



Q3 ENERGIE
GmbH & Co. KG

PV Fuse-Links and PV Fuse Holders

For PV DC applications up to 1,500 V DC



Application in Q3 DC Connection Systems

The fuse-links and fuse holders are used on a project-specific basis within Q3 DC connection systems. Depending on the system design, overcurrent protection is provided in the positive conductor, the negative conductor or in both string conductors.

The rated current is selected based on the electrical characteristics of the PV modules, the string configuration and the operating and ambient conditions of the installation.

The cylindrical PV fuse-links used by Q3 are 10 × 85 mm in size, rated for 1,500 V DC and classified in utilisation category gPV. They provide overcurrent and short-circuit protection for PV DC circuits.

The fuse-links are installed in a single-pole PV fuse holder rated for 1,500 V DC, incorporating an optical LED fuse operation indicator.

Available fuse-link rated currents: 10 A, 12 A, 15 A, 16 A, 20 A, 25 A, 30 A and 32 A.

The appropriate fuse-link rating is selected on a project-specific basis in accordance with the electrical design of the PV installation.

Q3. The Boxmakers.

PV Fuse-Link

Design	PV fuse-link, gPV
Type	ATPV-32L
Size	10 × 85 mm

Electrical Data			
Rated voltage	1:500 V DC	Utilisation category	gPV
Breaking capacity	50 kA DC	Size	10 × 85 mm
Ambient temperature*	−40 °C to +90 °C	Protection function	Overcurrent and short-circuit protection
Available rated currents	10 A / 12 A / 15 A / 16 A / 20 A / 25 A / 30 A / 32 A		
Reference standard	IEC 60269-6		

* The permissible current-carrying capacity depends on the ambient temperature and installation conditions.
Appropriate derating must be applied where operating conditions differ from the specified conditions.

Electrical Characteristics of the Fuse-Links Used			
Rated current In	Power dissipation at 1.0 × In	Pre-arcing I²t	Total I²t
10 A	3.0 W	105 A²s	580 A²s
12 A	3.1 W	134 A²s	746 A²s
15 A	3.5 W	167 A²s	932 A²s
16 A	4.0 W	178 A²s	995 A²s
20 A	4.5 W	223 A²s	1,243 A²s
25 A	4.6 W	279 A²s	1,550 A²s
30 A	5.4 W	304 A²s	2,220 A²s
32 A	6.2 W	325 A²s	2,370 A²s

Standards and Test Requirements	
IEC 60269-6	Additional requirements for fuse-links for the protection of photovoltaic energy systems
EN 60269-6:2011	PV fuse-links – product-specific requirements
EN 60269-1:2007 + A1 + A2	General requirements for low-voltage fuses

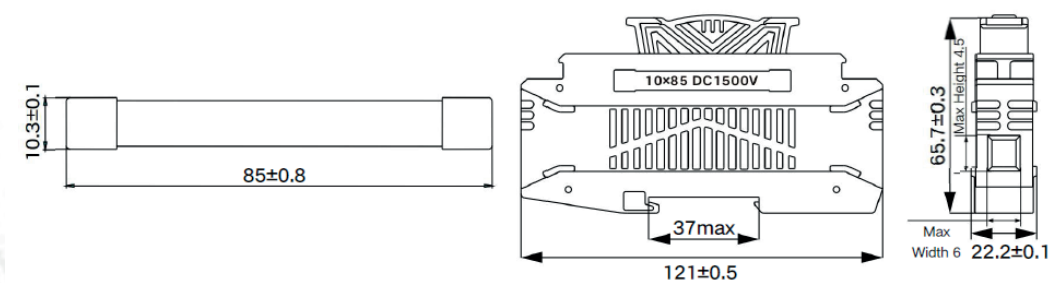


PV Fuse Holder with Optical LED Indicator

Design	Single-pole PV fuse holder with LED fuse status indicator
Type	ATPV-63LDL

Electrical and Mechanical Data			
Number of poles	1-pole	Rated operational voltage Ue	1,500 V DC
Rated operational current Ie	50 A	Rated insulation voltage Ui	1,500 V
Rated impulse withstand voltage Uimp	8 kV	Utilisation category	DC-PV0
Conditional short-circuit current	50 kA	Pollution degree	3
Fuse-link size	10 × 85 mm	Conductor connection range	1–25 mm ²
Tightening torque	2,6 Nm	Indicator	Optical LED fuse status indicator

Standards and Test Requirements	
EN 60947-1:2007 + A1 + A2	General rules for low-voltage switchgear and controlgear
EN 60947-3:2009 + A1 + A2	Requirements for switches, disconnectors, switch-disconnectors and fuse-combination units



Operation and Maintenance

- Mechanically damaged fuse-links must be replaced.
- Fuse-links must not be replaced under load unless the installed equipment is explicitly designed and approved for this purpose.

All information reflects the current technical status at the time of publication. Technical modifications, errors and printing errors excepted.