E-T-A®
ENGINEERING TECHNOLOGY

Arc Fault Detector

Type PVREM-…-AF1 / PVSEC-…-AF1

Preventive Fire Protection for Photovoltaic Systems

PVSEC-...-AF1

PVREM-...-AF1

Technical information

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Arc faults are a potential hazard in photovoltaic systems because of the high DC voltages and currents. Arc faults, mostly serial ones, are often caused by defective modules or connectors (plagiarism or copies) and by defective cables because of ageing, animal bite and hail. This may lead to fire in other components of the system and their surroundings, e.g. the roof.

In order to realise an efficient preventive fire protection, E-T-A has designed several possible solutions which monitor the entire DC side of a photovoltaic system and thus help to enhance its safety and reliability. Serial arc will be detected, extinguished and indicated before any safety-critical situations can arise.

The arc fault detection feature is available in combination with the DC Disconnect with remote control and with the Firefighter Switch up to max. DC 1,000 V and 30 A. In addition we can provide a customer-specific version on printed circuit board basis.

Technical data

Rated operational voltage	max. DC 1,000 V
Rated operational current	max. 30 A
Ambient temperature	-30 °C...+66 °C
Approval	UL1699B, Type 1 Device
Fail-safe-function	integral
PVSEC-...-AF1: 5-pole terminal (spring-loaded)	Change-over auxiliarx contact Supply voltage DC 24 V
PVREM-...-AF1: 8-pole terminal (spring-loaded)	Change-over auxiliarx contact Supply voltage DC 24 V Three-position momentary switch (I-0-II)

Features and benefits

- Fire prevention through arc fault detection
- Explicitly design for the photovoltaic market and its requirements
- Two basic versions (detect, signal and disconnect):
- One or two pole DC Disconnect with remote control and arc fault detection type PVREM-…-AF1
- One or two pole Firefighter Switch with arc fault detection type PVSEC-…-AF1
- Specified for various system configurations and power inverters
- Arc fault detection (detect, distinguish between serial and parallel, signalling) is available as a customer-specific solution on pcb basis.

DC Disconnecti with remote control and arc fault detection type PVREM-…-AF1

Firefighter Switch with arc fault detection type PVSEC-…-AF1

Example of a customer-specific arc fault detection on pcb basis

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