
- Applications that require communications over distances up to 1000 ft
- Applications with severe electrical or RF noise.

Communication standards like USB, RS-232 and Ethernet require copper cable with a voltage potential to transmit data between two devices. Fiber optics utilizes light to accomplish the same task. Fiber optic cable is made of a transparent glass core surrounded by a mirror like covering, enclosed inside a fire resistant outer jacket. Light passes through the cable, bouncing off the mirror covering until it reaches the other end of the fiber optic cable.

Fiber optic communications is widely used in IS Hazardous environments due to the convenience of installation and use. In an IS environment, copper cables carrying a voltage or current potential are often required to be installed into conduit. This ensures safety in a hazardous environment, but also increases installation and maintenance costs. In hazardous IS environments, fiber optic cables can be run without the need for conduit which speeds the installation process. Doran's 9000XL IS indicator utilizes fiber optic communications for data transmission and I/O control for relay control and remote signal inputs.



Fiber optics are also available as a standard option in Doran's line of Excel Series indicators for non-IS environments. Fiber optic communications completely eliminate electrical and radio frequency noise. Long runs up to 1000 ft are much more convenient and less costly to install and maintain with fiber optics as signal boosters and repeaters are not required.

APPLICATION DESCRIPTION

A customer needs to weigh 35 lbs of oil based paint mixture in a hazardous area and needs to send the production weight data to a safe area computer. All scale components must be explosion proof and meet FM (Factory Mutual) Intrinsically Safe criteria.

Enter the Doran Guardian 9000 XL/IS Intrinsically Safe AC powered Indicator with a 12" x 12" DXL 50 lb scale base containing an FM Approved load cell. Doran's Guardian 9000XL/IS is an approved Factory Mutual System.

The Fiber Optic Option is ordered with the AC Line Guardian 9000 XL/IS Scale System along with the fiber optic Converter that provides RS-232 communication to the safe area computer. A 50 foot fiber optic cable is included with the order of this interface. The fiber optic cable is run to the safe area computer. The Fiber Optics Converter is installed, providing interface from fiber optic to RS-232 to the computer.

For data acquisition, Doran's Excelerator Data Collect Software is a great match to collect weight data for archiving and future review. Once Excelerator is up and running, the user will weigh the 35 lbs of paint mixture and press the print button. This will send the weight and unit to the computer running Doran's Excelerator program.

AVAILABILITY AND ORDERING INSTRUCTIONS

Doran is able to provide the fiber optic options, these can also be found in the Option Section of the Guardian XL/IS Indicator and all Excel Series Indicators.

INTRINSICALLY SAFE OPTIONS

9XOPT49: Fiber Optic Interface

Includes: Fiber Optic Interface board mounted inside of the 9000XLMIS, a special backplate to accommodate the Fiber Optic Cables, and 50 feet of fiber optic cables.

9XOPT51: Fiber Optic Converter for RS-232 Output (Safe Area Only)

Includes: One single function fiber optic converter and a wall mounted transformer.

9XOPT53- : Additional Fiber Optic Cable Lengths

A 50 foot length of cable is included with option 9XOPT49. The lengths described below are *in place of* the included 50 feet of cable, **NOT** in addition to the included cable.

9XOPT53: 30 Meter (100 ft.) Length of Fiber Optic Cable

9XOPT53-40: 40 Meter (131 ft.) Length of Fiber Optic Cable

9XOPT54: 50 Meter (164 ft.) Length of Fiber Optic Cable

Additional lengths are available – call for pricing.

NON INTRINSICALLY SAFE OPTIONS

EXOPT103: Fiber Optic Interface

Includes: Internal Fiber Optic interface board, a special backplate, and 50 feet of fiber optic cable. Additional lengths are available, call for pricing.