



Q3 *ENERGIE*

GmbH & Co. KG

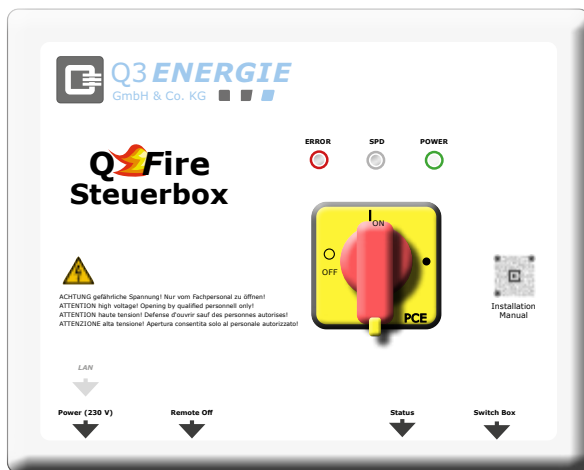


Fireman's Switch

Module string disconnection with integrated surge protection



Generator isolation according to IEC 60947-3



  
MADE IN GERMANY



QFire Fireman's Switch: Function Overview

QFire is a PV generator shutdown device for the automated galvanic disconnection of PV strings according to DIN EN 60947-3:2020.

1 Switch boxes are installed near the PV modules at the roof entry point. High-performance relays safely disconnect all incoming lines without arcing

2 Control box is installed near the inverter or in another easily accessible location

Enables complete DC power disconnection from a central point:

- manual activation at the control box
 - AC-coupled to the power grid (in case of grid failure, system switches off; automatic restart once grid is back)
 - undervoltage due to cable failure or grid fluctuations
- and also

3

- via external emergency stop switch
- connected to the fire alarm control panel



Simple operation,
clear signals,
uncompromising
safety –
just the way
we need it!



Key Features of the QFire Fireman's Switch for PV Systems

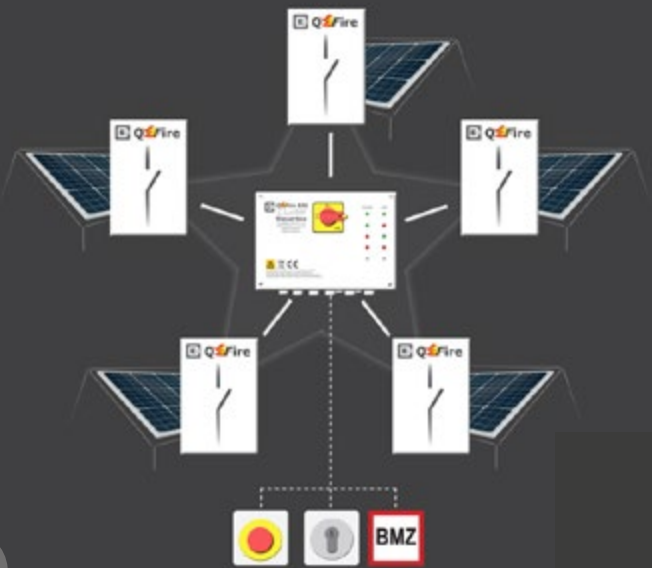
The QFire fireman's switch for PV systems is certified according to IEC 60947-3 and custom-designed and manufactured at our facility in Kaufbeuren – Made in Germany.

Technical Highlights

- up to 24 strings per box
- surge protection & fuses (± optional)
- plug or clamp terminals
Standard: MC4-Evo 2 by Stäubli
- plastic or metal housing
- optional string reduction
(e.g. 8 inputs → 4 outputs)
- plug & play (counter plugs included)

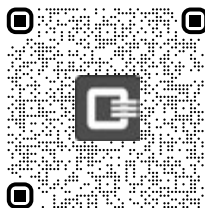
Thanks to the modular design, all connection elements are customized for compact and streamlined systems.

Cluster Technology



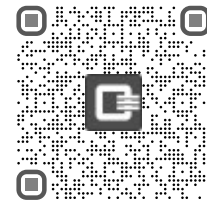
Control up to five separate roof areas with a single QFire control box – and shut them down simultaneously!

In addition to indicating „on“ and „off“, each individual cluster also signals the cable status and, if applicable, the functionality of the surge protection device. The distance between the control unit and a single cluster can be up to 1,200 meters. In the event of a power failure, all clusters enter a safe state and automatically switch back on when the grid is restored. When the system is triggered, all strings of the entire PV installation are disconnected from the generator at the switch boxes – ensuring complete de-energization.



Regulatory Challenge: When is a fireman’s switch required for PV systems in Germany?

The safety of photovoltaic (PV) systems is a critical issue - especially in the event of a fire. In this context, technical standards and regulations play a decisive role. The German standard DIN VDE 0105-100 defines general requirements for the operation of electrical installations, while the application rule VDE-AR-E 2100-712 provides specific guidelines for the disconnection of PV systems to protect emergency responders. In addition, the international standard IEC 60947-3 outlines requirements for switching devices and disconnectors that ensure safe system shutdowns. Together, these standards form the technical basis for determining when a fireman’s switch is legally required.



Plan, install, and protect with confidence – your training for enhanced fire safety expertise in photovoltaic systems

As a planner or installer, you are not only responsible for the proper installation of photovoltaic systems, but also for the safety of your customers. When it comes to fire protection, there are specific requirements that must be observed.

The QFire fireman’s switch online training provides you with the essential knowledge to plan and install PV systems safely and in compliance with current regulations.

The training is free of charge – sign up now!



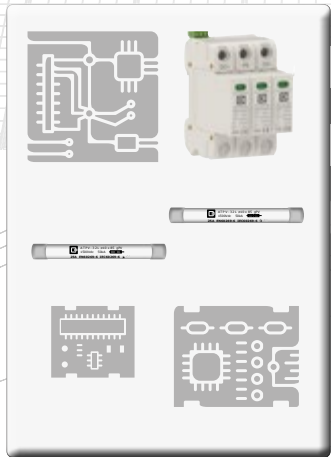
Technical Data		Control Box	Switch Box
Switching method	galvanic disconnection		
Connections	Stäubli MC4-Evo 2 (compatible to all MC4) 4-6 mm²		
Strings	modular expandable up to 99 switch boxes, each up to 24 strings		
Norms	CE, IEC 60947-3		
Housing			
Material	Polycarbonate (≤16 strings) Steel (>16 strings)		
IP rating (EN60529)	Polycarbonate: IP 66/67 Steel: IP 66		
Impact resistance	Polycarbonate: IK08 (+35°C/-25°C) Steel: IK10 (+60°C/-25°C)		
Certifications	EN 62208:2011:2011		
Mounting location		weather-protected outdoor	
Dimensions (mm)	250 x 170 x 100	2-4 strings: 300 x 400 x 132 6-8 strings: 400 x 400 x 132 10-16 strings: 400 x 600 x 132 18-24 strings: 600 x 600 (800) x 200 (300)	
Gewicht	~1,1 kg	~2-20 kg (depending on version)	
Voltage			
Operating voltage		230 VAC	
Fuse		B6 circuit breaker	
Power consumption	~40 mA bei 230 VAC	~40 mA bei 230 VAC + max. 1,8 W/String	
Isolation voltage		1.500 VDC	
Max. System Voltage	---	1.500 V DC	
Max. switch voltage	---	1.500 V DC	
Control voltage	24 V DC (12 V DC)	24 V DC (12 V DC)	
Max. current per string	---	1.500 V DC @ 20 A	
Surge protection			
Kategorie	---	DC T1+2	
Remote signal contact	---	yes	
Integrated slave	---	230 VAC for cascading	
Compliance	---	IEC 61634-31:2018, EN 50539-111:2012+A1:2014	
Status indication	Optical LEDs (LAN/Ethernet optional)	Optical LEDs	
Operating temperature		- 25°C to +50°C	
Humidity		0–99 % RH (non-condensing)	
Options		external key switch or emergency stop, volt-free status contact	

QFire MODULAR SYSTEM

SWITCH BOX

CONTROL BOX

ACCESSORIES

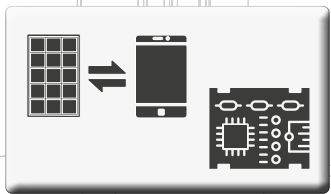


MC4 -EVO2 (Standard)

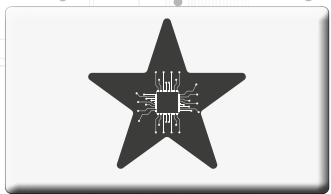
optional: Sunclix

optional: screw terminal technology

up to 24 strings possible



alternative



Cluster Control Box
für up to 5
separate roof areas



external emergency stop switches

SWITCH BOX integrable ACCESSORIES

Art.-No.	Description	
Q-502102	Control Unit (Slave) for grid-side control and disconnection via control line or volt-free contact	
Q-595012	Surge Protection T1+2 Combined surge arrester with remote signaling contact – one required per MPPT. Other brands available on request.	
100574	Fuse and Fuse Holder in Positive Pole	
100575	Fuse and Fuse Holder in Negative Pole	
991010	Delay Circuit (Shutdown Delay 1 sec/box) for sequential disconnection (1-second delay per box) in large-scale photovoltaic systems to ensure grid-friendly shutdown	
595014	High-Performance Device Control Line (comparable T1+2) Effective protection against overvoltage. Technical specifications and performance data are comparable to T1 and T2 classifications.	

CONTROL BOX integrable ACCESSORIES

Art.-No.	Description	
500666	QFire Power Patcher Data Transmission for connection to a control box. Data transmission to the Q3 Cloud via TCP/IP to the customer's router. Reports: status, system state (on/off)	
595014	High-Performance Device Control Line (comparable T1+2) Effective protection against overvoltage. Technical specifications and performance data are comparable to T1 and T2 classifications.	
500567	QFire Cluster Control Box Control of up to 5 cluster contacts to operate up to 5 QFire BIG systems	
500569	QFire Cluster Card Accessory for the cluster control unit – one card required per cluster	

ACCESSORIES EXTERN

Art.-No.	Description	
500001	Emergency Off IP66 compliant with IEC 60529 IP67 IP69 IP69K	
500003	Key Switch Schneider Electric, XALD144 IP66 compliant with IEC 60529 IP67 IP69 IP69K	
500005	Emergency Off (behind glass) GMC-120-DKM-G-Y IP52 compliant with EN 60529 Norm: EN 12094-3	

Learn More about QFire and Q3

Scan the QR code to discover all the details about our QFire fireman's switch, additional solutions for safe photovoltaic technology, and our company – directly on the website of Q3 ENERGIE GmbH & Co. KG.

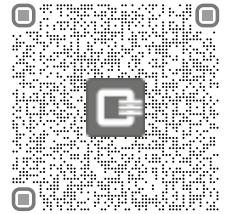
There you'll also find helpful information for project planning and contacts who are ready to support you if needed.



QFire Fireman's Switch Inquiry

Planning a PV system with a fireman's switch? Simply share your technical specifications with us using our form – we'll be happy to provide you with a customized offer for your QFire.

This way, you can integrate our solution early in your planning process. If you have any questions, we're happy to assist you.



BSFZ-Seal for Innovative Orientation

This award confirms our innovative strength and our commitment to greater safety in the photovoltaic sector.

Project ID: 849-547-133/2024-2/1



Q320250424 · Printing errors, omissions, and technical changes excepted.

**Gold standard
in generator
disconnection**



Druckprodukt mit finanziellem

Klimabeitrag

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