toscano

Motorized string disconnect switch for emergencies
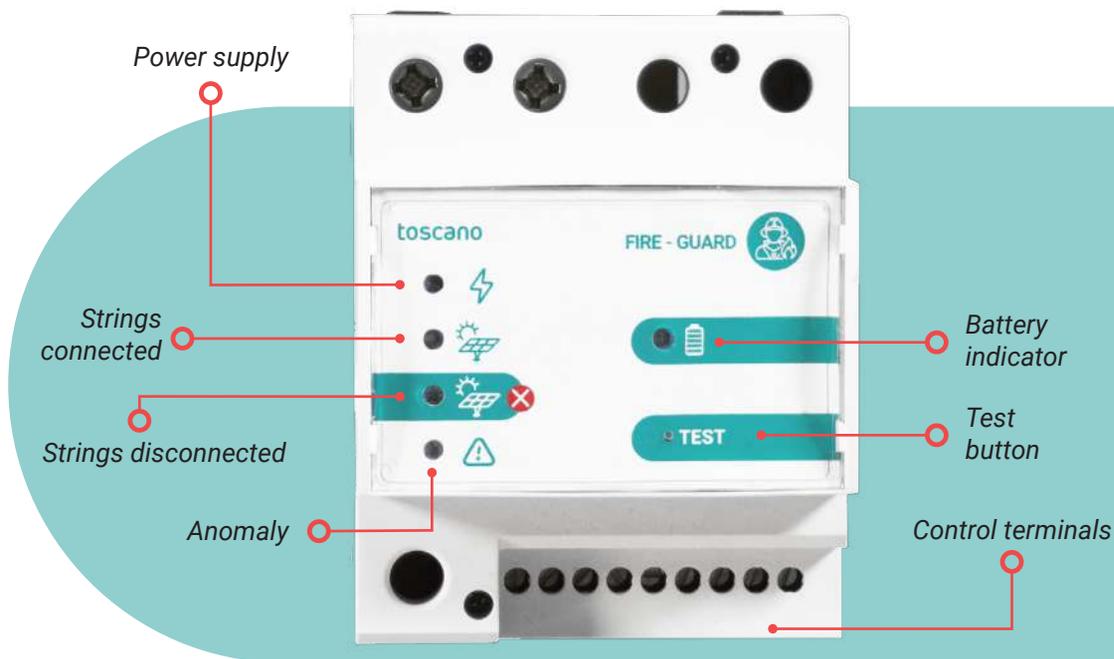
PV-FIRE-GUARD

vigivolt

PV-FIRE-GUARD

COMBI-PRO-FIRE is a safety device for photovoltaic installations that **automatically disconnects** the current flow from the photovoltaic modules to the inverter **when the detected temperature exceeds 80 °C**, **by activation of the fire detection system** or through manual activation of an emergency stop button.

It is designed to **ensure safe intervention by firefighters and maintenance personnel**. Reconnection is automatic once the grid supply is restored, or manual by deactivating the emergency stop button, ensuring efficient and uninterrupted operation.

Control terminals

Input

Output

Status indication

DC circuit breaker–isolator

COMBI-PRO-FIRE

Internal temperature sensor (>80 °C)

MOD. 1000V
MAX. 63A

COMBI-PRO-FIRE features

Remote indication
It is activated when the device trips, enabling status monitoring.

Connection type
Direct to terminal (MC4-free), reducing contact to prevent thermal hotspots.

Manual disconnection
Allows immediate isolation through physical actuation on the unit or via remote emergency stop stations.

Intelligent Safety Triggering
Automated shutdown protocol for thermal anomalies (>80ºC).

Enhanced protection
Magnetic disconnect rated for 10kA, ensuring safe circuit interruption.

Modular device
This modular unit can be easily integrated into existing control panels.

Monitoring and control module for supervising up to **10 COMBI-PRO-FIRE units**, powered at **230 Vac** and featuring an internal battery to ensure operation in the absence of grid voltage. It allows **disconnection via an emergency stop button and integration with fire detection control panels.**

Equipped with **status signaling, anomaly detection protocols, and battery health diagnostics.** These features provide **continuous oversight to guarantee safe, fail-safe management of the electrical infrastructure.**

Power supply

toscano
FIRE - GUARD

Strings connected

Strings disconnected

Anomaly

Battery indicator

TEST

Test button

Control terminals

*Preliminary design: We reserve the right to modify this information without prior notice.

FIRE-GUARD features

1 to 10 Strings
Centralized protection and monitoring of photovoltaic installations from 1 to 10 strings.

Modular device
This modular unit can be easily integrated into existing control panels.

Anomaly indicator
Visual indication of system faults or abnormal conditions.

Internal battery
Internal battery for operation in the absence of grid voltage.

Test button
Allows verification of the correct operation of the system.

Safe zone indicator
Visual indication confirming that the installation is voltage-free.

ECO-FIRE

Panel mounting options

Motorized DC disconnect panel (1000V / 63A) for string-level isolation in high-voltage PV installations. Designed for seamless operational continuity, the unit incorporates an automatic reset mechanism that **restores connection once safety parameters are cleared after a trip.**

It provides a breaking capacity of Icu 10 kA and Ics 7.5 kA, and incorporates a **Safety Lock** system that ensures safe and controlled disconnection, preventing unintended reclosing and guaranteeing reliable operation of the photovoltaic installation.

4-string configuration

Safety Lock
Prevents the device from automatically reclosing after a voluntary opening, in compliance with **UNE EN 60947-2:2018.**

1-string configuration

ECO-FIRE features

1 to 4 Strings
Suitable for the isolation and control of 1 to 4 photovoltaic strings.

Custom string configurations
Fully adaptable configuration designed to match the specific number of strings.

Connection type
Supports connection via MC4 connectors and screw terminals.

Fire Guard option
Optional Fire Guard integration.

How does it work?

1 **EMERGENCY DETECTION**
Designed for proactive safety, the COMBI-PRO-FIRE **automatically trips when ambient temperatures surpass 80°C**. It also provides versatile manual control through strategically placed **emergency stop buttons** or via the facility's fire management system.

2 **DC DISCONNECTION**
When activated, COMBI-PRO-FIRE **immediately disconnects the DC current**, isolating the rooftop strings and preventing the presence of voltage up to the protection panel and the inverter.

3 **SAFE ZONE**
By leaving the installation in a **DC voltage-free condition**, the presence of energy in the protected area is eliminated, ensuring an electrically safe environment for intervention.
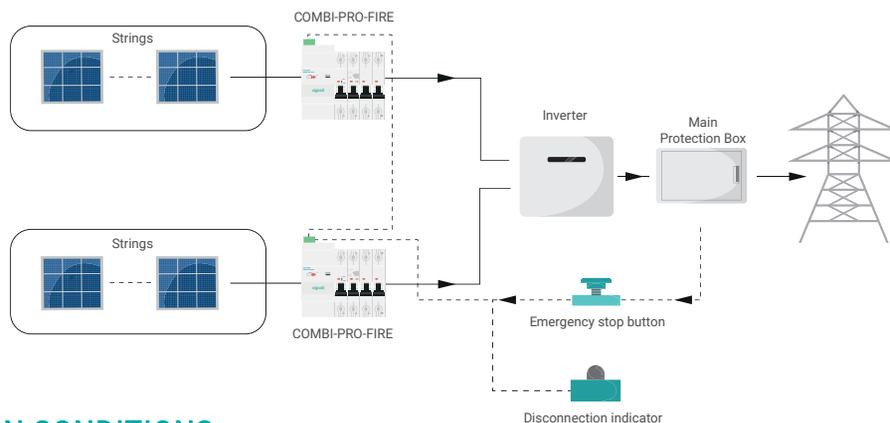
4 **REMOTE OR MANUAL RECONNECTION**
If the disconnection is **automatic**, the system will **reconnect remotely** once normal operating conditions are restored. **If the disconnection was manual**, for safety reasons, **reconnection must be carried out manually** by an authorized user.
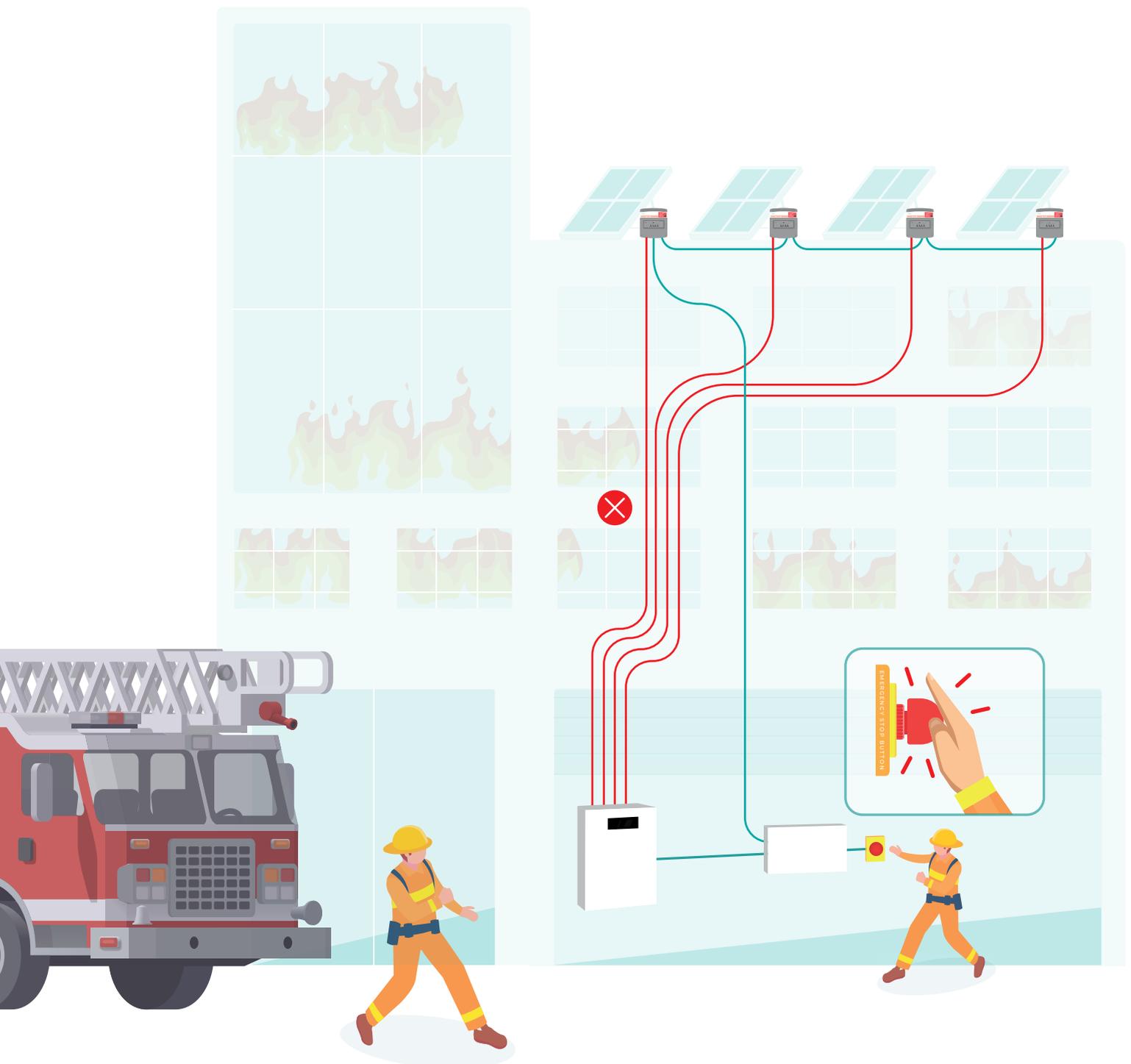
OPERATION SEQUENCE

1 NORMAL OPERATION

2 ACTIVATION CONDITIONS

Over-temperature
If detected temperature exceeds 80 °C.

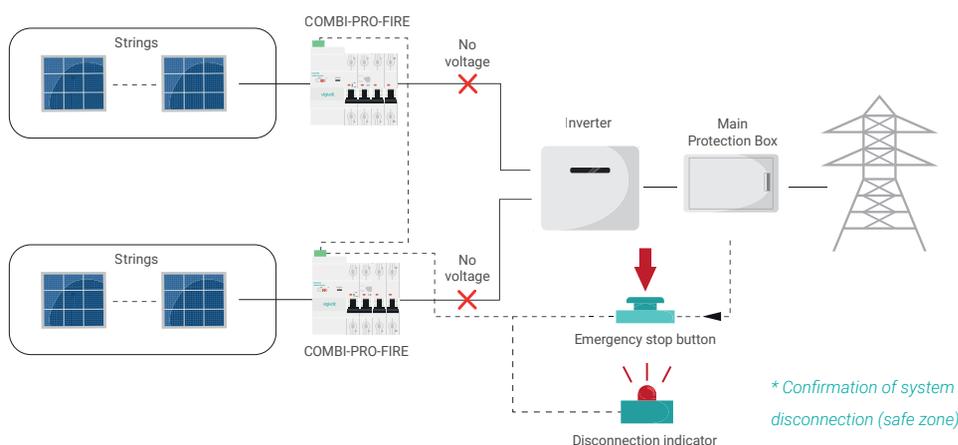**Emergency stop button pressed**
By pressing the emergency stop button from a safe zone.

Fire control panel
By manually disconnecting from the control panel.

3 PROTECTION ENABLED

Confirmation of system disconnection (safe zone)

* Preliminary version: We reserve the right to modify this information without prior notice.

Models

COMBI-PRO-FIRE

Codes	References	Voltage
10005779	COMBI-PRO-FIRE-1000	1000 VDC
10005780	COMBI-PRO-FIRE-1500	1500 VDC

FIRE-GUARD

Codes	References
10006077	FIRE-GUARD

ECO-FIRE

Codes	References	Strings / MPPT
10006093	ECO-FIRE 1I1-1000	1 String / 1 MPPT
10006094	ECO-FIRE 2I2-1000	2 String / 2 MPPT
10006095	ECO-FIRE 3I3-1000	3 String / 3 MPPT
10006096	ECO-FIRE 4I4-1000	4 String / 4 MPPT