

AFS

Arc Flash Detection Sensors

An arc flash is an electrical accident that creates a high-temperature explosion. It is an uncontrolled release of energy caused by an electric arc which exposes everything within its reach to a multitude of hazards such as:

- extreme radiant heat (upwards of 20,000 degree Celsius),
- a plasma ball (or fire ball),
- molten shrapnel projectiles,
- blinding light (ultraviolet and infrared),
- a concussive blast,
- a deafening sound (enough to rupture ear drums) and
- dangerous vaporous gasses.

An arc flash can happen during abnormal use due to a corruption of isolation, or in circumstances involving animals, flooding, vibrations, or corrosion. It can also occur during commissioning or maintenance, rendering equipment unusable and forcing costly downtime with serious economic consequences.

Prevent accidents and protect your site with our arc flash protection solutions for both safety and productivity.

Arc-flash detection technology significantly decreases the time it takes a relay to trip in response to an arc fault, which reduces hazardous arc-flash incident energy.

FANOX combination of light-sensing technology with fast overcurrent protection allows high-speed tripping during arc-flash events without overtripping for external faults or adverse light conditions.



- **High-Speed Detection:** Arc-flash light sensing and overcurrent protection detect arc-flash hazards and send a trip signal to the breaker in as fast as 4ms.
- **Lifesaving Protection:** By reducing the energy of this explosions the injuries caused on the persons working on the surroundings.
- **Reduced Damage to Switchgear:** With arc-flash protection, equipment damage is minimized during an arc-flash event, returning affected equipment to service faster and maximizing power system availability.
- **Coordinated Protection:** The use of IEC 61850 GOOSE messaging allows coordination with upstream protection if a fault occurs.
- **Flexible Installation:** Install into new switchgear or motor control centers.
- **Retrofit into existing equipment** is also possible.
- **Quality, Reliability and Service.**

TECHNICAL CHARACTERISTICS

ARC FLASH DETECTION FEATURES:

Wavelength	650 nm
Optical connector type	Versatile-Link duplex connector and is compatible with existing simplex Versatile-Link connectors.
Fyber type	1mm Plastic Optical fiber (POF)
Typical TX power	1 dBm
Receive sensitivity	-25 dBm

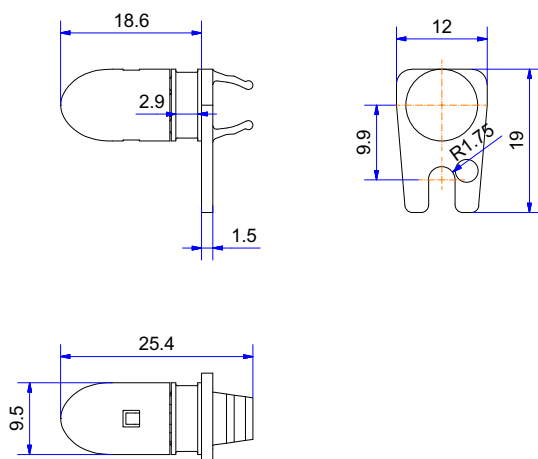
POINT SENSOR FEATURES:

Point Sensor Diagnostic Worst case loss	20 dB
Link budget	6 dB
Black-Jacketed fiber worst case lose	-0.23 dBm / m
Black-Jacketed fiber typical case lose	-0.19 dBm / m
Connector Splice loss	2 dB
Approximate range	15 m (max.)

FIBER SENSOR FEATURES:

Link budget	26 dB
Clear-Jacketed fiber worst case lose	-0.26 dBm / m
Clear-Jacketed fiber typical case lose	-0.21 dBm / m
Connector Splice loss	2 dB
Approximate range	35 m (max.)

Point sensor dimensions



Selection and ordering data AFS

AFS

Arc Flash Sensors					
P L					SENSOR TYPE Point Sensor Bare-Fiber Loop
	0 3 4				CONNECTION TYPE Point Sensor with Direct Connection to relay Bare-Fiber Loop with Pass Through Wall Bare-Fiber Loop
		0 A			POINT SENSOR LENGTH N/A Fiber Length to sensor A (x meters) (only with sensor Type P)
			0 B		RELAY TO CONNECTOR LENGTH N/A Fiber Length to Pass Through Wall / Connector B (x meters) (only with Connection Type 2)
				0 C	BARE-FIBER LOOP LENGTH N/A Bare-Fiber Length C (x meters) (only with sensor Type L)

A, B and C will indicate the length of the fiber. Length available from 1 meter.

Example of ordering code (A=10 meters, B and C do not apply):

P	0	10	0	0	AFS P 0 10 0 0
AFS					

Note 1: Only following combinations: P0-A-0-0, L3-0-B-C and L4-0-0-C are allowed.

Note 2: The maximum length for "A" factor is 15 m and the maximum length. For bare-fiber loop:

If pass through wall is not used, the maximum length for C factor is 35 m.

If pass through wall is used, the maximum length for 2*B + C factor is 35 m.

Note 1:

Only following combinations are allowed:

- P0-A-0-0
- L3-0-B-C
- L4-0-0-C

Note 2:

The maximum length for "A" factor is 15 m.

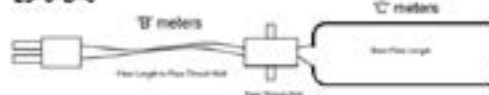
The maximum length for bare-fiber loop:

- If pass through wall is not used, the maximum length for C factor is 35 m.
- If pass through wall is used, the maximum length for 2*B+C factor is 35 m.

P0-A-0-0



L3-0-B-C



L4-0-0-C

