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SolteQ

***Safety and fire prevention
system for
photovoltaic systems***

SolteQ-
PV-Power-Switch-BFA
+
Anti-Theft-System DSS

News from the past:

„Fire brigades refuse to extinguish fires when a PV module is present because of dangerous high voltages....“ ... that's history now !

The **safety system BFA** is an independent system for **emergency power down** in case of fire. In case of fire the whole system will be short-circuited automatically and safe by a mechanical safety contact. Even for service works the hole solar system or single strings can be simply power downed and up again.

By pushing a button or fully automatically in case of fire the system realize a short circuit directly at the terminals of the solar module. So the firemen can do his work without any worry of dangerous high voltages.

A photovoltaic system is a real generator !

While normal operation a PV-system produces voltages up to 1.000 volts. These voltages are absolutely dangerous. Day for day brave firemen risks her life to blow out fire on buildings with PV-systems on it. In case of mission there is no time to loose to look for a DC-switch or search for cable run. Even a DC-switch gives no safety, because the dangerous voltages are still existing up to the DC-switch.

With the new **PV-Safety-System BFA from SolteQ** it is possible to guarantee 100% safety !

In case of fire the system will be power downed within 50 milli seconds ! The firemen can do his work, without any thoughts for the high voltages.

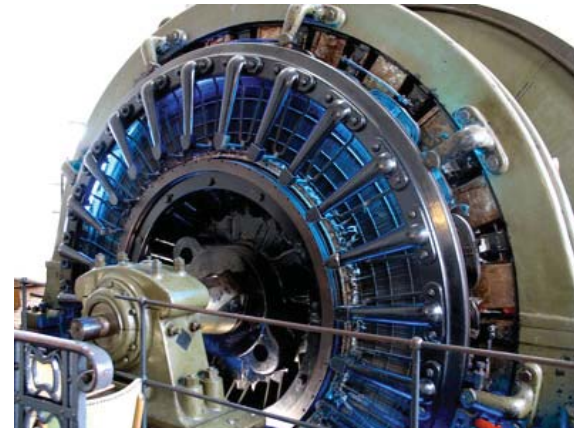
In the same time there can be automatically opened the factory gate to make sure free access for the firemen.

... the perfect safety system !

Brave firemen risks their lifes to rescue our goods and chattels. We must protect their lifes !

Automatically oder via pushing a button, the system shortcuts each module directly, so the hole solar plant will be absolutely free of any voltages.

... to protect our fire brigades !



Safety Power Switch - BFA - at first instance: personal protection !!

A photovoltaic system ist a real generator. Such a generator is always a hazard for life. Even to quench the fire is very dangerous, because the water can close the electrical circuit. A switch of by a DC-switch brings not a real safety, because the dangerous voltages are still in the strings up to the DC-switch. In case of fire the switch must be searched inside a burning building.

Much easier is, if the power down process takes place automatically without any thoughts of the firemen.

The power down process can be started manually by pushing the button for service works. You can power down the hole solar system, but also single strings. A permanently risk of electric shock for the fireman is existing if the dangerous high voltages gets water contact.

The new **SolteQ Power Switch BFA** switches in case of fire within 50 milli seconds the complete solar system to power down modus.

Fire prevention

Easy and safe !

Power down and power up, automatically or manual !

From the module up to the inverter - zero voltage!



For maximum safety !

... highly recommended by firebrigades and insurances !



Emergency system for your solar system

For maximum safety !



SolteQ-Power-Switch makes your PV-System safe !

Every PV-System should have an emergency button !

The SolteQ-BFA-System ist not only a emergency system, it has also practical features to control and handle a PV-System.

Developed conform to latest standards for safety and personal protection, our engineers designed several functions to handle the PV-System safe and makes the work with it absolutely harmless.

Even the installation, maintenance or cleaning works of a System can be done without any danger.

The system works with a special safety contact and guarantees a galvanic isolation o from the solar system of 5kV. This makes sure, that the safety system cannot have an effect to the solar voltage.

Furthermore relevant standards in the industry specifies that a safety system may not work with semoconductors, but a robust mechanical contact.



The Emergency system for your Solar system

Acquired surplus with clean modules !

SolteQ-BFA is available as retrofit (BFA-Box) or even as integrated Junctionbox for PV-Module-Manufacturers. Ask your dealer for PV-Modules with integrated BFA-Safety-Switch. He surely will help you.

The SolteQ-BFA-System is developed as low cost and practical emergency power down system for photovoltaic systems. Even the installation is done very quick and easy.

The module integrated version outlines the ideal solution for new system, because everything is already inside the module. Only the button is outside !

With very low expense you wil get a high-end PV-System.

An absolutely MUST HAVE for every PV-System !

Maintenance + Cleaning + Snow clearance + Emergency case

Clean and safe Energy

... with SolteQ



Installation of new Systems with SolteQ-Power-Switch

SolteQ-Power-Switch-BFA - Installation of new systems without risk of electro shock

Everyone, who has mounted and connect modules knows it:

There are high voltages in the system.

Once the the sun begins to light the modules produces energy. With connecting module for module the voltage goes higher and higher.

Switch the modules easy off and begin to install without any danger of high voltages !

Another hidden danger:

If the connectors will be plugged together under voltage small or big electrical arcs will be occurred, even if the inverter is not connected.

To be honest: in practice not even all runs conform to standards. Connectors will be plugged even under load.

These arcs damages the tin surface inside of the connectors and produces long term risks which makes itself felt after years. Every small or big damage of the connectors tin surface makes that the contact resistance raise up and up with time.

This cannot happen if the module voltage is switched off completely by installing.

Press the button easy before plugging the connectors.

Installing and start up of a new system without any risks !



E VDE-AR-E 2100-712:((2010-09)):

„A DC-Load interrupter switch reg. DIN VDE 0100-712 (VDE 0100-712):2006-06 is not required anymore.“

-> Safe cost with SolteQ !

conform to safety standards IEC60364-5-537 and VDE0100-537 and VDE-AR-E 2100-712

Conform zu Sicherheitsnormen, f.e. IEC60364-5-537 and VDE0100-537, which specifies, that an „Emergency-Stop-Device“ may only realize the break with a robust mechanical contact, and not with a semiconductor.

By plugging the connectors together the connectors can be damaged.

Little or bigger electrical arcs inside the connectors can damage the contact surface, what can result a long term contact problem.

This is not only a problem for the connector, also for the installateur.

With help of ther BFA-System these risk will be prevented, by switching of the modules. So the connectors can be plugged under voltage free conditions.

Zertification

The system was proved and certified as real safety system by the independent testing center **TPS-Intercert** (Technical testing center for solar technics, Test labor of BessteQ GmbH).

The system is conform to following safety standards:

IEC60364-5-537 bzw. VDE0100-537

Conform to standards:

VDE-AR-E 2100-712

IEC 60364-7-712 (VDE 0100-712):2011-04



Renewable Energy Technical Institution



proved



Cleaning of the modules with SolteQ-Power-Switch

... brings more profit !

SolteQ-Power-Switch-BFA - Safetey while cleaning the modules

Modules gets dirty with time, what results great loss of energy and benefit.

Dust, rain, environmental damp, chimney soot set down on the surface and hinders the light to reach the solar cells. Light energy can not be used 100%.

Clean your modules every year !

After 2-3 years the efficiancy will drop up to 30%. Because of the high voltages in the system the modules cannot be cleaned with normal water. New connectors are waterproof. But after some years in every system leakages will come up. This is the reason, why cleaning works are done by expensive spezial companies wil demineralized water with spezial tools.

The **SolteQ-BFA-System** allows the cleaning with normal water and simple for **very low cost**.

So the cleaning can be done often and by everyone.

In the picture the difference after one year is shown very well.



The cleaning works will be payed by himself, by higher benefit !

tools, like a simple brush and

Cleaning with simple tools !

Acquired surplus with clean modules !

Don't loose money !



Clean your PV-System for low cost and often !

... completely free of danger and voltages.

... simply with water and brush.

... only a clean system gives a right benefit !
... and pays the cleaning by himself.



Maintenance / Snow cleaning with SolteQ-Power-Switch

Maintenance works

A PV-System produces to the normal working times of a service technician always high voltages. A switching off of the standard „DC-Switch“ eliminates NOT the voltages. Maintenance and service works can be done under full voltage and danger free conditions, if a BFA-System is installed. With one press on the button, and no more fear of electrical shock.

Also single strings sectional parts of the PV-System can be switched of, without loss of benefit of the total system.



Show cleaning

„Man lies motionless on the roof“

This was the headline lately in the newspaper.

What happend:

While snow cleaning works the man get a electric shock by contact with the snow pusher and damages a solar cable. This results a electrical shock because of the high voltages, which are present on all components of the system. In case of a damage or any leakage the voltages can come over.

A simple crack in the glas front or leakage in the silicon seal or even in a connector is enought. The cables can be damaged by a bit of a marten. Or even by a little damage while service works.

Surely there will be situation, which cannot be thought about. But all these scenarios are possible and can become a very dangerous situation !

All risks must be eliminated - without any compromises !

The voltages should be switched off directly on every single module. That's the only way to handle a PV-System safe and secure.

**MADE
IN
GERMANY**

... 100 %



Please ask us:
Service-Hotline
05933/ 92 48 101
or
vertrieb@solteq.eu

We would like to help you !



For emergency ...



... and maintenance



... quick and easy



... and low in cost

Horse stables

A PV-System is a real power generator and out-lines a big danger for stables !

A PV-System is absolutely an environmental confirm and profitable invest. But it must done correc t !

Do not risk the lifes of your worthfull animals !

Hay and straw and their dust in combination with electrical devices are a dangerous combination.

Even if these devices produces heat or can be overheated in case of a malfunction.

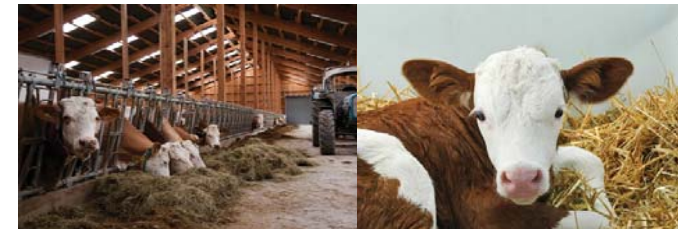
If you set a PV-System on the roof of your animals, please do everything to provide maximum safety for them.

SolteQ has a high interest to provide maximum safety for humans and animals life.

The SolteQ-BFA-System is equipped with all important features. The specific required sensors and many other component please find in the rich pallette of accessoires.

Please ask us - we are happy to help you !

Please ask also for the spezial brochure „Horse and other stables“



And please do not forget the smoke sensor !

A smoke sensor should exist in every room and stable. A simple and cheap tool, but very practical !



Inverter in / at the stable

are mounted in the most cases on flammable underground, like wood. Inverters become very hot in case of malfunctions and cause a fire.

The inverters are of plastic and very well flammable. Plastic is pressed fossile oil, wich is very good flammable.

What happens: Inverter overheats, plastic begins to burn, burning plastic drops fall down, where hay and straw is located and everything goes it's way ...

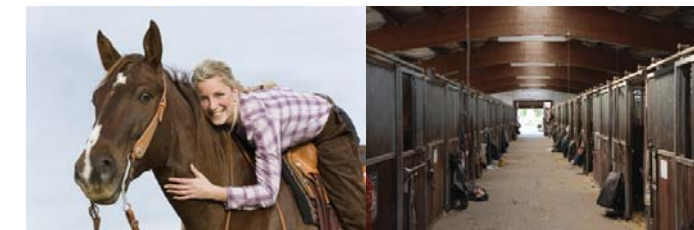
With help of a SolteQ-BFA-System the temperature of the inverters can be monitored. In case of a overheating the modules will be switched off automatically so that the power supply will break. This results, that the inverter do not heat up to a flammable point.

With very low cost maximum safety and a catastrophe can be prevented - Please ask us !



Our animals needs our protection !

Even if we put a dangerous power generator on their top. Do not wait - safe your fosterlings !



Functions

Safe, redundant and autarkic power down of the modules !

Each solarmodule gets his own safety box BFA. The swiching process takes places directly at the terminals of the solar module. The solar module is beeing short-circuited safe and redundant by a real mechanical safety contact, so there are absolutely ZERO VOLT everywhere in the system.

Our engineers has focussed during the developing works safety and intrinsic safety of the system.

The BFA-Boxes are developed for a long life time. In the inside there are no processors or complicated circuit. Only a few components make it possible to realize a very small own consumption of each box with ca. 1mA. This is less than a LED on a TV.

The supply cable is a additional safe point. In case of a dangerous electric arc the supply cable will be damages by the burning. This makes that the supply voltage drop and the boxes switch off the sources of the energy and the arc will be killed.

Even on a loss of the supply cable of the safety boxes, for example by fire or cutting via axe or switching of the supply of the building, the safe power down is guaranteed autarc by stored energy.

This state will be hold permanently up to switching on the supply voltage again by turning the key.

This concept makes it possible to safe power down even a very big system simply by pressing the button and power up again by turn the key, complete without any damages on the modules

... developed for maximum safety !

Fail-Safe-Function + full automatic power down within 50mS !!

14 ways for safe power down

The Solarmodules will be switched off one by one if

1. the grid energy supply of the building is switched off
2. the fuse is switched off
3. the datacable of the BFA-System is damaged by fire
4. or is cuttet by knife
5. the master or slave emergency button is pushed
6. a alarm signal from a fire central or smoke sensor is setted
7. the datacable will be cuttet from the roof
8. the modules fall down from the roof
9. one of the system components fail (fail safe)
10. the water sensor gives an alarm
11. the arc detector gives an alarm
12. remote controlled by SMS or handy app
13. by the inverter, if it gives an alarm
14. over a temerature sensor on the inverter

... and keeping switched off up to turning the key again !

Every System should have an emergency button !

Galvanic isolation: 5kV !
Completely independent system. No effect to the PV-Voltage in operation.

Easy power down, also for maintenance and service works - Single string power down

Even service and maintenance works can be done with zero dangerous of high voltages. A single string or even the complete solarsy-tem can be power downed easily only by pressing the button. The works can be done and after that the system can be start up again easily by turning the key.

Automatic power up after grid supply loss

A short loss of the grid voltage up to 2 seconds will have no effect. If the grid supply fails longer period and comes back, the BFA-System starts up the system automatically again.

Automatic power down in case of flood

The flooding sensor is for territories which are endangered by floodings. The sensor detects the water and sends a signal to the central station which switches the modules off. DC-Arcs will be killed automatically this way.

Very practical even while installation and start up of a new PV-System

The installation process can be done under complete voltage free conditions !

- No more danger for the worker
- no more predamages on the connectors !

If the workers plug the connectors under voltages up to 1.000 Volts together, the connectors will be predamaged, because of arcs and oxidation in the connecting process. Predamages on the connectors can come up to a point of source of fire after long time !

With the SolteQ-BFA-System no connector need to be damaged by switching off the voltages and then plug the connectors !

... first power down, then connect, and at least: **Power-ON !**

Functions

Quick and easy !

Easy to install: Connecting the modules cables to the BFA-Box and the Box with the next box - that's all !

The BFA-Box works on module level and makes a shortcut to each module if the button will be pressed.

Power down the PV-System by pressing the emergency button or switching off the AC-Switch

or

automatically by smokesensor or other sensors

Power on again easy by turning the key

... without any damages on the modules



Safe and quick poer down !
... in every possible case

Complete or single string power down

Maximum safety with tri-redundance and fail safe function

Modules with integrated safety system



+



... the perfect solution for new systems !

Plug & Play !
Easy installation

...easy, safe and brilliant !



1. The emergency button & basic station HMDK

With a emergency button the system can be power downed from the entrance of the building. Important seconds can be safed this way.

Contact load: max. 300 BFA- oder Stringboxes
With Switch-Relay: No Limit

2. The emergency button as central station HMZ

The emergency central button HMZ is in same time the basic station of the BFA-system. This includes all inputs and outputs.

Inputs: • external alarm input for fire station or smoke sensor
• Additional emergency buttons (Slave)
Outputs: • potential free contact

The potential free contact can be used for the display, gate control or other things.

Technical data Basic station (Master/Slave)

Dimensions: 133x133x36mm
Protection class: IP44, IP55 on request
Power supply: 12V via Adaptor
Own consumption: 1 VA
Max. count of
BFA-Boxes directly: 1.000 pcs.
BFA-Boxes via auxiliary relais: - without limitation
Ambient temperature: -20 ... +85°C
Specification: EN54-11, Typ B



up to 20 years
warranty for the
electronic possible,
standard: 2 years



Emergency button HMDK



Emergency button /
central station HMZ



**Works nearly energy
neutral !
Needs no energy from
the solarsystem**

Standardversion (MC4)



Technical data BFA-Box

max. count of boxes: unlimited
Dimensions: 76x76x25 mm
Protection class: IP65
Power supply: 18..30V via data cable
Own consumption: < ca. 0,014 VA /1,2 mA per box
Switching capacity: 800W (40V/20A .. 80V/10A)
Ambient temperature: -40 ... +85°C
MTBF (mean time between failures): 57 years
Certification: TPS Intercert TS00119101
Conform to: IEC60364-5-537 bzw. VDE0100-537
und VDE-AR-E 2100-712



Version, horizontal
(used for foil modules)

Watersensor

Watersensor

In case of a flooding parts of the PV-System in the water can become dangerous.

- Production of hydrogen (explosive gas)
- Danger of electrical shock
- Danger of fire

The BFA-Watersensor mounted in knee height position detects water and gives a signal to the central station, which switches the PV-System off.

-> **No more danger in case of flooding !**

Fire prevention

Overheated cables, damages on the cables caused by wind scrubbering or open spots by marten bits can become quick to a short cut which becomes a very dangerous DC-light arc.
A DC-light arc is greatly feared, because he can be over 6.000 °Celsius. In most cases it causes a fire.

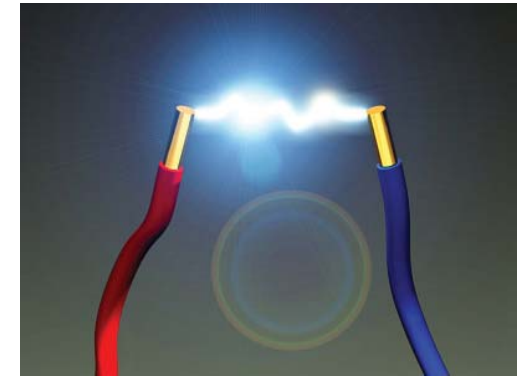
With the several functions and possibilities of the SolteQ-BFA-System a fire can be prevented very simple by killing the arc automatically in his starting process. Even the datacable of the BFA-System works as a long „cable sensor“. This cable sensor will be damages, long before the solar cables will be damaged by fire. A damage of the datacable results the switching off of the system.

Inverters can also be monitored. In case of a overheat, the PV-System will be switched off and the energy for the fire will be switched off, long before a fire comes up.



It will be recommended to switch also the AC side of the system off, with help of a AC-Relay.

In the rich portfolio of accessoires you will find the right solution for every need.



A DC arc should not be lowballed. It can produce over 6.000 ° Celsius and can not be killed with the normal tools of a fire brigade, even not with water or foam.
Only to switch of the power supply is the only way to kill a DC arc.



**Watch out !
„Switching off“ is not al-
ways „switching off“ !**

A safety system may only called, what provides really safety !
In the standards IEC60364-5-537 bzw. VDE0100-537 is described exactly, how a real safety system has to work. It describes, that the switching component must be a robust mechanical contact and not a semiconductor. A semiconductor can not guarantee a long life and long term reliability.
Only a spezial mechanical contact can provide a real safety !
Even a switching off the cables between the roof and inverters is absolutely not enough. In this case on the roof and Modules and cables the voltages are still existing in full level (!)
The SolteQ-BFA-System is a real safety system, developed with eye on safety and practical functions. It eliminates all voltages - **from module up to inverter and grid entrance point !**

**conform to safety standards
IEC60364-5-537 and VDE0100-
537 and VDE-AR-E 2100-712**

Top quality ✓

Installing the SolteQ-Power-Switch-BFA-Box

Schema of installation for upgrade an existing system

The connection is very simple, the boxes are completely prepared with all needed cables.

Mount the BFA-Box:

-> Plug the connectors, clip the Box onto the back of the module - that's it !

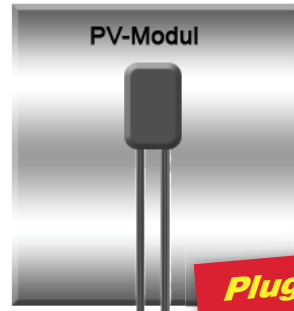
No additional cable needed !

All cables are pre installed on the boxes in the needed length. Only the cable from Master-Button to the first box on the roof must be laid. This cable is a additional

predetermined breaking point. In case of a beginning fire, this cable will be damaged before the solar cables burn out. The BFA-Boxes detect this and switch the modules off.



Easy to install with the metal clip on the backside of the BFA-Box



**Plug & Play !
Easy
installation**

Maximum safety !

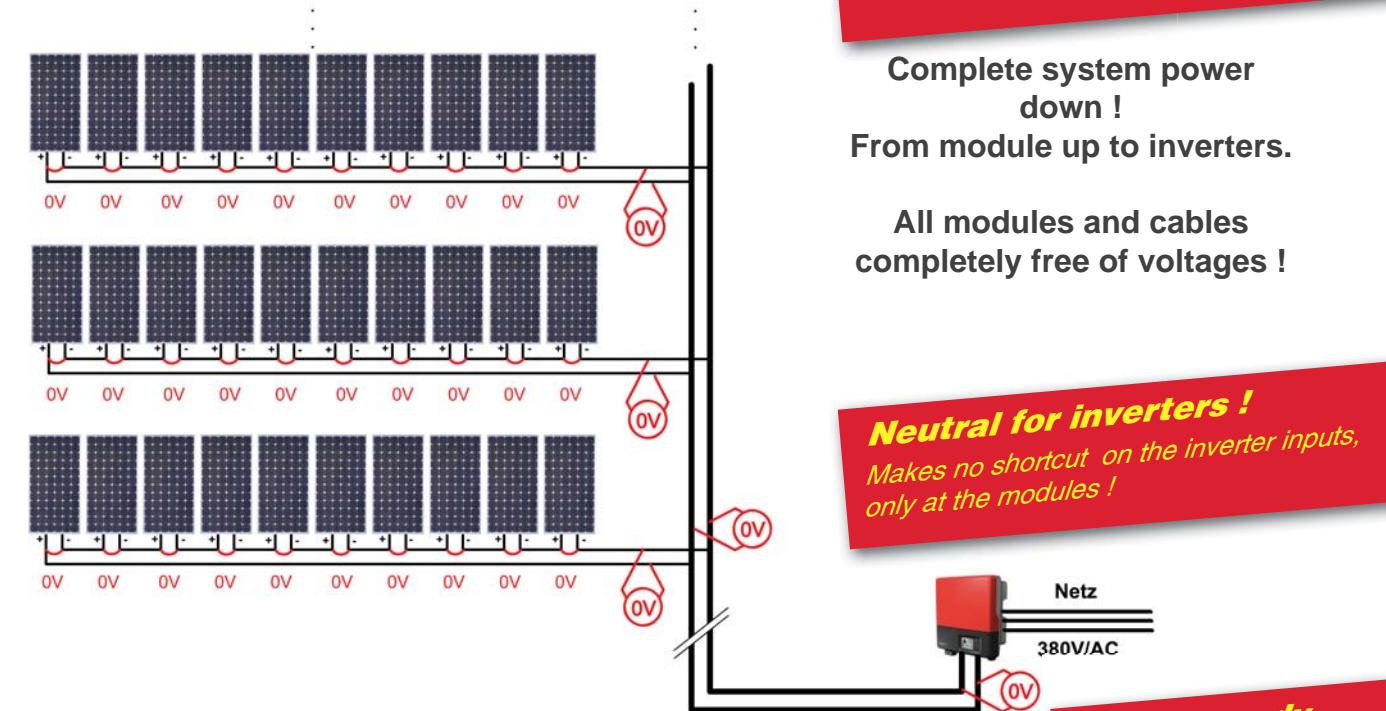
Fail-Safe-Function

The power down of the module is done by short cutting the module directly at its connections. Each module will be switched off in this way quickly and safely so no voltage can be produced anymore. Even in case of a malfunction of a system component or the data cable of the BFA-System, the system switches automatically in the safe mode.

An important feature of the BFA-System is the tri redundancy. There must be a defect at three BFA-Boxes in the same string at the same time, to get dangerous voltages over 120V. But the probability for this case is very low, because the MTBF (Mean time between failures) of the system and each box is 57 years.

Connection

Schema



Connection

The connection of the data cable is also very easy:

All modules will be plugged in series or parallel on the data cable. The order does not matter.

An Emergency-Master-Button (= Central unit) can handle up to 1.000 BFA-Boxes. If more boxes are needed, no problem. With help of an Extension Relais the count of the Boxes is not limited. Further there can be used many slave buttons, for example on several entrances of a building.

Start up of a new PV-System

Without a SolteQ-BFA-System the connectors will be predamaged by connecting the plugs under the existing high voltage of the system. In this case arcs come up and make oxidation damages on the contact surfaces of the contacts. Longterm this is a very dangerous point, because a defect connector can cause contact problems and at least eventually a fire.

This is not only inconvenient for the contact, also for the worker.

With the SolteQ-BFA-System a damage of all contacts will be prevented by switching off the system voltage and connecting the connectors after that

Further practical functions

• Integrated string diode
... the external string diode can be saved

• Cooling

The BFA-Central unit offers an output to switch on an automatic fire extinguishing system. So the fire can be possibly killed before the firebrigades arrive.

• Gate control

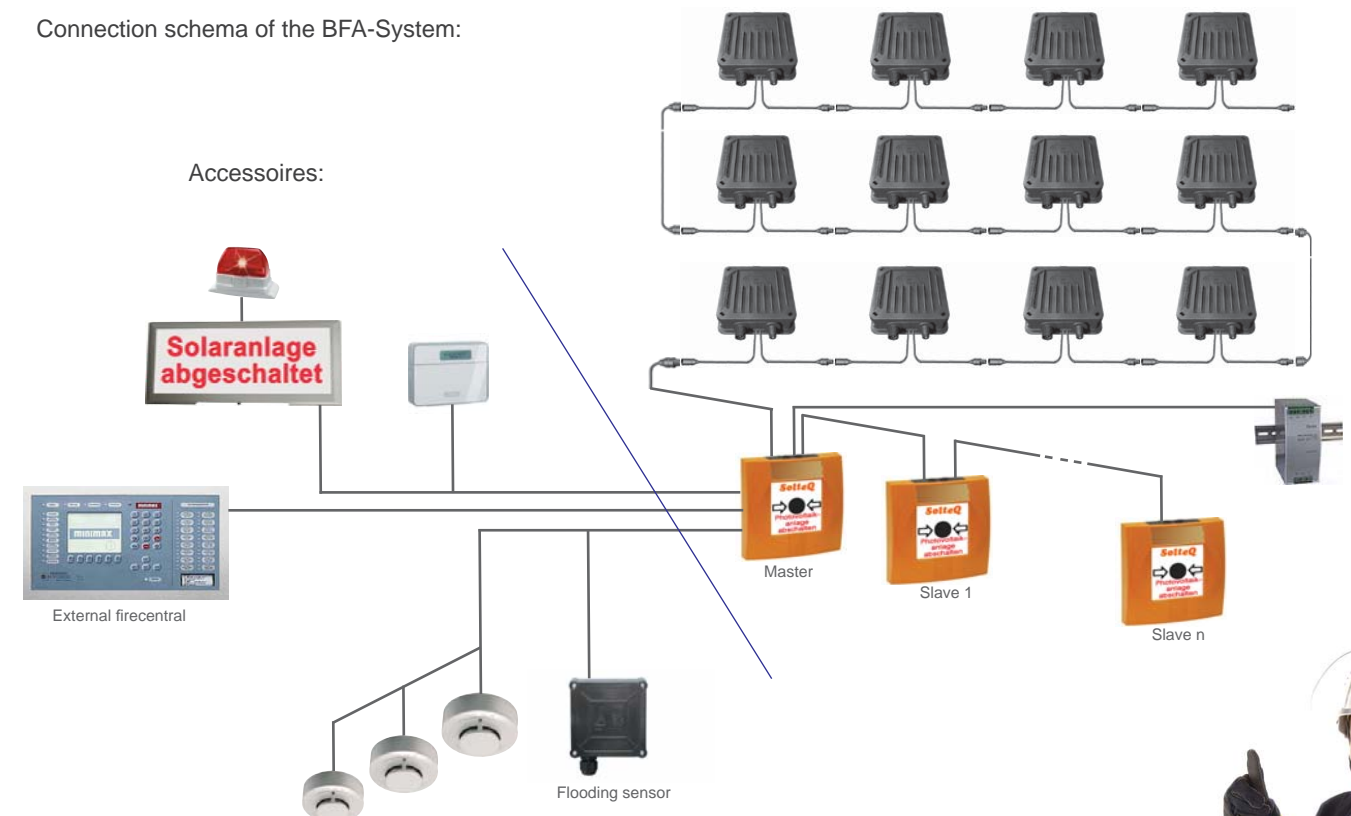
In case of fire a gate can be automatically opened to make the way free for the firefighters

• Warranty extension

If desired the Warranty can be stretched up to 20 years

**Start up and installation of
a new system now
VOLTAGEFREE !**

Connection schema of the BFA-System:



SolteQ-BFA - Firemen's best friend !



The new Handy-App for iPhone

Switch your PV-System from any distance !

Alarm or status information will be send from the system directly on your smart phone via SMS. So you can switch the complete system on and off from every place in the world and get directly a status back.

In emergency cases the firebrigades can also switch the system quickly, even if you are not at home.

Give your IP-Code to your firebrigades and you get safety everytime.

Do not forget: Your PV-System is a real generator !

And more practical functions:

Beside of the main function to controll your PV-System, the SolteQ-BFA-Safety-System provides much more practical things.

With the brandnew SolteQ-BFA-App for your Handy, you can switch on and off several further devices or receive Alarm states and more.

Use your handy as remote control and switch your gardenrainer or garden- or houselight easy on or off.

Or activate your alarm system with a button. You can recall your system status from everywhere in the world and get info if any device is active or not.

The receiverunit has got 4 outputs for 230V-devices and 6 inputs with potentialfree contacts. Up to 4 devices can be switched easily with your new „remote control“.

... Your new remote control !



SolteQ iPhone-App

Module-Junctionboxes with integrated Power-Switch-BFA

Für den PV-Modul-Hersteller: Die SolteQ-Protector-Boxen

Die Ideal-Lösung für Neuanlagen ist eine, in die PV-Module bereits integrierte Sicherheitsabschaltung. Die neuen Protector-Boxen-Serie, bietet für jede Anforderung die richtige Anschlussdose. Um eine bestmögliche Qualität zu gewährleisten, stehen hochwertige und bewährte Anschlussdosen von renomierten Herstellern zur Auswahl.



PB1A - Hersteller: SKS

Eigenschaften:

- Steckverbindersystem: nach Kundenwunsch, Standard MC4
- Anschluss über Löt pads
- Schutzart: IP65

Hinweis:

Gerne prüfen wir auch, ob die Sicherheitsabschaltung BFA in eine andere, von Ihnen gewünschte Box integrierbar wäre. Sprechen Sie uns hierzu bitte an.



PB1B - Hersteller: SKS

Eigenschaften:

- Steckverbindersystem: Wieland-kompatibel im Gehäuse eingespritzt
- Anschluss über Löt pads
- Schutzart: IP65
- Geeignet für automatisierte Fertigung



PB2 - Hersteller: Alrack

Eigenschaften:

- Steckverbindersystem: nach Kundenwunsch, Standard MC4
- Schutzart: IP65
- Geeignet für automatisierte Fertigung
- Auf Wunsch mit Modul-Steckverbinder



Der Modulsteckverbinder ermöglicht eine sehr schnelle Montage in der Fertigung. ... Box aufstecken fertig.



PB3 - Hersteller: Spelsberg

Typ: 1410-2

Eigenschaften:

- Steckverbindersystem: nach Kundenwunsch, Standard MC4
- Schutzart: IP65
- Anschluss über Federklemmen, dadurch sehr einfach in der Montage



PB4 - Hersteller: Tyco

Typ: 1394724-7

Eigenschaften:

- Steckverbindersystem: Tyco-Solarlok
- Schutzart: IP65
- Anschluss über Federklemmen, dadurch sehr einfach in der Montage
- Geeignet für automatisierte Fertigung

Available as integrated junctionbox for module manufacturers !
Please ask for separate brochures



PB5 - Hersteller: Yamaichi

Typ:

Eigenschaften:

- Steckverbindersystem: MC4-kompatibel
- Schutzart: IP67
- Anschluss über Löt pads
- Geeignet für automatisierte Fertigung

Alle Anschlussdosen werden nach kundenspezifischen Anforderungen gefertigt. Es können Kabellängen, Steckverbindersystem frei gewählt werden.

Standard: MC4 mit 1,0 m Kabellängen
Für nähere Informationen und Details fordern Sie bitte die entsprechenden Broschüren an.



SMS-Box (Sende-/Empfangeinheit)



Technical data
Switch outputs: 4
Inputs: 6
Supply voltage: 24V

Download the SolteQ-Handy-App for free from Apple App-Store.

High quality tools for high quality results



Cable cutter knife



Tool for MC3



Crimp System knife for several Crimp inlays
(please ask for Crimp inlays)



Stripping tool for solarcable



Solar-Kit



Solar-Universal MC



Connectors from all manufacturers



Slave emergency button

Emergency buttons should be installed on every entrance of the building. There can be connected unlimited counts of buttons as needed. Available in several colours and customized inlay it wanted. Dimensions: 133x133x36mm



Flooding sensor

The new flooding sensor detects a flooding and triggers the central station to switch the system off. For connection to the central sation (Master-Emergency-Button)

New!



Smoke sensor

If a building has no fire alarm system it can be used simply a smoke sensor for fire detection and power down the solar system automatically. Recommended: one smoke sensor in every room, floor, stairway etc.



Arc detektor

Every arc will be detected safe at his beginning and give the signal to power down the system. So the arc will be killed and a fire will be possibly avoided.

GSM/SMS-Module

By using a SMS module in case of fire a message can be send to one or more telephone numbers.



Telephone dialer

In case of Alarm a alarm message will be send to a telephone number.



Illuminated display „Solarsystem power down“

With the display the status power down can be shown, so the firemen can see direktly from distance „everything is OK, we can work!

By a integrated battery the illumination can work power failure proof even if there is no more power from grid available.

The Display is readable also from distances up to 50m.

Technical data

Dimensions: 42,5 x 22,5 x 6,5 cm
Protection class: IP54
Power supply: 230V/ 50/60Hz (24/100/110V/ 50/60Hz)
Power failure proof“



Flashlights

The xenon flashlights can be mounted everywhere inside and outside, where the fireman can see it well.

The robust plastic casing (IP34) protects from environmental influences. Operates only with Display.

Available in colours: red, yellow, blue
Power supply: 12V via display



Anti theft sensor DSS110

Safe your precious solar modules and inverters !

Do not allow that your modules will be go away over night !

You lock your car, interlock the doors of your home three times and leave your modules easilie on the roof ?

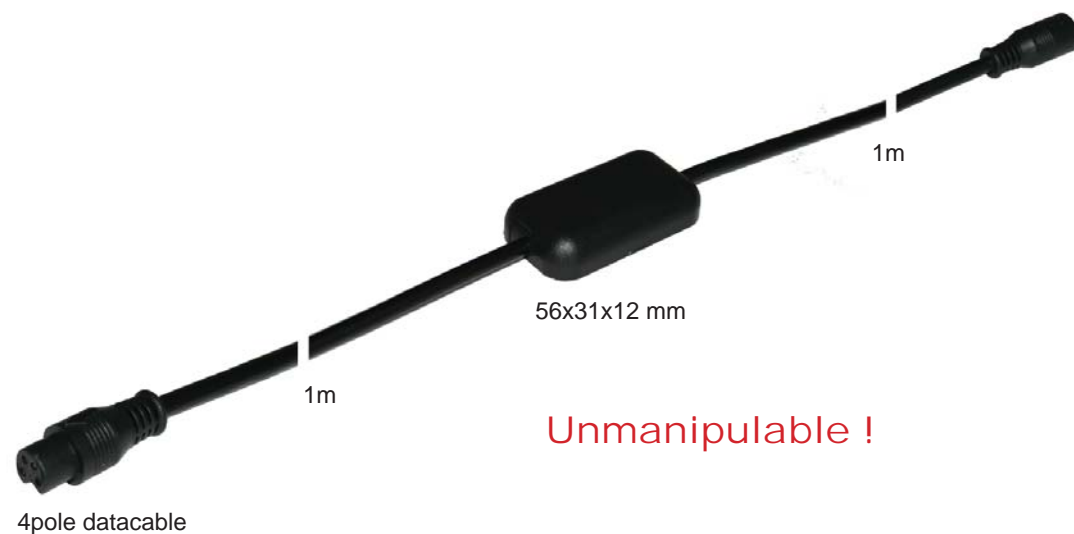
With the new **Solarmodule-Antitheft-System SolteQ-DSS110** every unauthorised move of the modules will be detected safe and quick.

Double safety!

The new PV-Sensor DSS110

On each module a sensor will be fixed. In cyclical periods the **ID-Code** of each Sensor will be proved by the central station. This way every sensor will be checked permanently of his presence. Even if one ore more sensors do not answer with their special ID-Code, a alarm status will be registrated. In addition there is a movement and angle sensor in each sensor. Even if the sensors will be moved or there is a change in his physical angle, in the same time a alarm will be given out. Also the data cable system is **absolutely unmanipulable**.

So there can be given out a loud alarm by a siren, wich will scare away the thieffes quick and safe. Or a quite alarm can be activated, by dialing a telephone number or sending a SMS, and the thieves will be caught while doing their „work“. This way not one module will be lost.



Unmanipulable !

The count of modules after which an alarm should be given out can be choosen. This way will guarantee to give not an alarm if one sensor will have a malfunction. In this case a warning will be given out on the central station.

Suitable for ground and roof mounted modules. For new systems and for retrofit.



For maximum safety !



Further possible applications

Protect modules - inverters - fences - gates

... simply everthing, what should not move normally.

Glue the sensor with silicone at the module or inverter or fix it with cable strips on the fence or gate and every movement or change of the angle will release an alarm.



SolteQ-DSS

- detects every movement on object
 - switches lights on
 - activates cameras to record the situation detailed
 - Free of fail alarms
- and much more

... simply good and unmanipulable !



SolteQ - DSS has an eye on each module and inverter!

Please ask for separate detailed brochure for DSS-System

