HIGH SPEED FUSES AND SYSTEM PROTECTION

for Photovoltaic Systems and Installations

2018 Photovoltaic Portfolio

Ihr Rundumschutz für starke Ströme
All-round protection for strong currents

HIGH SPEED FUSES
AND SYSTEM PROTECTION

IATF 16949
ISO 9001-2015

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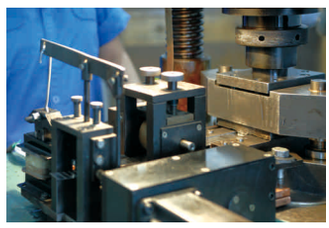


High Speed Fuses
And System Protection

ADLER-Your All-round Protection for Strong Currents!

ADLER Elektrotechnik Leipzig GmbH is a professional team which unites knowledge, skill and experience to provide both best technical expertise as well as customer service at one stop. With know-how from a long-time history of fuse development and distribution we establish ourselves as your contact point for photovoltaic, industrial and electric vehicle fuses and accessories.

Based on our strong foundations and innovative spirit we strive

to achieve robust growth. Our diversified and dedicated team of sales people, product technicians and field application engineers supplies top quality products and superior customer support.

Our Products are Designed for Following Applications:

- Photovoltaic midget and medium fuse links (gPV)
- Photovoltaic NH fuses in various sizes (gPV)
- Rail-mount fuse holder cartridges for cylindrical fuses and NH blade type fuse bases
- Photovoltaic system components, combiner boxes and parts
- DC switches, isolators, disconnects, circuit breakers
- Photovoltaic surge protection devices (SPD)
- Cylindrical fuse links for industrial applications (gG)
- All standard DIN-sized NH blade fuses for general industrial application (gG)
- Fuse holders for cylindrical fuses, fuse mounts and NH blade type fuse bases
- HV fast acting semiconductor fuses
- Automotive grade EV main fuses for electric vehicles up to 1000VDC
- EV fuses for auxiliary protection for 500VDC and 700VDC up to 50A
- EV fuse bolt mounts and holders
- Automotive Mini and Midi blade fuses
- Special fuses for battery storage protection

Across all of our product range, we are proud to offer established, certified products that have developed a reputation for quality, reliability and innovation. We provide our customers with solutions expertise, a high standard of personalized service, availability of stock and an 'easy to deal with' experience.

Our Mission Statement

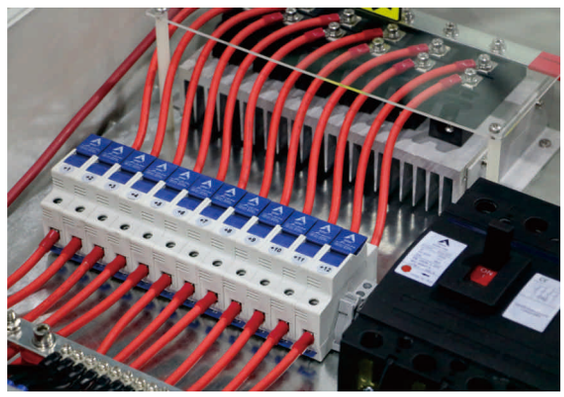
We add value to our customer's business by supplying sophisticated, high quality electrical products, solutions-focused expertise, personal service and genuine customer care at highest possible standards in our industry.

ADLER Global Network:

- ADLER Elektrotechnik Leipzig GmbH (Headquarters)
- ADLER Regensburg (Engineering)
- ADLER Elektrotechnik Xi'an Co.,Ltd.(Manufacturing)
- ADLER Songshan Lake Dongguan (Testing center)

Product Selection Guides

PV – Fuse Selection Guide



- In PV systems consisting of arrays with >4 module strings the fault current can easily exceed the operating current. The current can reach a level that can cause overheating and damage of wire insulation.
- To ensure the best possible protection for the system and people working on the equipment, each string of solar panels MUST be protected with one fuse on each + and – terminal.
- These fuses will also isolate the faulted string so that the rest of the PV system can continue to generate electricity.

When a fault occurs in the DC circuit of the PV installation, the absence of natural zero crossing makes the interruption of DC faults more difficult than the interruption of AC faults as only the fuse arc will force the current to decrease to zero.

The correct interruption depends on three parameters:

- The value of the DC voltage
- The value of the ratio L/R (time constant) of the fault path
- The value of the fault current

Due to the unique requirement in PV systems of having to clear a very low level fault, it is important that a fuse with full range capability is used. This means that the fuse is designed for clearing overloads as well as short circuit faults and requires the use of a fuse with a gPV characteristic.

In order to calculate the best fuse for a general recommendation, the following information is required:

- Number of strings connected in parallel N
- N>4: PV fuse protection needed!
- Number of solar modules connected in series per string M
- The ambient temperature

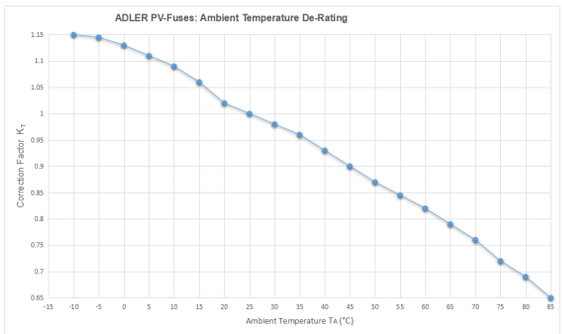
From the solar module specifications:

- Short circuit current of the string Isc
- Open circuit voltage U_{oc}
- Conditions: $U_{oc\ STC}$

Checklist:

1) Taking into account that neither the + nor the – terminals are connected to ground, each string of modules has to be equipped with two fuses: one fuse for the positive and one for the negative output.
2) The first rule has to be applied when the number of chains in parallel (N) is equal to or higher than 4. (for less than 4 parallel chains, fusing is not necessary).
3) The maximum DC operating voltage of the fuse must be higher than or equal to 1.20 x M x ($V_{oc\ STC}$).

In operation, fuse links, like thermal devices, are influenced by ambient temperature. The current capability of the PV fuse links shall therefore be derated according to the corresponding correction factor in the PV temperature derating curve



Calculation method to choose the correct fuse for a PV power system:

Rated Voltage of the Fuse U_n:

The rated voltage of the fuse must be higher than the maximum open-circuit voltage of the PV string. To determine the maximum value, the open-circuit voltage U_{oc} must be adjusted to the lowest possible ambient air temperature of the solar panel. In most cases, the rated voltage can be calculated as follows, taking into consideration the lowest temperature of -25 °C and the corresponding temperature coefficient:

$$U_n \geq 1.2 \times M \times (U_{OC\,STC})$$

Rated current of the fuse I_n:

The rated current of the fuse must be higher than the maximum value of the current generated by the solar module.

- I_{sc} is the maximum current that a module can generate.

Rated current of the fuse I_n in grouping conditions:

For non-STC ambient temperatures, operations under fluctuating current loads and side-by-side mounting of several fuse holders, derating factors must be considered. These factors can be obtained from the datasheets of the fuse links and holders.

- **K_T**: Fuse-link temperature correction factor (see diagram above)
- **K_C** Fuse-link derating factor for current variation (K_C = 0.85 for PV applications)
- **K_G**: Grouping factor (see table on the right)

Number of units n	K_G grouping factor
1 ≤ n < 4	1
4 ≤ n < 7	0.8
7 ≤ n < 10	0.7
10 ≤ n	0.6

This table considers the proximity heating effect if fuse holders are mounted in groups and are operated at nominal load. Depending on the fuse link there is a certain power loss from each fuse which may increase the ambient air temperature around the holder above the ambient air temperature within the equipment enclosure.

The formula is as follows: $I_n \geq I_{SC} / (K_T \times 0.85 \times K_G)$

Installation example:

Number of strings connected in parallel	N=5
Number of solar modules connected in series per string	M=4
Ambient temperature	50 °C

Solar module specifications:

Short circuit current of the string	I_{sc} = 5.5 A
Open circuit voltage under Standard Test Conditions:	$U_{oc\,stc}$ = 44.5 V

Determine rated voltage of the fuse:

$U_n \geq 1.2 \times M \times (U_{OC\,STC})$

$U_n \geq 1.2 \times 4 \times 44.5 = 213.6$ V

Determine rated nominal current of the fuse:

Ambient temperature derating: 50 °C, K_T = 0.87 As the fuse holders are grouped in units of five, a grouping factor of K_G = 0.8 shall be applied

$I_n \geq I_{SC} / (K_T \times 0.85 \times K_G)$ $\quad I_n \geq 1.7 \times I_{SC}$

$I_n \geq I_{SC} / (0.87 \times 0.85 \times 0.8)$ $\quad I_n \geq 9.35$ A

From the range of possible rated currents the next higher rated current above 9.35 A must be chosen. Accordingly, this value is

$$I_n = 10\,A$$

3 Photovoltaic Fuses and Protection Components

- PV Cylindrical Fuse Links
- PV NH Type Fuses
- DC Surge Protection Devices

A73 gPV 1000 VDC Fuse 10x38 mm

FEATURES:

- 1000 VDC, 10x38 mm PV fuse link
- Rated Current: 1-30 A
- Rated Breaking Capacity: 30 kA
- Time Constant: 1-3 ms
- Special design with silver plated caps for high-power PV applications
- Standard: UL 248-19
- Approval: UL (File: E490190)
- BH100-01,BH100-02 holders for DIN rail mounting

ELECTRICAL SPECIFICATIONS

Part Number				Rated Current	Ampere Code	Breaking Capacity	I²t (A²s)		Dissipation (W)		Certifications
Cartridge	Central Mount	Level Mount	PCB Mount				Pre-Arcing	Total at 1000 V	80 % In	100 % In	UL
A731100700	A731100701	A731100702	A731100703	1A	1100	30 kA @1000 VDC	0.15	0.4	0.8	1.5	●
A731200700	A731200701	A731200702	A731200703	2A	1200		1.3	3.4	0.7	1.1	●
A731300700	A731300701	A731300702	A731300703	3A	1300		4	12	0.8	1.3	●
A731400700	A731400701	A731400702	A731400703	4A	1400		10	28	1.1	1.4	●
A731500700	A731500701	A731500702	A731500703	5A	1500		19	50	1.1	1.4	●
A731600700	A731600701	A731600702	A731600703	6A	1600		32	93	1.2	1.8	●
A731800700	A731800701	A731800702	A731800703	8A	1800		85	205	1.2	2.2	●
A732100700	A732100701	A732100702	A732100703	10A	2100		30	70	1.3	2.3	●
A732120700	A732120701	A732120702	A732120703	12A	2120		98	150	1.5	2.8	●
A732150700	A732150701	A732150702	A732150703	15A	2150		149	230	1.8	3.0	●
A732200700	A732200701	A732200702	A732200703	20A	2200		229	330	2.4	3.6	●
A732250700	A732250701	A732250702	A732250703	25A	2250		411	500	2.6	4.1	●
A732300700	A732300701	A732300702	A732300703	30A	2300		1200	2500	4.3	5.7	●

Note: (1) DC cold resistance are measured at <10 % of rated current in ambient temperature of 25±5 °C
(2) Typical pre-arcing I²t measured at 10*In current

TIME VS CURRENT CHARACTERISTIC

Rated Current	100%	135%	200%
10-30 A	>4 h	< 1 h	< 4 min

PART NUMBER SYSTEM

A73 (1) 2300 (2) 7 (3) 00 (4)

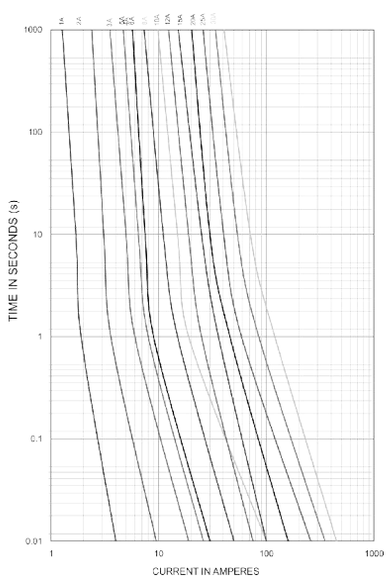
1 ····· Product Series ····· A73

2 ····· Ampere Code ····· 30A (see ampere code column of electrical specifications)

3 ····· Rated Voltage ····· 7: 1000V

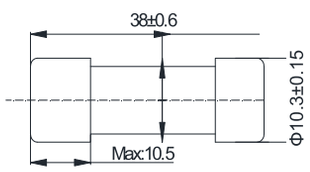
4 ····· Supplementary Code ····· 00: Cartridge; 01: Central Mount; 02: Level Mount; 03: PCB Mount;

Time Current Curve (reference)



DIMENSIONS (mm)

A73xxxx700



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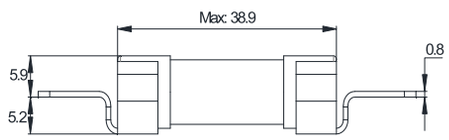

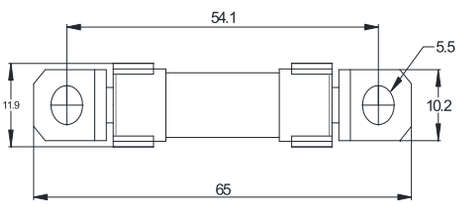

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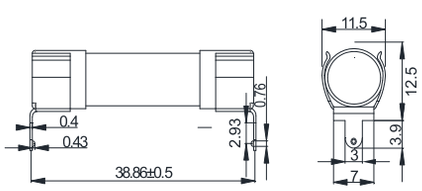

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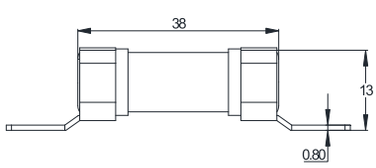
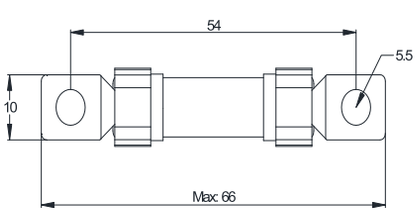




A83 gPV 1100 VDC Fuse 10x38 mm

FEATURES:

- 1100 VDC, 10x38 mm PV fuse link
- Rated Current: 10-30 A
- Rated Breaking Capacity: 20 kA
- Time Constant: 1-3 ms
- Special design with silver plated caps for high-power PV applications
- Standard: UL 248-19 / EN 60269-6
- Approvals: UL(pending), CE
- BH100-01, BH100-02 holders for DIN rail mounting

ELECTRICAL SPECIFICATIONS

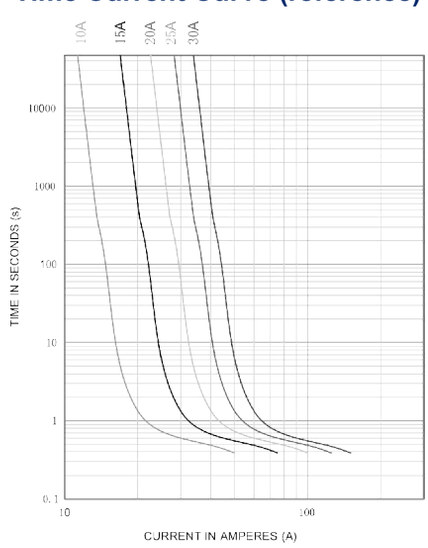
Part Number				Rated Current	Ampere Code	Breaking Capacity	I²t (A²s)		Dissipation (W)		Certifications	
Cartridge	Level Mount	Central Mount	PCB Mount				Pre-Arcing	Total at 1100 V	80 % In	100 % In	UL	CE
A832100700	A832100701	A832100702	A832100703	10A	2100	20 kA@1100 VDC	30	70	1.0	1.3	○	●
A832150700	A832150701	A832150702	A832150703	15A	2150		149	230	1.4	1.8	○	●
A832200700	A832200701	A832200702	A832200703	20A	2200		229	330	2.1	3.0	○	●
A832250700	A832250701	A832250702	A832250703	25A	2250		411	1860	2.5	3.4	○	●
A832300700	A832300701	A832300702	A832300703	30A	2300		600	3300	3.2	4.3	○	●

Note: (1) DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25°C
(2) Temperature rise: ≤70K at rated current
(3) Typical pre-arcing I²t measured at 10In current

TIME VS CURRENT CHARACTERISTIC

Standard	UL			IEC	
Rated Current	100%	135%	200%	113%	145%
10-30 A	>4 h	< 1 h	< 4 min	>1 H	< 1 H

Time Current Curve (reference)



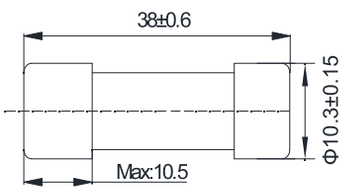
PART NUMBER SYSTEM

A83	2300	7	00
↓	↓	↓	↓
1	2	3	4

1 ..... Product Series A83
2 ..... Ampere Code ..... 30A (see ampere code column of electrical specifications)
3 ..... Rated Voltage 7: 1100V
4 ..... Supplementary Code ..... 00: Cartridge; 01: Central Mount; 02: Level Mount; 03: PCB Mount;

DIMENSIONS (mm)

A83xxxx700



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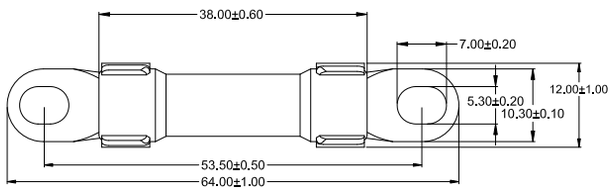

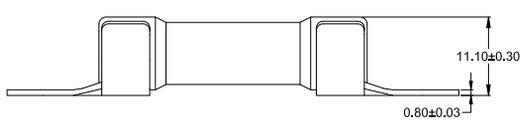

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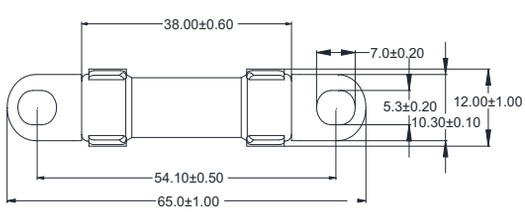

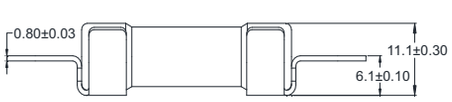

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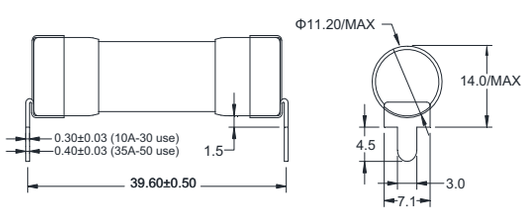


A74 gPV 1500 VDC Fuse 14x51mm

FEATURES:

- 1500 VDC, 14x51 mm PV fuse link
- Rated Current: 4-30 A
- Rated Breaking Capacity: 10 kA
- Time Constant: ≤1 ms
- Special design with silver plated caps for high-power PV applications
- Standard: UL 248-19
- Approval: UL (File: E490190)
- BH200, BH201 holders for DIN rail mounting

ELECTRICAL SPECIFICATIONS

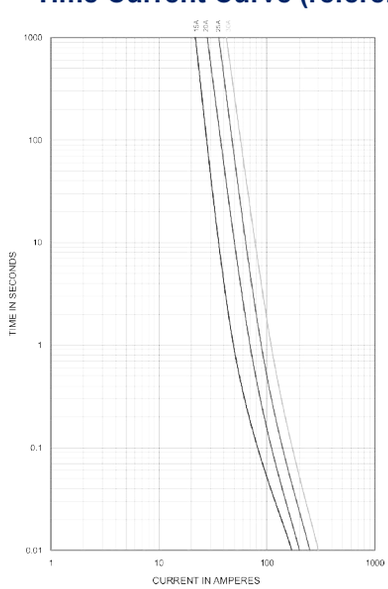
Part Number		Rated Current	Ampere Code	Breaking Capacity	I²t (A²s)		Dissipation (W)			Certifications
Cylindrical	In-LIne Terminal				Pre-Arcing	Total at 1500 V	70 % In	80 % In	100 % In	UL
A741400b00	A741400b01	4A	1400	10 kA@1500 VDC	8	60	0.9	1.25	2.2	●
A742150b00	A742150b01	15A	2150		310	900	1.6	2.3	3.9	●
A742200b00	A742200b01	20A	2200		200	340	2.4	3.5	6.1	●
A742250b00	A742250b01	25A	2250		295	400	2.75	3.8	7.0	●
A742300b00	A742300b01	30A	2300		380	450	2.95	3.85	7.3	●

Note: (1) DC cold resistance are measured at <10 % of rated current in ambient temperature of 25±5 ℃
(2) Typical pre-arcing I²t measured at 10*In current

TIME VS CURRENT CHARACTERISTIC

Rated Current	100%	135%	200%
4-30 A	>4 h	< 1h	< 4 min

Time Current Curve (reference)



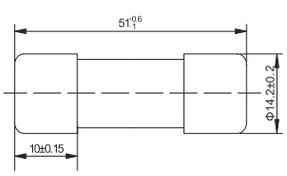
PART NUMBER SYSTEM

A74	2300	b	00
↓	↓	↓	↓
1	2	3	4

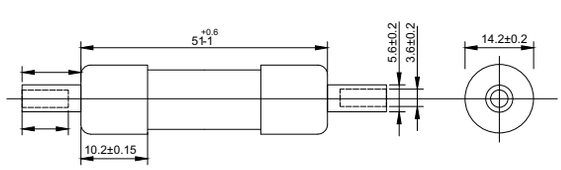
1 ····· Product Series ····· A74
2 ····· Ampere Code ····· 30A (see ampere code column of electrical specifications)
3 ····· Rated Voltage ····· b: 1500V
4 ····· Supplementary Code ····· 00: Cylindrical; 01: In-LIne Terminal

DIMENSIONS (mm)

A74xxxxb00



A74xxxxb01



A75 / A78 gPV 1500 VDC Fuse 10x85 mm

FEATURES:

- 1500 VDC, 10x85 mm PV fuse link
- Rated Current: 2-15 A
- Rated Breaking Capacity: 30 kA
- Time Constant: ≤1 ms
- Special design with silver plated caps for high-power PV applications
- Standard: UL 248-19
- Approval: UL (File: E490190)
- BH300 holder for DIN rail mounting

ELECTRICAL SPECIFICATIONS

Part Number		Rated Current	Ampere Code	Breaking Capacity	I²t (A²s)		Dissipation (W)			Certifications
Cylindrical	In-Line Terminal				Pre-Arcing	Total at 1500 V	70 % In	80 % In	100 % In	UL
A751200b00	A781200b00	2A	1200	30 kA@1500 VDC	3.5	10	1.1	1.45	2.6	●
A751400b00	A781400b00	4A	1400		15	50	1.2	1.55	2.8	●
A751500b00	A781500b00	5A	1500		22	75	1.4	1.8	3.2	●
A752100b00	A782100b00	10A	2100		300	1100	1.7	2.3	4.2	●
A752120b00	A782120b00	12A	2120		20	60	1.8	2.4	4.2	●
A752150b00	A782150b00	15A	2150		35	95	2	2.8	5	●

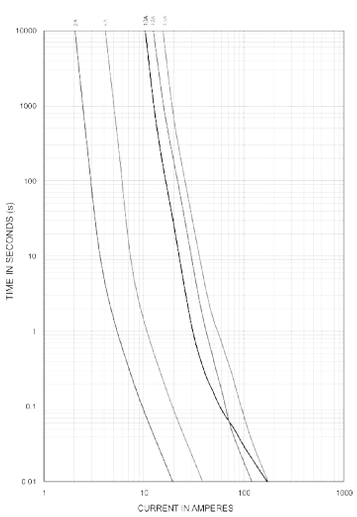
Note: (1) DC cold resistance are measured at <10 % of rated current in ambient temperature of 25±5 ℃

(2) For A78 use 10-12 AWG (6-4mm²) lead wire; recommended crimping tool: T&B Sta-Kon ERG4002 or equivalent.

TIME VS CURRENT CHARACTERISTIC

Rated Current	100%	135%	200%
2-15 A	>4 h	< 1h	< 4 min

Time Current Curve (reference)



PART NUMBER SYSTEM

A75	2150	b	00
↓	↓	↓	↓
1	2	3	4

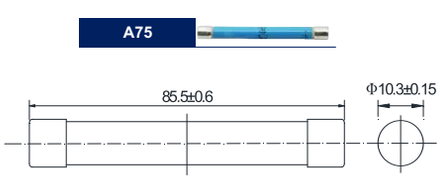
1 ····· Product Series ····· A75

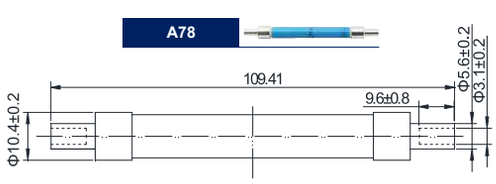
2 ····· Ampere Code ····· 15A(see ampere code column of electrical specifications)

3 ····· Rated Voltage ····· b: 1500V

4 ····· Supplementary Code ····· 00: default

DIMENSIONS (mm)





A85 gPV 1500 VDC Fuse 10x85 mm

FEATURES:

- 1500 VDC, 10x85 mm PV fuse link with glass-fiber
- Rated Current: 10-30 A
- Rated Breaking Capacity: 30 kA
- Time Constant: 1-3 ms
- Special design with silver plated caps for high-power PV applications
- Standard: UL 248-19 / EN 60269-6
- Approvals: UL(pending)
- BH300 holder for DIN rail mounting

ELECTRICAL SPECIFICATIONS

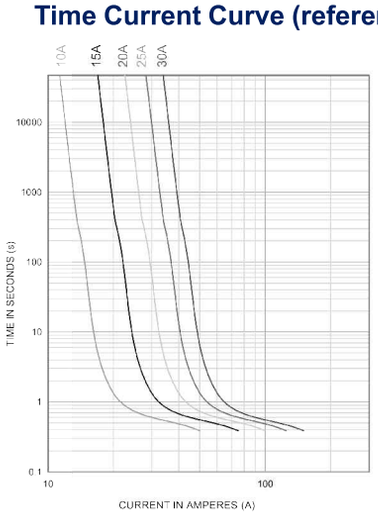
Part Number		Rated Current	Ampere Code	Breaking Capacity	I²t (A²s)		Dissipation (W)		Certifications
Cylindrical	In-LIne Terminal				Pre-Arcing	Total at 1500 V	80 % In	100 % In	UL
A852100b00	A852100b01	10A	2100	30 kA@1500 VDC	3.5	10	1.45	2.6	○
A852150b00	A852150b01	15A	2150		15	50	1.55	2.8	○
A852200b00	A852200b01	20A	2200		22	75	1.8	3.2	○
A852250b00	A852250b01	25A	2250		300	1100	2.3	4.2	○
A852300b00	A852300b01	30A	2300		20	60	2.4	4.2	○

Note : (1) DC cold resistance are measured at <10 % of rated current in ambient temperature of 25±5 ℃
(2) For A85 use 10-12 AWG (6-4mm²) lead wire; recommended crimping tool: T&B Sta-Kon ERG4002 or equivalent.

TIME VS CURRENT CHARACTERISTIC

Standard	UL			IEC	
Rated Current	100%	135%	200%	113%	145%
10-30 A	>4 h	< 1 h	< 4 min	>1 h	< 1h

Time Current Curve (reference)



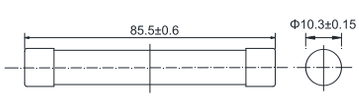
PART NUMBER SYSTEM

A85	2150	b	00
↓	↓	↓	↓
1	2	3	4

1 ····· Product Series ····· A85
2 ····· Ampere Code ····· 15A(see ampere code column of electrical specifications)
3 ····· Rated Voltage ····· b: 1500V
4 ····· Supplementary Code ····· 00: Cylindrical; 01: In-LIne Terminal

DIMENSIONS (mm)

A852100b00



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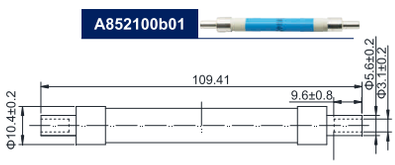


A76 / A79 gPV 1500 VDC Fuse

FEATURES:

- 1500 VDC, 10x57 mm PV fuse link
- Rated Current: 1-6 A
- Max. Breaking Capacity: 10 kA
- Time Constant: ≤1 ms
- Special design with silver plated caps for high-power PV applications
- Standard: UL 248-19
- Approval: UL (File: E490190)

ELECTRICAL SPECIFICATIONS

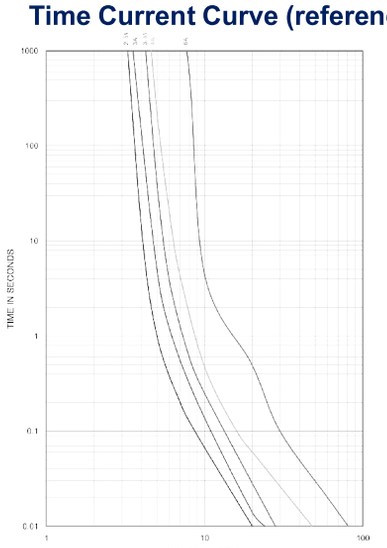
Part Number		Rated Current	Ampere Code	Breaking Capacity	I²t (A²s)		Dissipation (W)	Certifications
Cylindrical	In-Line Terminal				Pre-Arcing	Total at 1500 V	100% In	UL
A761100b00	A791100b00	1.0A	1100	10 kA@1500 VDC 20 kA@1500 VDC (self-tested)	2	12	2.1	●
A761250b00	A791250b00	2.5A	1250		3	15	2.1	●
A761300b00	A791300b00	3.0A	1300		5	21	2.1	●
A761350b00	A791350b00	3.5A	1350		15	56	2.2	●
A761400b00	A791400b00	4.0A	1400		18	68	1.8	●
A761600b00	A791600b00	6.0A	1600		60	200	2.1	●

Note: (1) DC cold resistance are measured at <10 % of rated current in ambient temperature of 25±5 °C
(2) Typical pre-arcing I²t measured at 10*In current
(3) For A79 use 10-12 AWG (6-4 mm2) wire range cu only (solid/stranded); recommended crimping tool: T&B Sta-Kon ERG4002 or equivalent.

TIME VS CURRENT CHARACTERISTICS

Rated Current	100%	135%	200%
1A-6A	> 4 h	< 1 h	< 4 min

Time Current Curve (reference)



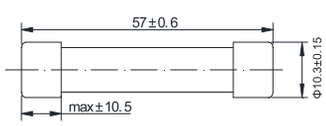
PART NUMBER SYSTEM

A76	1600	b	0
1	2	3	4

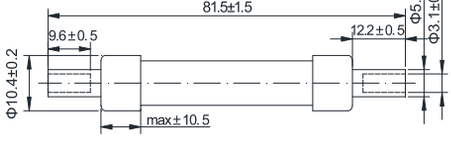
1 ····· ProductSeries ····· A76
2 ····· Ampere Code ····· 6A (see ampere code column of electrical specifications)
3 ····· Rated Voltage ····· b: 1500V
4 ····· Supplementary Code ····· 00: default

DIMENSIONS (mm)

A76



A79



AX6 gPV 1000/1500VDC Fuse

FEATURES:

- 1000 / 1500 VDC, PV fuse link
- Rated Current: 100-160 A
- Rated Breaking Capacity: 10 kA
- Time Constant: 1-3 ms
- Standard: Ref. to UL 248-19
- Approval: UL(pending)
- BH1XL Fuse base

ELECTRICAL SPECIFICATIONS

Part Number	Rated Current	Ampere Code	Breaking Capacity	I²t (A²s)		Dissipation (W)		Certifications
				Pre-Arcing	Total	80% In	100% In	UL
AX63100700	100 A	3100	10 kA@1000 VDC	1195.2	4374.4	14.4	27.2	O
AX63125700	125 A	3125		1696	7960	16	29.6	O
AX63160700	160 A	3160		3152	18723.2	20	36	O
AX63100b00	100 A	3100	10 kA@1500 VDC	1494	5468	18	34	O
AX63125b00	125 A	3125		2120	9950	20	37	O
AX63160b00	160 A	3160		3940	23404	25	45	O

Note: (1) DC cold resistance are measured at <10% of rated current in ambient temperature of 20±5℃

PART NUMBER SYSTEM

AX6	3160	b	00
↓	↓	↓	↓
1	2	3	4

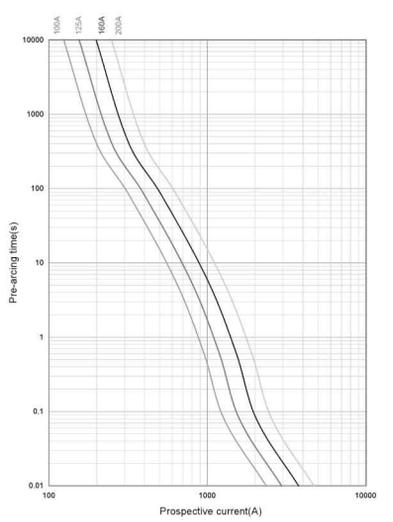
1 ..... Product Series AX6

2 ..... Ampere Code ..... 160A(see ampere code column of electrical specifications)

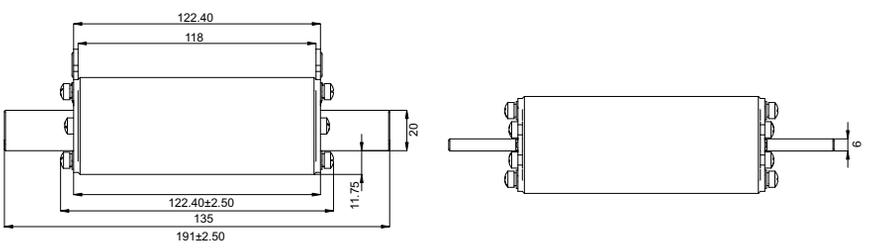
3 ..... Rated Voltage ..... 7: 1000V; b: 1500V

4 ..... Supplementary Code ..... 00: default size

Time Current Curve (reference)



DIMENSIONS (mm)



AX7 gPV 1000/1500VDC Fuse

FEATURES:

- 1000 / 1500 VDC, PV fuse link
- Rated Current: 125-250 A
- Rated Breaking Capacity: 10 kA
- Time Constant: 1-3 ms
- Standard: Ref. to UL 248-19
- Approval: UL(pending)
- BH03L Fuse base

ELECTRICAL SPECIFICATIONS

Part Number	Rated Current	Ampere Code	Breaking Capacity	I²t (A²s)		Dissipation (W)		Certifications
				Pre-Arcing	Total	80% In	100% In	UL
AX73125700	125 A	3125	10 kA@1000 VDC	1975.2	12516	18.4	32.8	O
AX73160700	160 A	3160		3333.6	20985.6	22.4	38.4	O
AX73200700	200 A	3200		7986.4	48375.2	25.6	45.6	O
AX73250700	250 A	3250		1975.2	12516	18.4	32.8	O
AX73125b00	125 A	3125	10 kA@1500 VDC	2469	15645	23	41	O
AX73160b00	160 A	3160		4167	26232	28	48	O
AX73200b00	200 A	3200		9983	60469	32	57	O
AX73250b00	250 A	3250		18078	101563	39	68	O

Note: DC cold resistance are measured at <10% of rated current in ambient temperature of 20±5℃

PART NUMBER SYSTEM

AX7	3160	b	00
↓	↓	↓	↓
1	2	3	4

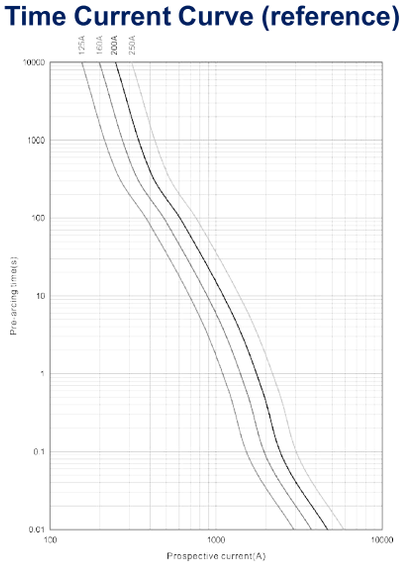
1 ..... Product Series AX7

2 ..... Ampere Code ..... 160A (see ampere code column of electrical specifications)

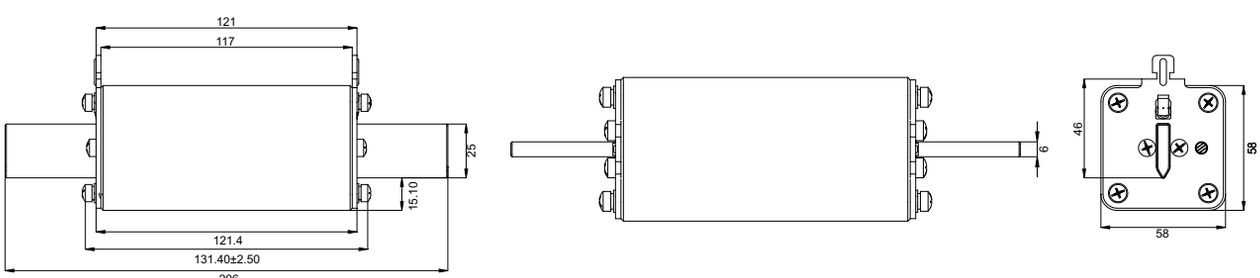
3 ..... Rated Voltage ..... 7:1000V; b: 1500V

4 ..... Supplementary Code ..... 00: default

Time Current Curve (reference)



DIMENSIONS (mm)



AX8 gPV 1000/1500VDC Fuse

FEATURES:

- 1000 / 1500 VDC, PV fuse link
- Rated Current: 250-400 A
- Rated Breaking Capacity: 10 kA
- Time Constant: 1-3 ms
- Standard: Ref. to UL 248-19
- Approval: UL(pending)
- BH03L Fuse base

ELECTRICAL SPECIFICATIONS

Part Number	Rated Current	Ampere Code	Breaking Capacity	I²t (A²s)		Dissipation (W)		Certifications
				Pre-Arcing	Total	80% In	100% In	UL
AX83250700	250A	3250	10 kA@1000 VDC	14432.8	81143.2	28	52.8	O
AX83315700	315A	3315		33245.6	133088	33.6	62.4	O
AX83355700	355A	3355		32942.4	145278.4	35.2	68	O
AX83400700	400A	3400		14432.8	81143.2	28	52.8	O
AX83250b00	250A	3250	10 kA@1500 VDC	18041	101429	35	66	O
AX83315b00	315A	3315		41557	166360	42	78	O
AX83355b00	355A	3355		41178	181598	44	85	O
AX83400b00	400A	3400		53391	247188	46	88	O

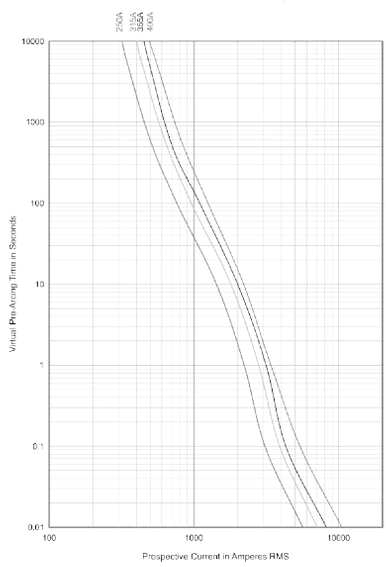
Note: DC cold resistance are measured at <10% of rated current in ambient temperature of 20±5℃

PART NUMBER SYSTEM

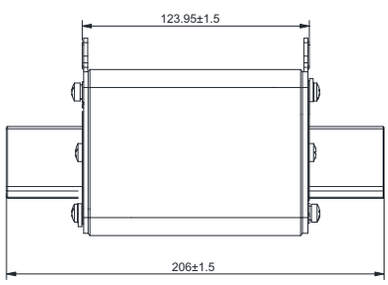
AX8	3250	b	00
↓	↓	↓	↓
1	2	3	4

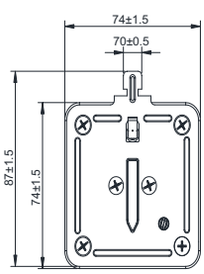
1 ..... Product Series AX8
2 ..... Ampere Code ..... 250(see ampere code column of electrical specifications)
3 ..... Rated Voltage ..... 7:1000V; b: 1500V
4 ..... Supplementary Code ..... 00: default size

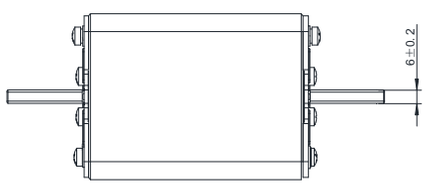
Time Current Curve (reference)



DIMENSIONS (mm)







ASPD 1000VDC PV Surge Protection Device

FEATURES:

- Suitable For Use in All Photovoltaic Systems
- Pre-wired Modular Complete Unit, Consisting of A Base Part and Plug-in Protection Modules
- Plug-in Protection Module, easy Installation and Maintainance
- High Energy Varistor, Response Time Less Than 25 Nanoseconds
- Optional Remote Signal Contact(FM) for Monitoring Device (Floating Changeover Contact)
- Din Rail Mounting TH35-7.5/DIN35
- In Compliance with :EN 50539-11

PRODUCT SPECIFICATIONS

ASPD PV DC Surge Protection Device		
Poles		3P
Standard		EN 50539-11
Electrical Characteristics		
Category IEC/EN		IEC II/EN2
Open Voltage	Uoc Max	1000 VDC
Max Continuous Operational Voltage	Uc	1000 VDC
Nominal Discharge Current	In(8/20)μs	20 kA
Maximum Discharge Current	Imax(8/20)μs	40 kA
Voltage Protection Level Up	Up	≤3.8 kV
Response Time	tA	≤25 ns
Contol and Indication		
Operating State / Fault Indication		Green/Red
Plug-in Protection Module		Yes
Remote Signalling Contact (Optional)	Max. Working Voltage(V)	30 VDC
	Max. Working Current	1 A
Connection And Installation		
Wire	Hard cable mm^2	4-25
	Flexible cable mm^2	4-16
Terminal Screws		M5
Torque(Nm)	Main Circuit	2.5
	Remote Contact	0.25
Degree of Protection		IP20
Installation Environment		
Operating Temperature Range (T_U)		-40°C to +80°C
For Mounting on		TH35-7.5/DIN35
Relative Humidity		30% to 90%
Weight kg		0.36

PRODUCT ARCHITECTURE

1 Brand
2 Type
3 Max. Discharge Current I_{max}
4 Nominal Discharge Current I_n
5 Voltage Protection Level U_p
6 Max. Continuous Operating Voltage U_{cpv}
7 Indicator
8 Standard Code
9 Certificate Symbol

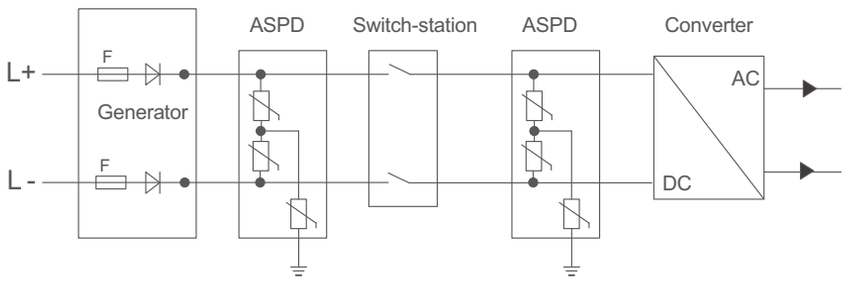
Model Numbering Definitions

ASPD	40	3	10	01
Product code	Max. discharge current	Poles	Rated Voltage (*100)	With remote signal contact
PV DC Surge Protection Device	40 kA	3P	1000 V	01: With Remote signal contact 00: Without contact

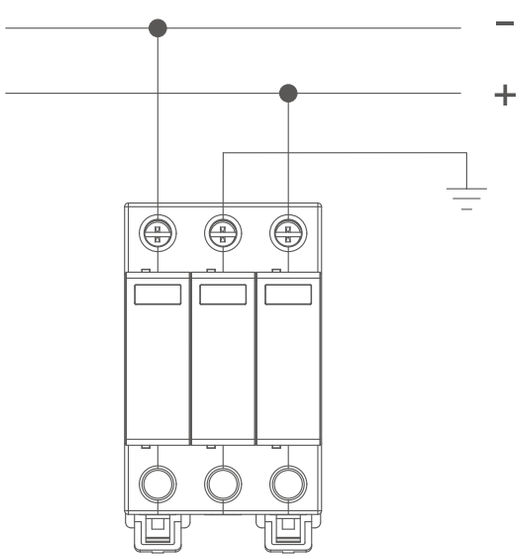
Application

ADLER's ASPD Series PV DC Surge Protection Devices are designed and manufactured complying to PV standard EN50539-11. It is widely used in PV DC combiner boxes, inverters, controllers and DC cabinets. With a rated voltage of 1000 VDC and a maximum discharge current of 40 kA, the integrated high-energy varistor provides highly effective protection against lightning and surge voltages.

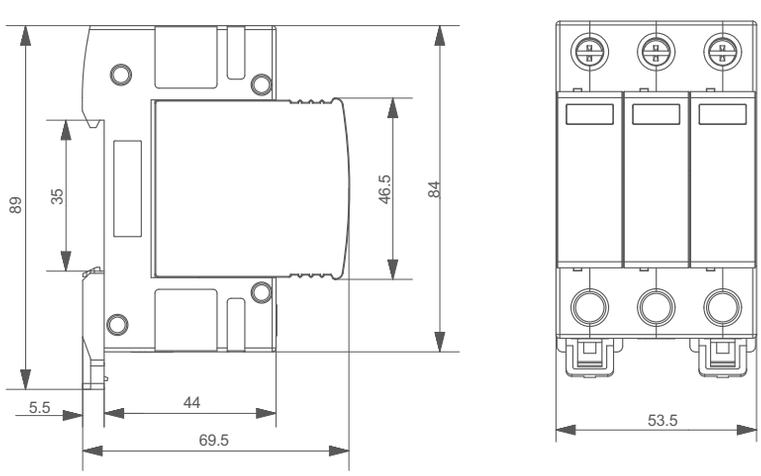
CONNECTION DIAGRAM



WIRING INSTRUCTIONS



DIMENSIONS(mm)



ASPD 1500VDC PV Surge Protection Device

FEATURES:

- Suitable For Use in All Photovoltaic Systems
- Pre-wired Modular Complete Unit, Consisting of A Base Part and Plug-in Protection Modules
- Plug-in Protection Module, easy Installation and Maintainance
- High Energy Varistor, Response Time Less Than 25 Nanoseconds
- Optional Remote Signal Contact(FM) for Monitoring Device (Floating Changeover Contact)
- Ref. to EN 50539-11, GB/T 18802.31

PRODUCT SPECIFICATIONS

ASPD PV DC Surge Protection Device		
Pole		3P
Standard		EN 50539-11 , GB/T 18802.31
Electrical Characteristics		
Open Voltage	Uoc Max	1500 VDC
Max Continuous Operational Voltage	Uc	1800 VDC
Nominal Discharge Current	In(8/20)μs	20 kA
Maximum Discharge Current	Imax(8/20)μs	40 kA
Voltage Protection Level Up	Up	≤4.5 kV
Response Time		≤25 ns
Short-circuit Current Rating-Iscpv		220A
Thermal Protection Function		Yes
Remote Signal Output Function		Yes
Mode of Protection		+/PE, -/PE, +/-
Connection And Installation		
Wire	Hard cable mm^2	4-25
	Flexible cable mm^2	4-16
Terminal Screws		M5
Torque(Nm)	Main Circuit	2.5
	Remote Contact	0.25
Degree of Protection		IP20
Installation Environment		
Operating Temperature		-40°C to +80°C
Humidity		5% to 95%
Air Pressure		70 - 106 KPA

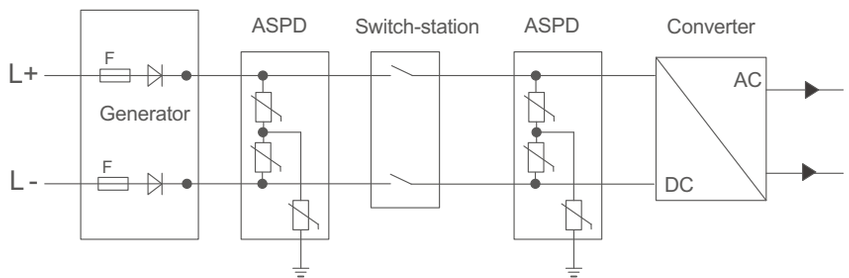
Application

ADLER's ASPD Series PV DC Surge Protection Devices are designed and manufactured complying to PV standard EN50539-11. It is widely used in PV DC combiner boxes, inverters, controllers and DC cabinets. With a rated voltage of 1500 VDC and a maximum discharge current of 40 kA, the integrated high-energy varistor provides highly effective protection against lightning and surge voltages.

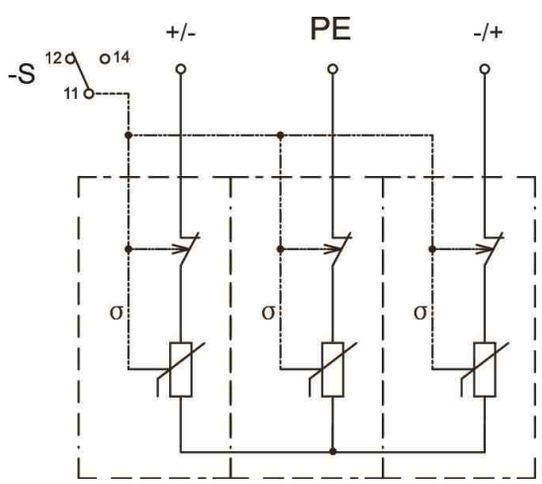
Model Numbering Definitions

ASPD	40	3	15	01
Product code	Max. discharge current	Pole	Rated voltage (*100)	With remote signal contact
PV DC Surge Protection Device	40 kA	3P	1500 V	01: With Remote signal contact 00: Without contact

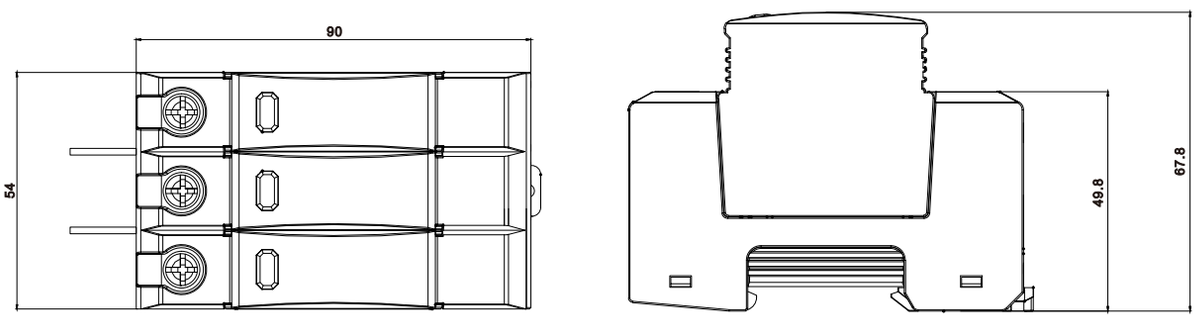
CONNECTION DIAGRAM



Electrical Principle



DIMENSIONS(mm)



4 Photovoltaic System Components

- PV Fuse Holders and Accessories
- DC Isolator Switches
- DC Circuit Breakers, MCBs, MCCBs

BH100-01 1000V/1100V Fuse Holder

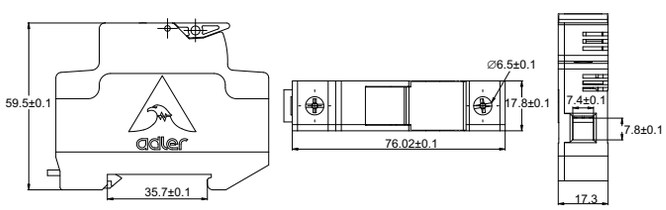
DESCRIPTION:

BH100-01 touch safe holders are designed for 10x38mm DC midget fuses, especially for use with photovoltaic equipment.

SPECIFICATIONS:

- Rated Voltage: 1000 VDC / 1100 VDC
- Rated Current: up to 30 A / 32 A
- Short Circuit Current Rating(SCCR): DC 30kA@1000VDC / 20kA@1100VDC
- Standards: UL 4248-18, EN 60947-3
- Wire Range: 18 - 8 AWG
- Max. Torque: 3.4 N·m
- Max. Dissipation: 6W
- Operation Temperature: -40°C to +130°C
- Material Flammability: UL 94-V0
- Mounting: DIN Rail mounting
- Degree of protection IP20
- UL Listed File: E486822
- TUV File: R 50393963

DIMENSIONS: mm



FEATURES:

ADLER BH100-01 touch safe fuse holders are designed for all standard 10x38mm PV fuses such as ADLER A73/A83 series.

Note:

SCCR is limited to the interrupting rating of the installed fuse or 30kA, which ever is less.

BH100-02 1000V/1100V Fuse Holder

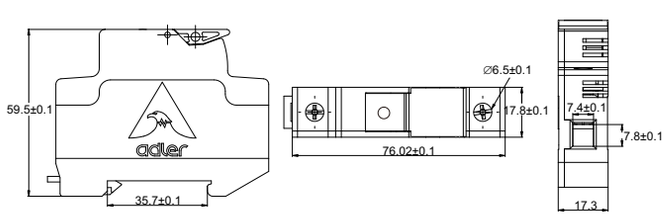
DESCRIPTION:

BH100-02 touch safe holders are designed for 10x38mm fuse links and is equipped with a red indicator light. It will light up when the circuit is nterrupted.

SPECIFICATIONS:

- Rated Voltage: 1000 VDC / 1100 VDC
- Rated Current: up to 30 A / 32A
- Short Circuit Current Rating(SCCR): DC 30kA@1000VDC / 20kA@1100VDC
- Standards: UL 4248-18, EN 60947-3
- Wire Range: 18 - 8 AWG
- Max. Torque: 3.4 N·m
- Max. Dissipation: 6W
- Operation Temperature: -40°C to +130°C
- Material Flammability: UL 94-V0
- Mounting: DIN Rail mounting
- Degree of protection IP20
- UL Listed File: E486822

DIMENSIONS: mm



FEATURES:

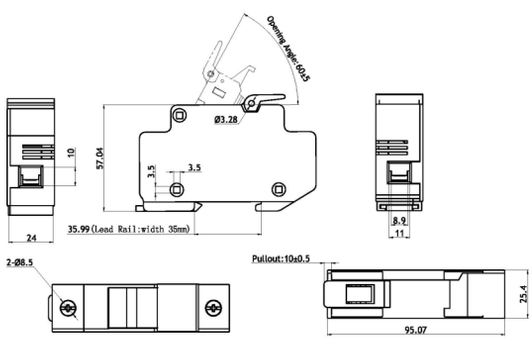
ADLER BH100-02 touch safe fuse holders are designed for all standard 10x38mm PV fuses such as ADLER A73/A83 series.

Note:

SCCR is limited to the interrupting rating of the installed fuse or 30kA, which ever is less.

BH200 1500V Fuse Holder

DIMENSIONS: mm



DESCRIPTION:

The BH200 touch safe holder is designed for 14x51mm fuse links, especially for use with photovoltaic equipment.

SPECIFICATIONS:

- Rated Voltage: 1500 VDC
- Rated Current: up to 30 A
- Short Circuit Current Rating(SCCR): DC 10kA
- Standards: UL 4248-18, EN 60947-3 (10kA@1500V DC)
- Material Flammability: UL 94-V0
- Mounting: DIN Rail mounting
- Wire Range: 5-13 AWG
- Operation Temperature: -40°C to +150°C
- UL Listed File: E486822
- TUV File: R 50393975

FEATURES:

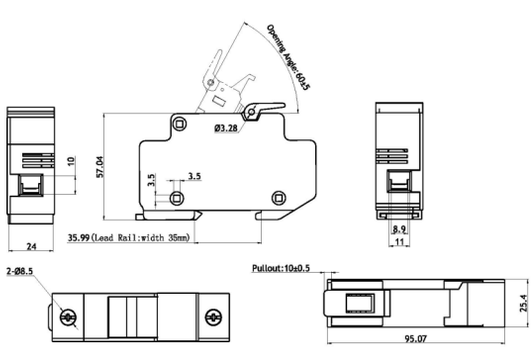
ADLER BH200 touch safe fuse holders are designed for all standard 14x51mm PV fuses such as ADLER A74 series. With current ratings up to 30A at 1500V DC, this holder provides the most compact and effective solution to protect 1500V DC circuits and equipment in photovoltaic applications.

Note:

SCCR is limited to the interrupting rating of the installed fuse or 10kA, which ever is less.

BH201 1500V Fuse Holder

DIMENSIONS: mm



DESCRIPTION:

The BH201 touch safe holder is designed for 14x51mm fuse links and is equipped with a red indicator light. It will light up when the circuit is interrupted.

SPECIFICATIONS:

- Rated Voltage: 1500 VDC
- Rated Current: up to 30 A
- Short Circuit Current Rating(SCCR): DC 10kA
- Standards: UL 4248-18, EN 60947-3 (10 kA@1500 VDC)
- Material Flammability: UL 94-V0
- Mounting: DIN Rail mounting
- Wire Range: 5-13 AWG
- Operation Temperature: -40°C to +150°C
- UL Listed File: E486822
- TUV File: R 50393975

FEATURES:

ADLER BH201 touch safe fuse holders are designed for all standard 14x51mm PV fuses such as ADLER A74 series. With current ratings up to 30A at 1500V DC, this holder provides the most compact and effective solution to protect 1500V DC circuits and equipment in photovoltaic applications.

Note:

SCCR is limited to the interrupting rating of the installed fuse or 10kA, which ever is less.

BH300 1500V Fuse Holder

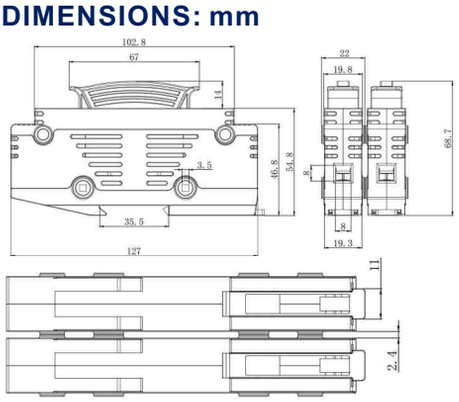
DESCRIPTION:

The BH300 touch safe holder is designed for 10x85mm fuse links, especially for use with photovoltaic equipment.

SPECIFICATIONS:

- Rated Voltage: 1500 VDC
- Rated Current: up to 30 A
- Short Circuit Current Rating(SCCR): 50 kA
- Standards: UL 4248-18,EN 60947-3 (10 kA@1500 VDC)
- Material Flammability: UL 94-V0
- Mounting: DIN Rail mounting
- Wire Range: 6-14 AWG
- Operation Temperature: -40°C to +150°C
- UL Listed File: E486822
- TUV File: R 50394043

DIMENSIONS: mm



FEATURES:

ADLER BH300 touch safe fuse holders are designed for standard 10x85mm PV fuses such as ADLER A75/A85 series and other cylindrical fuses up to Ø10 x 85mm. With current ratings up to 30A at 1500V DC, it can effectively protect 1500 VDC circuits and equipment in photovoltaic applications.

Note:

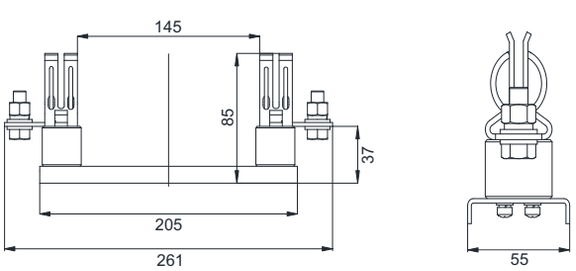
SCCR is limited to the interrupting rating of the installed fuse or 50kA, which ever is less.

BH1XL Fuse Holder

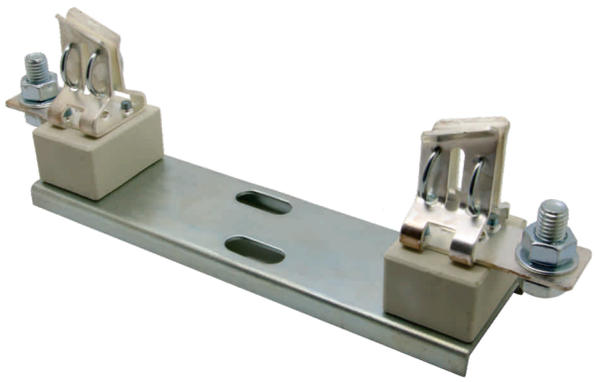
FEATURES:

- Rated Voltage: 1500V DC
- Rated Current: 200A
- Torque: Mounting Plate: 15 N.m
- Terminal Screw(M10): 32 N.m
- Material: Fuse Clip: Silver Plated Copper
- Spring: Zinc Plated Steel
- Mounting Plate: Zinc Plated Steel
- Insulator: Ceramic
- Recommend Fuse: AX6

DIMENSIONS: mm



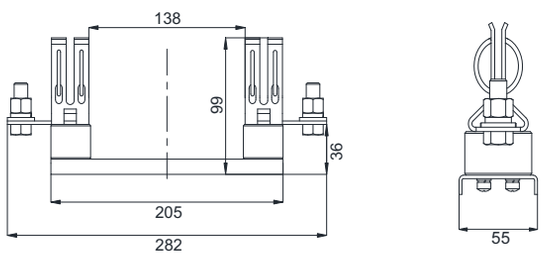
BH03L Fuse Holder



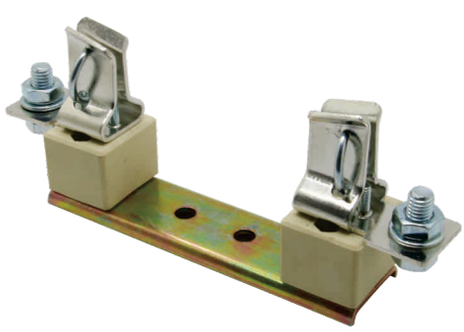
FEATURES:

- Rated Voltage: 1500 VDC
- Rated Current: 630 A
- Torque: Mounting Plate: 15 N.m
- Terminal Screw(M10): 32 N.m
- Material: Fuse Clip: Silver Plated Copper
- Spring: Zinc Plated Steel
- Mounting Plate: Zinc Plated Steel
- Insulator: Ceramic
- Recommend Fuse: AX7, AX8

DIMENSIONS: mm



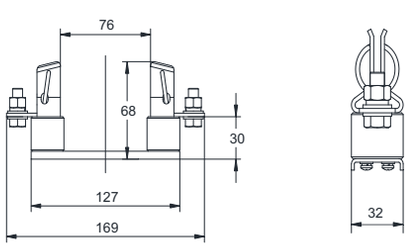
BHNH0 Fuse Holder



FEATURES:

- Rated Voltage: 1500 VDC
- Rated Voltage: 200 A
- Torque: Mounting Plate: 15 N.m
- Terminal Screw(M8): 10 N.m
- Material: Fuse Clip: Silver Plated Copper
- Spring: Zinc Plated Steel
- Mounting Plate: Zinc Plated Steel
- Insulator: Ceramic
- Working Temperature: -40 ℃ to +90 ℃
- Storage Temperature: -40 ℃ to +70 ℃

DIMENSIONS: mm



BHT100 1000V Terminal Block

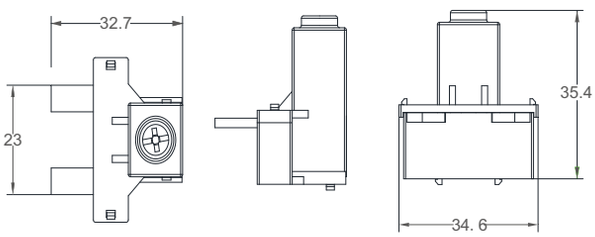
FEATURES:

The insulated BHT100 terminal block is suited for PV installations using ADLER BH100-01, BH100-02 fuse holders.

SPECIFICATIONS:

- Rated Voltage: 1000 VDC
- Rated Current: 60 A
- Torque: 3.0 N.m
- Wire Range: 13 - 5 AWG
- Operation Temperature: -40°C to +130°C

DIMENSIONS: mm



APPLICATIONS:

At practical application, the module -photovoltaic and combiner box has distance so far, every road wire is longer, at large-scale application, that use a mount of wire, in order reduce use a mount of wire and comfirn every road can be protection, use BHT100 conection terminal, parallel of two fuses.

BHT200 1500V Terminal Block

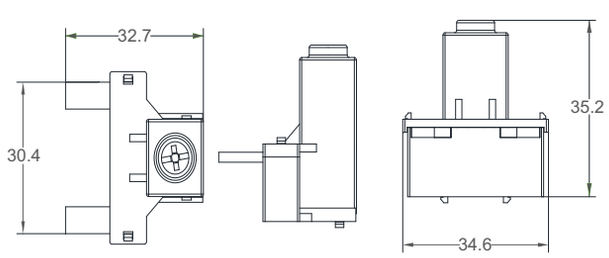
FEATURES:

The insulated BHT200 terminal block is suited for PV installations using ADLER BH200, BH201 fuse holders.

SPECIFICATIONS:

- Rated Voltage: 1500 VDC
- Rated Current: 60 A
- Torque: 3.0 N.m
- Wire Range: 13 - 5 AWG
- Operation Temperature: -40°C to +130°C

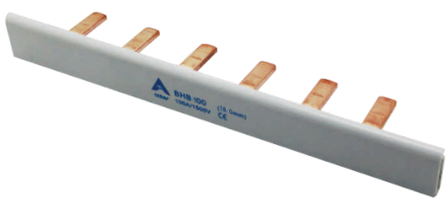
DIMENSIONS: mm



APPLICATIONS:

At practical application, the module -photovoltaic and combiner box has distance so far, every road wire is longer, at large-scale application, that use a mount of wire, in order reduce use a mount of wire and comfirn every road can be protection, use BHT200 conection terminal, parallel of two fuses.

BHB100 1000V Busbar



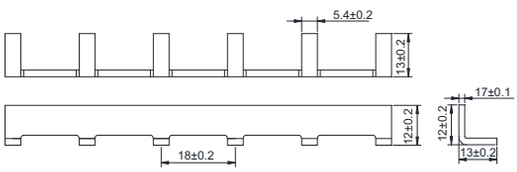
FEATURES:

The insulated BHB100 comb bar is suited for PV installations using ADLER BH100-01, BH100-02 fuse holders.

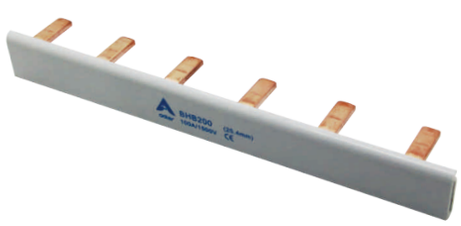
SPECIFICATIONS:

- Insulated 1-pole comb bar, bridge type
- Rated Voltage: 1000 VDC
- Rated Current: 100 A
- Pitch: 18.0mm, Width: 1.7 mm
- Operation Temperature: -40 °C to +130 °C
- Standard: EN 61439-6: 2012

DIMENSIONS: mm



BHB200 1500V Busbar



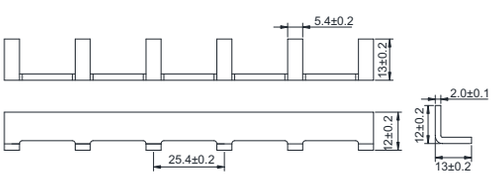
FEATURES:

The insulated BHB200 comb bar is suited for PV installations using ADLER BH200 and BH201 fuse holders.

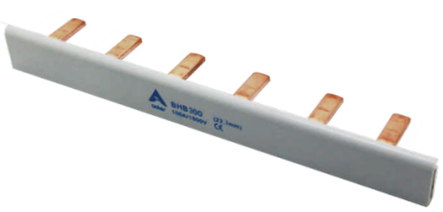
SPECIFICATIONS:

- Insulated 1-pole comb bar, bridge type
- Rated Voltage: 1500 VDC
- Rated Current: 100 A
- Pitch: 25.4mm, Width: 5.4 mm
- Operation Temperature: -40 °C to +130 °C
- Standard: EN 61439-6: 2012

DIMENSIONS: mm



BHB300 1500V Busbar



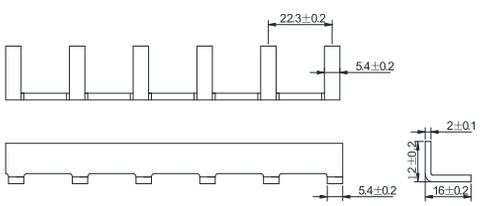
FEATURES:

The insulated BHB300 comb bar is suited for PV installations using ADLER BH300 fuse holder.

SPECIFICATIONS:

- Insulated 1-pole comb bar, bridge type
- Rated Voltage: 1500 VDC
- Rated Current: 100 A
- Pitch: 22.3mm, Width: 2.0 mm
- Operation Temperature: -40 °C to +130 °C
- Standard: EN 61439-6: 2012

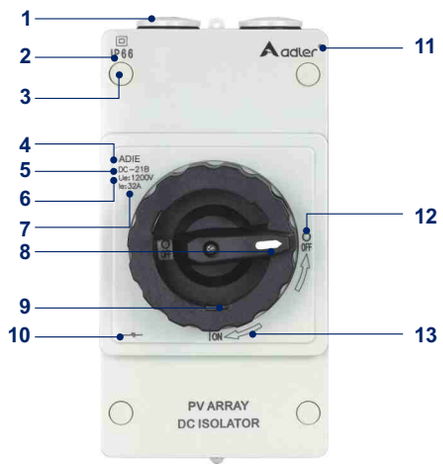
DIMENSIONS: mm



ADIE Series Enclosed PV DC Isolator Switch

FEATURES:

- Compact structure
- Pre-wired DC Main Switch with MC4(optional)
- UV resistant, IP66 enclosure
- Arcing time < 3ms
- "OFF" position Lockable
- IEC60947-3 Standard
- 2P, 3P, 4P, 6P
- DC-21B
- Ui:1500V/Uimp:8kV



Model Numbering Definitions

ADIE	63	4T	15	16	00
Product Code	Conventional free air thermal current	Type Number	Rated Voltage(*100)	Rated Current	Assembly
DC Isolator Switch with Enclosure	63 A	2-pole with Input and Output on top	06: 600V 08: 800V 10: 1000V 12: 1200V 15: 1500V	16 A	00: Standard

1 Waterproof Plug
2 IP66 Ingress Protection
3 Sealed Plug
4 Type
5 Application Category
6 Rated Voltage
7 Rated Current
8 Knob
9 Lockable
10 Electrical Diagram
11 Brand
12 ON
13 OFF

Technical Specifications

Technical date	Symbol	Merit		Unit
Rated operational voltage(DC poles)	Ue			VDC
Rated operational current(DC poles)	Ie			VDC
Conventional free air thermal current	Ith	63		A
Rated impulse withstand voltage	Uimp	8		kV
Rated short-time withstand current(1s)	Icw	8		kA
Rated short-circuit making capacity	Icm	8		kA
Rated conditional short-circuit current		8		kA
Standard Short Circuit Rating		5		kA
High-Fault Short Circuit Rating		8		kA
Insulation voltage	Ui	1500		V
Category DC		DC-21B		
Number of cycles of operation(With current)		3000times(6T Type is 2200 times only)		
Number of cycles of operation(With current)		7000		
Number of DC poles		4/6		
Method of mounting		Standard TH35-7.5 DIN rail mounting		
Method of operating		independent manual operation		
Knob operation force		max	1.4	N.m
Tightening torque terminal screws M4,-max.M4		1.2	1.8	N.m
Tightening torque panel mounting nut,min.-max.		2.5	3.0	N.m
Tightening torque M3 screw in the standard black knob,min.-max.		0.5	0.7	N.m
Ambient temperature allowed between		-40 to +70		℃
Storage temperature allowed between		-40 to +85		℃
Maximum relative humidity,without condensation at 20℃		90		%
Pollution degree		2		
IP rating terminals		IP66		

Application:

ADLER's ADIE Series DC Isolator Switch with plastic enclosure is designed for 1-20 kw residential and commercial PV systems, it is usually installed between solar panels and inverter. With an arcing time of less than 3 ms the switch provides highest precision and safety. Using highest quality materials and designed to gPV test standards this isolator switch will ensure best accuracy and a long working life.

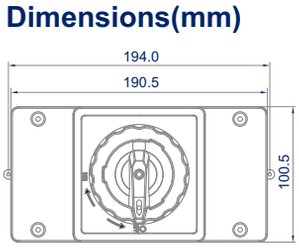
Wiring Instructions

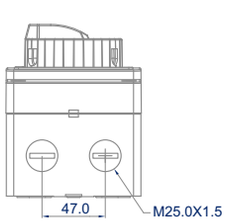
Contact Configuration	DC-21B Rating						Poles in series	Number of Strings	Type Number	Weight kg/pcs
	600V	800V	900V	1000V	1200V	1500V				
1 3 5 7 / 2 4 6 8	50A						2	1	2H	0.91
1 3 5 7 / 2 4 6 8	32A	23A		16A	10A	5A	2	2	04	0.91
		30A		20A						
1 3 5 7 / 2 4 6 8				40A	32A	16A	4	1	4S	0.91
1 3 5 7 / 2 4 6 8				40A	32A	16A	4	1	4B	0.91
1 3 5 7 / 2 4 6 8					32A	16A	4	1	4T	0.91
1 3 5 7 9 11 / 2 4 6 8 10 12	32A	23A		16A	10A	5A	2	3	06	1.05
		30A		20A						
1 3 5 7 9 11 / 2 4 6 8 10 12	63A						2	1	3H	1.05
1 3 5 7 9 11 / 2 4 6 8 10 12						32A	6	1	6S	1.05
1 3 5 7 9 11 / 2 4 6 8 10 12						32A	6	1	6B	1.05
1 3 5 7 9 11 / 2 4 6 8 10 12				40A			3	2	6T	1.05

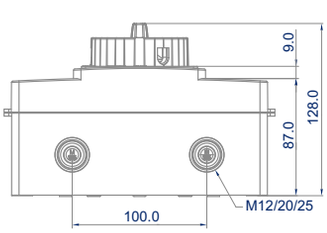
Switching Configurations

Type	2-pole 4Parlleled poles	4-pole	2-pole with Input on top Output bottom	2-pole with Input and Output bottom	2-pole with Input and Output on top	6-pole	2-pole 6Parlleled poles	2-pole with Input on top Output bottom	2-pole with Input and Output bottom	4-pole with Input and Output bottom
Part Number	2H	04	4S	4B	4T	06	3H	6S	6B	6T
Contacts Wiring diagram										
Switching example										

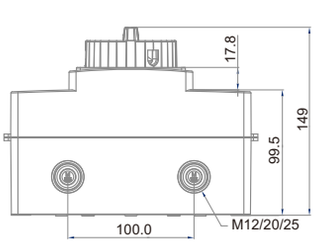
Dimensions(mm)







4 Poles



6 Poles

ADIS Series PV DC Isolator Switch

ADIS-1 1200 VDC Isolator Switch

- Rated Voltage 1200 VDC
- Single Hole Mounting Ø22 mm
- Flame-Retardant
- Arcing Time <3 ms
- IEC60947-3
- 4 poles(Single|Double Strings Available)
- DC-21B: 16 A,25 A,32 A up to 1200 VDC

ADIS-2

ADIS - Standard 1200 VDC Isolator Switch

ADIS-3 1200 VDC Isolator Switch with OFF-Lock

Application

ADLER's ADIS series DC Isolator Switches are designed for installation in 1-20 kW Inverters, Controller and DC Combiner Boxes.
They are used for Residential or Commercial PV solar power system(on-grid/off-grid). With their arcing time of less than 3 ms they effectively disconnect all standard PV solar systems.

- ADIS-2: DIN Rail Mounting;
  ADIS-3: DIN Rail Mounting Door Clutch
- OFF - Lock
- Flame-Retardant
- Arcing Time <3 ms
- IEC60947-3
- 4Poles(Single|Double Strings Available)
- DC-21B: 16 A,25 A,32 A up to 1200 VDC

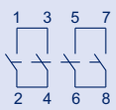
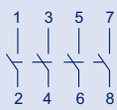
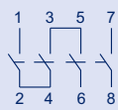
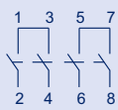
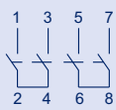
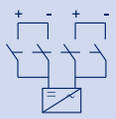
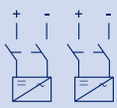
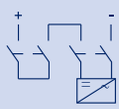
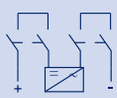
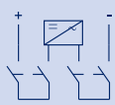
Product Specifications

Electrical Characteristics		
Function		Isolator, Control
Compliance		IEC60947-3
Poles		4P
Max Rated Current		32 A
Rated Operational Voltage	Ue	1200 VDC
Rated Current	In	16 A/25 A/32 A
Rated Insulated Voltage	Ui	1200 VDC
Rated Impulsed Withstand Voltage	Uimp	8 kV
Service Life/Cycle Operation		
Mechanical		20000
Electrical		500
Installation Environment		
Size of Terminal Screw		M4
Tightening Torque	Nm	2.5
Maximum Cable Cross Sections	mm^2	4-16
Ingress Protection		IP20
Storage Temperature		-25°C to +85°C

Model Numbering Definitions

ADIS	1	32	0DR2	12	13
Product Code	Series	Max. Rated Current	Type Number	Rated Voltage	Rated Current
DC Isolator Switch	1: ADIS-1 2: ADIS-2 3: ADIS-3	32 A	2-pole	06: 600V 08: 800V 10: 1000V 12: 1200V	13 A

Switching Configurations

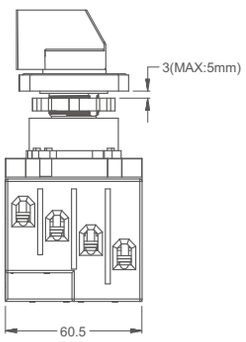
Model	2-pole	2-pole 4 Paralleled Poles	4-pole	4-pole with Input on top Output bottom	4-pole with Input and Output bottom	4-pole with Input and Output on top
ADIS-1/2/3 16 A	2	2H	4	4S	4B	4T
ADIS-1/2/3 25 A	2	2H	4	4S	4B	4T
ADIS-1/2/3 32 A	2	2H	4	4S	4B	4T
Contacts Wiring graph						
Switching example						

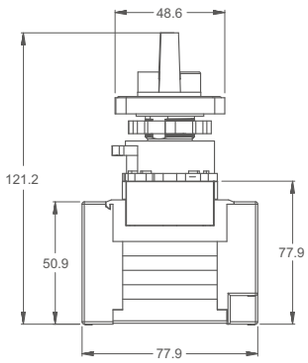
Wiring Instructions

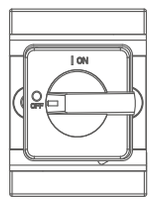
Contacts Configuration	600V	800V	1000V	1200V	Poles in series	Number of Strings	Code	Weight kg/PCS
	16A	16A	9A		2	1	DR2	0.23
	25A	20A	11A	9A	2	1	DR2	0.23
	32A	23A	13A	13A	2	1	DR2	0.23
	29A	16A	9A		2	1	DR2H	0.25
	45A	20A	11A	9A	2	1	DR2H	0.25
	50A	23A	13A	13A	2	1	DR2H	0.25
	16A	16A	9A		2	2	DR4	0.23
	25A	20A	11A	9A	2	2	DR4	0.23
	32A	23A	13A	13A	2	2	DR4	0.23
	16A	16A	16A	16A	4	1	DR4S	0.24
	25A	25A	25A	25A	4	1	DR4S	0.24
	32A	32A	32A	32A	4	1	DR4S	0.24
	16A	16A	16A	16A	4	1	DR4B	0.24
	25A	25A	25A	25A	4	1	DR4B	0.24
	32A	32A	32A	32A	4	1	DR4B	0.24
	16A	16A	16A	16A	4	1	DR4T	0.24
	25A	25A	25A	25A	4	1	DR4T	0.24
	32A	32A	32A	32A	4	1	DR4T	0.24

Dimensions(mm)

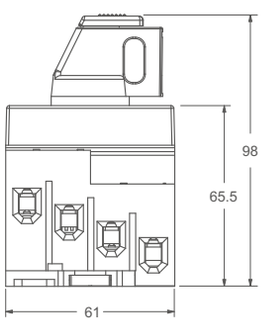
ADIS-1

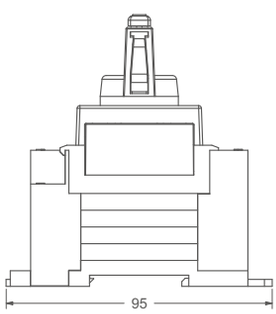


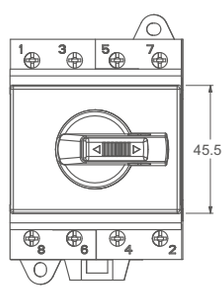




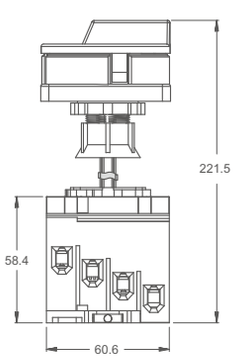
ADIS-2
DIN Rail Mounting

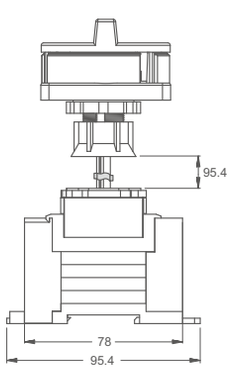


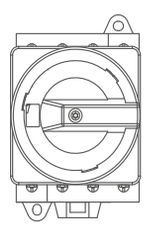




ADIS-3
DIN Rail Mounting,
Door Clutch







ADII Series PV Inverter DC Isolator Switch

ADII-1 63 A DC Isolator Switch

- Panel Mounting
- Compact Structure
- Arcing time < 3 ms
- Busbar Design, Easy Installation
- Flame-Retardant
- Special Modular Design
- IEC60947-3 Standard
- DC-21B: 3 A,16 A,32 A up tp 1500 VDC

ADII-2 63 A DC Isolator Switch

- Din Rail Mounting And Fixed Mounting
- Compact Structure
- Arcing Time < 3 ms
- Busbar Design, Easy Installation
- Flame-retardant
- Special Modular Design
- IEC60947-3 Standard
- DC-21B: 3 A,16 A,32 A up tp 1500 VDC

Product Specifications

Technical data	Symbol	Merit		Unit
Rated operational voltage (DC poles)	Ue			
Rated operational current (DC poles)	Ie			
Conventional free air thermal current	Ith	63		A
Rated impulse withstand voltage	Uimp	8		kV
Rated short-time withstand current (1s)	Icw	8		kA
Rated short-circuit making capacity	Icm	8		kA
Rated conditional short-circuit current		8		kA
Standard Short Circuit Rating		5		kA
High-Fault Short Circuit Rating		8		kA
Insulation voltage	Ui	1500		V
Installation Environment				
Utiizatin category DC		DC-21B		
Number of cycles of operation(With current)		3000 times (6T Type is 2200 times only)		
Number of cycles of operation(Without current)		7000 times		
Number of DC poles		1/2/3/4/6/8		
Method of mountig		Panel mounting	Standard TH35-7.5 DIN rail mounting	
Method of operatin		independent manual operation		
Knob operation force		max.	1.4	Nm
Tightening torque terminal screws M4 , min. - max.M4		1.2	1.8	Nm
Tightening torque panel mountig nut, min. - max.		2.5	3.0	Nm
Tightening torque M3 screw in the standard black knob, min. - max.		0.5	0.7	Nm
Ambient temperature allowed between		-40 °C ~ +70°C		
Storage temperature allowed between		-40°C ~ +85°C		
Maximum relative humidity, without condensatiOn at 20°C		90%		
Pollution degree		2		
IP rating terminals		IP20		
IP rating gland of the shaft in case of single hole panel mounting		IP66		

Application

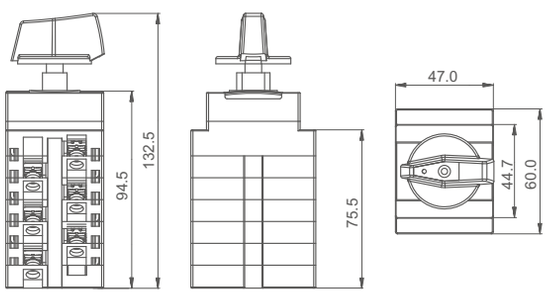
ADLER's ADII series DC Isolator Switches are designed for PV solar power systems, in applications between1 kW to 20 kW, especially for use in inverters, controllers and solar DC combiner boxes. The ADII can operate at a maximum Voltage of 1500 VDC, with rated currents of 32 A , combining innovative design with a compact structure.

Model Numbering Definitions

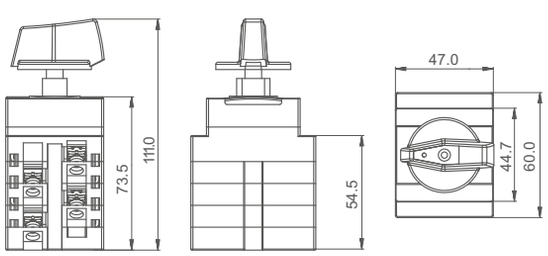
ADII	1	63	02	12	10
Product Code	Series	Max. Rated Current	Type Number	Rated Voltage	Rated Current
DC Isolator Switch	1: Panel mounting 2: DIN rail mounting	63 A	**2-pole**	05: 500V 06: 600V 08: 800V 09: 900V 10: 1000V 12: 1200V 15: 1500V	10 A

ADII-1

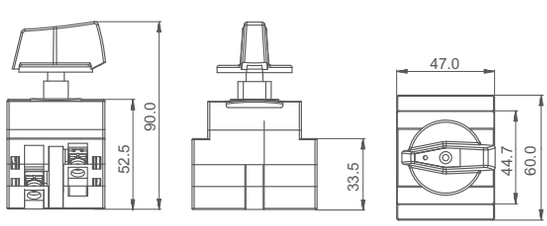
6P



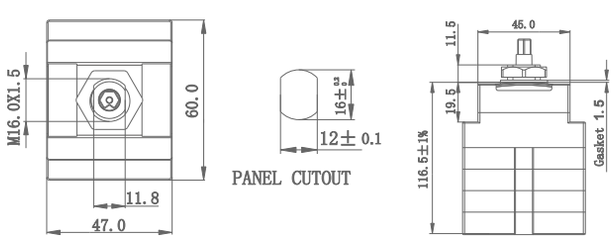
4P



2P

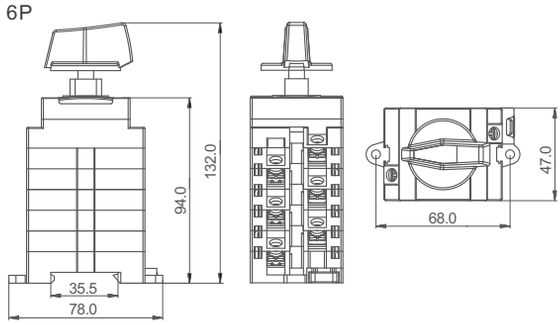


8P

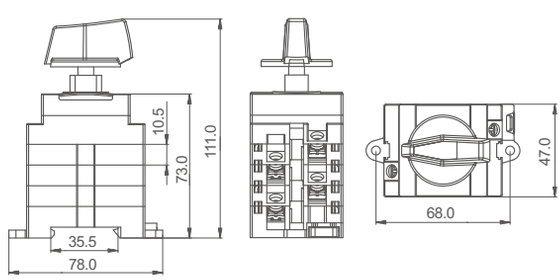


ADII-2

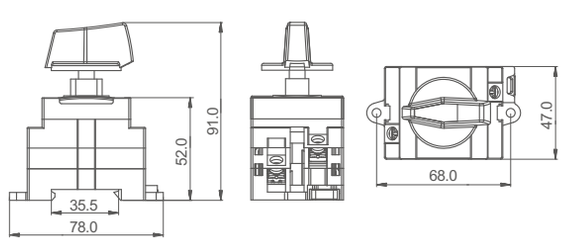
6P



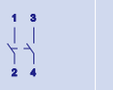
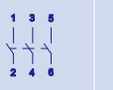
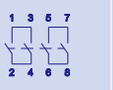
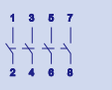
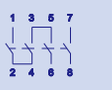
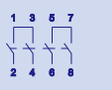
4P

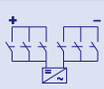
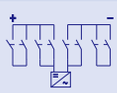


2P



Switching Configurations

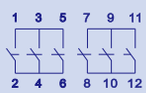
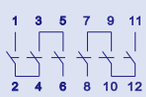
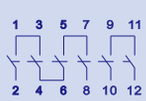
Type	1-pole	2-pole	3-pole	2-pole 4Parlleled poles	4-pole	2-pole with Input on top Output bottom	2-pole with Input and Output bottom	2-pole with Input and Output on top
Part Number	01	02	03	2H	04	4S	4B	4T
Contacts Wiring diagram								
Switching example								

Type	6-pole	2-pole 6Parlleled poles	2-pole with Input on top Output bottom	2-pole with Input and Output bottom	4-pole with Input and Output bottom	8-pole	2-pole 8Parlleled poles
Part Number	06	3H	6S	6B	6T	08	4H
Contacts Wiring diagram							
Switching example							

Wiring Instructions

Contact Configuration	DC-21B Rating							Poles in series	of Strings	Type Number	Weight kg/pcs
	500V	600V	800V	900V	1000V	1200V	1500V				
											
		12A	8A	6A	4A			2	1	02	0.18
											
	32A	32A	25A	20A	16A	16A	5A	2	1	02	0.18
			30		20A						
											
		20A	16A	13A	11A	9A	3A	2	2	03	0.18
											
		50A						2	1	2H	0.26
											
	32A	32A	23A		16A	10A	5A	2	2	04	0.26
			30		20A						
											
					40A	32A	16A	4	1	4S	0.26
											
					40A	32A	16A	4	1	4B	0.26
											
						32A	16A	4	1	4T	0.26

Wiring Instructions

Contact Configuration	DC-21B Rating							Poles in series	Number of Strings	Type Number	Weight kg/pcs
	500V	600V	800V	900V	1000V	1200V	1500V				
	32A	32A	23A		16A	10A	5A	2	3	06	0.33
			30A		20A						
	63A	63A						2	1	3H	0.33
							32A	6	1	6S	0.33
							32A	6	1	6B	0.33
					40A			3	2	6T	0.33
	32A	32A	23A	20A	16A	10A	5A	2	4	08	0.4
			63A					4	1	4H	0.4

ADIR Series PV Rail-Mount DC Isolator Switch

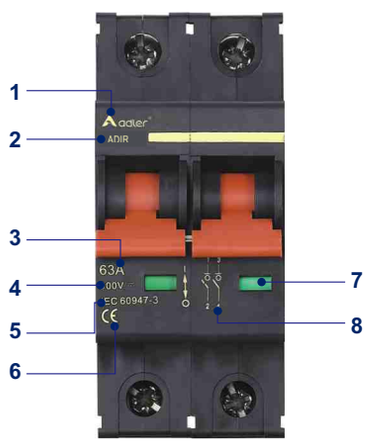
Features

- Non-polar design
- Functions: Unfrequent operation and Isolation
- Rated Current: Up to 63 A
- Rated Voltage: 1200 VDC
- Flash Barrier for better system safety
- In Compliance with: IEC60947-3/GB14048-3

Product Specifications

Electrical Characteristics					
Model		ADIR			
Comply With		IEC60947-3/GB14048.3			
Poles		1P	2P	3P	4P
Rated Working Voltage	Ue	300 VDC	600 VDC	900 VDC	1200 VDC
Max Rated Current		63 A			
Rated Current	In	25 A,40 A,63 A			
Rated Insulated Voltage	Ui	1200 VDC			
Rated Impulsed Voltage	Uimp	6 kv			
Service Life/cycle Operation					
Mechanical	Actual Value	20000			
	Standard Value	8500			
Electrical	Actual Value	4000			
	Standard Value	1500			
Isolator Function		6KY			
Installation Environment					
Ingress Protection		All Sides IP40 ,Connection Terminal IP20			
Terminal Cross Section		2.5-25 mm^2			
Working Temperature		-25°C to +70°C			
Storage Temperature		-40°C to +85°C			
Resistance to Humidity And Heat		II (at humidity level of 55 %, relative humidity 95 %)			
Resistance to Shock		2.6 IEC60068			
Resistance to Impack		2.27 IEC60068			

Product Architecture



1 Brand
2 Type
3 Rated Current
4 Rated Voltage
5 Standard Code
6 Certificate Symbol
7 Indicator
8 Wiring Diagram

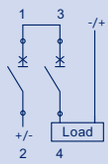
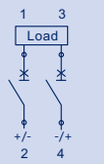
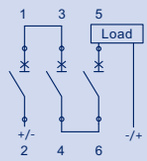
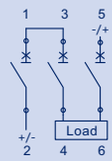
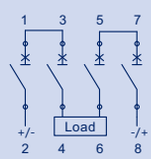
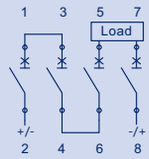
Model Numbering Definitions

ADIR	63	4	12	25
Product Code	Max Rated Current	Poles	Rated Voltage (*100)	Rated Current
DC Isolator Switch for DIN Rails	63 A	4P	1200V	25A

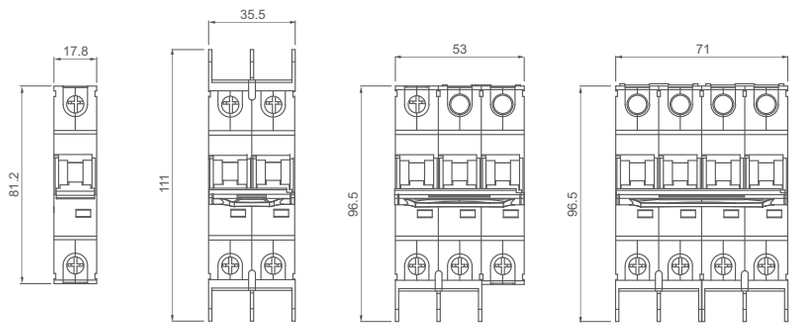
Application

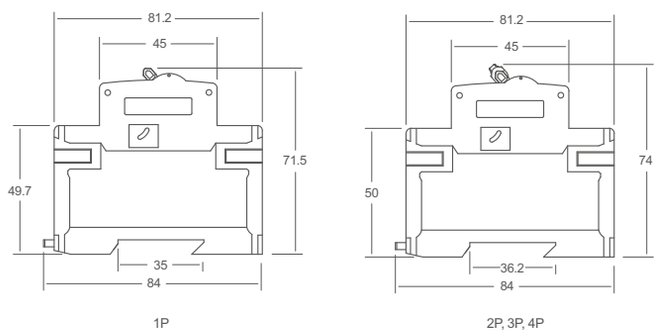
ADLER's ADIR Series PV Rail-Mounted DC Isolator switches are mainly used in PV solar power systems, applied in DC solar combiner box, controller etc. At operational voltage of up to 1200 VDC and currents of up to 63 A, they provide effective disconnection and Anti-reflux protection. The scientific design of the arc-extinguishing system increases the safety of the PV system.

Wiring Instructions

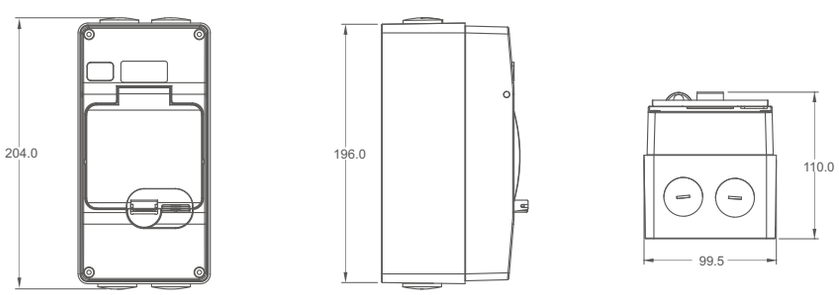
Poles	1P	2P		3P		4P	
Type							
Contacts Wiring graph							

Dimensions(mm)





1P 2P, 3P, 4P



ADIM Series PV Moulded Case DC Isolator Switch

Features

- High Insulation Performance
- Ideal for random operation and DC isolation
- Rated Voltage up to 1200 VDC
- Rated Current: 125 A,250 A,400 A,630 A
- IEC60947-3, GB14048-3

Product Specifications

ADIM series PV DC Moulded Case Isolator Switch						
Type			ADIM-125	ADIM-250	ADIM-400	ADIM-630
Poles			4P			
Max Rated Current			125 A	250 A	400 A	630 A
Electrical Characteristics						
Rated Operational Voltage	Ue		1200 VDC			
Rated Operational Current	In(A)		60/80 100/125	125/160 200/250	250/300/315 350/400	400/500/630
Rated Insulated Voltage	Ui		1200 VDC			
Impulsed Withstand Voltage	Uimp		8 kV			
1 Min Power Frequency Withstand Voltage			3.8 kV			
Control And Indication						
Control Mode	Manual	Direct (RHD)	Optional			
		Extended(ERH)	Optional			
	MOD		Optional			
Shunt Release (SHT)			Optional			
Auxiliary Release			Optional			
Terminal End Cover			Yes			
Interphase Barriers			Yes			
Service Life/Cycle Operation						
Mechanical			14000	14000	5000	5000
Electrical			5000	5000	1500	1500
Size (L x W x H)			150x122x92	165x140x89	258x198x107	282x282x115
Ingress Protection			All Sides IP40 ,Connection Terminal IP20			
Installation Environment						
Comply with			IEC60947-3/GB14048.3			
Storage Temperature			-45°C to +70°C			

Product Architecture

1 Brand
2 Type
3 Rated Current
4 Rated Voltage
5 Rated Short-time Withstand Current
6 Standard Code
7 Certificate Symbol
8 Wiring Diagram

Model Numbering Definitions

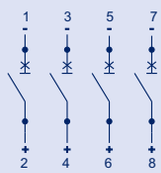
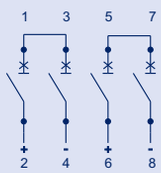
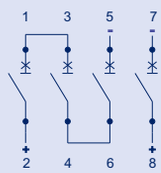
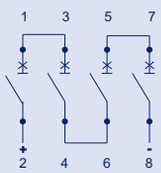
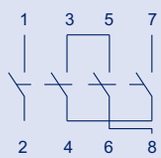
ADIM	630	4	12	500
Product Code	Max Rated Current	Poles	Rated Voltage (*100)	Rated Operational Current (A)
PV DC Moulded Case Isolator Switch	125: 125 A 250: 250 A 400: 400 A 630: 630 A	4 Poles	1200 V	500 A

Application

ADLER's ADIM PV DC Isolator Switches are designed for protection in large scale solar power systems and for operation in DC combiner boxes , inverter equipment and DC power distribution cabinets. They support an operational voltage of up to 1200 VDC and rated currents of up to 630 A to effectively isolate DC current.

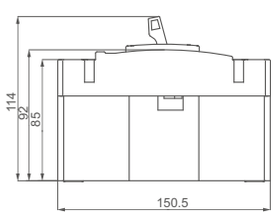
Type	ADIM-125A	ADIM-250A	ADIM-400A	ADIM-630A
Picture				

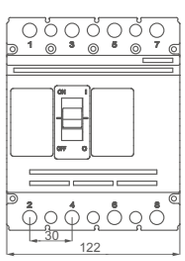
Wiring Instructions

	Type Y				Type S
Connection Wiring graph					

Dimensions(mm)

125 A





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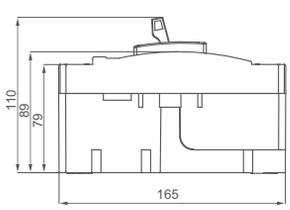

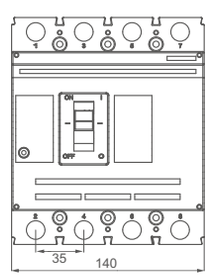

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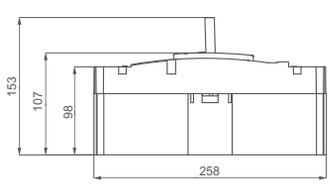
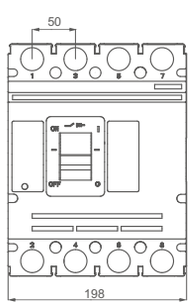
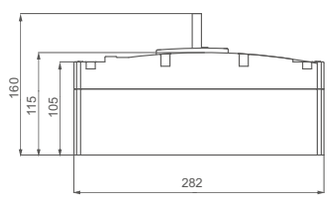
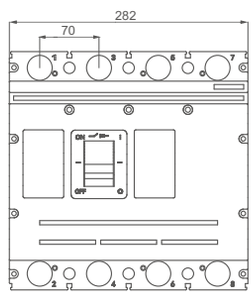




630 A





ADCR Series PV Rail-Mount DC Circuit Breakers

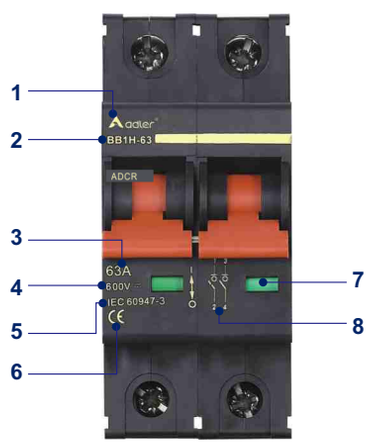
Features

- Nonpolarity
- High Short-Circuit / Breaking Capacity
- Functions: Overload, Short Circuit, Unfrequent Operation and, Anti-reflux Protection
- Rated Voltage: 1200 V, Ultimate Breaking Capacity: 6 kA
- Rated Current: 63 A
- Comply with : IEC60947-2/GB14048-2

Parameter

Electrical Characteristics					
Type		ADCR			
Comply with		IEC60947-2/GB14048.2			
Poles		1P	2P	3P	4P
Rated Working Voltage	Ue	300 VDC	600 VDC	900 VDC	1200 VDC
Max Rated Current		63A			
Rated Current	In	4 A, 6 A,10 A,13 A,16 A,20 A,25 A,32 A,40 A,50 A,63 A			
Rated Insulated Voltage	Ui	1200 VDC			
Rated Impulsed Voltage	Uimp	4 kV			
Ultimate Breaking Capacity	Icu	6 kV			
Run Breaking Capacity	Ics	100 %			
Curve Type		B			
Tripping Type		Thermal Magnetic Type			
Service Life/cycle Operation					
Mechanical	Actual Value	20000			
	Standard Value	8500			
Electrical	Actual Value	4000			
	Standard Value	1500			
Installation Environment					
Ingress Protection		All Sides IP40 ,Connection Terminal IP20			
Terminal Cross Section		2.5-25 mm^2			
Working Temperature		-25°C to +70°C			
Storage Temperature		-40°C to +85°C			
Resistance to Humidity And Heat		II (at humidity levels up to 55 %, Relative Humidity 95 %)			
Resistance to Shock		2.6 IEC60068			
Resistance to Impack		2.27 IEC60068			

Product Architecture



1 Brand
2 Type
3 Rated Current
4 Rated Voltage
5 Breaking Capacity
6 Standard
7 Indicator
8 Wiring Diagram

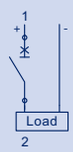
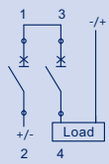
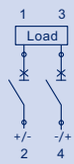
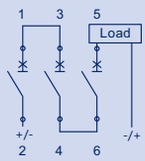
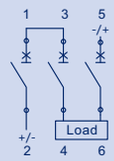
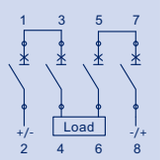
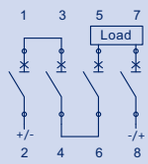
Model Numbering Definitions

ADCR	63	4	12	03
Product Code	Max Rated Current	Poles	Rated Voltage (*100)	Rated Current
PV Rail Mount Circuit Breaker	63 A	1: 1 Pole 2: 2 Poles 3: 3 Poles 4: 4 Poles	03: 300 V 06: 600 V 09: 900 V 12: 1200 V	3 A

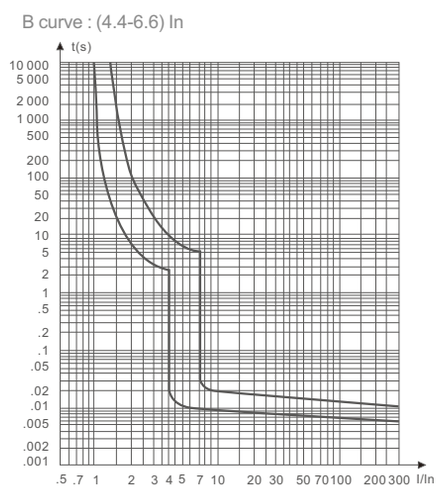
Application

ADLER's ADCR Series PV Circuit Breakers are mainly applied to DC solar combiner box ,Controller etc. The main function include overload protection, Anti-reflux protection and short-circuit protection. The scientific design of the arc-extinguishing system increase the safety of the solar system.They support an operational voltage of up to 1200 VDC and rated current of up to 63 A.

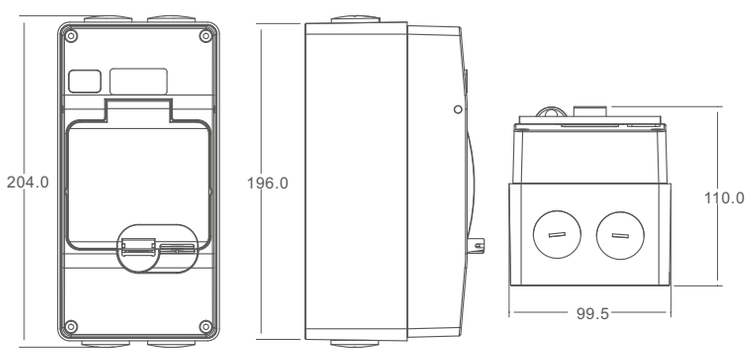
Wiring Method

Poles	1P	2P	3P	4P
Type				
Contacts Wiring graph		 	 	 

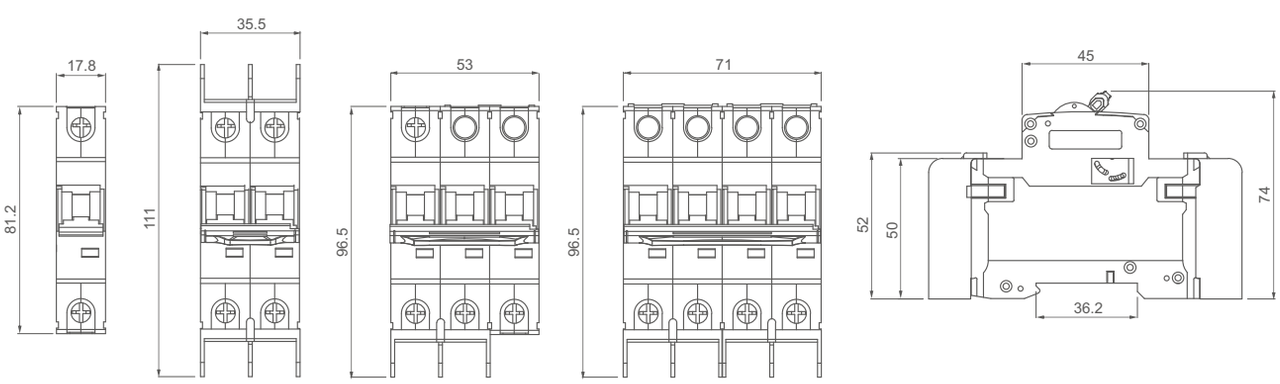
Characteristic Curve



Dimensions(mm)



Dimensions(mm)



ADCM Series PV Moulded Case DC Circuit Breakers

Features

- High Short-Circuit/Breaking Capacity
- Protection Functions: Overload, Short circuit , Unfrequent Operation
- Rated Voltage up to 1000 VDC
- Rated Current 125 A, 250 A, 400 A, 630 A
- IEC60947-2, GB14048-2
- Easy Installation

Product Specifications

ADCM Series						
Type			ADCM-125	ADCM-250	ADCM-400	ADCM-630
Poles			4P	4P	4P	4P
Max Rated Current			125 A	250 A	400 A	630 A
Electrical Characteristics						
Rated Operational Voltage	Ue		1000 VDC	1000 VDC	1000 VDC	1000 VDC
Rated Operational Current	In(A)		63/80 100/125	125/160 200/250	250/300/315 350/400	400/500/630
Rated Insulation Voltage	Ui		1000 VDC			
Impulsed Wisthstand Voltage	Uimp		8 kV			
1 Min Power Frequency Withstand Voltage			3.8 kV	3.8 kV	3.8 kV	3.8 kV
Ultimate Breaking Capacity	Icu		20 kA	20 kA	20 kA	20 kA
Run Breaking Capacity	Ics		15 kA	15 kA	15 kA	15 kA
Protection						
Tripping Type			Thermal Magnetic Type			
Control And Indication						
Control Mode	Manual	Direct (RHD)	Optional			
		Extended(ERH)	Optional			
	MOD		Optional			
Shunt Release (SHT)			Optional			
Auxiliary Release			Optional			
Terminal End Cover			Yes			
Interphase Barriers			Yes			
Service Life/Cycle Operation						
Mechanical			14000	14000	5000	5000
Electrical			5000	5000	1500	1500
Size (L x W x H)			150x122x92	165x140x89	257x198x107	282x282x115
Ingress Protection			All Sides IP40 ,Connection Terminal IP20			
Installation Environment						
Comply With			IEC60947-2/GB14048.2			
Storage Temperature			-25°C-+70°C			

Product Architecture

1 Brand
2 Type
3 Rated Current
4 Rated Voltage
5 Breaking Capacity
6 Operation Breaking Capacity
7 Standard Code
8 Certificate Symbol
9 Wiring Diagram
10 Characteristic Curve

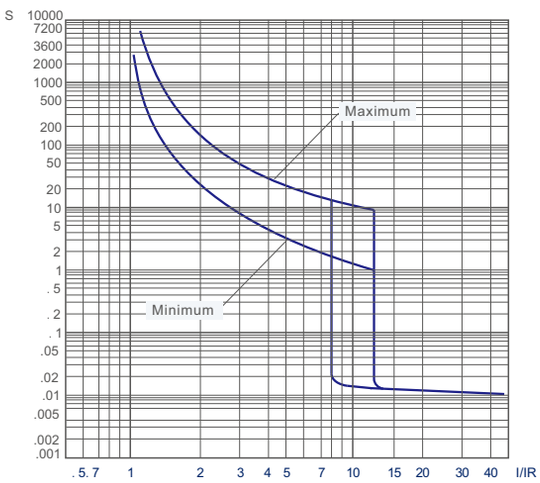
Model Numbering Definitions

ADCM	630	4	10	60
Product Code	Max Rated Current	Poles	Rated Voltage (*100)	Rated Operational Cuurent
PV DC Moulded Case Circuit Breaker	125 A, 250 A 400 A, 630 A	4P	1000 V	60 A

Application

ADLER's ADCM series PV DC Moulded Case Circuit Breakers are mainly used in large scale solar power systems, and are installed in DC combiner boxes,inverter equipment and DC power distribution cabinets. They support a voltage of up to 1000 VDC, and rated currents of up to 630 A, for optimal protection against overloads and short circuit protection.

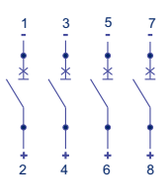
Characteristic Curve

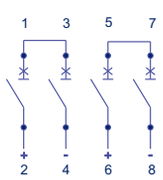


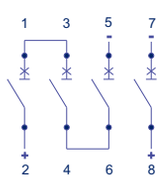
Type	ADCM-125	ADCM-250	ADCM-400	ADCM-630
Picture				

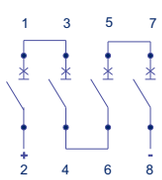
Contacts Wiring graph

Type Y MCCB

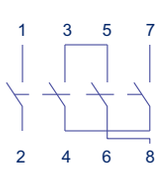






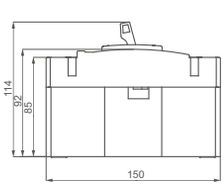


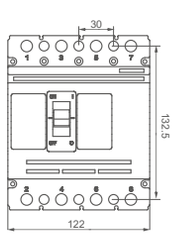
Type S MCCB



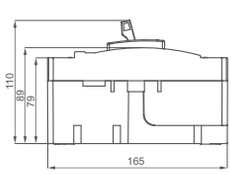
Dimensions(mm)

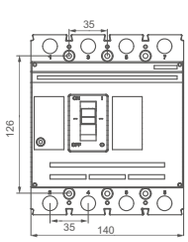
125A





250A





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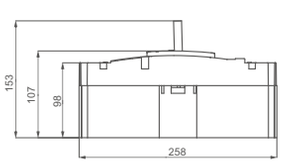
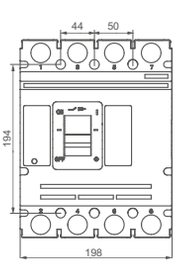
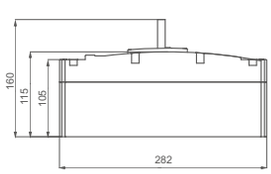
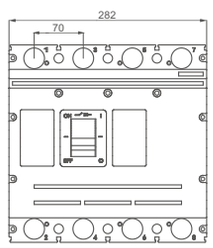




630A





HIGH SPEED FUSES
AND SYSTEM PROTECTION

IATF 16949
ISO 9001-2015

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- ADLER Songshan Lake Dongguan (Testing center)