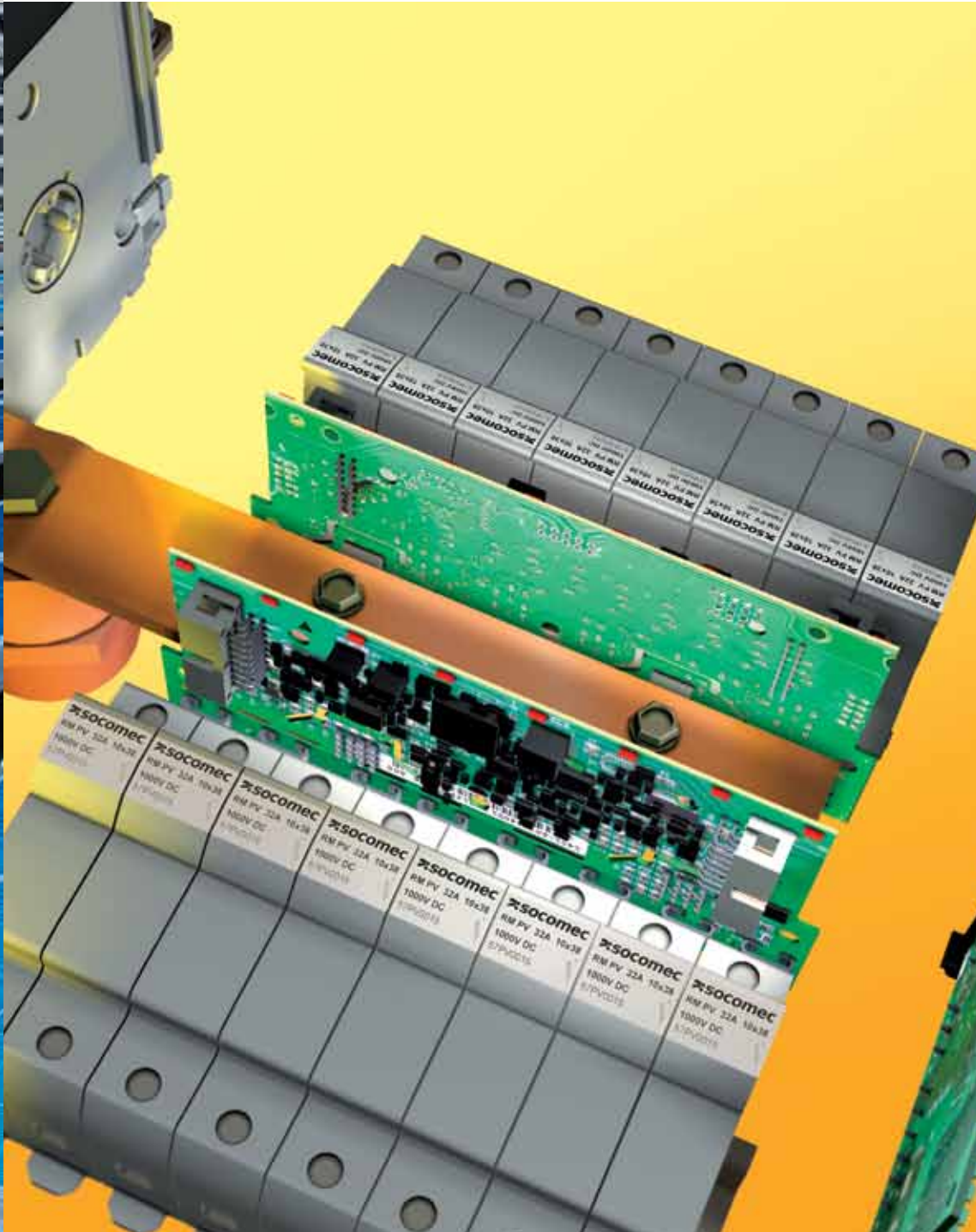


RESYS AFD

PV Arc-Fault & String Monitoring System



your energy
our expertise



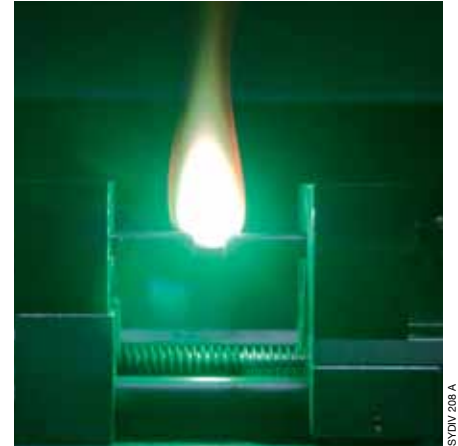
socomec
Innovative Power Solutions

Ensure the safety and efficiency of your PV plant

Defective PV modules and components - as well as faulty cables or connectors - can lead to potentially dangerous arc-faults. Undetected, an arc-fault could result in an electrical fire, causing damage to the PV installation and surrounding property.

RESYS AFD - Arc-Fault & String Monitoring system - is a compact solution for integration within a PV combiner box, designed to detect and interrupt an electrical arc before it results in a potential fire.

RESYS AFD also monitors the PV energy production at string level to reduce energy losses and guarantee the return on investment of the PV plant.



SYDNY 208 A

Causes

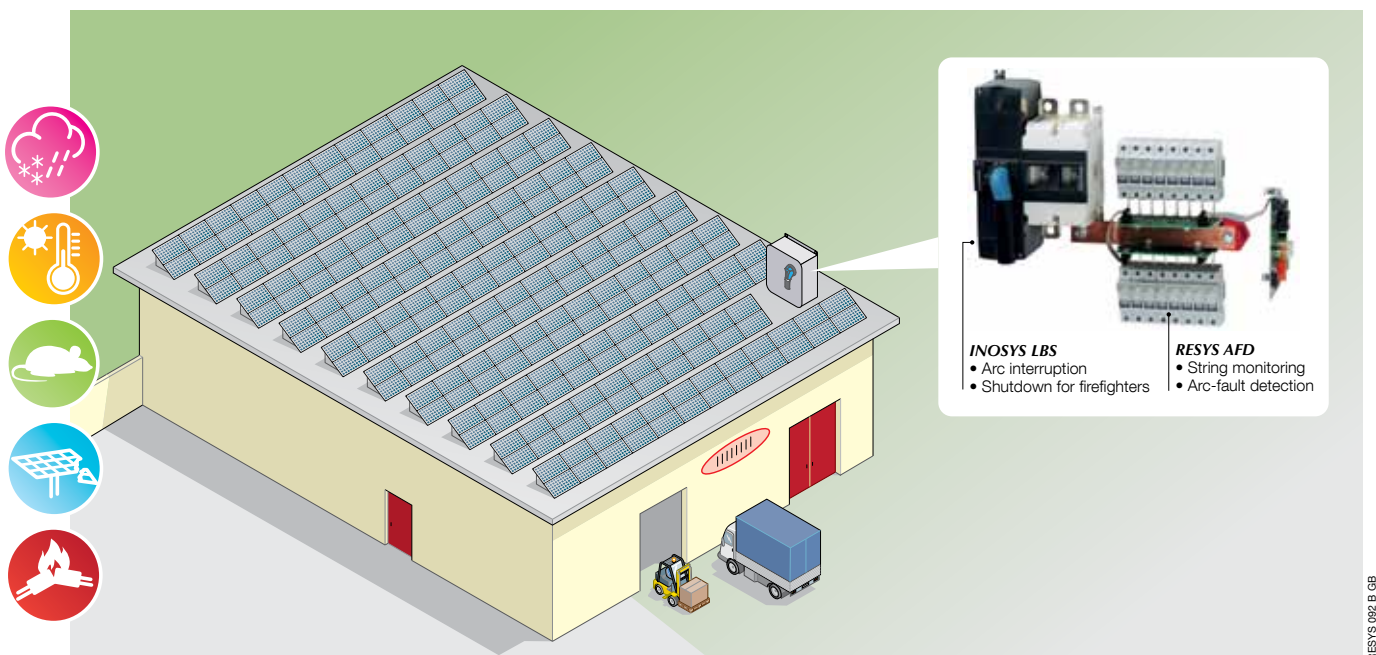
- Stress on PV components:
 - extreme weather conditions (temperature variation, humidity),
 - animal bite.
- Component failure:
 - defective PV modules,
 - mismatching of connectors.
- Installation failure:
 - bad crimping,
 - loose connection screw.

Requirements

To ensure the long term return on investment in PV plant operating in harsh environments, any problems relating to efficiency or safety must be detected as soon as possible, especially if there is a reduction in levels of performance or if electrical arcs should occur. Critical failure such as electrical arc-fault must be automatically interrupted to prevent possible fire hazards. Localizing the cause of the problem must be clearly indicated to reduce the cost of maintenance.

Solutions

- RESYS AFD protects PV systems installed on commercial buildings and on ground mounted plant.
- RESYS AFD provides permanent string monitoring to detect arc-faults and indicates the string involved.
- RESYS AFD interrupts the electrical arc by opening the circuit when used with INOSYS LBS.



RESYS 092 B GB

The benefits



Accurate string monitoring

- Ensures the long term performance of your PV plant.
- Accurate string current monitoring and voltage measurement with a high accuracy ($\pm 2\%$) via RS485/MODBUS using Sunspec Alliance protocol.
- Problem prevention and reduced downtime costs.



Reliable arc detection

- Total immunity to electrical and frequency disturbances (patented technology).
- No nuisance tripping and false alarms, reducing the cost for service call-outs.
- Accurate arc-fault detection and safe interruption.



Easy to integrate

- Compact size.
- Easy integration even in the smallest combiner boxes.
- Compatible with standard BOS components.



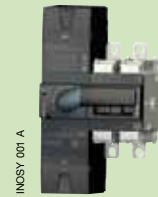
UL1699B compliant

- UL 1699B compliant for both AFD (Arc-Fault Detection) and AFCI (Arc-Fault Current Interruption) when used in conjunction with INOSYS LBS.
- Minimal additional testing and certification is required with new combiner box design.
- Compliance of the PV Plant with NEC 2011 and 2014 article 690.11.

Also available

INOSYS LBS

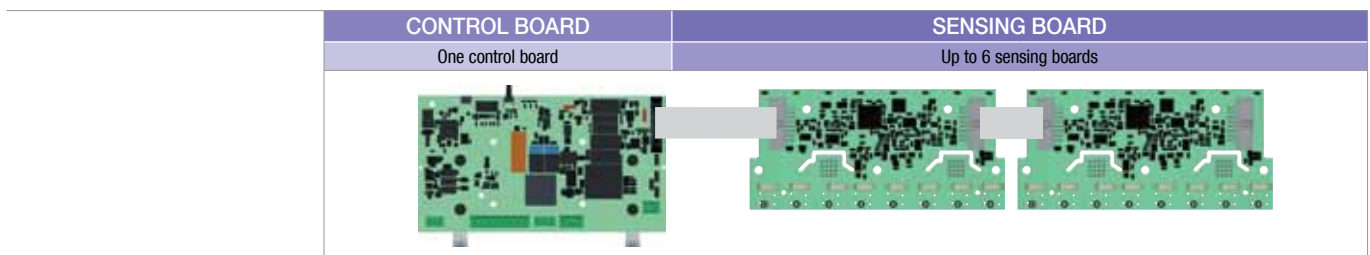
- PV load break switches with tripping function.
- Suitable as Interrupting Device for AFCI function as required by NEC 2014, article 690.11.
- 100 to 1250 A, 1000 & 1500 VDC.



Technical specifications

- DC voltage: 1000 V max.
- Current per string: 12 A max for 15 A fuse protection.
- Power supply: 24 V \pm 20% - 30 mA max.
- 8 inputs per sensing board - up to 48 strings per system.
- Wide operating temperature range: -40 to 70 °C (-40 to 158 °F).

Flexible modular solutions



FUNCTIONS

String monitoring	RESYS AFD C20	RESYS AFD S20 RESYS AFD S21	Fuse cable length: 40 mm Fuse cable length: 80 mm
Arc-Fault Detection	RESYS AFD C40	RESYS AFD S40	Fuse cable length: 40 mm
String monitoring + Arc-Fault Detection	RESYS AFD C60	RESYS AFD S41	Fuse cable length: 80 mm

Technological Partnership



The RESYS AFD arc detection algorithm has been developed with CEA, the French Alternative Energies

and Atomic Energy Commission. CEA is a technology research and development provider, whose role is to transfer this know-how to the industry. Based in ten research centers in France and with a staff of about 16000 people,

CEA is also operating at INES, the French institute of solar energy, covering the complete value chain of photovoltaics: material, cells, modules, PV systems, smart grid and storage systems.

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