

## Optical Connector Cleaning

The cleanliness of optical connectors used in conjunction with the Fiber SenSys Alarm Processor Units (APU's) is absolutely critical. All optical connectors must be cleaned immediately prior to insertion into the ports on the alarm processor. Failure to do so may result in damage to internal components.

When working with fiber optic sensor systems, cleanliness is extremely important. Optical connectors are precision machined to exacting specifications. The alignment of the optical fibers from one to the other in a coupled pair is very important. When inserting connectors into a bulkhead, it is imperative that all surfaces are extremely clean. As the connectors come into contact with each other, tiny particles of debris can prevent proper seating and alignment, interrupt the lasers path, and create nicks and scratches in the surface of the polished optical fiber. After repeated use and over time these blemishes can become severe enough to degrade the ability of the connector to pass the laser signal, causing the sensor to fail. If this occurs the connector will need to be replaced. Proper cleaning and maintenance techniques will greatly extend the life of a connector, and improve the overall performance of the optical sensor system.



When cleaning connectors, the primary concern is the polished face. The face is the mating surface that comes into direct contact with another connector or the lens of an optical laser or detector. Any debris or residue on the connector face can have negative effect on the amount of signal that the connector is able to pass.

Cleaning the face of the connector can be done in many ways using an assortment of tools. Commonly, a new clean fiber optic wipe is moistened with isopropyl alcohol or alcohol alternative, and then the connector is drawn across the wipe with light pressure. This is followed by drawing the connector face across another new clean dry wipe in order to remove any liquid residue. Alternately, a dry mechanical cleaner can be used following the manufactures instructions. After the initial cleaning the connector face should be inspected using an optical connector scope to verify that the face is clean and free of debris and residue. The connector should be promptly inserted into its receptacle or covered with a clean protective cap.

For proper cleaning procedures and techniques please refer to the Fiber SenSys AN-SM-004 Optical Connector Cleaning Application Note, available through Fiber SenSys' website or by contacting tech support at 503-374-9896. Fiber-optic cleaning kits are available through your regional FSI territory representative.