



Tier 800AF Series

Arc Flash Relay System



The Tier 800AF Series Arc Flash Relay System reduces arc flash incident energy and boundaries in both Medium-Voltage and Low-Voltage electrical systems. The Tier AF series is an externally installed control cabinet that uses up to four fiber optic sensors to immediately detect light associated with an arc flash event and quickly activate a system disconnect.

Why Install an Arc Flash Disconnect System?

The Tier 800AF series Arc Flash Relay System is a cost effective solution to protect employees working, testing, troubleshooting, or energizing electrical equipment. The Arc Flash Relay System increases equipment safety & reliability by limiting the amount of fault current that can flow through your equipment.

Features:

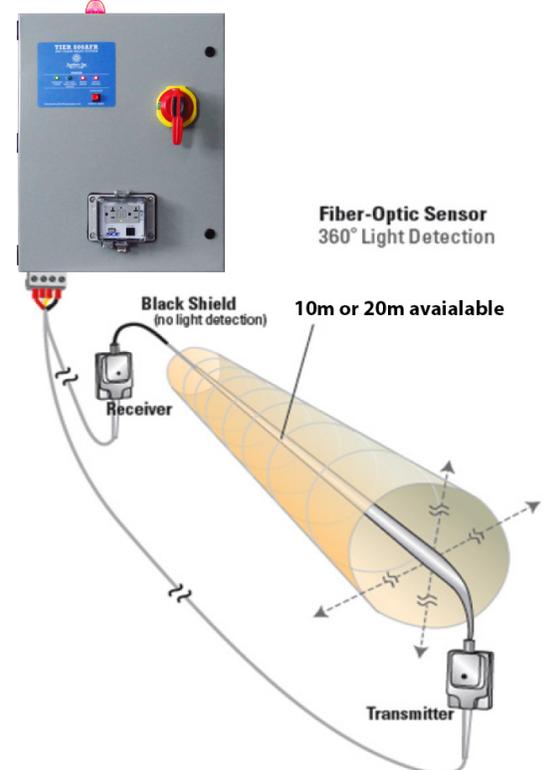
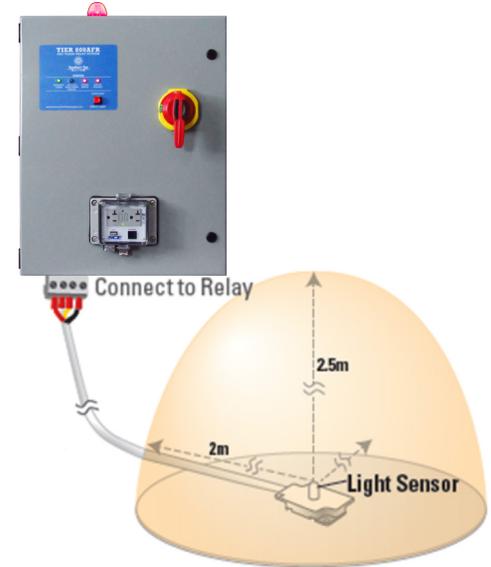
- External Connection:
 - Enables fast & easy install
 - Ensures electrical equipment warranties, listings & selective coordination is maintained.
 - Universal equipment connection
- Arc Flash(incident energy) reduced to less than 1.2 cal/cm²
- Evaluates light associated with arc flashes
- Digital Inputs
- Remote Communications via RS485 or Ethernet TCP
- Warranty: AFRS Unit 10 Years

Technical Specifications

Input Control Voltage	120 - 480 VAC Single Phase (2W+G)
Control Voltage for Shunt Trip	Two 120V or Two 24V Controlled Output
Connection Type	Parallel Connection
Relay System Type	Optical Arc Sensor
Termination	Fused Disconnect, #12 - #2 AWG
Mounting	External Mount
Front Panel Outlet (Optional)	120V 5A Graceport (Power, Ethernet, USB-A)
Input Current	5A, 60Hz
Overcurrent Protection	Internally fused at 5 Amps
Short Circuit Current Rating	200 kA (UL 508A)
Response Time	<1 ms relay
Enclosure Rating	NEMA 4 Steel
Programming Comms	Internal - USB Type B, RJ-45 Ethernet
Form 'C' Contacts	250V 1A
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Fiber Optic Sensors	
Sensor Types	10m Point, 10m Rope, 20m Rope
Number of Sensors	Maximum 4 sensors, any combination.
External Status	
Power ON	Green LED
System Enabled	Green LED
System Tripped	Red LED
Service Required	Red LED
Optional Strobe	Red Strobe Light
Internal Status	
Supply 1&2	Green LED for each
Error	Red LED
C/B Fail	Red LED
C/B On (2)	Green LED for each
Tripped (3)	Red LED for each
Trip Coil 1&2	Red LED for each
Sensors 1-4	Dual Color Green/Red LED for Each
Reset Button	External Front Panel and Internal on Relay
Warranty	Arc Flash Unit - 10 Years

External Digital Inputs

Trip (2)	Wired Inputs - 2 LEDs
Inhibit (2)	Wired Inputs - 2 LEDs
Reset (2)	Wired Inputs - 1 LED





Enclosure		
Dimensions	Enclosure Rating	Options
20" x 16" x 10"	NEMA 4 Steel	Rotary Disconnect, Graceport, Strobe Light

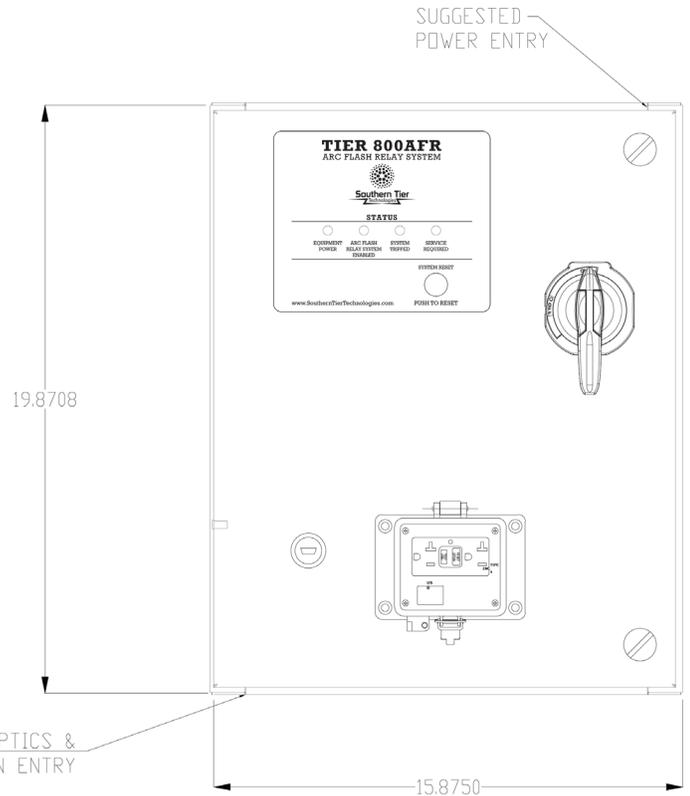


Table A: Control Voltage

Model Code	Voltage	Source Configuration
12	120V	Single Phase , 2W+G (L1, L2/N, G)
20	208V	Single Phase , 2W+G (L1, L2/N, G)
24	240V	Single Phase , 2W+G (L1, L2/N, G)
27	277V	Single Phase , 2W+G (L1, L2/N, G)
40	400V	Single Phase , 2W+G (L1, L2/N, G)
48	480V	Single Phase , 2W+G (L1, L2/N, G)

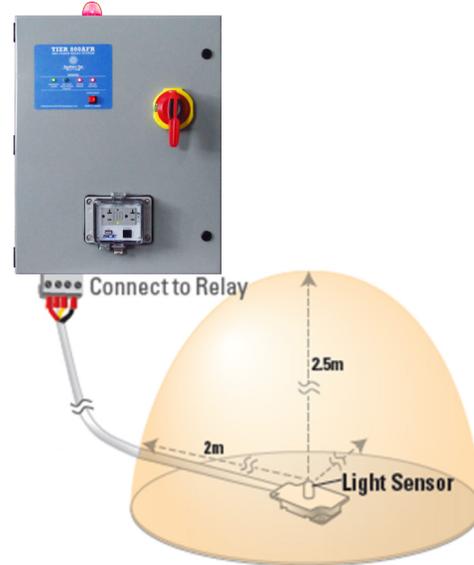
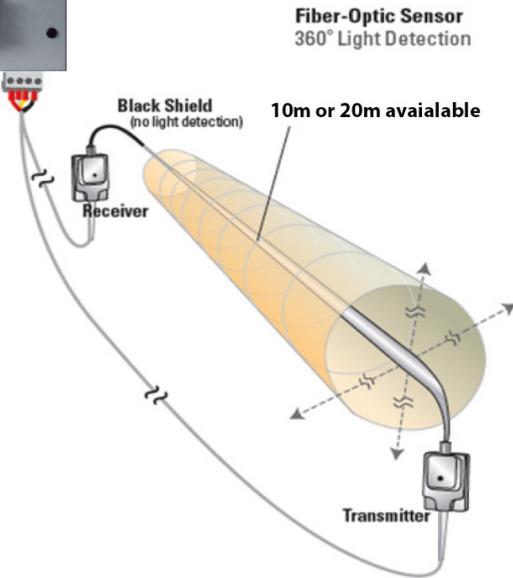
Select the input control voltage for your unit. We will set this value at the factory. All units are capable of operating at any of the above voltages. The control voltage value can easily be changed by the end user.

Tier 800 Arc Flash Relay System, 800 Family Ordering Information: Example Model Number: AF48E220DGNS

Positions: 1-2	Positions: 3-4	Positions: 5	Position: 6	Position: 7	Position: 8	Position: 9	Position: 10	Position: 11	Position: 12
Product Family	Control Input Voltage	Mount Type	10m Point of Use Sensor	10m Rope Sensor	20m Rope Sensor	Rotary Fused Disconnect	Convenience Outlet (Graceport)	Current Transformers	Custom Job Requirements
AF = Tier 800 Family	See Table A	E = External Mount Bus mount currently unavailable	Select a Number 0-4 for quantity of these sensors	Select a Number 0-4 for quantity of these sensors	Select a Number 0-4 for quantity of these sensors	D = Disconnect	G = Graceport N = None	N = None (Currently unavailable, please select N)	S = Strobe Light N = None C=Custom(Contact Factory)

If ordering sensors independent of an Arc Flash Relay System Unit, or in addition to a unit beyond the sensor capacity of the unit(4 sensors), use the following product numbers for each sensor type.

Unlike ordering with an Arc Flash Unit, there is no upward quantity limitation in the product number, you may order as many as you wish. Select any number, 1 or above, for the type and size of sensor you need.



All Independent Sensor Product Numbers will be in one of the three following formats.

Simply Interchange the red **X** in the product number with the quantity desired.

AF**X**P10 - 10 Meter Point Sensors

AF**X**R10 - 10 Meter Rope Sensors

AF**X**R20 - 20 Meter Rope Sensors

Tier 800 Arc Flash Sensors : Example # AF2P10

Positions: 1-2	Positions: 3	Positions: 5	Position: 6
Product Family	Quantity of Sensors	Sensor Type	Sensor Length
AF = Tier 800 Family	Input any Number 1 or above example.. 1 = 1 sensor 2 = 2 sensors	P = Point of Use R = Rope Sensor	10 = 10 meters 20 = 20 meters