

G23NE-401



**GRL** Electric

# NEW ENERGY

## ELECTRICAL COMPONENTS

Connect Makes Batter

**GRL**



## About GRL

Zhejiang GRL Electric Co., Ltd. is one of the leading companies in the Middle And High End market of low-voltage electric in China. Founded in 1992, GRL focuses on meeting customer' s requirement,enhancing customer value, aiming to provide customers with safe and reliable low-voltage electrical components.

GRL specializes in Solar system,combiner box, fuse, fuse switch, vertical fuse switch disconnecter and busbar systems. Committed to solving customer pain points, meeting customer' s demands, GRL helps customer win competitive advantages . OEM and ODM cooperation are also welcome.

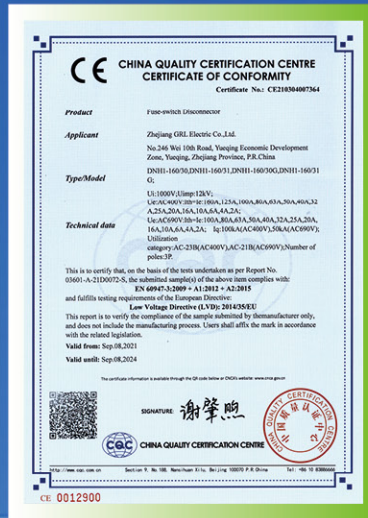


Connect Makes Batter 

ISO9001 质量管理体系  
 ISO14001 环境管理体系  
 ISO45001 职业健康安全管理体系

CCC CE CB TÜV RoHS

90+ Patent 200+ Certificate





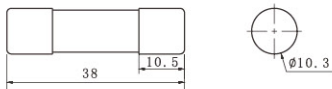
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# Photovoltaic fuse



# Photovoltaic fuse 1000VDC



## Technical Parameter

Utilization category	gPV
Rated breaking capacity DC	20 kA
Time constant L/R	1-3 ms
(Reference)Standard	IEC 60269-6, GB/T 13539.6

Model No.	Rated operating current $I_e$	Joule integral $I^2T$ (A <sup>2</sup> S)		Power dissipation	
				0.8In	1.0In
DNPV1038	2	1.2	3.3	0.68	1.36
DNPV1038	3	3.9	11	0.75	1.42
DNPV1038	4	10	27	0.94	1.58
DNPV1038	5	18	48	0.98	1.83
DNPV1038	6	31	89	1.10	1.84
DNPV1038	8	3.1	31	1.13	1.86
DNPV1038	10	7.2	68	1.21	2.08
DNPV1038	12	16	136	1.38	2.62
DNPV1038	15	24	215	1.67	2.95
DNPV1038	16	25	250	1.73	3
DNPV1038	20	38	392	1.92	3.12
DNPV1038	25	71	508	2.10	3.46
DNPV1038	30	102	821	2.30	3.78
DNPV1038	32	110	900	2.5	4

# PV(Photovoltaic) Fuse Links 1500VDC



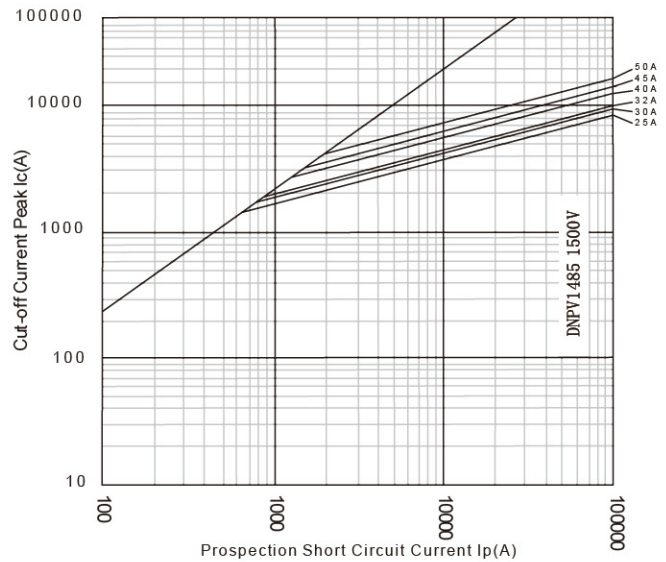
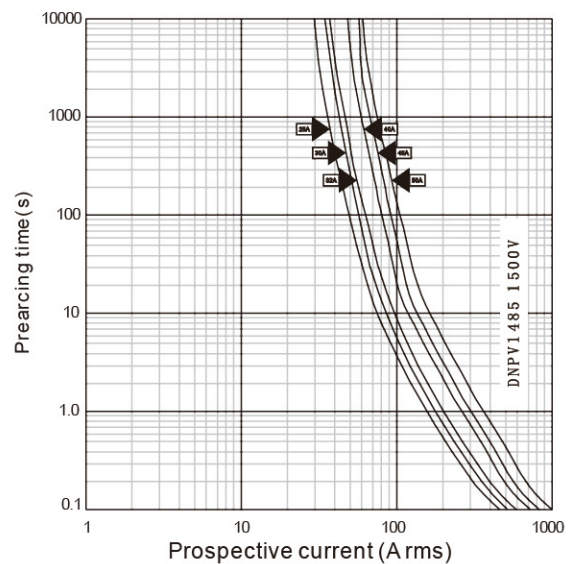
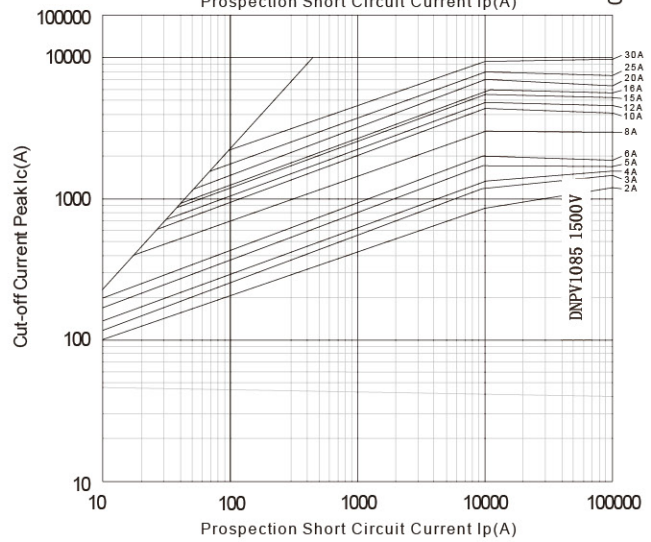
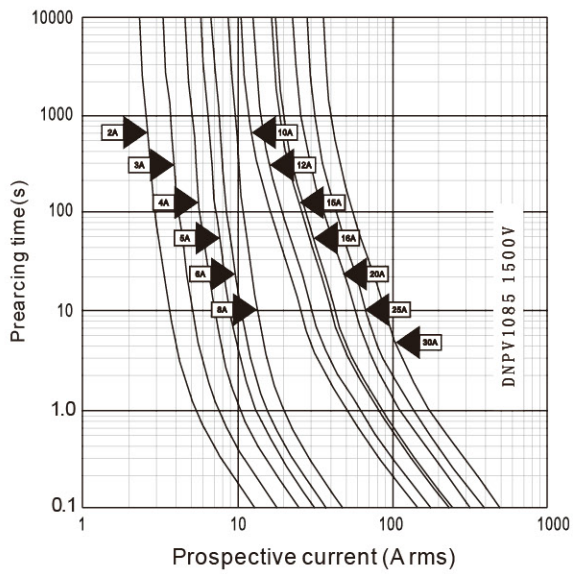
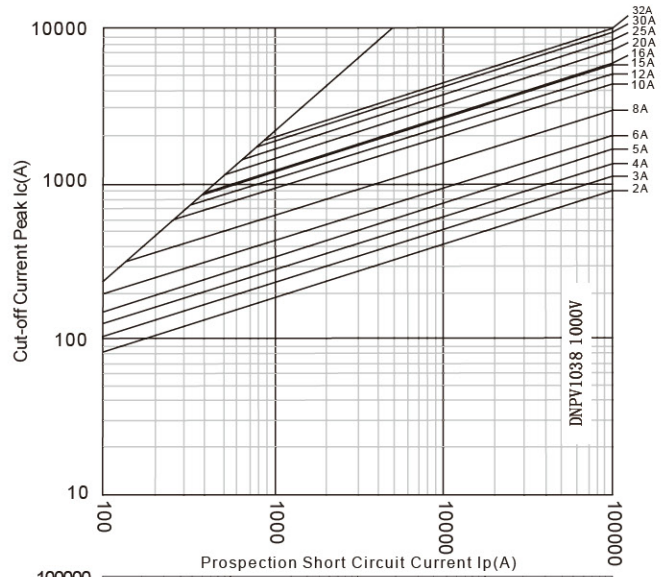
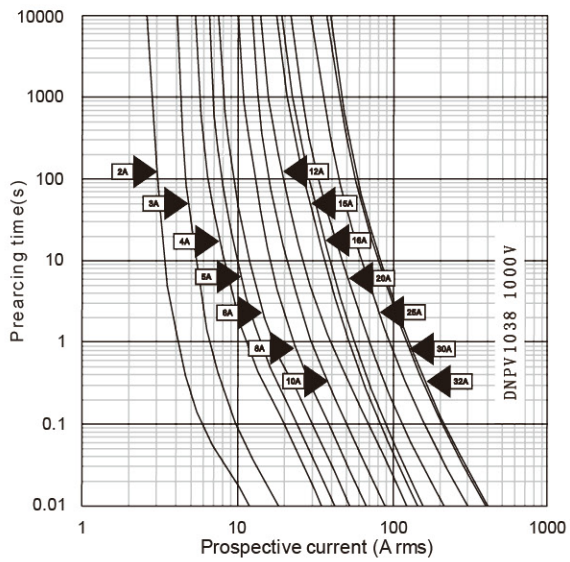
## Technical Parameter

Utilization category	gPV
Rated breaking capacity DC	20 kA
Time constant L/R	1-3 ms
(Reference)Standard	IEC 60269-6, GB/T 13539.6

Model No.	Rated operating current $I_e$	Joule integral $I^2T$ (A <sup>2</sup> S)		Power dissipation	
				0.8In	1.0In
DNPV1085	2	4	8	1.0	2.0
DNPV1085	3	6	11	1.1	2.1
DNPV1085	4	8	14	1.2	2.2
DNPV1085	5	11	22	1.4	2.4
DNPV1085	6	15	30	1.5	2.6
DNPV1085	8	9	35	1.8	3.0
DNPV1085	10	10	98	2.2	3.5
DNPV1085	12	12	120	2.5	3.8
DNPV1085	15	14	170	3.0	4.8
DNPV1085	16	16	230	3.1	5
DNPV1085	20	34	400	3.5	6.2
DNPV1085	25	65	550	4.0	7.2
DNPV1085	30	85	700	4.5	8
DNPV1085	32	90	750	5	8.4

# PV(Photovoltaic) Fuse Links

## Graph





# DNPVF1

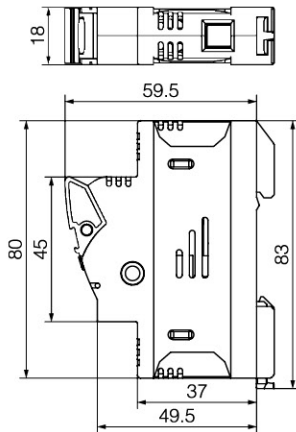
## PV(Photovoltaic) Fuse Holders (Disconnectors) Series



**Order No.:**DN56401  
**Model No.:**DNPVF1-32

### Technical Parameter

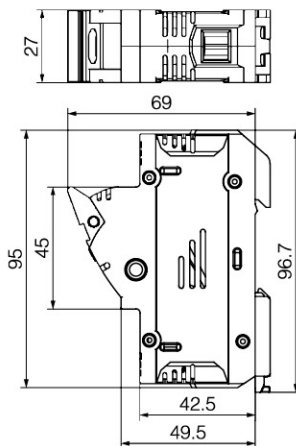
Name and Discription	PV(Photovoltaic) Fuse Holders(Disconnectors)
Pole	1 pole
Mounting method	DIN rail installation
Conductor area	0.75-25mm <sup>2</sup>
Fuse link size	10*38
Rated operational current Ie	32A
Rated operational voltage Ue	DC1000V
Rated Insulation Voltage Ui	1000V
Rated impulse withstand voltage Uimp	6 kV
Breaking capacity with fuse	20kA
Utilization category	DC-PV0
Degree of protection	IP20
(Reference)Standard	IEC 60947-3, GB/T14048.3



**Order No.:**DN56411  
**Model No.:**DNPVF1-63

### Technical Parameter

Name and Discription	PV(Photovoltaic) Fuse Holders(Disconnectors)
Pole	1 pole
Mounting method	DIN rail installation
Conductor area	1.5-35mm <sup>2</sup>
Fuse link size	14*51
Rated operational current Ie	50A
Rated operational voltage Ue	DC1000V
Rated Insulation Voltage Ui	1000V
Rated impulse withstand voltage Uimp	6 kV
Breaking capacity with fuse	20kA
Utilization category	DC-PV0
Degree of protection	IP20
(Reference)Standard	IEC 60947-3, GB/T14048.3



# DNPVF1

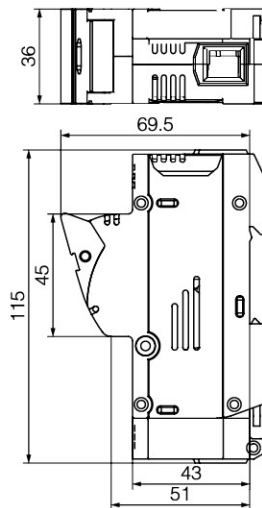
## PV(Photovoltaic) Fuse Holders (Disconnectors) Series



**Order No.:**DN56421  
**Model No.:**DNPVF1-125

### Technical Parameter

Name and Discription	PV(Photovoltaic) Fuse Holders(Disconnectors)
Pole	1 pole
Mounting method	DIN rail installation
Conductor area	0.75-25mm <sup>2</sup>
Fuse link size	10*38
Rated operational current Ie	50A
Rated operational voltage Ue	DC1000V
Rated Insulation Voltage Ui	1000V
Rated impulse withstand voltage Uimp	6 kV
Breaking capacity with fuse	20kA
Utilization category	DC-PV0
Degree of protection	IP20
(Reference)Standard	IEC 60947-3, GB/T14048.3



# DNPVF1-32L

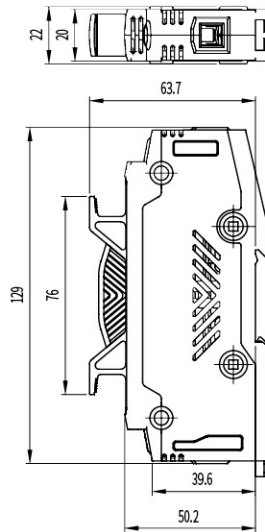
# PV(Photovoltaic) Fuse Holders



**Order No.:**DN56432  
**Model No.:**DNPVF1-32L

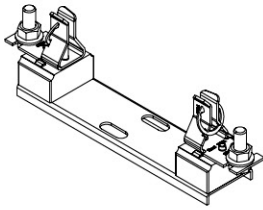
## Technical Parameter

Name and Discription	PV(Photovoltaic) Fuse Holders
Pole	1 pole
Mounting method	DIN rail installation
Conductor area	0.75-25mm <sup>2</sup>
Fuse link size	10*85/14*85 mm
Rated operational current Ie	32A
Rated operational voltageUe	DC1500V
Rated Insulation Voltage Ui	1500V
Rated impulse withstand voltage Uimp	8 kV
Breaking capacity with fuse	20kA
Utilization category	DC-PV0
Degree of protection	IP20
(Reference)Standard	IEC 60947-3, GB/T14048.3



# DNPVF2

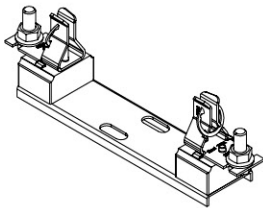
# PV(Photovoltaic) Fuse Base Series



Model No.:DNPVF2-1L

## Technical Parameters

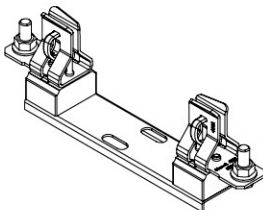
Rated Current	125A
Rated Voltage	DC 1500V
Mounting screw	10M
Mounting torque	32N.m



Model No.:DNPVF2-1XL

## Technical Parameters

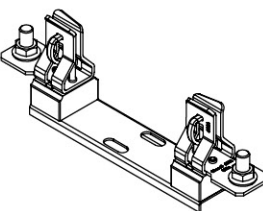
Rated Current	200A
Rated Voltage	DC 1500V
Mounting screw	10M
Mounting torque	32N.m



Model No.:DNPVF2-2XL

## Technical Parameters

Rated Current	250A
Rated Voltage	DC 1500V
Mounting screw	12M
Mounting torque	35N.m



Model No.:DNPVF2-3L

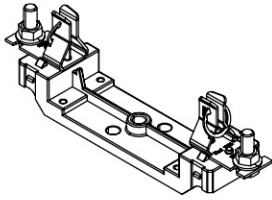
## Technical Parameters

Rated Current	400A
Rated Voltage	DC 1500V
Mounting screw	12M
Mounting torque	35N.m

# DNPVF3

# PV(Photovoltaic) Fuse Holders Series

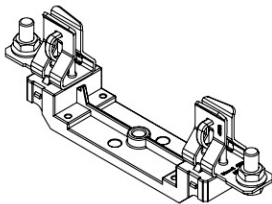
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Model No.:DNPVF3-1XL

## Technical Parameters

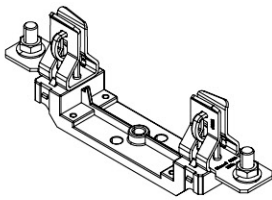
Rated Current	200A
Rated Voltage	DC 1500V
Mounting screw	10M
Mounting torque	32N.m



Model No.:DNPVF3-2XL

## Technical Parameters

Rated Current	250A
Rated Voltage	DC 1500V
Mounting screw	12M
Mounting torque	35N.m



Model No.:DNPVF3-3L

## Technical Parameters

Rated Current	400A
Rated Voltage	DC 1500V
Mounting screw	12M
Mounting torque	35N.m

# NT00-M, NT1-M, NT3-M AC800V Fuse Link

## Parameters of fuse link



Type No	Size	Rated voltage (V)	Rated current (A)	Rated breaking capacity (kA)
NT00-M-2			2	
NT00-M-4			4	
NT00-M-6			6	
NT00-M-8			8	
NT00-M-10			10	
NT00-M-16	00	AC 800	16	30
NT00-M-20			20	
NT00-M-25			25	
NT00-M-32			32	
NT00-M-40			40	
NT00-M-50			50	
NT00-M-63			63	

Type No	Size	Rated voltage (V)	Rated current (A)	Rated breaking capacity (kA)
NT1-M-4			4	
NT1-M-6			6	
NT1-M-8			8	
NT1-M-10			10	
NT1-M-16			16	
NT1-M-20			20	
NT1-M-25			25	
NT1-M-32	3	AC 800	32	100
NT1-M-40			40	
NT1-M-50			50	
NT1-M-63			63	
NT1-M-80			80	
NT1-M-100			100	
NT1-M-125			125	
NT1-M-160			160	

Type No	Size	Rated voltage (V)	Rated current (A)	Rated breaking capacity (kA)
NT3-M-160			160	
NT3-M-200			200	
NT3-M-250	3	AC 800	250	100
NT3-M-300			300	
NT3-M-315			315	

# NT1-P, NT3-P AC1140V Fuse Link



## Parameters of fuse link

Type No	Size	Rated voltage (V)	Rated current (A)	Rated breaking capacity (kA)
NT1-P-6			6	
NT1-P-10			10	
NT1-P-16			16	
NT1-P-20			20	
NT1-P-25			25	
NT1-P-32			32	
NT1-P-40	1	AC 1140	40	80
NT1-P-50			50	
NT1-P-63			63	
NT1-P-80			80	
NT1-P-100			100	
NT1-P-125			125	
NT1-P-160			160	

Type No	Size	Rated voltage (V)	Rated current (A)	Rated breaking capacity (kA)
NT3-P-100			100	
NT3-P-125			125	
NT3-P-160			160	
NT3-P-200	3	AC 1140	200	80
NT3-P-224			224	
NT3-P-250			250	
NT3-P-315			315	

Model No.:DNH1G  
Fuse Switch Disconnecter

## Technical Parameters

Rated Current	16A,32A,63A,100A,125A,160A,200A,250A,315A,400A,500A,630A
Rated Voltage	AC400V/690V/1140V, DC500V
Pole	3-pole
Busbar Distance	60mm
	For AC&DC applications Multiple frame sizes & installation types Flame retardant grade V0 For fuse NH00,NH-1,NH-2,NH-3

Model No.:DNH18  
Fuse Switch Disconnecter

## Technical Parameters

Rated Current	16A,32A,63A,100A,125A,160A,200A,250A,315A,400A,500A,630A,1250A,1600A
Rated Voltage	AC400V/AC690V/AC800V,DC500V
Pole	3-pole
Busbar Distance	60mm
	For AC&DC applications Multiple frame sizes & installation types Flame retardant grade V0 For fuse NH00,NH-1,NH-2,NH-3

# DNB1Z-63 MCB



## Suitable range

The rated working voltage of DNB1Z-63 mini DC circuit breaker can be up to DC 250V (1P)、DC800V(2P)、DC800V (3P)、DC1200V(4P), There is a special arc extinguishing and current limiting system in the MCB, which can quickly disconnect the fault current of the DC distribution system.

It can protect important components in the solar power generation system, ensures the operation of the solar photovoltaic power generation system is reliable.

## Usage environment

The altitude is lower than 2000 meters, Can be if altitude higher than 2000m Please contact the manufacturer for other special requirements.

The ambient temperature is - 25 °C , and the 24-hour average temperature does not exceed + 35 °C ; When the ambient temperature is higher than + 40 °C or lower than - 25 °C , please contact the manufacturer

The product shall be installed in the waterproof distribution box .



# DNB1Z-63

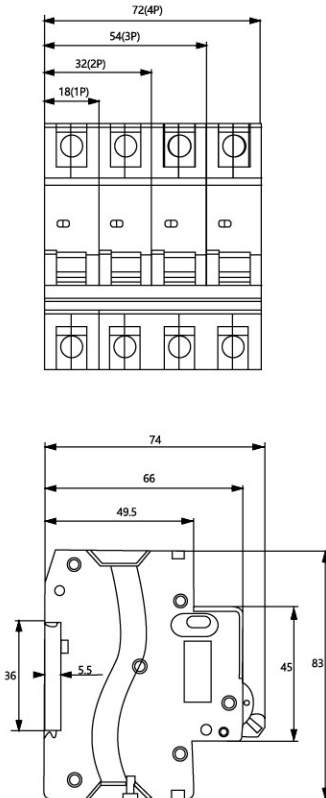
## MCB

### Model and Meaning

<b>DN</b>	<b>B</b>	<b>1</b>	<b>Z</b>	<b>-</b>	<b>63</b>	<b>/</b>	<b>□</b>	<b>□</b>
↓	↓	↓	↓		↓		↓	↓
Company code	MCB	Design No.	DC		Size		Poles	Rated current

### Technical Parameter

Entry Name	Technical Parameter
Rated insulation voltage (UI)	1250V
Rated operating voltage (UE)	DC(1P):15V,60V,100V,180V,250V ; DC(2P):125V,375V . 550V,600V,800V DC(3P):750V,800V ; DC(4P):800V.1000V 1200V
Rated current of frame	63A
Different currents of the same shell frame	6A、 10A、 16A、 20A、 25A、 32A、 40A、 50A、 63A
Rated operating short-circuit breaking capacity (ICS = ICU)	6kA
Rated operating short-circuit breaking capacity (ICS = ICU)	2P 800V \ 4p 1200V 2kA
Mechanical life	2000second
Electrical life	10000second (BelowDC125V/1P, Below DC250V/2P) , 1000second (Other voltage specifications)
Certificate	CB CE CCC
Rated impulse withstand voltage Uimp	6KA
Tripping characteristics / tripping type	B/C; Thermal porcelain
Overvoltage level	III
class of pollution	3
Protection grade	IP40; Connection port IP20
Damp heat resistance	Class 2
Relative humidity	≤ 95%
Standard	IEC 60947-2 GB/T 14048.2
Seismic resistance	Basis IEC 60068-2-6
Mechanical shock resistance parameters	Basis IEC60068-2-27
Operating ambient temperature	-30°C ~70°C
Damp heat resistance	Db Class (Temperature 55°C 6 Cycle)
Storage environment temperature	-30°C ~70°C
Altitude	≤ 2000m
Weight	0.12kg/P
enclosure	OF/SD/MX/MN/MX+OF
MX control voltage Us	DC:12V, 24V,220V; AC:110V, 220V, 380V It is recommended that the power supply should not be lower than 75W
Mn rated voltage UN	AC220V AC380V



# DNM8-400 MCCB



## Product Description

DNM8-400 series PV dedicated DC molded case circuit breakers are applicable to DC power grid circuits with rated voltage up to DC1500V and rated current 630A. DC circuit breakers have overload long delay protection and short-circuit instantaneous protection functions, which are used to distribute power and protect lines and power supply equipment from overload, short-circuit and other faults.

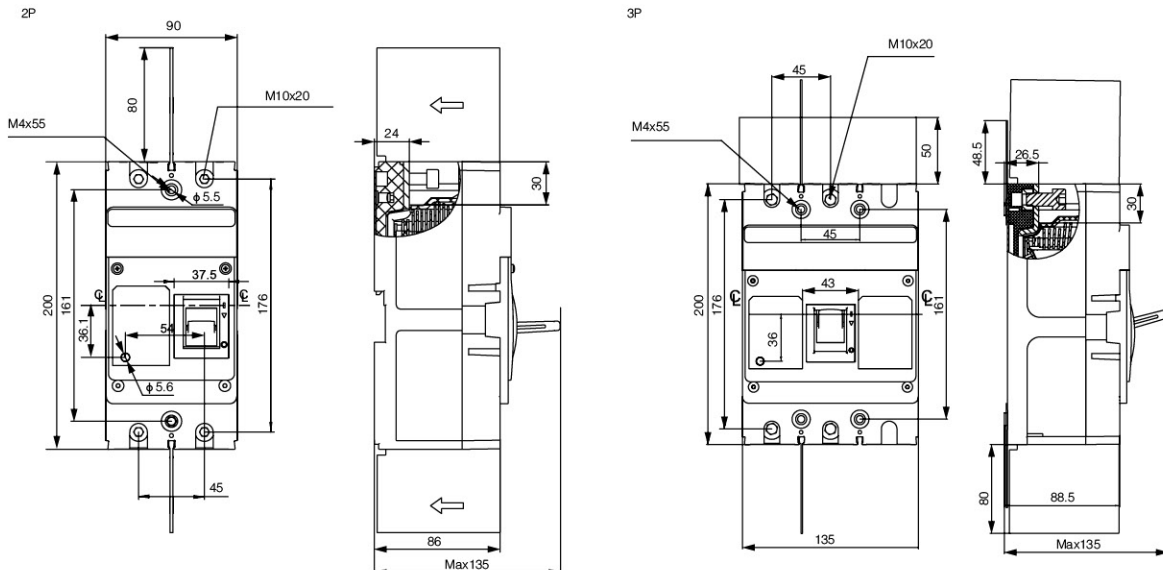
The operating mechanism of the DC MCCB has the functions of block speed closing and fast breaking, the structure is compact, size is small and convenient to use.

# DNM8-400 MCCB

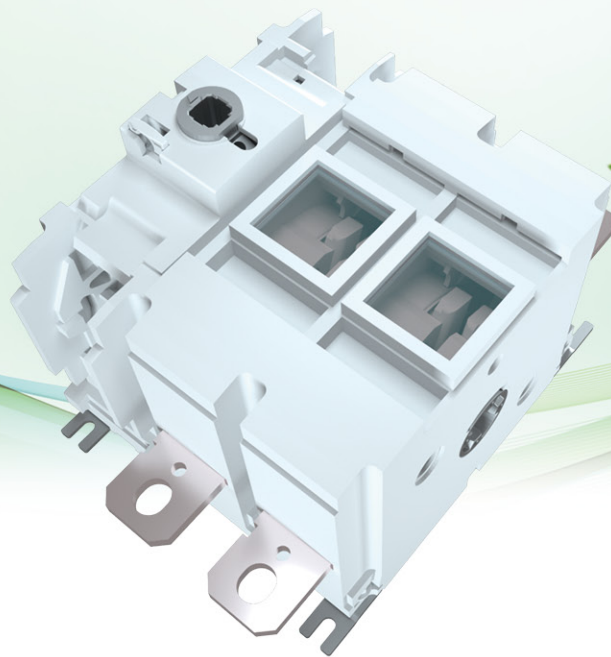
## Technical Parameter

Product Model	SM8-250HPV /2 1000V	SM8-250HPV /3 1500V	SM8-630HPV /4 1500V
Product Name	PV DC MCCB	PV DC MCCB	PV DC MCCB
Rated insulation voltage (Ui)	1500V	1500V	1500V
Rated operating voltage (Ue)	DC1000V	DC1250V DC1500V	DC1000V DC1250V DC1500V
Rated impulse voltage (Uimp)	12kV	12kV	12kV
Number of poles	2	3	4
Release type	Thermomagnetic type (thermomagnetic non adjustable)TMD Fixed		
According to standard	GB 14048.2,IEC/EN 60947-2		
Usage category	A		
Frame current (LN)	250A		630A
Rated working current (LN)	100/125/160/200/225/250A		
Rated limit short-circuit breaking capacity (ICU)	Ue 1000v 20kA	Ue 1500V 15kA Ue1250V 20kA	Ue 1250V/1500V 15kA Ue1000V 20kA
Operating breaking capacity (ICS)	75%ICU	Ue 1500V 15kA Ue1250V 20kA	Ue 1250V/1500V 15kA e1000V 20kA
Protection function	Long delay protection (IR)	1In	
	Instantaneous protection Li	6In(Min 1000A)	
life	Mechanics	10000second	5000second
	Electrical	1000second	500second
Overall dimension (W,H, D)	900×200×86mm	135×200×86mm	Model H 310×240×155 Model G 350×240×155
Installation method:	Fixed	Fixed	Fixed
Protection grade	Wiring port: IP20 / all sides: IP40		
relative humidity	+50°C Down no more than95%		
Whether there are wiring polarity requirements	NO		
class of pollution	Grade 3		
working temperature	-40°C ~+75°C		
Operation instructions	ON/OFF		
Whether the release is adjustable	No		
Electrical accessories	Optional: separation / auxiliary / alarm (Note: only one set can be installed ,on the left and right sides of auxiliary, alarm and separation) ,2p on the left only		
Disconnecter function	YES		

## Shape and mounting dimensions



# DNH50 Load Isolation Switch



## Suitable range

HGL series load isolation switch mainly suitable for DC rated voltage up to 1500V, rated current up to 630A. The switch is used in the infrequent making and breaking circuit.

## Model and Meaning

<b>DNH</b>	<b>50</b>	<b>-</b>	<b>160</b>	<b>/</b>	<b>2</b>
↓	↓		↓		↓
Company code	Design No.		Rated current		Pole

# DNH50

## Load Isolation Switch

### Usage environment

\*Ambient temperature:  $-5^{\circ}\text{C} \sim 4^{\circ}\text{C}$  , relative humidity is not larger than 95%.

\* Altitude: shall not exceed 2000m.

\*No explosive dangerous medium environment.

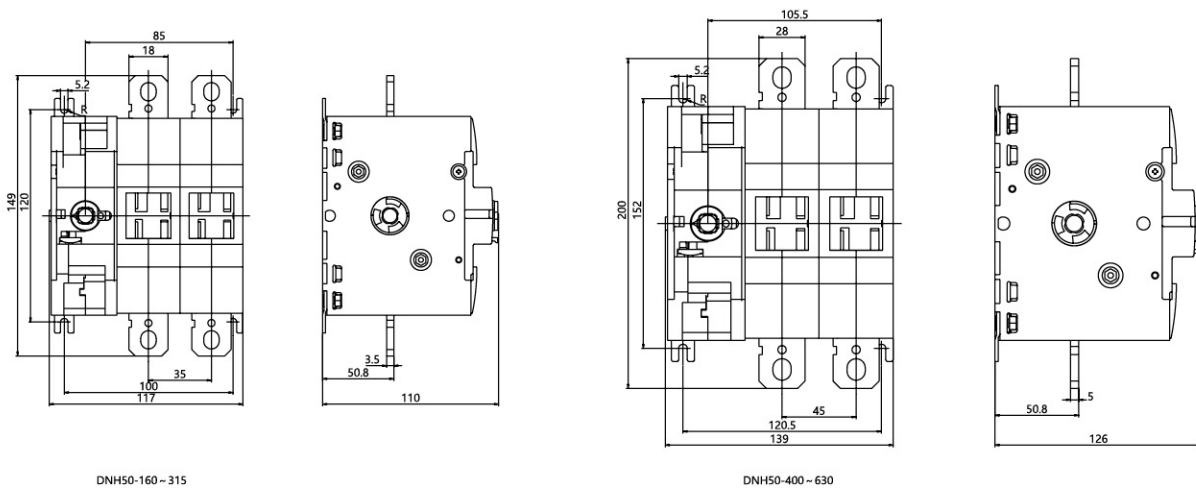
\*No rain and snow attack environment.

Note: if the load isolation switch is expected to be used in the condition that the ambient temperature is higher than  $+4^{\circ}\text{C}$  or is lower than  $-5^{\circ}\text{C}$  , customers should inform to the manufactory.

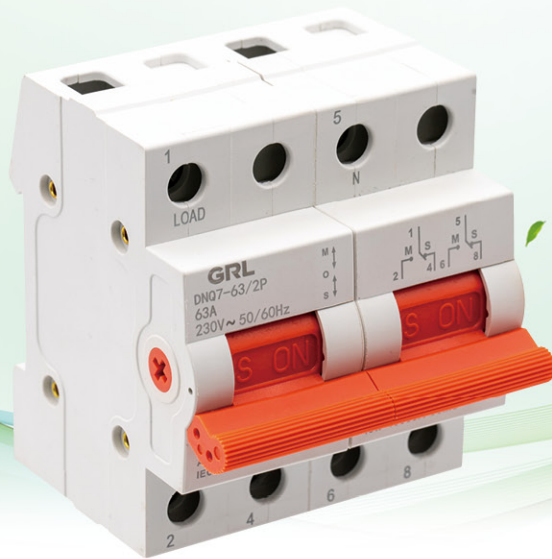
### Technical Parameter

Model NO.	DNH50-160	DNH50-250	DNH50-315	DNH50-400	DNH50-500	DNH50-630
Rated Current $I_e$	160A	250A	315A	400A	500A	630A
Rated Voltage $U_e$	DC1500V	DC1500V	DC1500V	DC1500V	DC1500V	DC1500V
Rated insulation voltage $U_i$	1500V	1500V	1500V	1500V	1500V	1500V
Use category	DC-21B/DC-PV2	DC-21B/DC-PV2	DC-21B/DC-PV2	DC-21B/DC-PV2	DC-21B/DC-PV2	DC-21B/DC-PV2
Dielectric strength	3820V	3820V	3820V	3820V	3820V	3820V
Rated Impulse Withstand Voltage	12kV	12kV	12kV	12kV	12kV	12kV
Rated short-time switching current	5kA	5kA	5kA	8kA	8kA	8kA
Rated short-time making capacity	10kA	10kA	10kA	10kA	10kA	10kA
Mechanical Durability	7800	7800	7800	4800	4800	4800
Electrical Durability	200	200	200	200	200	200

### Shape and mounting dimensions



# DNQ7 Changeover Switch



## Normal working conditions

- The air temperature is  $-5\text{ }^{\circ}\text{C} \sim +40\text{ }^{\circ}\text{C}$  , the average value within 24 hours should not be over  $35\text{ }^{\circ}\text{C}$  .
- The relative humidity should not exceed 50% at max temperature  $+40\text{ }^{\circ}\text{C}$  , the higher relative humidity is permissible at lower temperature, for instance, 90% at  $+20\text{ }^{\circ}\text{C}$  , but the condensation will be produced due to temperature change, which should be considered.
- The altitude of mounting place should not exceed 2000m. Classification: IV.
- Inclination is not more than  $\pm 23^{\circ}$  .
- Pollution grade: 3.

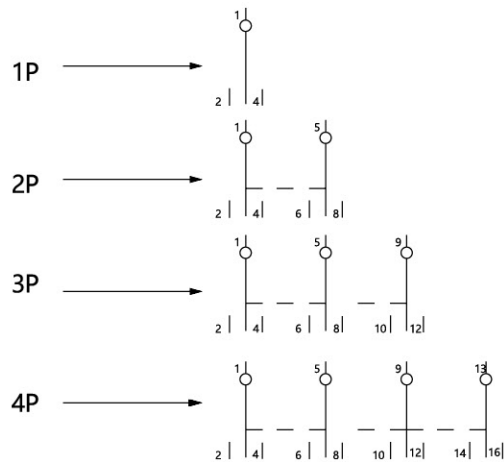
# DNQ7

## Changeover Switch

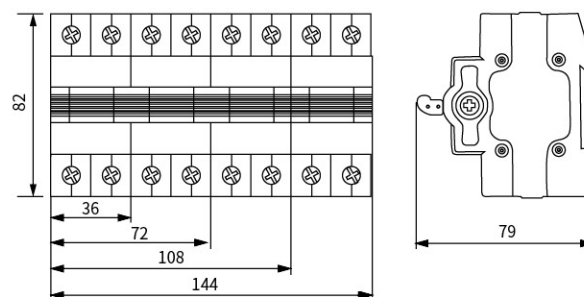
### Technical Parameter

Name/Model	DNQ7-125
Number of poles: 1P、2P、3P、4P	1P、2P、3P、4P
Rated working voltage Ue	230V/400V
Frequency	50Hz
Rated current A	63、100、125
Mechanical	30000
Electrical	10000
Use category	AC22B
Protection level	IP20

### Switch wiring diagram



### Shape and mounting dimensions



# DN2R ATS Manual



## Product Description

DN2R series dual power automatic transfer switches are newly developed miniature household power transfer switches. This switch is mainly used to test whether the normal or standby power supply is normal.

When the normal power supply is abnormal, the backup power supply will work immediately to ensure the continuity, reliability and safety of the power supply. This product is specially designed for home track TV installation and is specially used for Pz30 distribution box.

Series of automatic transfer switches are suitable for emergency power system 400v,60A with AC rated current of 50v or 60Hz, compact structure, reliable conversion, easy installation and maintenance. long life. It is widely used in various occasions where continuous power failure is not allowed. It can be operated electrically or manually by ATS, and the controller.

Complies with requirements of Low-voltage Switch Gear and Control Gears specified by IEC 60947-6-1 and IEC60947-3: functional equipment and transfer switch equipment



# DN2R ATS Manual

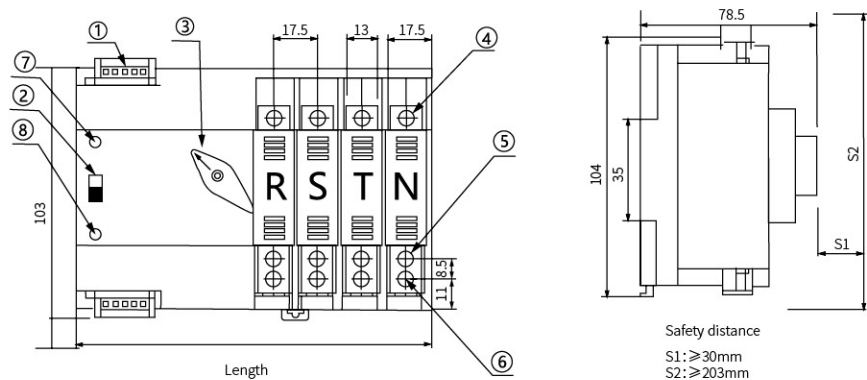
## Model and Meaning

<b>DN2R</b>	-	□	/	□ <b>P</b>
↓		↓		↓
Company code		Rated current		Pole : 2-Two poles 3-Three poles 4-Four poles

## Technical Parameter

Rated current Ie A	16/20/25/32/40/50/63	100
Insulation voltage Ui	AC 690V	
Rated voltage Ue	AC 400V	
Grade	Grade PC:able to make and withstand. not to break short-circuit current	
Use category	AC-33iB	
Pole	2P	3P      4P
Weight(kg)	0.62	0.72      0.81
Life	Electrial:2000times;Mechanical:5000times	
Rated conditional short-circuit current Iq	50kA	
SCPD (fuse)	RT16-00-63A	
Rated impulse withstand voltage	8kV	
Control circuit	Rated control voltage Us:AC220V,50Hz Correct working condition85%Us~110%Us	
Auxiliary circuit	AC220V/AC110V 50/60Hz	
Contact transfer time	<50ms	
Operating transfer time	<50ms	
Return transfer time	<50ms	
Off-time	<50ms	
Temperature range	-5°C ~+40°C average temperature not more than 35°C in 24 hours	

## Shape and mounting dimensions



# DN4 Surge Arrester Protector



## Scope of application

DN4 series C-level surge arrester protectors are suitable for photovoltaic power generation systems. When a surge overvoltage occurs in the system due to lightning strikes or other reasons, the protector immediately turns on quickly within nanoseconds, introducing the surge overvoltage into the ground, thereby protecting the electrical equipment on the dot network.

The DN4 series has a plug-in structure, which can be quickly replaced after the module fails: When the lightning protection module fails, the color of the indicator window changes from green to red, and at the same time, an alarm signal is sent to the remote alarm device connected to the product's remote signaling terminal.

# DN4

## Surge Arrester Protector

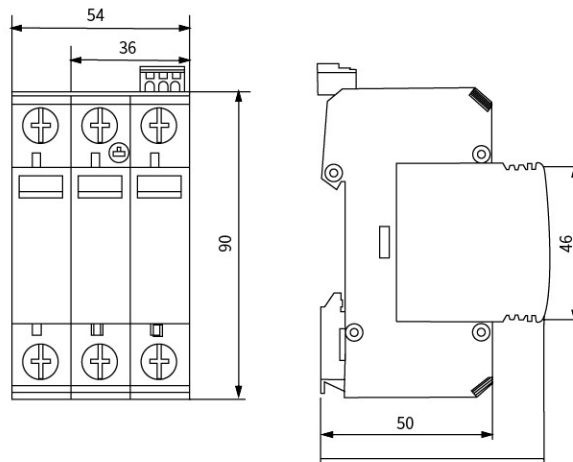
### Application Environment

- The normal range of ambient air temperature is not higher than +40°C , not lower than -25°C , and the relative humidity is not greater than 95%;
- The altitude of the installation site shall not exceed 2000 meters:
- Pollution level 3;
- There is no explosion hazard medium, and there is no gas and dust (including conductive dust) in the medium which will be corrode metals and destroy insulation.

### Technical Parameter

Parameters	DN4H-S40		DN4H1-S40	DN4H-S40	DN4-S40
Max continuous operating voltage Uc	500VDC	600VDC	800VDC	1000VDC	1200VDC 1500VDC
Max discharge current (Imax) (8/20 μs)	20kA、40kA、60kA				
Protection level (In) Up	≤ 2.8kV	≤ 2.8kV	≤ 3.0kV	≤ 3.6kV	≤ 4.0kV ≤ 5.0kV
Operating temperature	-40°C ~ +80°C				
Relative humidity	≤ 95% (25°C)				
Installation method	35mm standard rail				
Window indication	Normal: Green; Failed: Red				
Protection class	IP20 class				
Poles	1P、2P、3P				
Leakage 0.75μlma (μA)	≤ 20				

### Shape and mounting dimensions



# DN4-DC-B+C Surge Arrester Protector



## Scope of application

DN4 series C-level surge arrester protectors are suitable for photovoltaic power generation systems. When a surge overvoltage occurs in the system due to lightning strikes or other reasons, the protector immediately turns on quickly within nanoseconds, introducing the surge overvoltage into the ground, thereby protecting the electrical equipment on the dot network.

The DN4 series has a plug-in structure, which can be quickly replaced after the module fails: When the lightning protection module fails, the color of the indicator window changes from green to red, and at the same time, an alarm signal is sent to the remote alarm device connected to the product's remote signaling terminal.

# DN4-DC-B+C

## Surge Arrester Protector

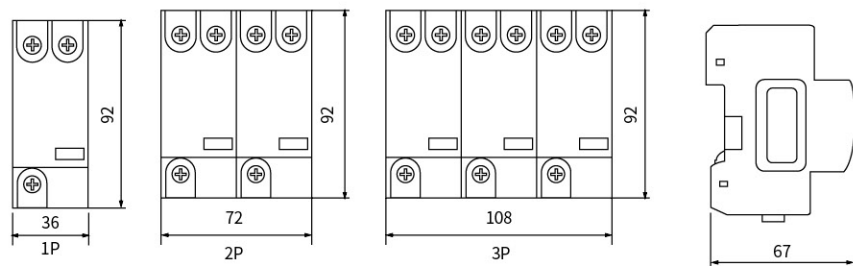
### Application Environment

- The normal range of ambient air temperature is not higher than +40°C , not lower than -25°C , and the relative humidity is not greater than 95%;
- The altitude of the installation site shall not exceed 2000 meters:
- Pollution level 3;
- There is no explosion hazard medium, and there is no gas and dust (including conductive dust) in the medium which will be corrode metals and destroy insulation.

### Technical Parameter

Project parameters	DN4-DC-B+C		
Rated voltage Un	500VDC	800VDC	1000VDC
Max continuous operating voltage Uc	630VDC	1000VDC	1060VDC
Max discharge current (Imax) (8/20 μ s)	20kA、 40kA、 60kA		
Discharge current (10/350)	7kA		
Protection level (In) Up	≤ 2.8kV	≤ 3.8kV	≤ 4.5kV
Operating temperature	-40°C ~ +70°C		
Relative humidity	≤ 95% (25°C)		
Installation method	35mm standard rail		
Window indication	Normal: Green; Failed: Red		
Protection class	IP20 class		
Poles	2P	2P	3P
Leakage 0.75μIma (μA)	≤ 20		

### Shape and mounting dimensions



# Waterproof cable connector

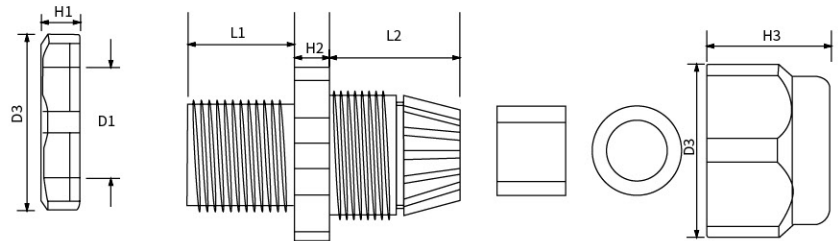


# Waterproof cable connector

## Technical Parameter



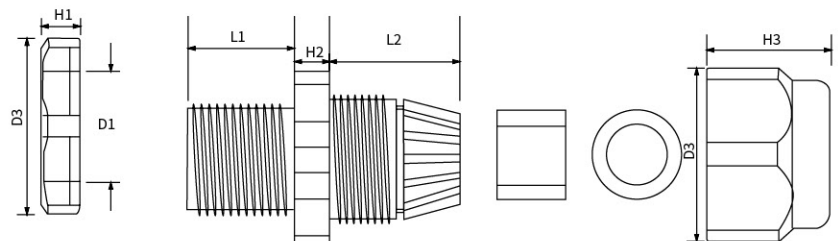
Model	D1 mm	L1 mm	Cable diameter mm	D2 mm	D3 mm	L2 mm	H1 mm	H2 mm	H3 mm
PG7	13-13.5	8	3~6.5	17.9	15.6	15.4	5.2	4.7	14.9
PG9	16-16.5	8	4~8	21.9	18.6	16.1	5.3	4.9	15.8
PG11	19-19.5	9	5~10	23.1	21.4	16.7	5.7	4.4	16.7
PG13.5	21-21.5	9	6~12	25.4	23.4	18.4	5.8	5	18.6
PG16	23-23.5	10	10~14	30	25.5	20.7	5.5	5.4	19.4
PG19	24-24.5	10	12~15	29.5	27.3	21.3	6.4	5.5	19.8
PG21	29-30	12	13-18	35.5	32.5	23.3	6.7	5.4	21.9
PG25	30-31	12	16-21	36.5	34.4	24.2	6.7	5.9	23.1
PG29	37-38.5	12	18-25	44.6	41.1	27.8	7.0	6.5	25.8
PG36	48-49.5	16	22-32	57.8	51.2	28.5	8.1	7.1	27.3
PG42	55-56.5	18	32-38	65	59.9	35.3	8.2	8.0	30.9
PG48	60-61.5	20	37-44	70.4	67.9	37.1	8.6	8.5	35.1
PG63	70.5-71.5	26	42-50	82.7	74.6	39.2	9.6	8.3	38.8



## Technical Parameter



Model	D1 mm	L1 mm	Cable diameter mm	D2 mm	D3 mm	L2 mm	H1 mm	H2 mm	H3 mm
M12X1.5	12	8	3~6.5	17.7	15.7	15.3	4.9	4.7	14.9
M16X1.5	16	8	4~8	21.7	18.5	16	4.9	5	15.8
M18X1.5	18	9	5~10	23.8	21.6	16.8	5	4.5	16.8
M20X1.5	20	9	6~12	26.5	23.3	19	6.4	5.1	18.7
M22X1.5	22	10	10~14	29.8	26.4	20.9	6.6	5.5	18.8
M24X1.5	24	10	12~15	29.9	27.4	21.1	6.5	5.5	19.7
M25X1.5	25	12	12~15	32.6	27.4	21.2	6.5	5.4	19.7
M30X1.5	30	12	16-21	36.7	34.6	24.4	6.8	5.9	22.7
M32X1.5	32	12	16-21	38.6	34.5	24.1	6.8	5.9	22.7
M36X1.5	36	12	18-25	45.2	41.3	24.8	7.2	6.6	24
M40X1.5	40	18	22-32	51.5	51.3	27.8	8.2	7.2	27.5
M50X1.5	50	20	32-38	60.1	59.6	34.9	8.2	8	30.8
M63X1.5	63	26	37-44	74.1	68.2	37.5	9.2	8.5	34.3



# MC4 Connector



## Scope of application

SM series waterproof joints are mainly used for photovoltaic modules, photovoltaic combiner boxes, photovoltaic inverters, etc. in photovoltaic power generation systems. Its waterproof performance reaches IP67, contact resistance is less than 0.5 ohm, easy to disassemble and use, and can effectively prevent insulation aging and arc fire caused by poor contact in the system.

## Environment

The upper limit of ambient air temperature shall not exceed +105°C, and the lower limit of air temperature shall not be lower than -4°C;

The maximum temperature during use shall not exceed +85°C and the minimum temperature shall not be lower than -4°C;

Pollution level: 2;

Safety level: II ;

Protection grade: IP67.



# MC4 CONNECTOR

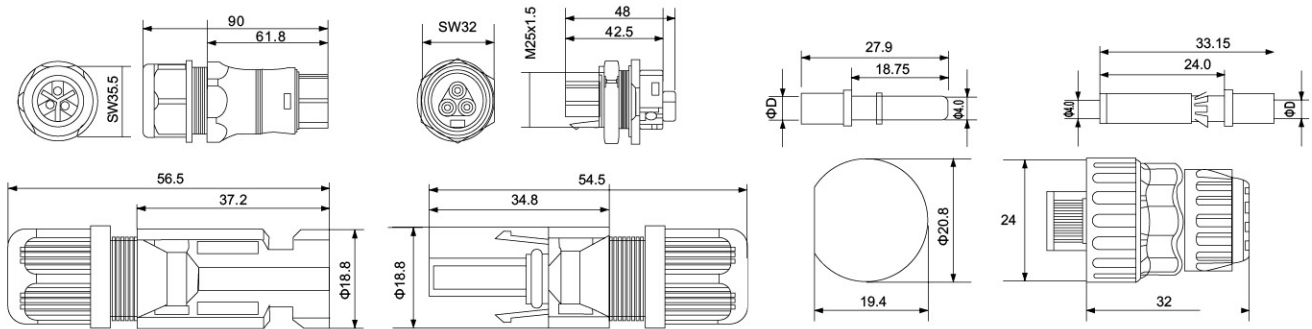
## Model and Meaning

S	M	□	
↓	↓	↓	
Company code	Waterproof Connector	C4: Inverter DC waterproof joint A4: Inverter AC waterproof joint	E4: Inverter Ethernet waterproof connector U4: Inverter USB waterproof connector

## Technical Parameter

	SMC4	SMA4	SME4	SMU4
Rated current	30A(25-6.0mm <sup>2</sup> )	35A	—	1.5
Rated voltage	1000V DC	500V AC	—	150V AC
Test voltage	6000V(50Hz, 1min)	4000V	—	≥ 500V
Connector contact resistance	0.5mΩ	≤ 1mΩ	—	≤ 30mΩ
Connector conductor material	Copper, tin plated	Copper, tin plated	Phosphorus copper tin plating	copper alloy
Connector insulation material	TPE/PA	PA	PA	Thermoplastic
Protection class	IP2*/IP67	IP67	IP68	IP67
Flame retardant grade	UL94-V0	UL94-V0	UL94-V0	UL94-V0
Safe	II	II	II	II
Adaptor diameter	2.5-6.0mm <sup>2</sup>	2.5-10.0mm <sup>2</sup>	7.0mm <sup>2</sup>	—
Insertion force/extraction force	≤ 50N/ ≥ 50N	≤ 50N/ ≥ 50N	—	≤ 35N/10~35N
Connection mode	crimping	crimping	peg graft	Solder connection
Operating temperature range	-40~+90°C	-40~+90°C	-40~+90°C	-40~+90°C

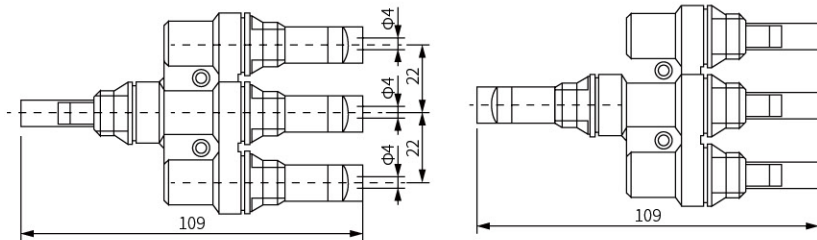
## Shape and mounting dimensions



# Other Connector



Model No.:RMC40-4T

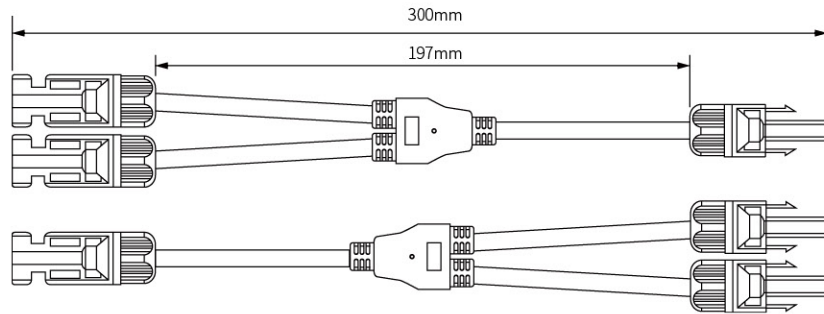


## Technical Parameter

Rated current	40A
Rated voltage	1000/1500V DC
Test voltage	6000V(50Hz,1min)
Overvoltage category/Pollution degree	CAT III /2
Contact resistance of plug connectors	1mΩ
Contact material	Copper,Ag plated
Insulation material	PPO
Degree of protection	IP2*/IP65
Flame class	UL94-V0
Safety class	II
Suitable cable	2.5-6.0mm <sup>2</sup>
Insertion force	≤ 50N
Withdrawal force	≥ 50N
Temperature range	-40° C ~ +110° C

# Other Connector

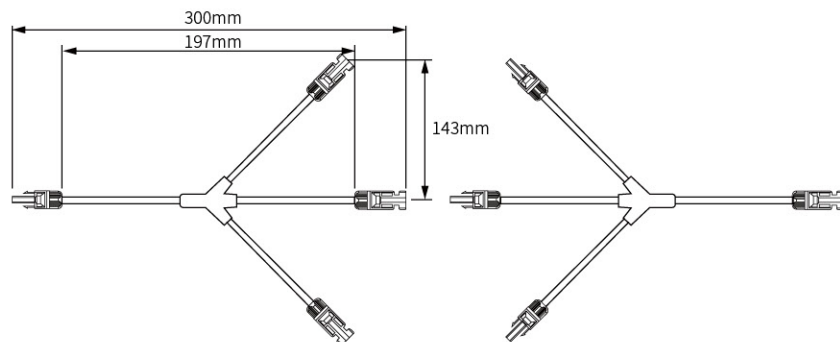
Model No.:RMC40-3T



## Technical Parameter

Rated current	30A
Rated voltage	1000V DC
Test voltage	6000V(50Hz1min)
Overvoltage category/Pollution degree	CAT III /2
Contact resistance of plug connectors	≤ 0.5 mΩ
Contact material	Copper,Ag plated
Insulation material	PPO
Degree of protection	IP2*/IP65
Flame class	UL94-V0
Safety class	II
Suitable cable	2.5-6.0mm <sup>2</sup>
Insertion Withdrawal force	≤ 50N
Temperature range	-40° C ~ +110
Cable length	8cm

Model No.:RMC40-4Y

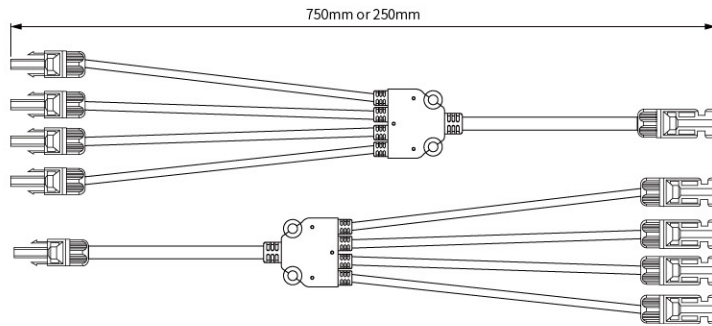


## Technical Parameter

Rated current	30A
Rated voltage	1000V DC
Test voltage	6000V(50Hz,1min)
Overvoltage category/Pollution degree	CAT III /2
Contact resistance of plug connectors	≤ 1mΩ
Contact material	Copper,Ag plated
Insulation material	PPO
Degree of protection	IP2*/IP65
Flame class	UL94-V0
Safety class	II
Suitable cable	2.5-6.0mm <sup>2</sup>
Insertion Withdrawal force	≤ 50N
Temperature range	-40° C~+110C
Cable length	8cm

# Other Connector

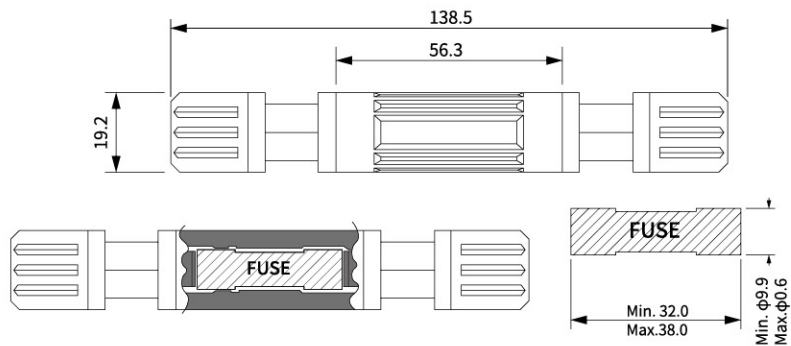
Model No.:RMC40-5Y



## Technical Parameter

Rated current	30A
Rated voltage	1000V DC
Test voltage	6000V(50Hz1min)
Overvoltage category/Pollution degree	CAT III /2
Contact resistance of plug connectors	$\leq 0.5m\Omega$
Contact material	opperAg plated
Insulation material	PPO
Degree of protection	IP2*/IP65
Flame class	UL94-V0
Safety class	II
Suitable cable	2.5-6.0mm <sup>2</sup>
Insertion Withdrawal force	$\leq 50N$
Temperature range	-40C~+110° C
Cable length	8cm

Model No.:RR1500-MC40

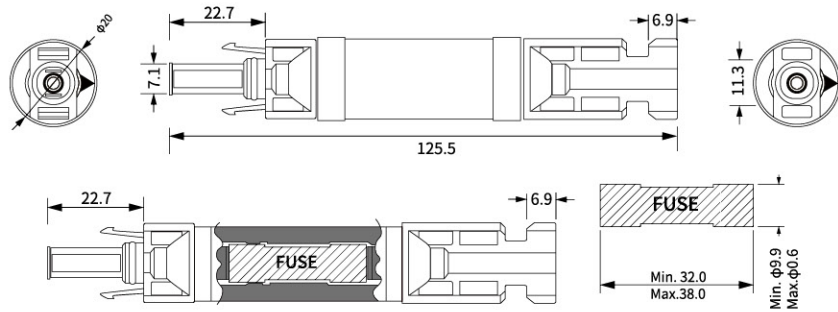


## Technical Parameter

Rated current	2A 5A 10A15A 20A 25A 30A(According to the FUSE)
Rated voltage	1500V DC
Test voltage	6000V(50Hz,1min)
Overvoltage category/Pollution degree	CAT III /2
Contact resistance of plug connectors	$\leq 1 m\Omega$
Contact material	Copper,Ag plated
Insulation material	PPO
Degree of protection	IP2*/IP67
Flame class	UL94-V0
Safety class	II
Suitable cable	2.5mm <sup>2</sup> ~10.0mm <sup>2</sup> /14AWG~8AWG
Insertion force	$\leq 50N$
Withdrawal force	$\geq 50N$
Temperature range	-40° C~+125° C

# Other Connector

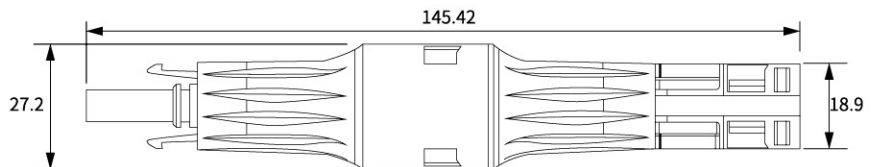
Model No.:MC40-1000



## Technical Parameter

Rated current	2A 5A 10A 15A 20A 25A 30A(According to the FUSE)
Rated voltage	1000V DC
Test voltage	6000V(50Hz,1min)
Overvoltage category/Pollution degree	CAT III /2
Contact resistance of plug connectors	≤ 1 mΩ
Contact material	Copper,Ag plated
Insulation material	PPO
Degree of protection	IP2*/IP67
Flame class	UL94-V0
Safety class	II
Suitable cable	2.5mm <sup>2</sup> ~10.0mm <sup>2</sup> /14AWG~8AWG
Insertion force	≤ 50N
Withdrawal force	≥ 50N
Temperature range	-40° C~+125° C

Model No.:RMC40-1500



## Technical Parameter

Rated current	2A 5A 10A 15A 20A 25A 30A 32A 35A 40A (According to the FUSE)
Rated voltage	1500V DC
Test voltage	6000V(50Hz,1min)
Overvoltage category/Pollution degree	CAT III /2
Contact resistance of plug connectors	≤ 1 mΩ
Contact material	Copper,Ag plated
Insulation material	PPO
Degree of protection	IP2*/IP67
Flame class	UL94-V0
Safety class	II
Suitable cable	2.5mm <sup>2</sup> ~10.0mm <sup>2</sup> /14AWG~8AWG
Insertion force	≤ 50N
Withdrawal force	≥ 50N
Temperature range	-40° C~+125° C

# EDSC Series DC Isolator



## Scope of application

EDSC series isolation switch is suitable for a power system with rated voltage DC1200V or below and rated current 32A or below. The product can be used for infrequent switching-on and switching-off and can disconnect 1 - 2 MPPT lines at the same time. It is especially suitable for isolating lines in HVDC transmission and distribution systems, such as cutting off the high voltage DC current between solar panels and inverters

## Product Benefits

- UV resistance and V0 flame retardant material
- Contact Silver Plating, silver layer thickness up to the industry's highest standards
- Arcing Time in 3 ms
- No Polarity
- Lockable at OFF position

IEC/EN60947.3 standard and AS 60947.3

Provide 5-year warranty product guarantee

# EDSC Series DC Isolator

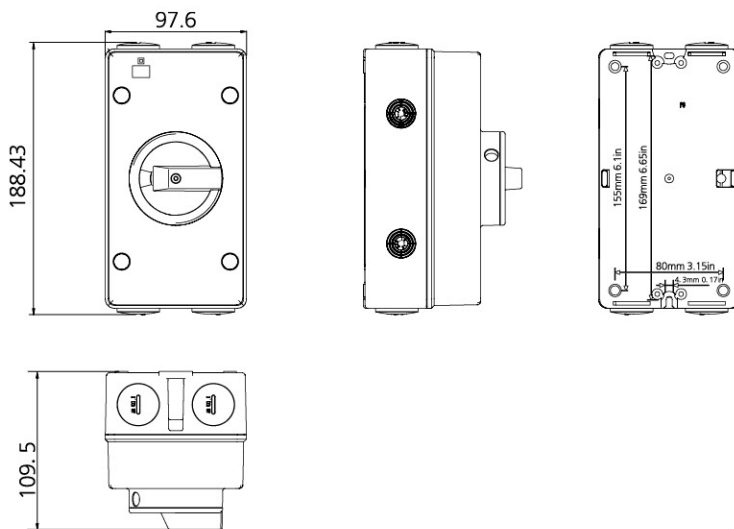
## Model and Meaning

<b>E</b>	<b>D</b>	<b>S</b>	<b>C</b>	□	-	□	□	□	□
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Brand	DC	Isolation Switch	Series	Voltage	Mounting Type	lth	With lock	Pole	

## Technical Parameter

Main Parameters	EDSC		
Rated Insulation Voltage	Ui	V	1500
Rated thermal current	lth	A	32
Rated impulse withstand voltage	Uimp	V	8000
Rated short-circuit making capacity	lcw	A	1 kA, 1 S
Operation temperature		°C	-40 to +85
Storage temperature		°C	-40 to +85
Pollution degree			3
Overvoltage category			III
IP rating of shafte and mounting nul			IP66

## Shape and mounting dimensions



# DNHLX-PV2/1 DC Combiner box



## Description

DNHLX-PV2/1 DC combiner box is suitable for inverter (MAX input voltage DC550V/DC1000V, 2 PV input channel, 1 output channel, single MPPT inverter). Box body is made of PVC engineering materials, with test for fire retardant, temperature rise, anti impact, anti ultraviolet, and other testing. IP65 protection grade.

Design and configuration, strictly accordance with the "Technical specification for photovoltaic junction equipment" CGC/GF 037:2014. Provide users with a safe, brief, beautiful and applicable photovoltaic system products.

## Advantages

### ● High Reliability

With DC FUSE

With DC Surge Protection Device

With DC circuit breaker or DC load isolation switch

### ● Strong Adaptability

IP65 design, waterproof, anti dust and anti ultraviolet.

Strict test for high and low temperature, used widely.

The simple installation, the simplified system wiring, the convenient wiring

The box body is made of cold rolled steel and other metal materials

### ● Flexible configuration

Used for single crystal silicon solar modules, polycrystalline silicon solar modules, thin film solar modules. Current rating of the photovoltaic fuse, circuit breaker, load isolation switch is modified

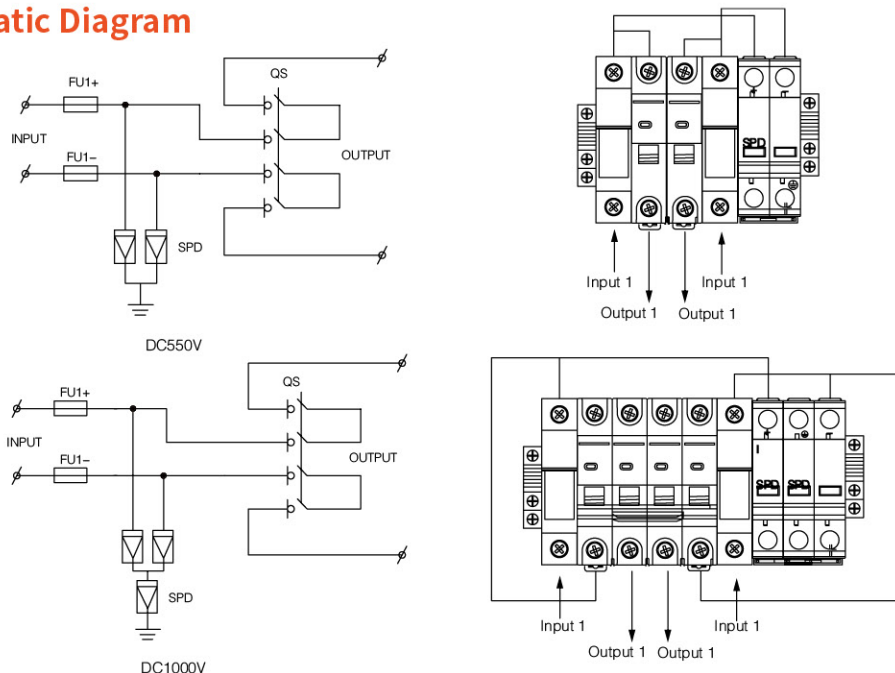


# DNHLX-PV2/1 DC combiner box

## Technical Parameter

Model	DHLX-PV2/1	
	<b>Electric parameter</b>	
System maximum dc voltage	550	1000
Maximum input current for each string	15A	
Maximum input strings	2	
Maximum output switch current	20A/32A	
Number of inverter MPPT	1	
Number of Output strings	1	
	<b>Lightning protection</b>	
Category of test	II grade protection	
Nominal discharge current	20kA	
Maximum discharge current	40kA	
Voltage protection level	2.8kV	3.8kV
Maximum continuous operating voltage U <sub>c</sub>	630V	1050V
Poles	2P	3P
Structure characteristic	Plug-push module	
	<b>System</b>	
Protection grade	IP65	
Output switch	DC isolation switch (standard)/DC circuit breaker (optional)	
SMC4 Waterproof Connectors	Standard	
PV dc fuse	Standard	
PV surge protector	Standard	
Monitoring module	Optional	
Preventing diode	Optional	
Box material	PVC	
Installation method	Wall mounting type	
Operating Temperature	~25°C ~ +55°C	
Elevation of temperature	2km	
Permissible relative humidity	0-95%, no condensation	
	<b>Mechanical parameter</b>	
Width x High x Depth	300x260x140	

## Schematic Diagram



# DNHLX-PV12/1 DC Combiner box



## Advantages

### ● High Reliability

With DC FUSE

With DC Surge Protection Device

With DC circuit breaker or DC load isolation switch

### ● Strong Adaptability

IP65 design, waterproof, anti dust and anti ultraviolet.

Strict test for high and low temperature, used widely.

The simple installation, the simplified system wiring, the convenient wiring

The box body is made of cold rolled steel and other metal materials

### ● Flexible configuration

Used for single crystal silicon solar modules, polycrystalline silicon solar modules, thin film solar modules. Current rating of the photovoltaic fuse, circuit breaker, load isolation switch is modified

## Description

DNHLX-PV12/1 PV combiner box bus synthetic DC input of 12 PV components to 1 output. Each channel is with a fuse. Output side is equipped with lightning protection and circuit breaker. It greatly simplify input wiring of DC power distribution cabinet and inverter. Realize lightning protection, short circuit protection and grounding protection. PV combiner box divided into two types: intelligent box and non-intelligent box. Intelligent PV combiner box is equipped with monitoring unit, then detect input current of each string, detect inside temperature, detect lightning protection status, detect circuit breaker status and summarize output voltage and so on.

Design and configuration strictly accordance with the "Technical specification for photovoltaic junction equipment" CGC/GF 037:2014. Provide users with a safe, brief, beautiful and applicable photovoltaic system products

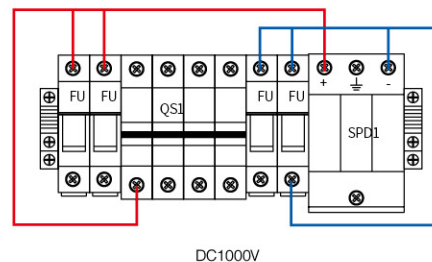
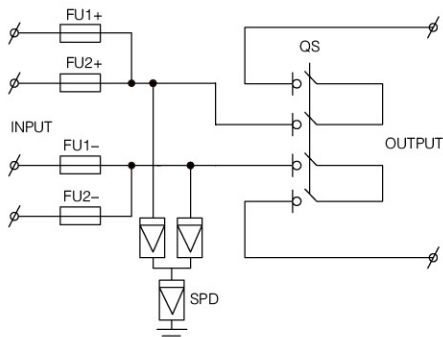
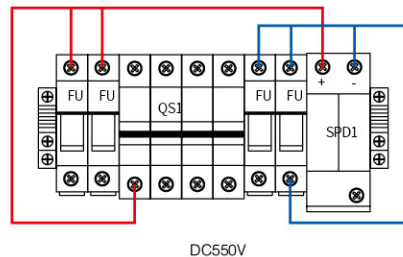
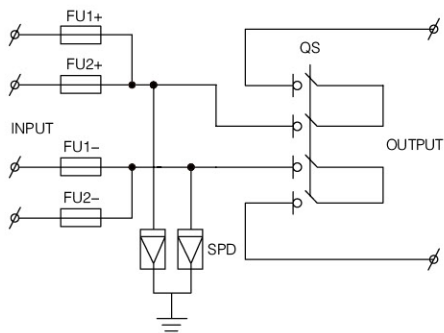
The product adopts outdoor wall mounted type, which adapt to the harsh environment. In addition to the core components, the other can be customized by user requirements

# DNHLX-PV12/1 DC combiner box

## Technical Parameter

Model	SHLX-PV12/1 Electric parameter
	<b>Electric parameter</b>
System maximum dc voltage	1000
Maximum input current for each string	15A
Maximum input strings	12
Maximum output switch current	160A
Number of inverter MPPT	N
Number of Output strings	1
	<b>Lightning protection</b>
Category of test	II grade protection
Nominal discharge current	20kA
Maximum discharge current	40kA
Voltage protection level	3.8kV
Maximum continuous operating voltage U <sub>c</sub>	1050V
Poles	3P
Structure characteristic	Plug-push module
	<b>System</b>
Protection grade	IP65
Output switch	DC isolation switch (standard)/DC circuit breaker (optional)
SMC4 Waterproof Connectors	Standard
PV dc fuse	Standard
PV surge protector	Standard
Monitoring module	Optional
Preventing diode	Optional
Box material	Metal
Installation method	Wall mounting type
Operating Temperature	-25°C ~ +55°C
Elevation of temperature	2km
Permissible relative humidity	0-95%, no condensation

## Schematic Diagram



# DNHLX-PV8/2 DC Combiner box



## Description

DNHLX-PV8/2 DC combiner box is suitable for inverter (MAX input voltage DC1000V, 8 PV input channel, 2 output channel, double MPPT inverter). Box body is made of PVC engineering materials, with test for fire retardant, temperature rise, anti impact, anti ultraviolet, and other testing. IP65 protection grade.

Design and configuration, strictly accordance with the "Technical specification for photovoltaic junction equipment" CGC/GF 037:2014. Provide users with a safe, brief, beautiful and applicable photovoltaic system products.

## Advantages

### ● High Reliability

With DC FUSE

With DC Surge Protection Device

With DC circuit breaker or DC load isolation switch

### ● Strong Adaptability

IP65 design, waterproof, anti dust and anti ultraviolet. Strict test for high and low temperature, used widely.

The simple installation, the simplified system wiring, the convenient wiring

The box body is made of cold rolled steel and other metal materials

### ● Flexible configuration

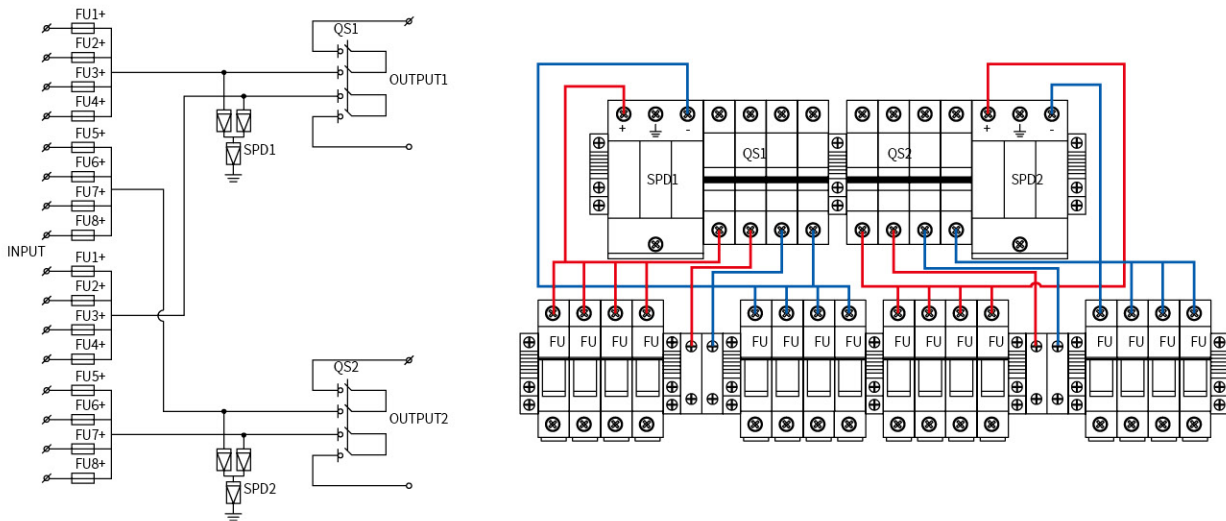
Used for single crystal silicon solar modules, polycrystalline silicon solar modules, thin film solar modules. Current rating of the photovoltaic fuse, circuit breaker, load isolation switch is modified

# DNHLX-PV8/2 DC combiner box

## Technical Parameter

Model	SHLX-PV12/1	Electric parameter
<b>Electric parameter</b>		
System maximum dc voltage		1000
Maximum input current for each string		15A
Maximum input strings		12
Maximum output switch current		160A
Number of inverter MPPT		N
Number of Output strings		1
<b>Lightning protection</b>		
Category of test		II grade protection
Nominal discharge current		20kA
Maximum discharge current		40kA
Voltage protection level		3.8kV
Maximum continuous operating voltage U <sub>c</sub>		1050V
Poles		3P
Structure characteristic		Plug-push module
<b>System</b>		
Protection grade		IP65
Output switch		DC isolation switch (standard)/DC circuit breaker (optional)
SMC4 Waterproof Connectors		Standard
PV dc fuse		Standard
PV surge protector		Standard
Monitoring module		Optional
Preventing diode		Optional
Box material		Metal
Installation method		Wall mounting type
Operating Temperature		-25°C ~ +55°C
Elevation of temperature		2km
Permissible relative humidity		0-95%, no condensation

## Schematic Diagram



# PV box series



## HT series Power Distribution Box

### Product description

\*Shell material: ABS box body/PC transparent cover

\*Waterproof grade: IP65

\*Product features: waterproof, dustproof, corrosion-resistant, high-strength insulation

### Technical Parameter

Model	Dimensions
HT-5	120*160*95
HT-8	200*155*95
HT-12	250*195*110
HT-15	310*195*110
HT-18	365*195*110
HT-24	360*280*110



## HA series Power Distribution Box

### Product description

\*Shell material: ABS box body/PC transparent cover

\*Waterproof grade: IP65

\*Product features: waterproof, dustproof, corrosion-resistant, high-strength insulation

### Technical Parameter

Model	Dimensions
HA-4	140*210*100
HA-8	215*210*100
HA-12	300*260*140
HA-18	410*285*140
HA-24	415*300*140

# PV box series

## Snap base business box



### Product description

\*Shell material: ABS shell/PC transparent cover

\*Product features: waterproof, dust-proof, corrosion-resistant, high-strength insulation, holes can be opened at will according to user needs, complete specifications, and convenient installation.

### Technical Parameter

Model	Dimensions
KK-1	300*200*170
KK-2	400*300*170
KK-3	500*400*200
KK-4	600*500*220
KK-5	300*200*170
KK-6	400*300*170
KK-7	500*400*200
KK-8	600*500*220
KK-9	300*200*170
KK-10	400*300*170
KK-11	500*400*200
KK-12	600*500*220

## TSM Series Lighting box



### Product description

\*Shell material: PS, ABS, flame retardant material (free choice)

\*Waterproof grade: IP40

\*Product features: dustproof, convenient installation, strong and durable, beautiful appearance, long service life

### Technical Parameter

TSM-4	112*210*100
TSM-6	148*210*100
TSM-8	184*210*100
TSM-10	222*210*100
TSM-12	256*210*100
TSM-15	312*210*100
TSM-18	364*222*100
TSM-24	270*325*100
TSM-36	305*473*100