

# THE SANTON DOMESTIC FIREFIGHTER SAFETY SWITCH

FOR PHOTOVOLTAIC INSTALLATIONS



**THE SUN PROVIDES ENERGY,**

**SANTON PROVIDES SAFETY**

IN MOST PHOTOVOLTAIC SYSTEMS, THE DC ISOLATOR IS INTEGRATED INTO THE DC/AC POWER INVERTER. AFTER SWITCHING OFF THE DC ISOLATOR, THE CABLES BETWEEN THE DC SOLAR MODULES AND DC/AC POWER INVERTER RUNNING THROUGH THE BUILDING ARE STILL SUBJECT TO UP TO 1000 V DC. IN THE EVENT OF A FIRE, FIREFIGHTERS ARE EXPOSED TO A VERY SERIOUS SOURCE OF POTENTIAL DANGER. THE SANTON DOMESTIC FIREFIGHTER SAFETY SWITCH (DFS) PROVIDES THE SOLUTION. IT DIRECTLY DISCONNECTS THE DC CURRENT IN CLOSE PROXIMITY TO THE SOLAR MODULES AND CREATES A SAFER SITUATION FOR FIREFIGHTERS.



## 5 REASONS TO CHOOSE THE SANTON DOMESTIC FIREFIGHTER SAFETY SWITCH

### 1. GAIN VALUABLE TIME IN CASE OF A FIRE

The DFS works according to standard international firefighter routines, resulting in valuable time being gained in case of a fire. This routine starts by shutting down all AC power in a house. As soon as this AC power is shut down, the DFS will automatically switch off and isolate all PV modules. Firefighters only have to follow their regular routine and do not have to waste valuable time eliminating the risk of the PV modules on the roof!

### 2. COMPLETELY ISOLATE PV MODULES

The DFS is powered by a motorized X-type switch and can therefore be located directly at the PV modules. This minimizes the amount of cabling with dangerous high voltage and leads to a completely powerless situation in the house, maximizing safety when needed.

### 3. AUTO RESET

A power down situation can occur at any time and for many reasons. The DFS has an auto reset function. The DFS automatically switches off if the regular AC power is down and automatically switches on when the regular AC power is on again. No manual reset is necessary every time the power has been down!

### 4. CONTAINS THE WORLD'S MOST POPULAR DC SWITCH

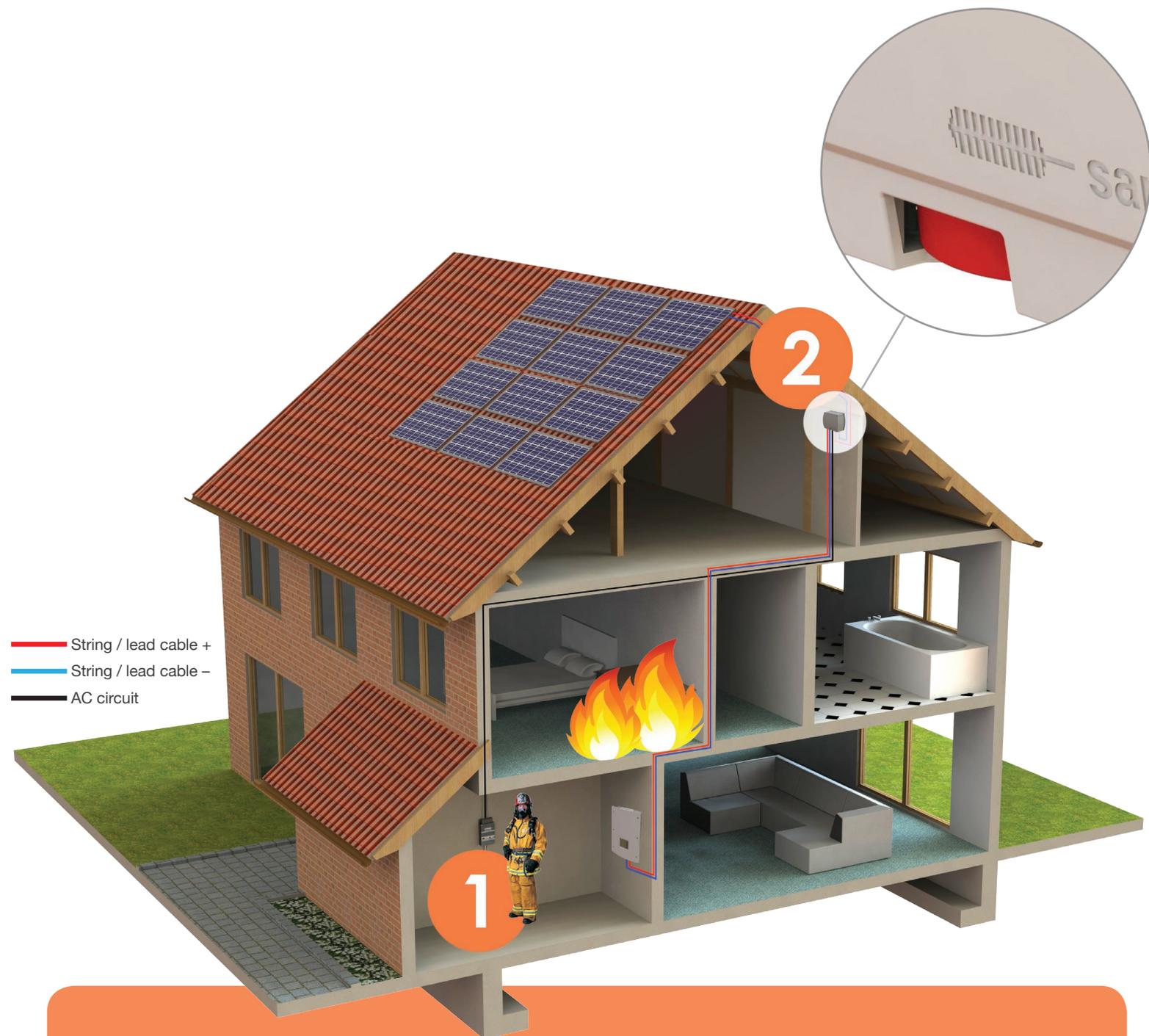
The DFS is equipped with the Santon X-type switch, which is the most popular DC switch for PV applications. The Santon 'snap-action' spring mechanism, with its response time of only 3 milliseconds, reduces the electric arc. In combination with the self-cleaning contacts, this increases durability and safety. Therefore the Santon X-type switch has been selected by many inverter manufacturers as their no. 1 DC switch.

### 5. CHOOSE THE WORLD'S LEADING DC SWITCHGEAR COMPANY

With over 80 years of experience in developing DC switchgear for many different companies in many different and heavy industries all over the world, Santon has proven itself to be a leading DC switchgear company. With the Santon Domestic Firefighter safety Switch, all knowledge and experience come together for you to keep your home, family and valuables safe.

Choose the best firefighter switch available - the Santon Domestic Firefighter safety Switch.

# AC POWER SHUT DOWN = DC POWER SHUT DOWN

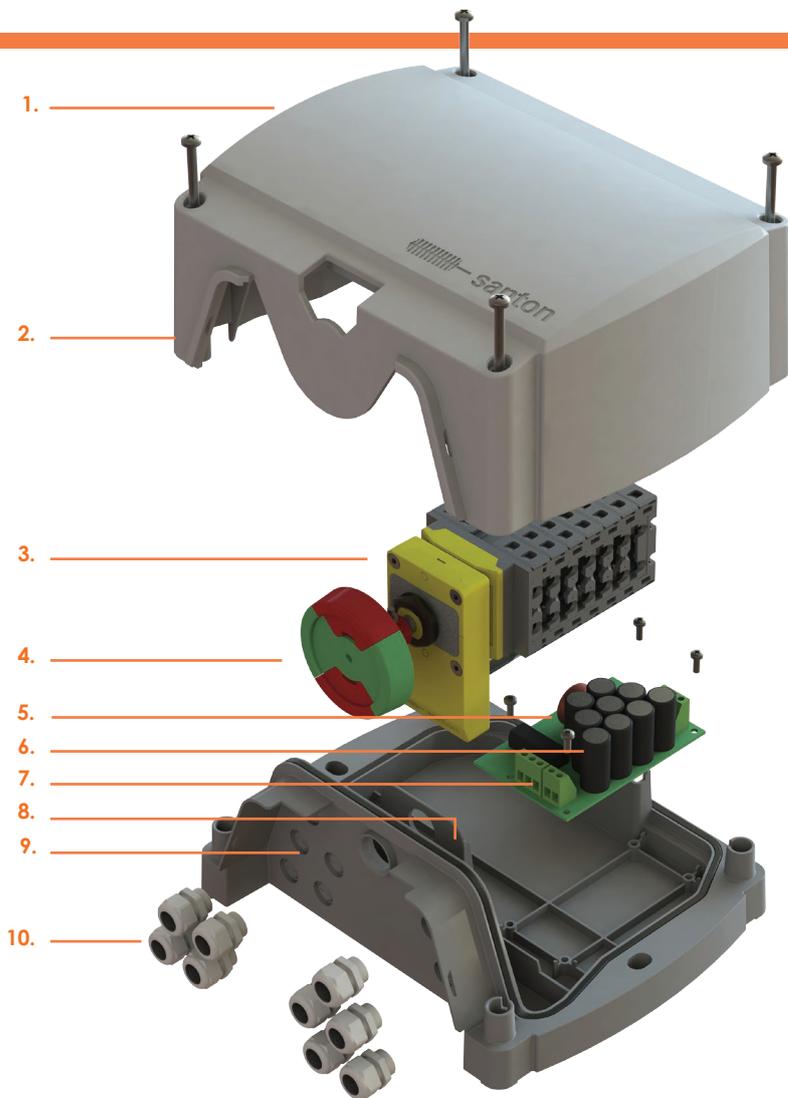


## 1. MANUAL AC POWER SHUT DOWN

The first step for any firefighter in fighting a fire is to shut down the main AC power circuit. This makes it possible to start extinguishing the actual fire without the risk of electrocution. Santon developed the Domestic Firefighter safety Switch according to this standard international safety routine. This prevents firefighters from having to take any extra action in case of a fire, maximizing their and your safety in the event of a fire.

## 2. AUTOMATIC DC POWER SHUT DOWN

As soon as a firefighter shuts down the main AC circuit, the DFS will detect this. If this power down situation lasts longer than 5 seconds, the DFS will automatically switch to the OFF position. Since the DFS is located close to the PV modules, the high voltage DC current from the PV modules will be completely isolated, which leaves a safe situation for the firefighters when fighting a fire in the house.



### 1. ROBUST ENCLOSURE

IP65 watertight / UV resistant / Designed for optimal switch access and ease of installation

### 2. SAFETY SEAL

Possible placement of safety seal for controlled maintenance

### 3. MOTOR-DRIVEN X-TYPE SWITCH

Santon's reliable X-type switch / Switch disconnection within 3m.sec / minimum arc / maximum lifetime

### 4. MECHANICAL POSITION INDICATION

Visual feedback of the switch position (GREEN/OFF and RED/ON)

### 5. TEMPERATURE SENSOR

The DFS will automatically switch to the off position in case the temperature rises above 100°C

### 6. POWER SUPPLY (UPS)

Power supply unit for remotely operating the switch

### 7. POWER CONNECTION

AC power connection for charging the power backup and for optional integration with a fire alarm system

### 8. PRESSURE EQUALISING VALVE

Avoids condensation inside the enclosure and ensures maximum endurance and lifetime

### 9. KNOCK OUTS

The DFS is supplied with 10 x 12mm knockouts

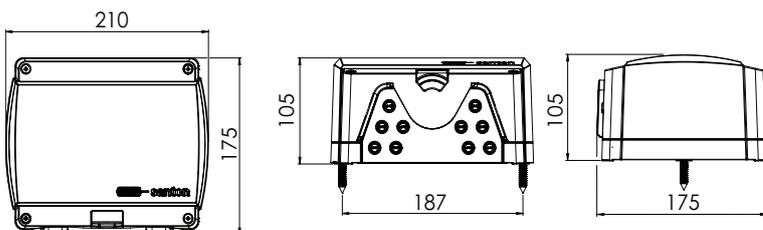
### 10. CABLE GLANDS OR MC4 CONNECTORS

The DFS can be ordered pre-wired with MC4 connectors or with separately delivered cable glands M12

Ratings according to IEC 60947-1&3 DC21 B based on switching both the + and the - pole:

V DC	1000	850	800	650
A	16	20	25	32

Type DFS	Number of strings	Number of poles	Specs
DFS-1	1	2	Unit with knock outs
DFS-1-W	1	2	Unit with cable glands 5 x M12
DFS-1-MC4	1	2	Unit pre-wired with 4 x MC4 connectors and 1 x M12 cable gland for AC
DFS-14	2	4	Unit with knock outs
DFS-14-W	2	4	Unit with cable glands 9 x M12
DFS-14-MC4	2	4	Unit pre-wired with 8 x MC4 connectors and 1 x M12 cable gland for AC



## ALSO AVAILABLE! THE ARC FAULT DETECTION UNIT

Fire in general can be caused by many things. Within PV installations however, electric arcs pose the biggest risk. Damage, erosion or bad wiring can easily cause electric arcs, which are responsible for the majority of all accidents involving electrical failures.

The Santon Arc fault Detection Unit (ADU) detects electric arcs and gives acoustic and visual feedback for you to take appropriate action and resolve the issue before it escalates.

For more information ask your local supplier or visit

[www.santonswitchgear.com](http://www.santonswitchgear.com)



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