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## BXF and BAF

Explosion Proof / Intrinsically Safe Ethernet Coupler for use in Hazardous Areas

## Installation & Operation Manual

### OVERVIEW

The Solexy BXF and BAF explosion proof and intrinsically safe Ethernet couplers are an integrated protection device that facilitates Ethernet cabling installation in hazardous areas making the signal intrinsically safe. The patented (7,507,105) BXF and BAF coupler features a barrier circuit which protects the field cabling from faults or voltage and current high enough to cause a spark ignition. The BXF circuit is encapsulated and housed in an explosion-proof stainless steel body and is designed to be used with a UL Listed enclosure for hazardous areas.

The BAF circuit is encapsulated and housed in an aluminum (T6061) housing and is designed to operate as an intrinsically safe barrier but located in a safe area, or can be used in an air purged panel as a bulkhead fitting for the Ethernet signal. By utilizing the couplers with a certified enclosure, your will system be approved for hazardous area use with most PC's, Ethernet Switches, Hubs and Masters.

**Note: The information in this manual is intended to assist with equipment design and ensure proper installation.**

### INTRINSIC SAFETY INFORMATION



UL File Number: E305231 Vol. 1 Sec. 2

The BXF and BAF are UL tested and listed for running Ethernet cable and signals in a Class I Div. 1 Groups A, B, C, D, and Class II Div. 1 Groups F and G, rated area. See applicable control drawing (below) for proper installation.

### INSTALLATION

For proper installation, see the applicable control drawing (attached):

Drawing	Coupler Description	Model
DC00053	BXF Explosion proof- I.S. Ethernet barrier with 3/4" - 14 NPT thread	BXF
DC00059	BAF Ethernet barrier I.S. for Nonhazardous area or Purged Panel	BAF
DC00064	BXF to BAF Control Drawing Hazardous to Nonhazardous	BXF to BAF

1. Feed the CAT5 or higher rated cable through the enclosure conduit entry. **DO NOT attach to Ethernet source, switch, hub or master at this time!**
2. Screw coupler into enclosure following local electrical code (UL requires 5 thread minimum engagement).
3. If part of the equipment is in a safe area then the circuit can be completed with the BAF series coupler, make sure that proper grounding occurs per local codes.
4. Attach Ethernet connection to bus system at each end via BXF/BAF pigtail connector according to control drawings listed above.
5. Attach interconnecting cable between barriers per control drawings listed above.

6. For proper wiring and cable make up if not using a factory supplied cable, refer to drawing DC00063.

### WARNINGS

1. This device will not work with POE, using it with POE could result in equipment damage.
2. This device is intended for 10/100 MHz Ethernet, it will not function properly with 1 GHz Ethernet. Contact the factory for 1 GHz application
3. For distances greater than 70 meters contact the factory.
4. The Solexy Ethernet Barrier field connections **MUST** be used with M12, 4-pin "D" coded connectors. Any other type of M12 connector will not work or fit into the barrier. See drawing DC00063

### PRODUCT SPECIFICATIONS

Ambient Temperature Range	-20°C to +60°C
Maximum Fault Voltage	250 VAC - 48 VDC
Maximum Ethernet Power Output	1 Watts
Maximum Current	50 mA
Frequency Range	10/100 MHz
DC Resistance (per conductor)	41 Ω
Maximum (Total) Cable Length *	70 meter (230 feet)

\* **Length may vary depending on bandwidth requirements and cable used (Example data vs. video)**

### CABLE SPECIFICATION

Recommended Belden 7933A 2 twisted pairs, or equal (see *specification below*)

Velocity Propagation (VP) in %	70%
Maximum Delay nS/100m	538@100MHz
Max. Delay Skew nS/100m	45
DC Resistance Ohms/100m	9.38
Max Operating Voltage	300V RMS
DCR Unbalanced %	3

### GROUNDING

1. Earth grounding is required at both ends of the circuit
2. All Grounds need to be at the same voltage potential
3. Cable must be shielded
4. Shield **MUST** be grounded at both ends