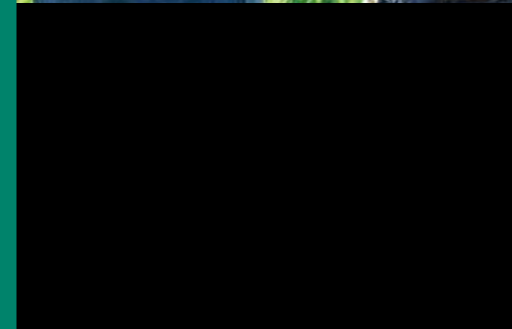




# FEED

YUEQING FEEO ELECTRIC CO.,LTD.



# FEED

YUEQING FEEO ELECTRIC CO.,LTD.

Add: Liushi, Yueqing, Zhejiang, China, 325604

Tel:+86-577-61800010

E-mail: info@feeo.com.cn

http://www.feeo.com.cn

# SOLAR

DISTRIBUTION SOLUTIONS  
INNOVATION & TECHNOLOGY

www.feeo.com.cn







# COMPANY

## YUEQING FEEO ELECTRIC CO.,LTD.

YUEQING FEEO ELECTRIC CO.,LTD which is owned by ZHEJIANG SULE ENERGY CO.,LTD is a professional solar PV electric components manufacturer located in Yueqing City, China. We're specialized in DC circuit breakers, Surge Protective Devices, PV fuses, isolator switches, MC4 connectors etc. With CE,RoHS,CB,TUV certificates and authorized dealers in Korea, Philippines, Thailand, India, Poland, Russia etc. we can assure you perfect quality and excellent service.

We're looking forward to having a good-long term cooperaton with you and your company.

# PROFILE



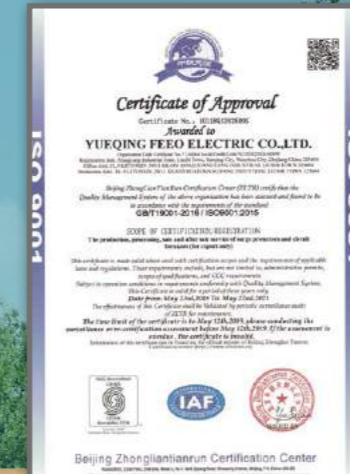


# CERTIFICATE HONOR

## YUEQING FEEO ELECTRIC CO.,LTD.



MCB CB Certificate



ISO9001



FUSE PATENT



FUSE CE



MCB CE



ISOLATOR SWITCH CE



SPD TUV



FUSE TUV

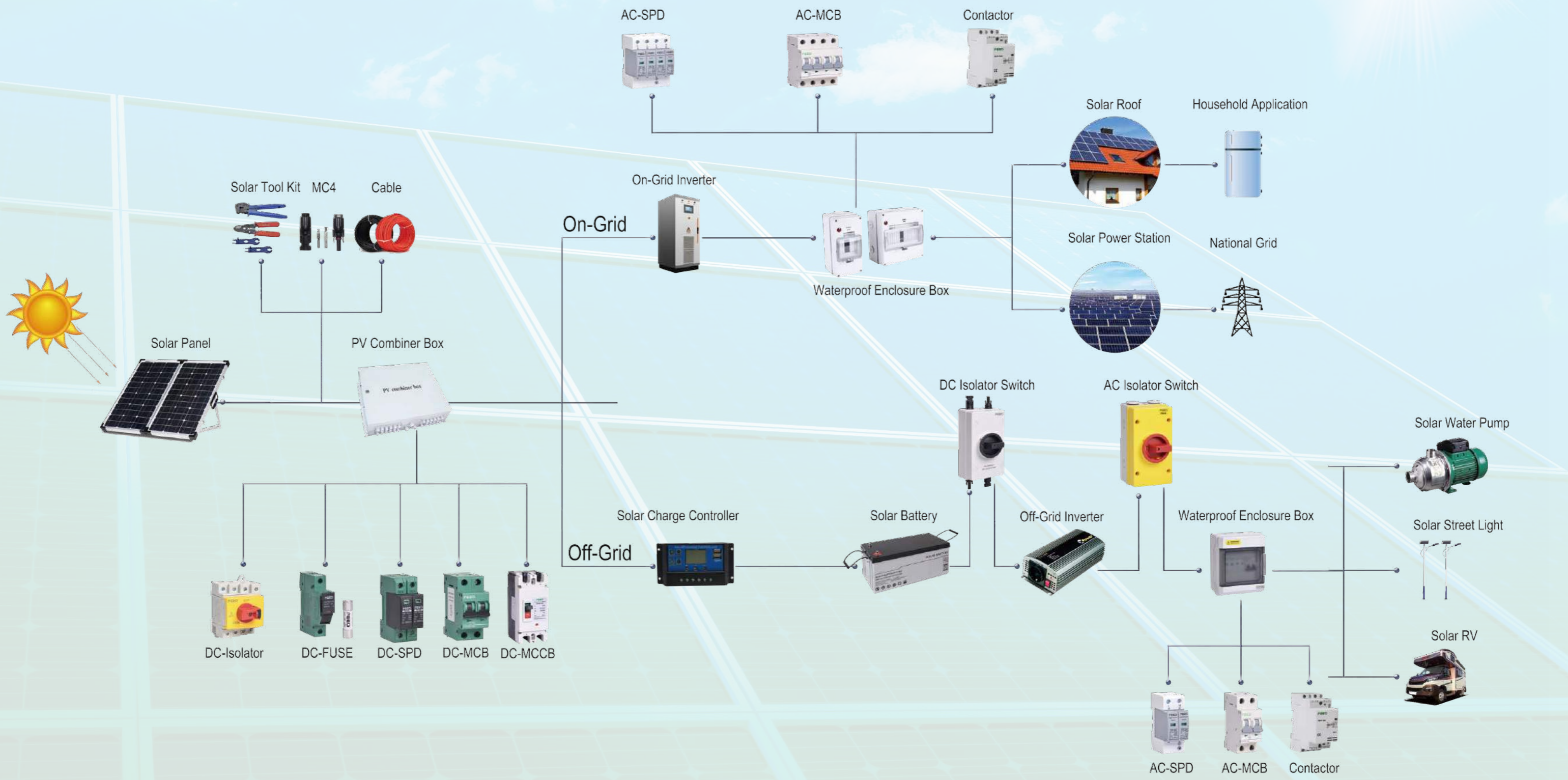


MCB TUV





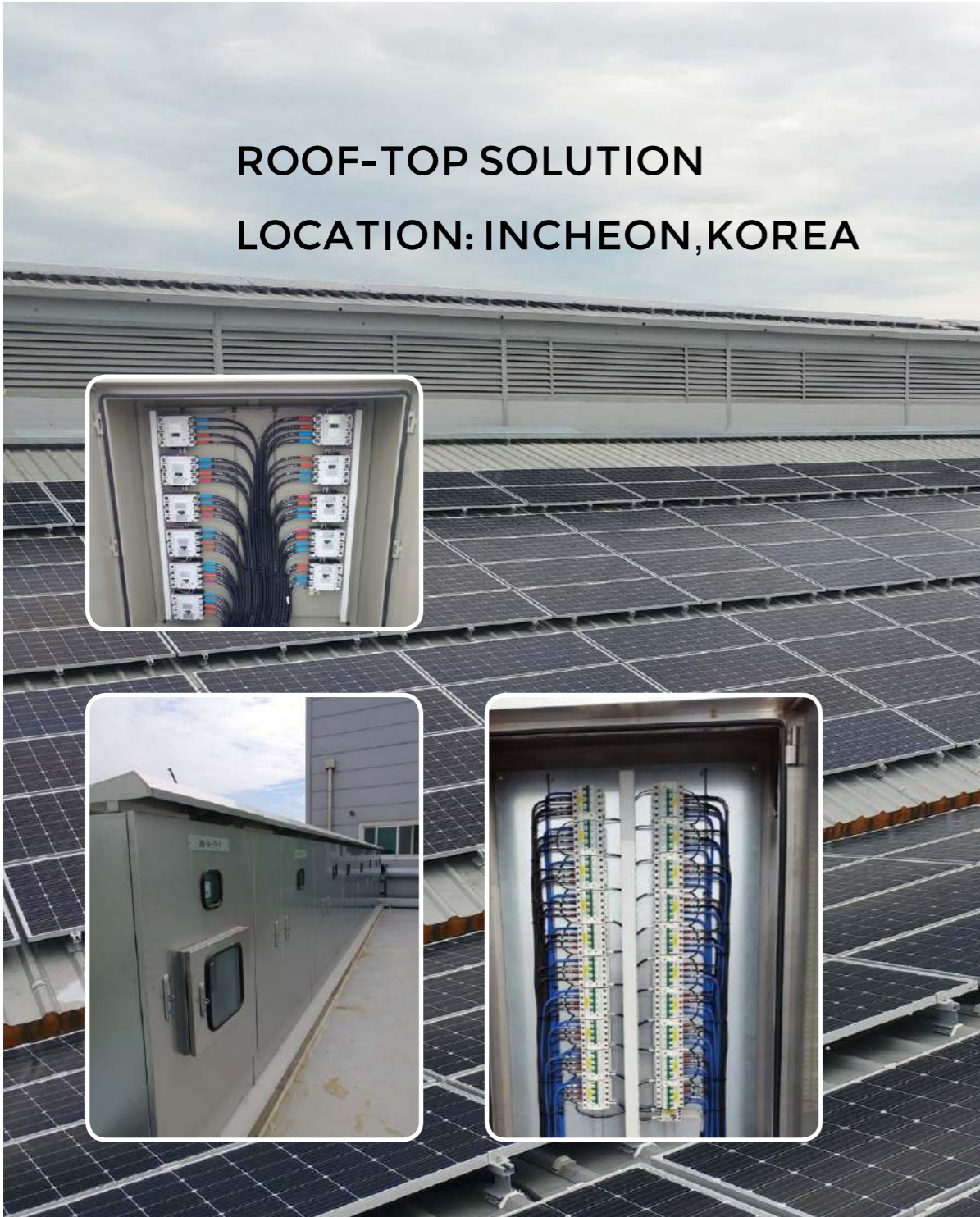
# Solar Energy Application Diagram





# FEEO'S SOLUTIONS

ROOF-TOP SOLUTION  
LOCATION: INCHEON, KOREA



POWER STATION  
SOLUTION  
LOCATION: INDONESIA

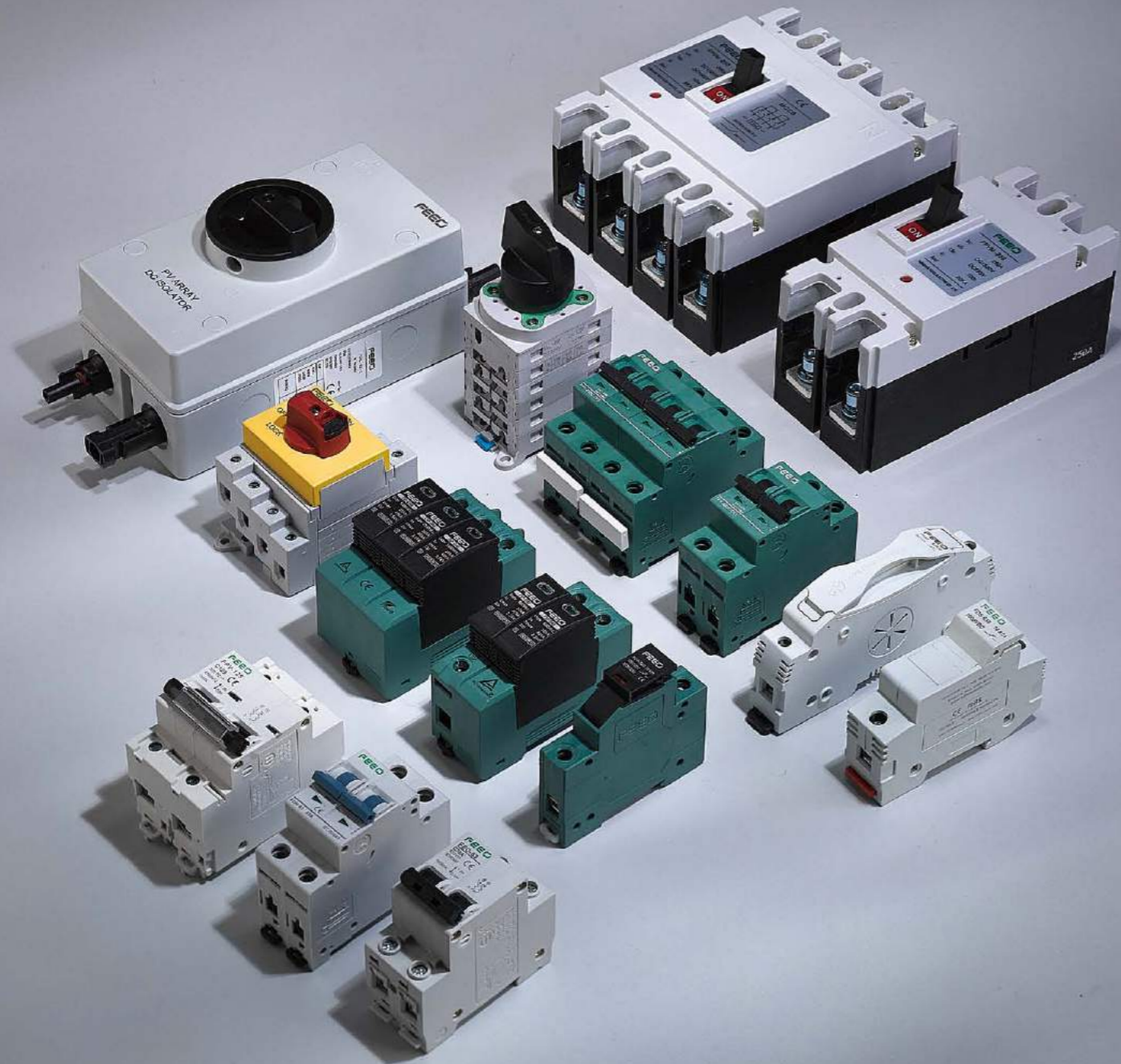


HOME BACKUP  
POWER SOLUTION  
LOCATION: PHILIPPINES





# DC Series



## Contents ▶▶



**01-06**  
FPV Series Solar DC  
Mini Circuit Breaker (DC MCB)



**07-08**  
FEO -63 Solar DC  
Mini Circuit Breaker (DC MCB)



**09-12**  
FPVM Solar DC Moulded  
Case Circuit Breaker (DC MCCB)



**13-17**  
FSP-D40 Solar DC  
Surge Protective Device (DC SPD)



**18-26**  
FDS series Solar DC Fuse



**27-28**  
FHDS Solar DC 1500V Fuse



**29**  
FHB Series Fuse Type Isolator Switch



**30-33**  
FDIS Solar DC Waterproof Isolator Switch



**34-36**  
FDIS(for inverter) Solar DC Isolator Switch



**37-38**  
FDIS(for enclosure) Solar DC Isolator Switch



**39-40**  
FDH-63 Solar DC Mini Isolator Switch



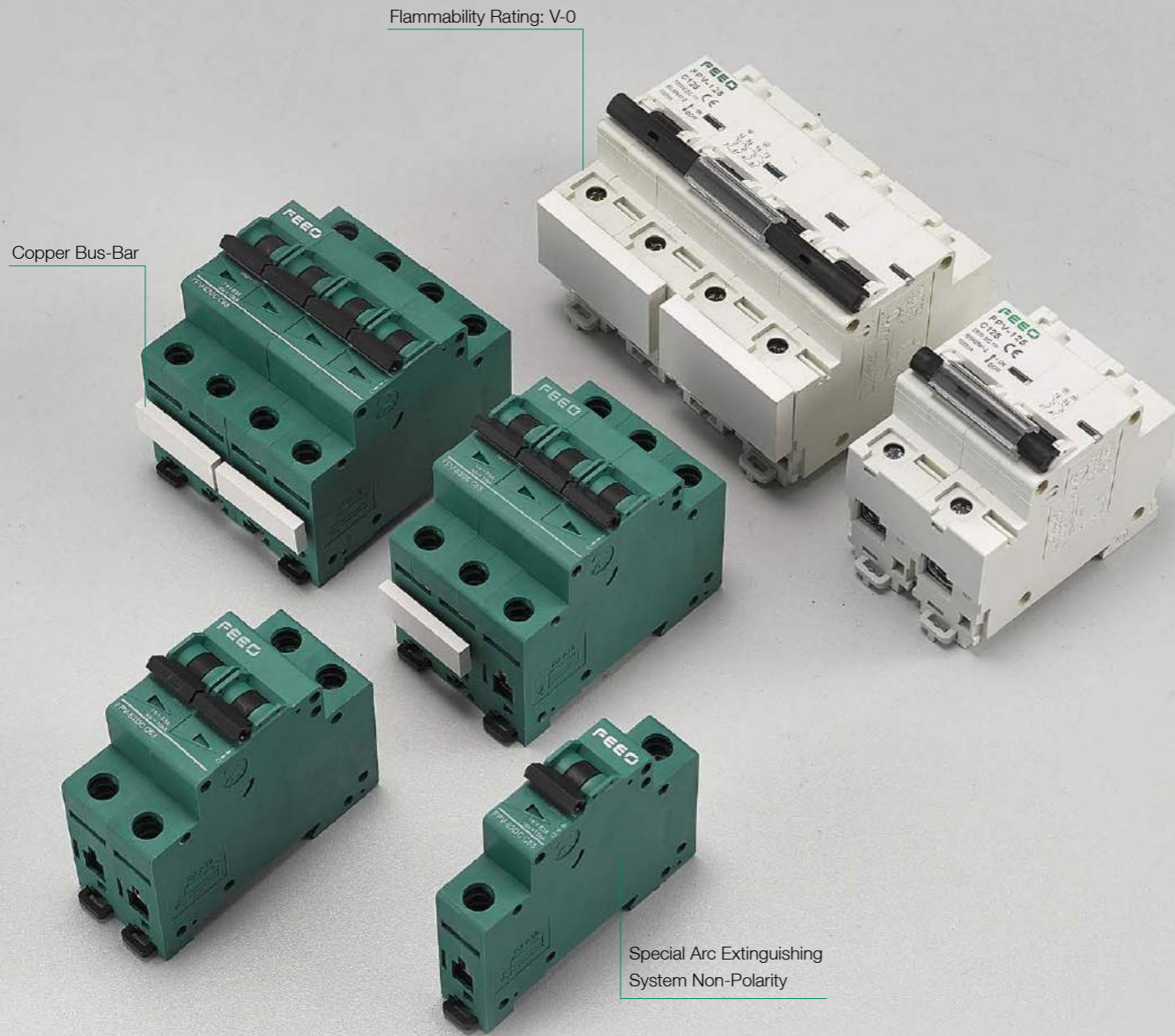
**41-42**  
FDHM Solar DC Moulded Case Isolator Switch



# FPV Series ▶▶

## Solar DC Mini Circuit Breaker (DC MCB)

CCC CE CB RoHS



# FPV-63

Solar DC Mini Circuit Breaker (DC MCB)

### ► Application

FPV-63 DC MCB supplementary protectors are designed to provide overcurrent protection within appliances or electrical equipment, where a branch circuit protection is already provided or not required. Devices are designed for direct current (DC) control circuit applications.



### ► Specifications

FPV-63 Series Circuit Breaker		FPV-63				
Frame Degree Rated Current (A)	63					
Pole	1P	2P	3P	4P	2P(CUSTOMIZED)	
Rated Operating Voltage (V DC)	250	550	750	1000	800	
Rated Insulation Voltage Ui (V DC)	1200V					
Rated Current In (A)	3,6,10,16,20,25,32,40,50,63A					
Rated Impact Voltage Uimp (kV)	4					
Ultimate Breaking Capacity Icu (kA)	6					
Run Breaking Capacity Ics (%Icu)	75%					
Curve Type	C					
Trip Type	Thermal-magnetic					
Mechanical	Actual average value	9700				
	Standard value	9700				
Electric	Actual average value	300				
	Standard value	300(accord to TUV standard)				

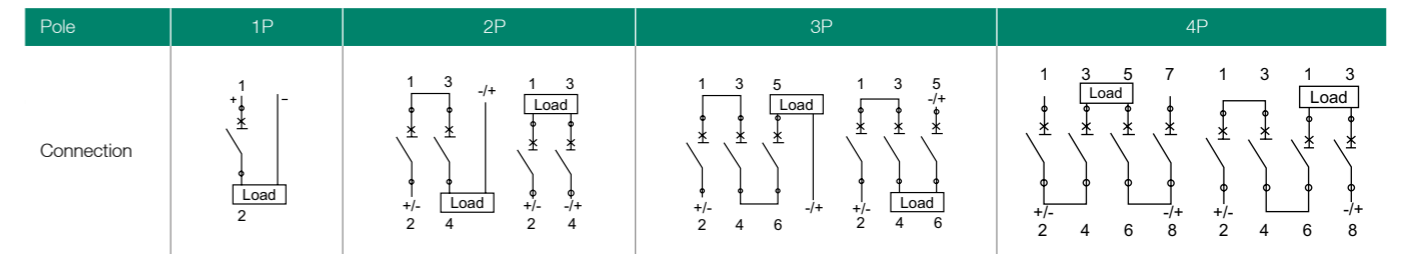
### ► Control and Indication

Shunt release (SHT)	
Undervoltage release (UNT)	Option
Auxiliary contact (AX)	
Alarm contact (AL)	

### ► Condition and Installation

Wiring capacity (mm <sup>2</sup> )	In ≤ 32A, 1-6, I ≥ 40A, 10-16				
Ambient temperature (°C)	-35~+70				
Altitude	≤ 2000				
Relative humidity	≤ 95%				
Pollution Level	3				
Installation Environment	No obvious shock and vibration				
Installation category	Class III				
Installation	DIN Standard rail				
Dimensions(W)x(H)x(Deep)	W	18	36	54	72
	H	80	80	80	80
	Deep	71	71	71	71
Weight (kg)	0.12	0.24	0.36	0.48	

### ► Connection





# FPV-63

Solar DC Mini Circuit Breaker (DC MCB)

YUEQING FEEO  
ELECTRIC CO.,LTD

## ► Over current tripping characteristic

Test	Test Current	Initial State	Limited Time	Expected Result	Remarks
a	1.05I <sub>n</sub>	Cold state	t 1h	Non-tripping	
b	1.3I <sub>n</sub>	Right after test number a	t<1h	Tripping	The current is rising within 5s
c	7I <sub>n</sub>	Cold state	t≤s	Non-tripping	
d	10I <sub>n</sub>	Cold state	t 0.1s	Tripping	

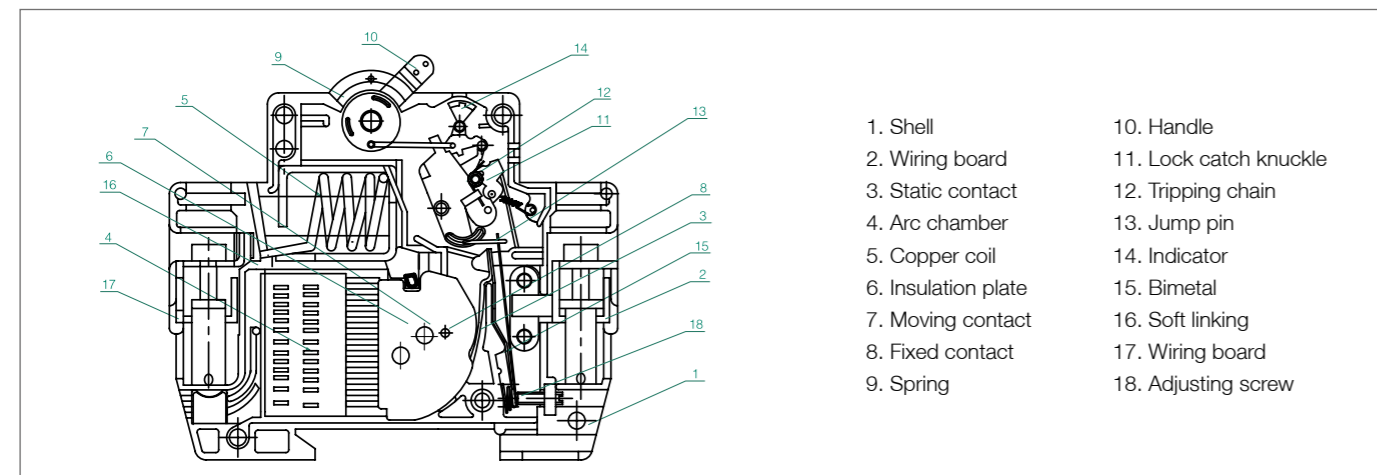
## ► Current correction values used at different ambient temperatures

Fixed current(A) Rated Current (A)	Temperature											
	-35	-30	-20	-10	0	10	20	30	40	50	60	70
3A	3.9	3.78	3.69	3.57	3.42	3.3	3.12	3	2.88	2.79	2.64	2.49
6A	7.8	7.56	7.38	7.14	6.84	6.6	6.24	6	5.76	5.64	5.28	4.98
10A	13.2	12.7	12.5	12	11.5	11.1	10.6	10	9.6	9.3	8.9	8.4
16A	21.12	20.48	20	19.2	18.4	17.76	16.96	16	15.36	14.88	14.24	13.44
20A	26.4	26.4	25	24	23	22.2	21.2	20	19.2	18.6	17.8	16.8
25A	33	32	31.25	30	28.75	27.75	26.5	25	24	23.25	22.25	21
32A	42.56	41.28	40	38.72	37.12	35.52	33.93	32	30.72	29.76	28.16	26.88
40A	53.2	51.2	50	48	46.4	44.8	42.4	40	38.4	37.2	35.6	33.6
50A	67	65.5	63	60.5	58	56	53	50	48	46.5	44	41.5
63A	83.79	81.9	80.01	76.86	73.71	70.56	66.78	63	60.48	58.9	55.44	52.29

## ► Current correction factor used at different altitudes

Rated Current (A)	Different altitude correction factors		
	≤2000m	2000~3000m	≥3000m
3,6,10,16,20,25,32,40,50,63A	1.0	0.9	0.8

## ► Details



# FPV-63

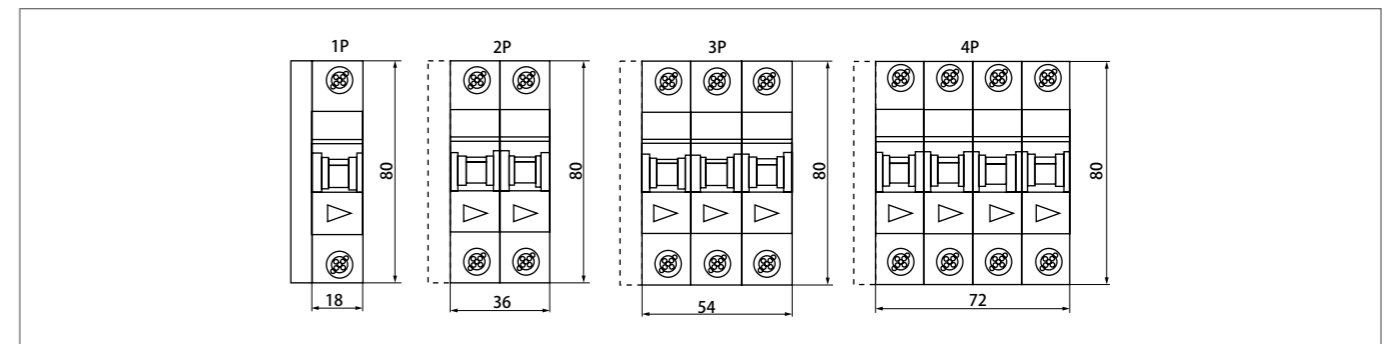
Solar DC Mini Circuit Breaker (DC MCB)

FEEO

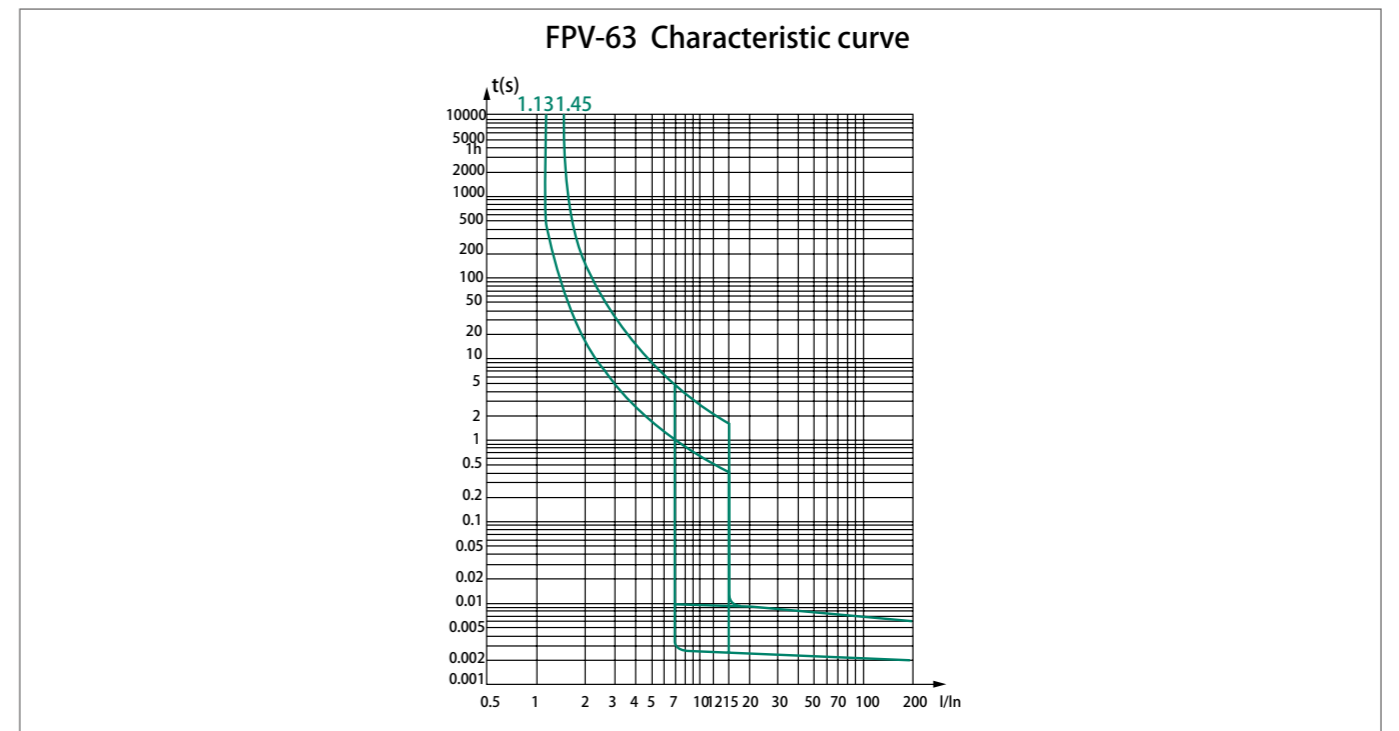
## ► Wire connection terminals

Rated current I <sub>n</sub> (A)	Copper wire nominal cross sectional area(mm <sup>2</sup> )
3,6	1
10	1.5
16,20	2.5
25	4
32	6
40,50	10
63	16

## ► Dimension



## ► Characteristic Curve





# FPV-125

Solar DC Mini Circuit Breaker (DC MCB)

YUEQING FEEO  
ELECTRIC CO.,LTD

## ► Application

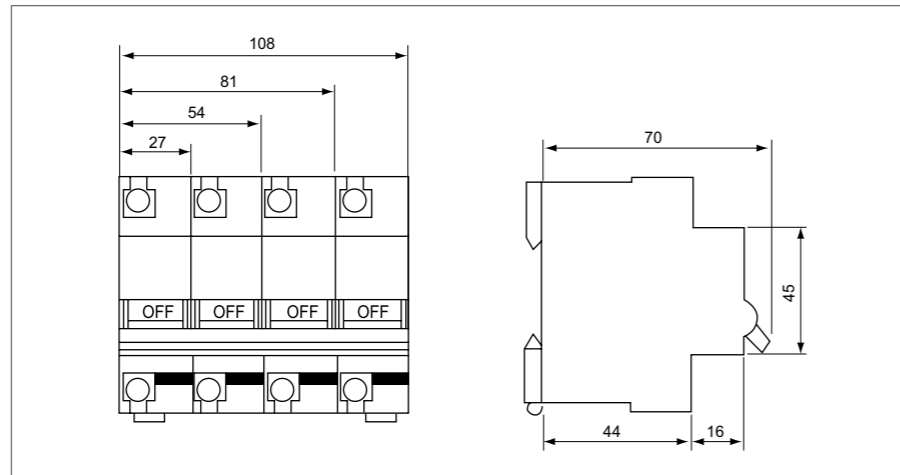
FPV-125 high breaking capacity circuit breaker is specially for solar PV system. The current is from 63A to 125A and voltage up to 1000VDC. Standard according to IEC/EN60947-2.



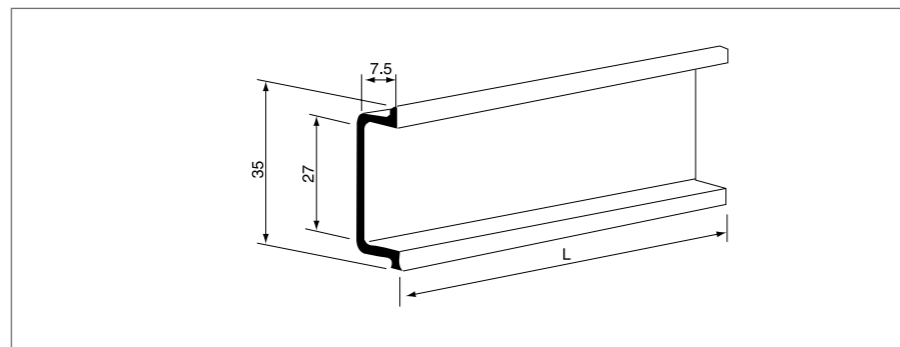
## ► Specifications

Rated Current	63,80,100,125A			
Rated Voltage	250VDC	550V/800VDC	750VDC	1000VDC
No. of Pole	1P	2P	3P	4P
Mechanical Life	20000 times(C.O.)			
Electrical Life	20000 times(C.O.)		125A: 1000 Times	
Icu:	10KA			
Ics:	63,80,100A:10KA		125A: 7.5KA	
Weight(G)	150	300	460	620

## ► Dimensions



## ► Installation



# FPV-125

Solar DC Mini Circuit Breaker (DC MCB)

FEEO

## ► Over current tripping characteristic

Item	Rated Current (A)	Initial State	Test Current	Limited Time	Prospective Result	Starting State
a	$I_n=63$	Cold state	$1.05I_n$	$t \leq 1h$	Non-tripping	The current rise steadily to a fixed value within 5s
	$I_n > 63$	Cold state	$1.05I_n$	$t \leq 2h$	Non-tripping	
b	$I_n=63$	Hot state	$1.3I_n$	$t < 1h$	Tripping	
	$I_n > 63$	Hot state	$1.3I_n$	$t < 2h$	Tripping	
c	$I_n \geq 63$	Cold state	$8I_n$	$t \leq 0.2s$	Non-tripping	
			$12I_n$	$t < 0.2s$	Tripping	

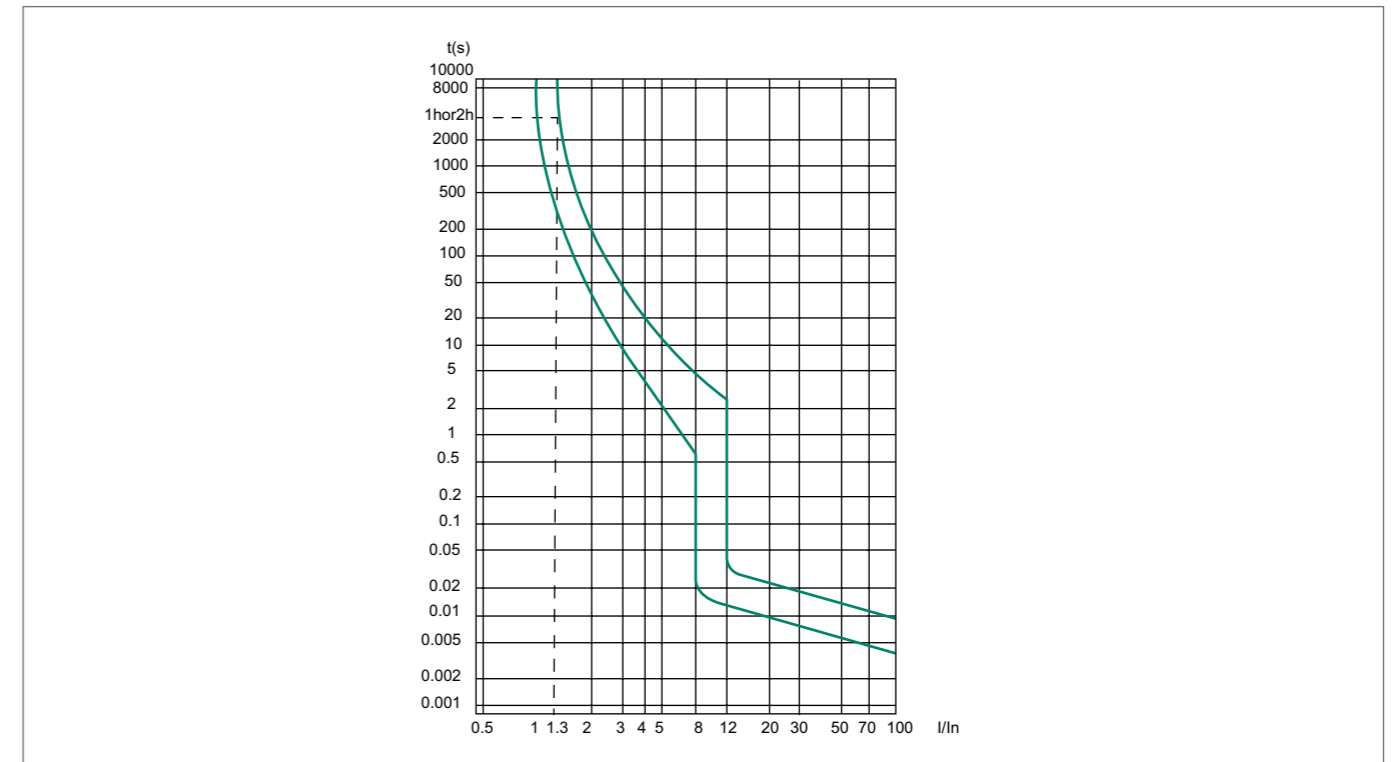
## ► Current correction values used at different ambient temperatures

Fixed current(A) Rated Current (A)	Temperature											
	-35	-30	-20	-10	0	10	20	30	40	50	60	70
63A	90.40	88.52	84.75	80.33	76.55	72.45	67.73	63	57.65	51.98	46.31	40.95
80A	114.8	112	106.8	101.6	96.4	90.8	85.6	80	74	67.6	60.4	53.2
100A	143.5	140.5	134.5	127.5	121	113.5	107.5	100	92.5	84.5	75.5	66.5
125A	178.75	173.75	164.38	156.25	148.75	140.63	135	125	116.25	107.5	97.5	85

## ► Current correction factor used at different altitudes

Rated Current (A)	Different altitude correction factors		
	$\leq 2000m$	2000~3000m	$\geq 3000m$
3,6,10,16,20,25,32,40,50,63A	1.0	0.9	0.8

## ► Characteristic Curve





# FEO -63

Solar DC Mini Circuit Breaker (DC MCB)

YUEQING FEEO  
ELECTRIC CO.,LTD

## ► Application

FEO-63 DC MCB supplementary protectors are designed to provide overcurrent protection within appliances or electrical equipment, where a branch circuit protection is already provided or not required. Devices are designed for direct current (DC) control circuit applications.



## ► Specifications

FPV-63 Series Circuit Breaker		FPV-63
Frame Degree Rated Current (A)		63
Pole		1P, 2P, 3P, 4P
Rated Operating Voltage (V DC)		DC12V -DC1000V
Rated Current In (A)		1-63A
Rated Insulation Voltage Ui (V DC)		1200VDC
Rated Impact Voltage Uimp (kV)		4
Ultimate Breaking Capacity Icu (kA)		6
Run Breaking Capacity Ics (%Icu)		75%
Curve Type		C
Trip Type		Thermal-magnetic
Mechanical	Actual average value	9700
	Standard value	9700
Electric	Actual average value	300
	Standard value	200

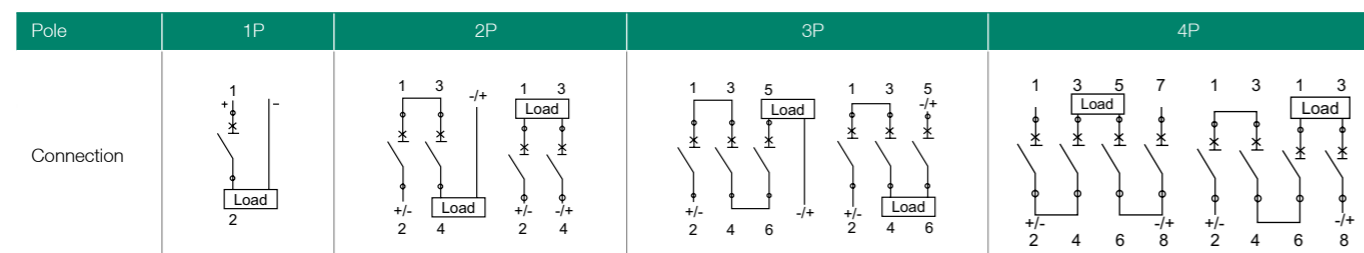
## ► Control and Indication

Shunt release (SHT)	Option
Undervoltage release (UNT)	
Auxiliary contact (AX)	
Alarm contact (AL)	

## ► Condition and Installation

Wiring capacity (mm <sup>2</sup> )	In ≤ 32A, 1~25 mm <sup>2</sup> , I ≥ 40A, 10~35mm <sup>2</sup>				
Ambient temperature (°C)	-20~+40				
Altitude	≤ 2000				
Relative humidity	≤ 95%				
Pollution Level	3				
Installation Environment	No obvious shock and vibration				
Installation category	Class III				
Installation	DIN Standard rail				
Dimensions(W)x(H)x(Deep)	W	18	36	54	72
	H	78	78	78	78
	Deep	71	71	71	71
Weight (kg)	0.12	0.24	0.36	0.48	

## ► Connection

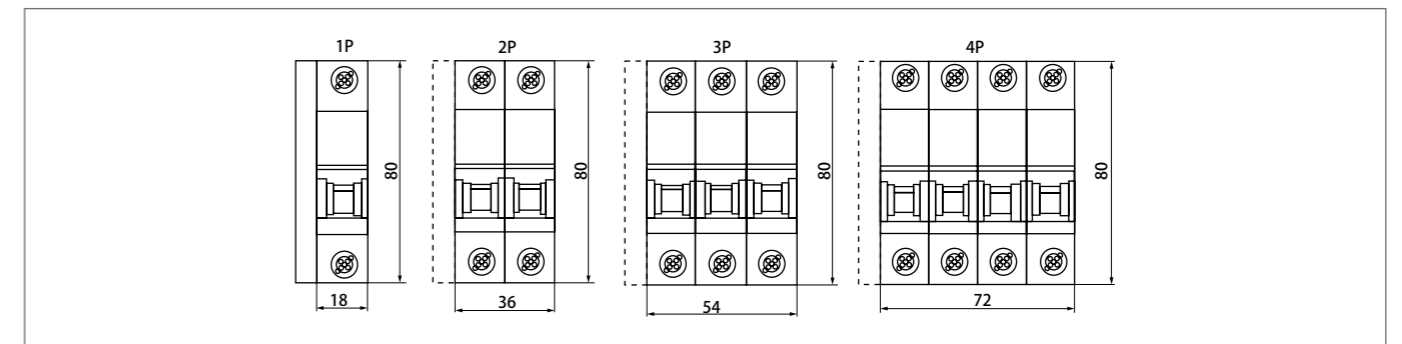


# FEO -63

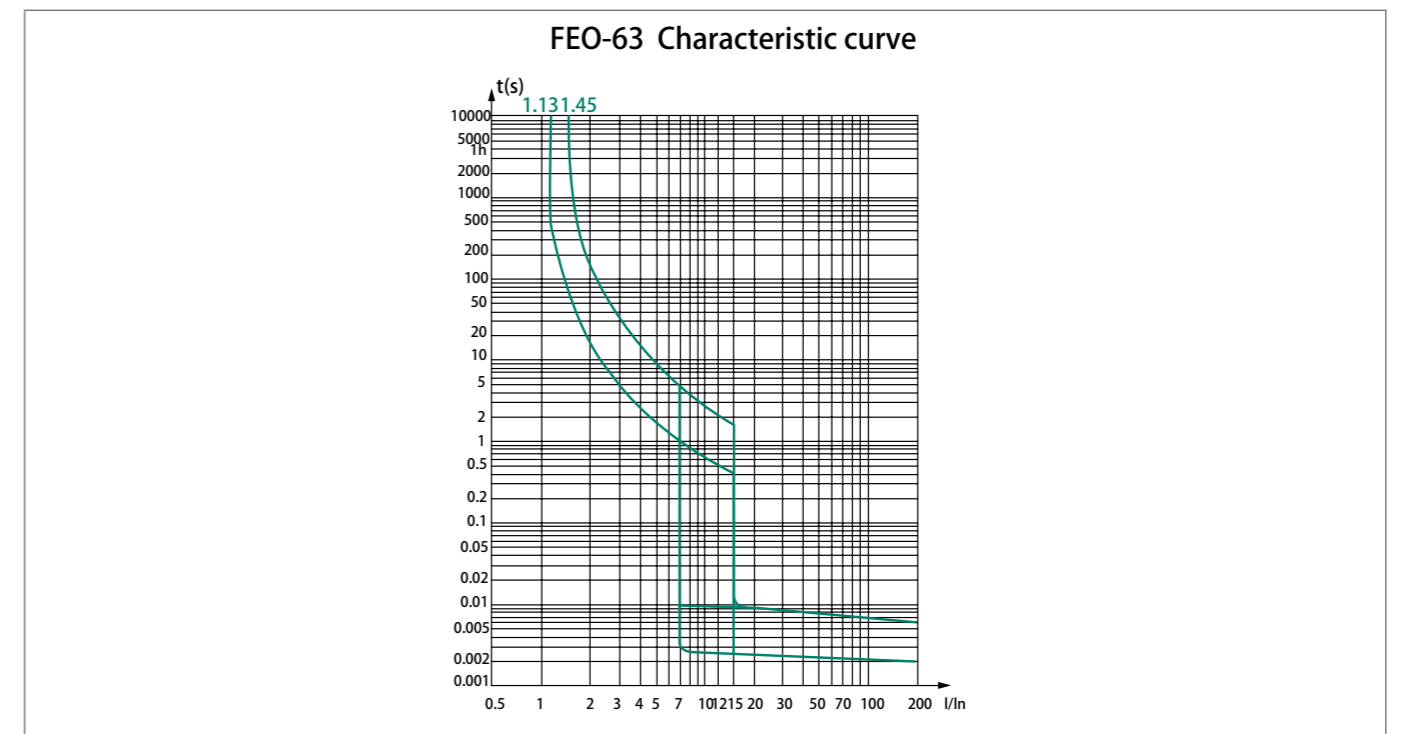
Solar DC Mini Circuit Breaker (DC MCB)

FEEO

## ► Dimension



## ► Characteristic Curve





# FPVM ▶▶

## Solar DC Moulded Case Circuit Breaker (DC MCCB)

CCC CE RoHS



# FPVM

## Solar DC Moulded Case Circuit Breaker (DC MCCB)

### ► Application

FPVM series Moulded Case Circuit Breaker is designed to distribute power and protect the circuit and power equipment against overload in solar system. It is apply to rating current 1250A or less, direct current rating voltage 1500V or less. Products according IEC60947-2, GB14048.2 standard.



### ► Specifications

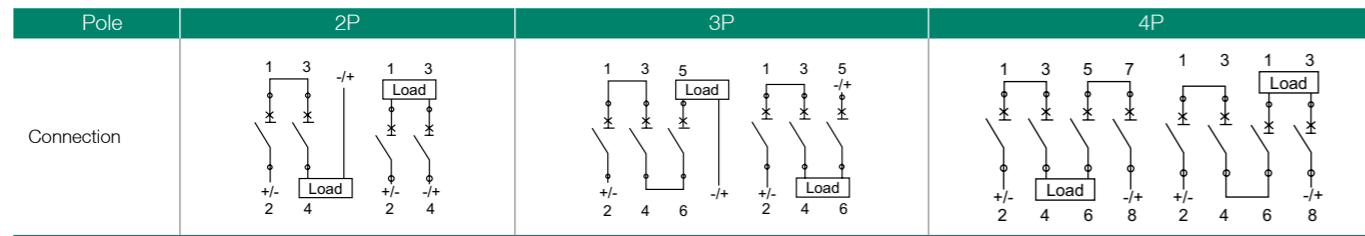
Model	FPVM-125	FPVM-250	FPVM-400	FPVM-630	FPVM-800	FPVM-1250
Rated Continuous Current	125	250	400	630	800	1250
Rated Current In (A)	16, 20, 25, 32, 40, 50, 63, 80, 100, 125	100, 125, 140, 160, 180, 200, 225, 250	250, 315, 350, 400	400, 500, 630	630, 700, 800	800, 1000, 1250
Rated Operating Voltage Ue (V) DC	550V 750V 1000V 1500V	550V 750V 1000V 1500V	750V 1000V 1500V	750V 1000V 1500V	750V 1000V 1500V	750V 1000V 1500V
Rated Insulation Voltage Ui (V)	1500V	1500V	1500V	1500V	1500V	1500V
Uimp (kV)	8kV	8kV	8kV	8kV	8kV	8kV
Test Voltage One Minute (V)	3550	3550	3550	3550	3550	3550
Breaking Capacity (kA) Icu (1cs=75% Icu)		L M H	L M H	L M H	L M H	L M H
	250V	25 35 50	35 50 65	35 50 65	35 50 65	50 65 80
	500V	25 25 50	35 35 65	35 35 65	35 35 65	50 50 80
	750V	25 15 50	35 25 65	35 25 65	35 25 65	50 35 80
1000V	25 10 50	35 15 65	35 15 65	35 15 65	50 20 80	
Mechanical Life	Times	7000	7000	4000	4000	2500
Electrical Life	Times	2000	2000	1000	1000	800
Breaking Times (ms)		20	20	20	20	20
Installation Location	Any place					
Isolator Capacity	Yes					
Standard	IEC 60947-2, IEC60947-1, GB 14048.1, GB 14048.2					
Temperature (°C)	-25°C ~+50°C					
Protection Degree	IP20					
Accessory	OF/SD/MX					
Arcing Distance (mm)	≥50					

### ► Application conditions

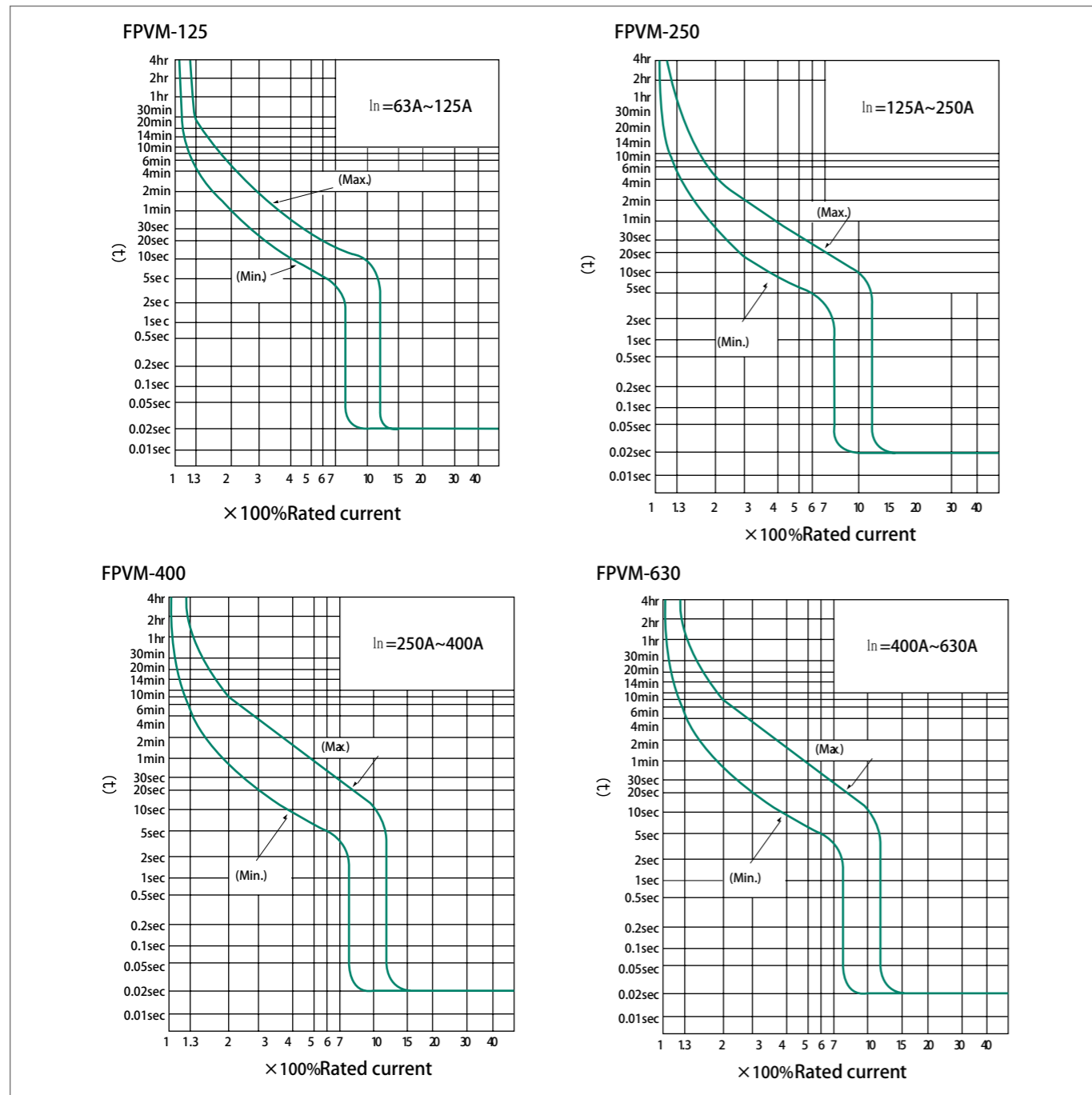
- Altitude : less than 2000m ( please specify when it's higher than 2000m).
- Ambient temperature : -40~+70
- Dampproof Moisture-resistant



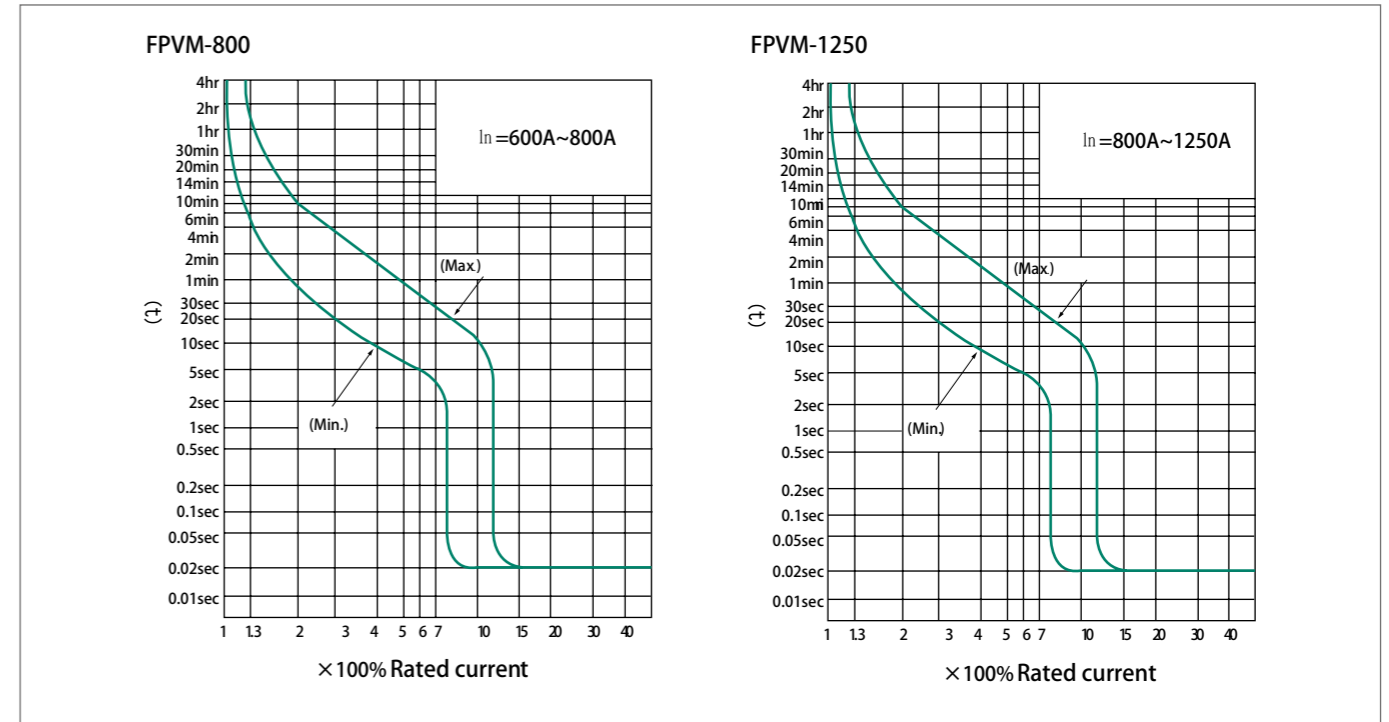
## ► Connection



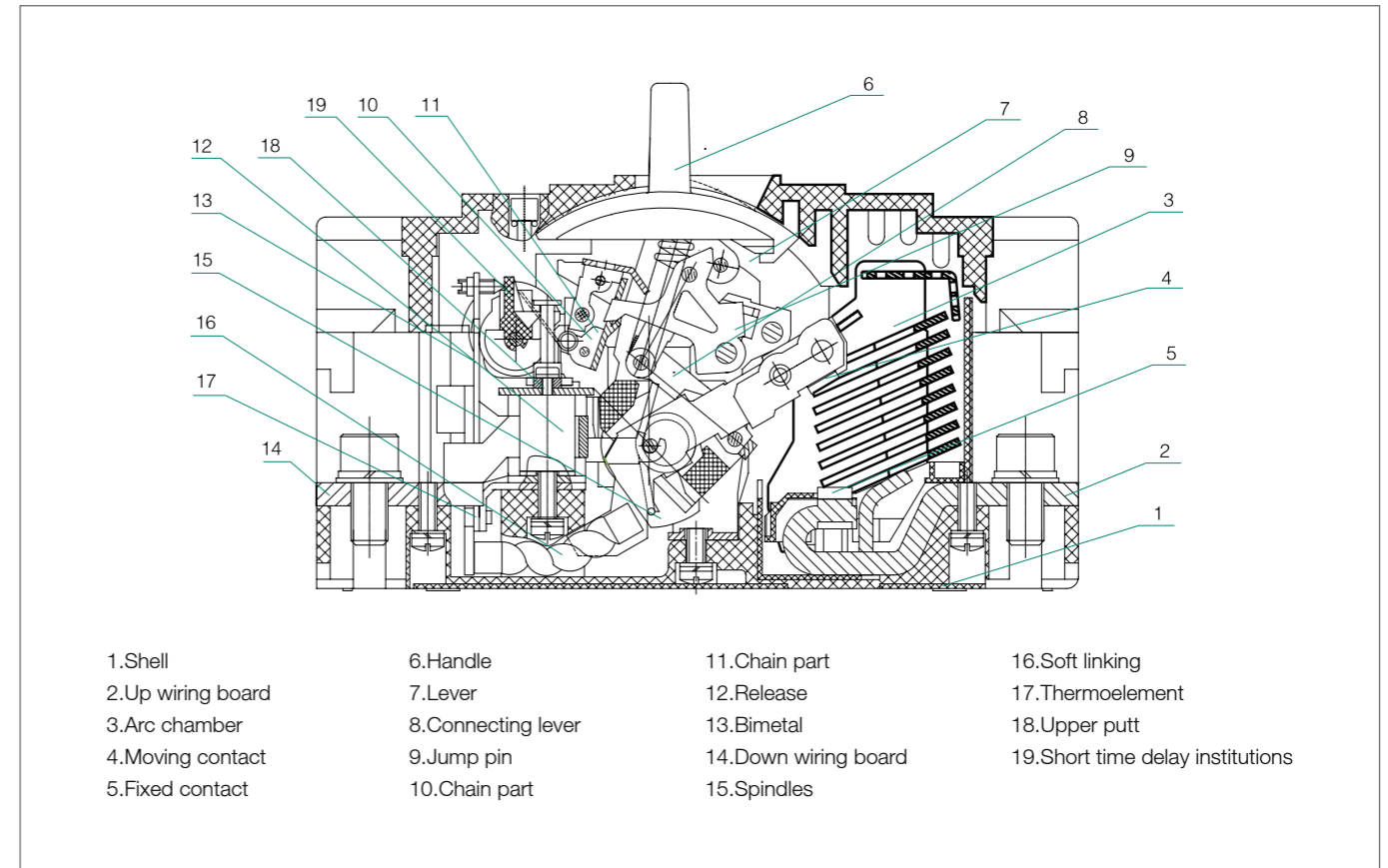
## ► Characteristic Curve



## ► Characteristic Curve



## ► Details





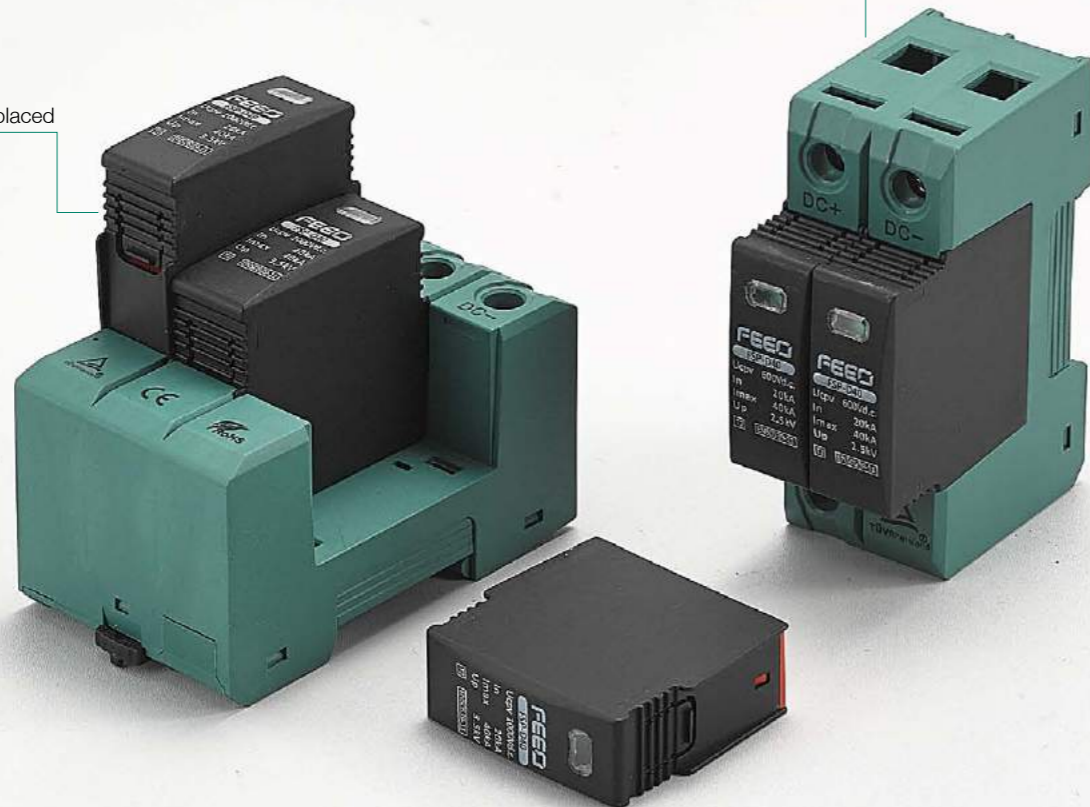
# FSP-D40 ▶▶

## Solar DC Surge Protective Device (DC SPD)



Modular Type  
Easy To Be Replaced

Integrated Molding Base



# FSP-D40

Type2 Solar DC Surge Protective Device (DC SPD)



### ▶ Application

Surge protective device, protect against lightning surge voltages in solar system (photovoltaic power supply system). These units must be installed in parallel on the dc networks to be protected and provide common and different modes protection. Its installed location are recommended at both ends of the dc power supply line (solar panel side and inverter/converter side), especially if the line routing is external and long. High energy MOVs equipped with specific thermal disconnectors and related failure indicators.



### ▶ Specifications

FSP-D40 Surge protector	FSP-D40				
PVDC - specific	EN50539-11				
Pole	2P	2P	3P	3P	2P(CUSTOMIZED)
Electrical parameter					
Classified test	II	II	II	II	II
Uoc max (VDC)	600	800	1000	1500	12/24
Uc (VDC)	600	800	1000	1500	12/24
In (8 /20) us ( kA)	20	20	20	20	20
Ima x (8 /20) us ( kA)	40	40	40	40	40
Up ( kV)	2.0	2.5	3.8	5.3	2.0

### ▶ Remote Signal Contact

Remote signal contact	Maximum working voltage (V)		250VAC/30VDC	250VAC /30VDC
	Maximum working current (A) IA ( 250 V /AC )	IA ( 250V/AC )	IA (250V /AC )	IA (30V /AC )
	IA ( 30 V DC )	IA (30V/AC )	IA (30V /AC )	

### ▶ Installation and Dimensions

Wiring capacity(mm2)	Hard wire	4~25	4~25
	Flexible wire	4~16	4~16
Stripping length(mm)		10	10
Terminals crcwa		M5	M5
Torque (Nm)	Main circuit	3.5	3.5
	Remote signal contact	0.25	0.25
Protection class	All profile	IP40	IP40
	Connection port	IP20	IP20
Installation environment		No obvious shock and vibration	
Altitude (m)		≤2000	≤2000
Working Temperature		-30°C ~ +70°C	-30°C ~ +70°C
Relative humidity		30%~90 %	30%~90 %
How to install		Installed with H 35-7.5/DIN35 steel mounting rail	
Size (mm) (W x H x L)	W	36	54
	H	90	90
	L	67.6	67.6
Weight (kg)		0.24	0.36

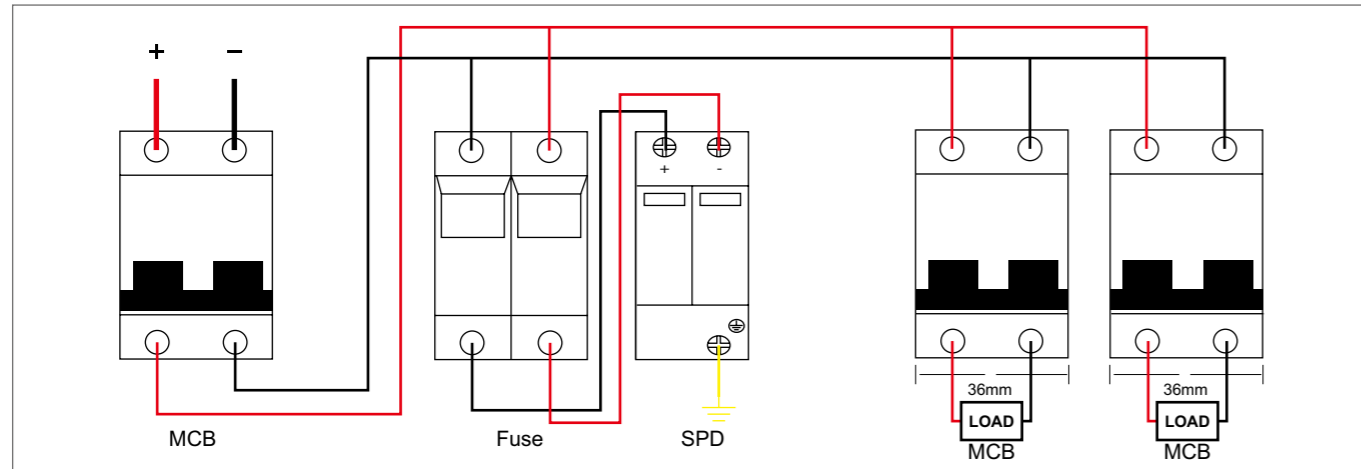


# FSP-D40

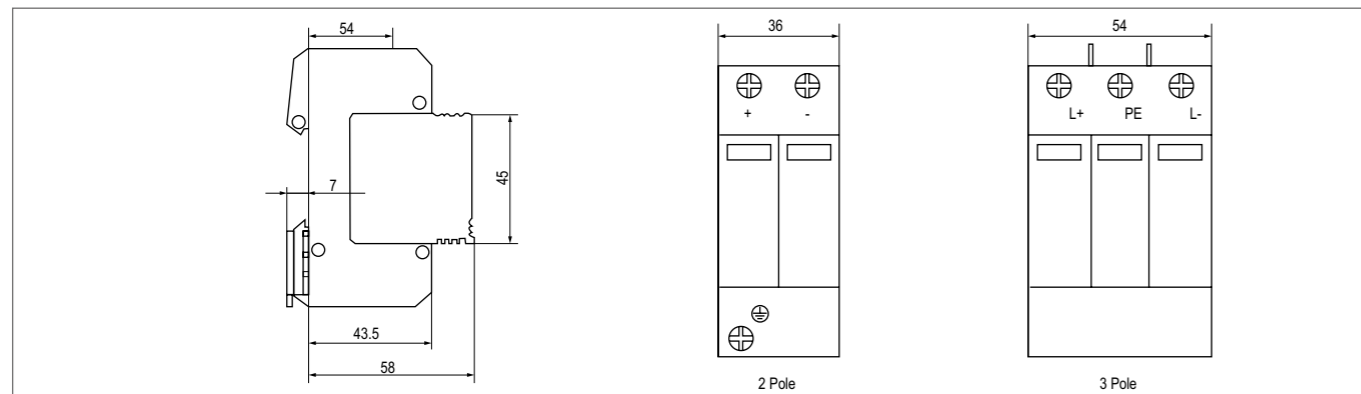
Type2 Solar DC Surge Protective Device (DC SPD)

YUEQING FEEO  
ELECTRIC CO.,LTD

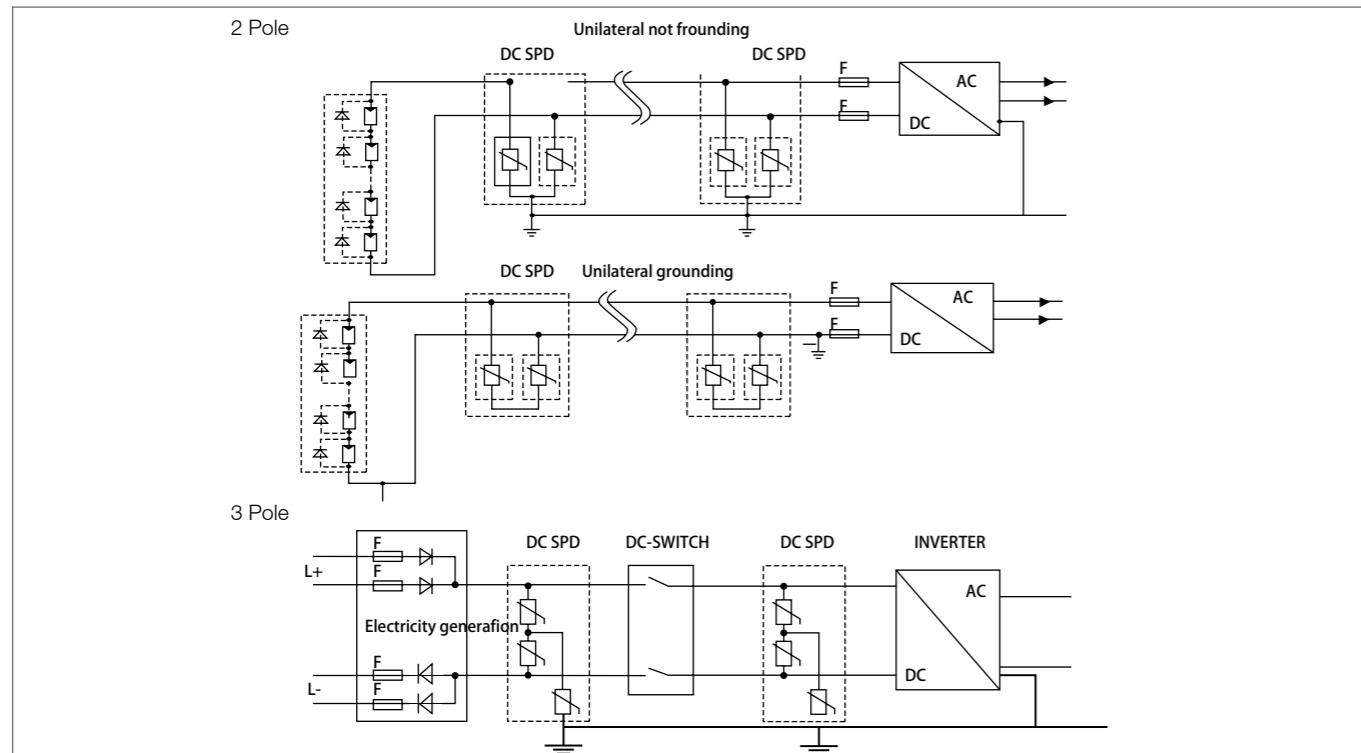
## ► Wiring Diagram



## ► Dimensions



## ► Drawing



# FSP-D40

Type 1+2 DC Surge Protective Device



## ► Application

FSP-D40 is a Type 1+2 surge protector specially designed for photovoltaic power generation, it is installed at the outlet of photovoltaic panels with high risk of direct lightning strike, it is suitable for photovoltaic system protection with DC voltages of 1000V and 1500V.



## ► Features

- Type 1+2 surge protective device for Photovoltaic
- VG-Technology
- Up to 1500 Vdc
- No leakage, no operating currents
- Impulse currents  $i_{imp}/i_{total}$  : 5/20 $\mu$ s & 10/350  $\mu$ s
- Common and Differential Mode protection
- Plug-in modules
- Remote Signaling (option)
- EN 50539-11 compliance

## ► Specifications

Model	FSP-D40		
Description	Type 1+2 PV DC surge protector		
Pole	2P	3P	3P
Protection mode	CM/DM		
Max. operating voltage	U <sub>cpv</sub>	600 Vdc	1000 Vdc 1500 Vdc
Current withstand short-circuit	I <sub>scpv</sub>	1000 A	
Operating current - to the voltage U <sub>cpv</sub>	I <sub>cpv</sub>	none	
Leakage current - to the voltage U <sub>cpv</sub>	I <sub>pe</sub>	none	
Follow current	I <sub>f</sub>	none	
Nominal discharge current - 8/20 $\mu$ s	I <sub>n</sub>	20 KA	
Max discharge current by pole - 8/20 $\mu$ s	I <sub>max</sub>	40 KA	
Max. Lightning current by pole - 10/350 $\mu$ s	i <sub>imp</sub>	5 KA/12.5KA	
Total lightning current - 10/350 $\mu$ s	I <sub>total</sub>	10 KA	
Total Maximal discharge current - 8/20 $\mu$ s	I <sub>total</sub>	60 KA	
Protection level CM/DM (at I <sub>n</sub> )	U <sub>p</sub>	2.8 KV	3.5 KV 5.1 KV



# FSP-D40

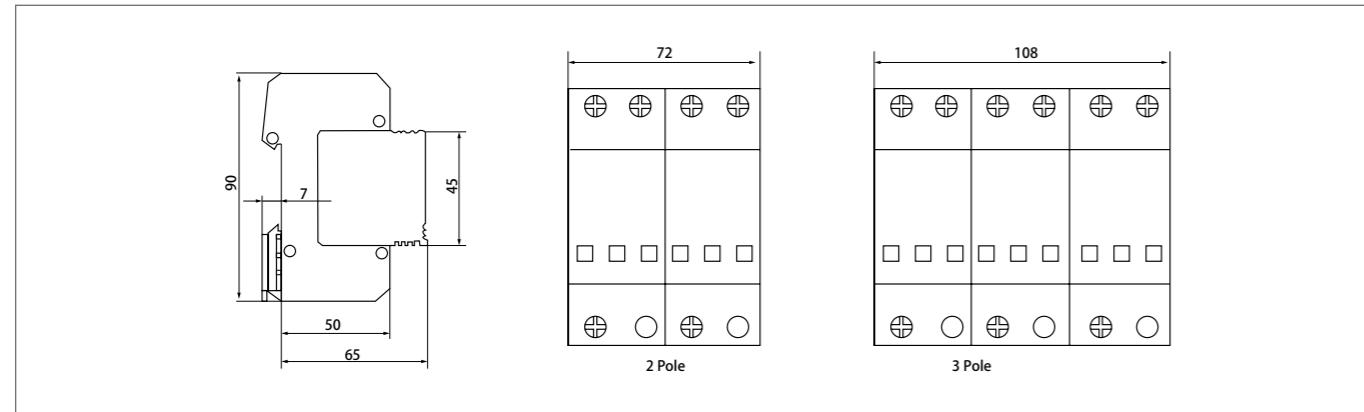
Type 1+2 DC Surge Protective Device

YUEQING FEEO  
ELECTRIC CO.,LTD

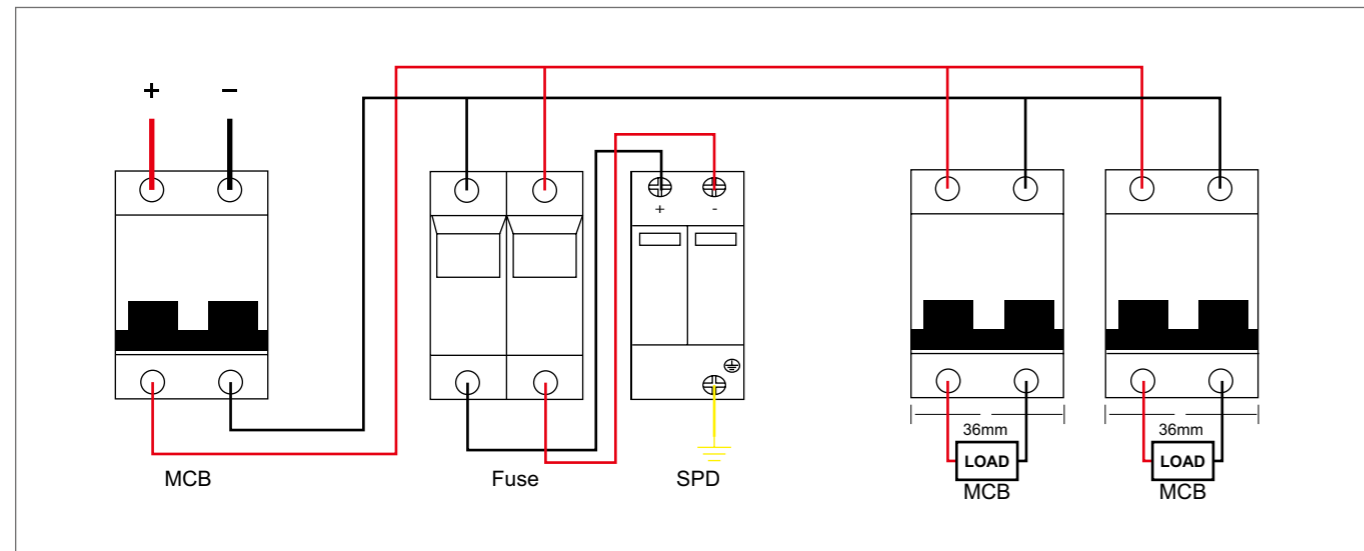
FEEO  
ELECTRIC

Mechanical characteristics	
Dimensions	See diagram
Connection	Screw terminal for 2.5-25 mm <sup>2</sup> wire
Disconnection indicator	1 mechanical indicator by pole
Remote signaling	Option FSP-D40 - Output on changeover contact
Mounting	Symmetrical rail 35 mm (EN60715)
Operating temperature	-40°C ~+85°C
Protection class	IP20
Housing material	Thermoplastic UL94-V0
Standards compliance	EN50539-11

## ► Dimensions



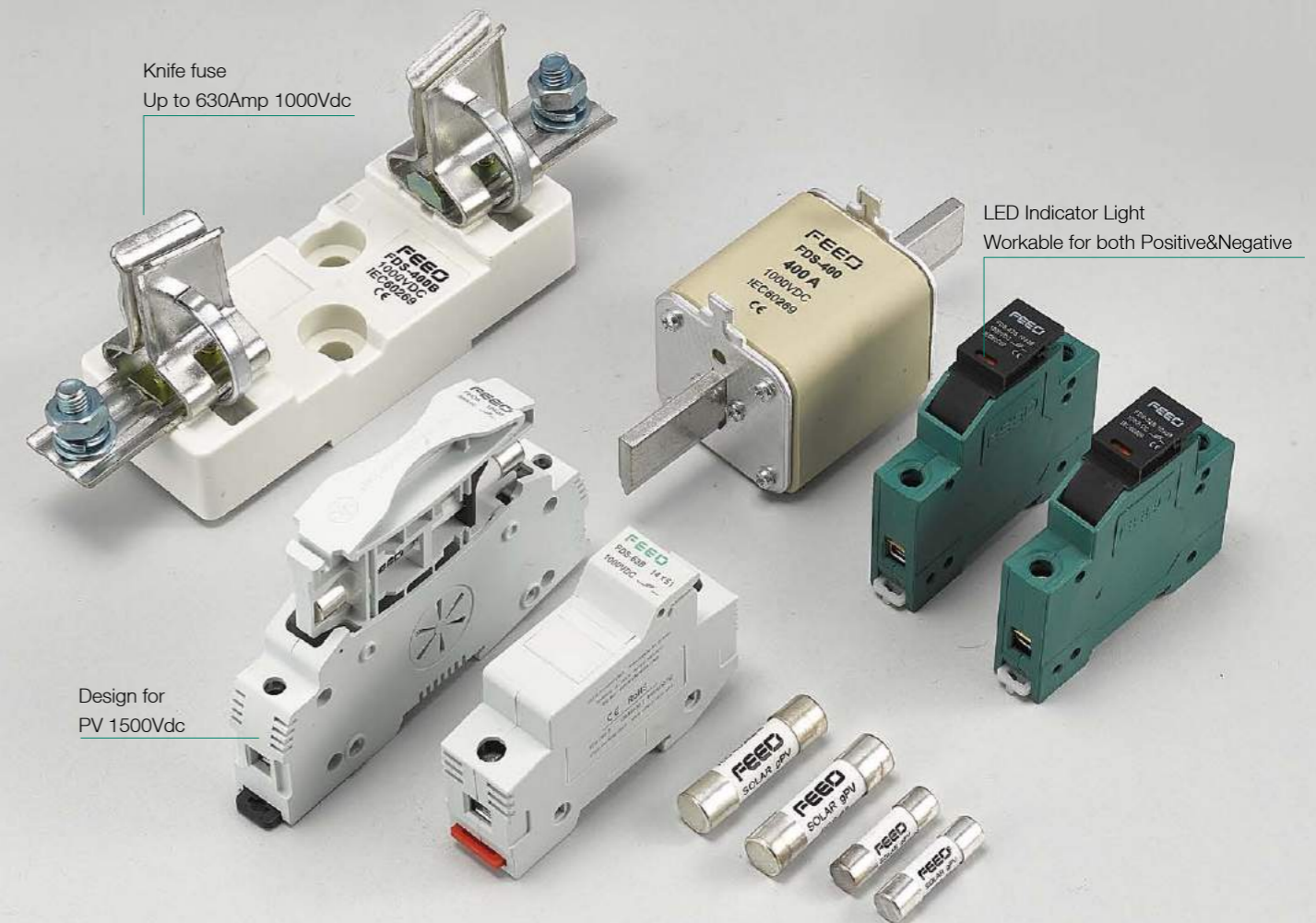
## ► Wiring Diagram



# FDS series

## Solar DC Fuse

CCC CE TÜV RoHS





# FDS-32

Solar DC Fuse

YUEQING FEEO  
ELECTRIC CO.,LTD



## ► Application

A range of 10x38mm fuse links specifically designed for protecting photovoltaic strings. These fuse links are capable of interrupting low overcurrents associated with faulted photovoltaic string arrays (reverse current, multi-array fault).

## ► Structural Characteristics

- According to IEC60269-1
- Rated current: 1-32A
- Rated voltage: DC 1000V
- Rated breaking capacity:DC 20KA
- Operating class gPV for Solar protection



## ► Specifications

Pole	1P
Rated Voltage Ue (V DC)	1000
Rated Current In (A)	1,2,3,4,5,6,8,10,12,15,20,25,32
Biggest Block Ability(KA)	20
The Most High Power Consumption(W)	3.5

## ► Connection and Installation

Connection(mm2)	2.5 - 10
Working Temperature(°C)	-30~+70
Resistance And Damp Hot	Class 2
Altitude(m)	≤ 2000
Relative Humidity	≤ 95%
Protection Class/Degree	IP20
Pollution	3
Installation Environment	No obvious shock and vibration
Installation Class/Type	Class III/DIN rail

## ► Size(mm)

Size/Dimension(mm)		
(WxHxL)	W	18
	H	60
	L	78
Fuse Size		10x38
Fuse Link Weight(kg)		0.011
Fuse holder weight(kg)		0.07

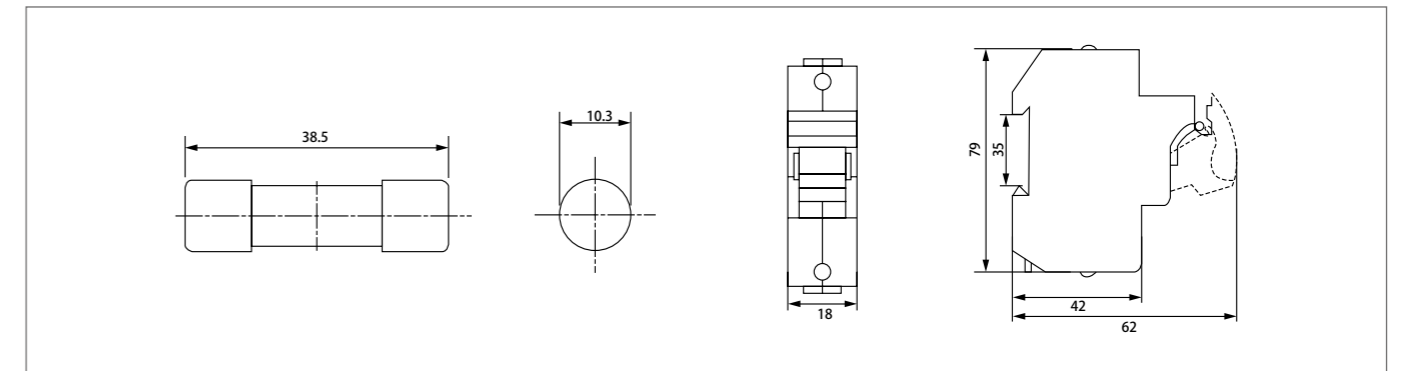
## ► Application conditions

- Photovoltaic system fuse accord with UL248-1 standard.
- Photovoltaic battery dc fuse designed to used for photovoltaic (PV) system.
- Main effect is to protect the solar panels. Solar panels points in effective condition is broken.
- Fault light cells break points at the same time, does not affect other normal work of light from the stack.
- Technical Data Rated voltage: DC1000V Breaking capacity: 25KA Function level: PV.

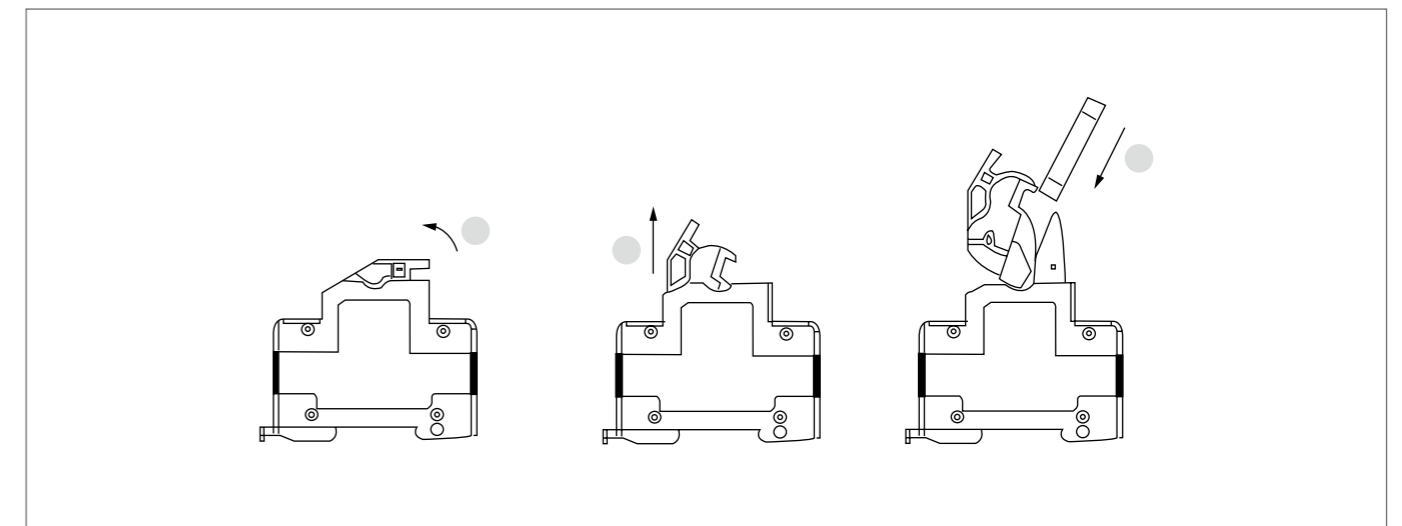
# FDS-32

Solar DC Fuse

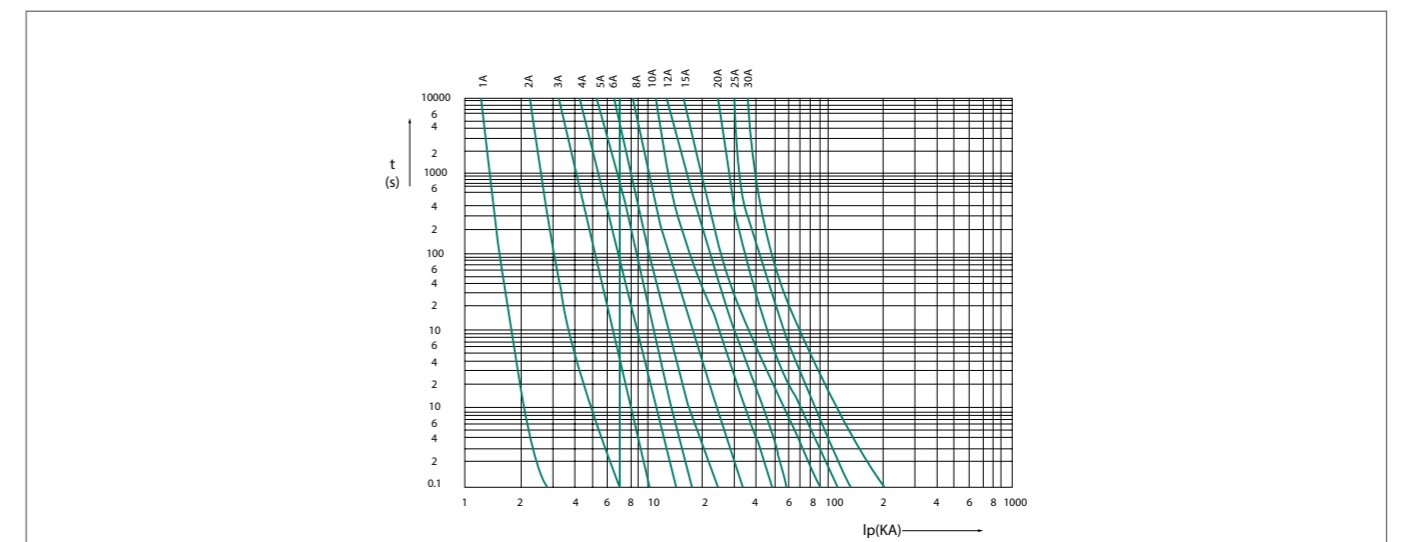
## ► Dimensions



## ► Installation



## ► Characteristic Curve





# FDS-63

Solar DC Fuse

YUEQING FEEO  
ELECTRIC CO.,LTD



## ► Application

A range of 14x51mm fuse links specifically designed for protecting photovoltaic strings. These fuse links are capable of interrupting low overcurrents associated with faulted photovoltaic string arrays (reverse current, multi-array fault).

## ► Structural Characteristics

- According to IEC60269-6
- Rated current: 1-63A
- Rated voltage: DC 1000V
- Operating class gPV for Solar protection



## ► Specifications

Pole	1P
Rated Voltage $U_e$ (V DC)	1000
Rated Current $I_n$ (A)	4,6,8,10,12,16,20,25,32,40,50,63

## ► Connection and Installation

Connection(mm <sup>2</sup> )	2.5 -1 0
Working Temperature(°C )	-30~+70
Resistance And Damp Hot	Class 2
Altitude(m)	≤ 2000
Relative Humidity	≤ 95%
Protection Class/Degree	IP20
Pollution	3
Installation Environment	No obvious shock and vibration
Installation Class/Type	Class III/DIN rail

## ► Size(mm)

Size/Dimension(mm)		
(WxHxL)	W	22
	H	66
	L	96
Fuse Size		14x51
Fuse holder Weight (kg)		0.11
Fuse link weight(kg)		0.025

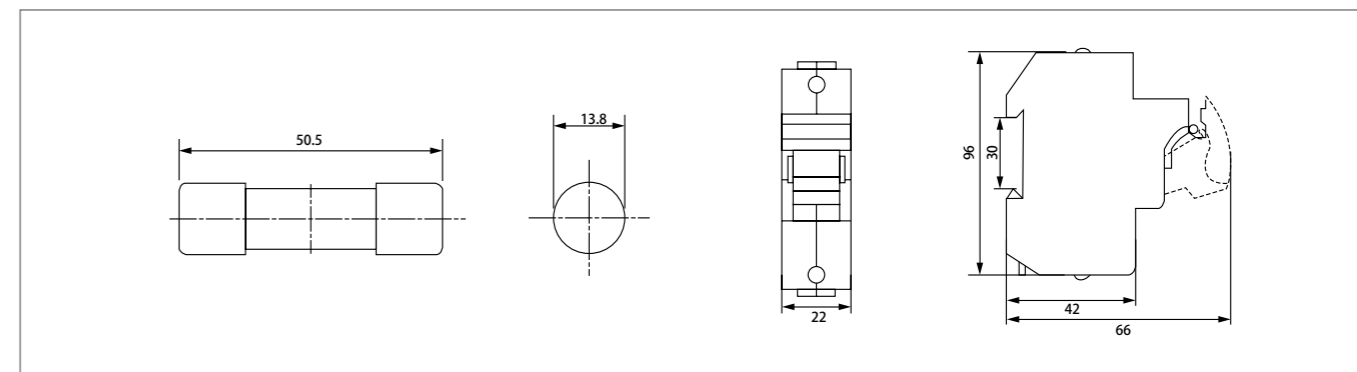
## ► PV fuse Description

- Photovoltaic system fuse accord with UL248-1 standard.
- Photovoltaic battery dc fuse designed to used for photovoltaic (PV) system.
- Main effect is to protect the solar panels. Solar panels points in effective condition is broken.
- Fault light cells break points at the same time, does not affect other normal work of light from the stack.
- Technical Data Rated coltage: DC1000V Breaking capacity: 25KA Function level: PV.

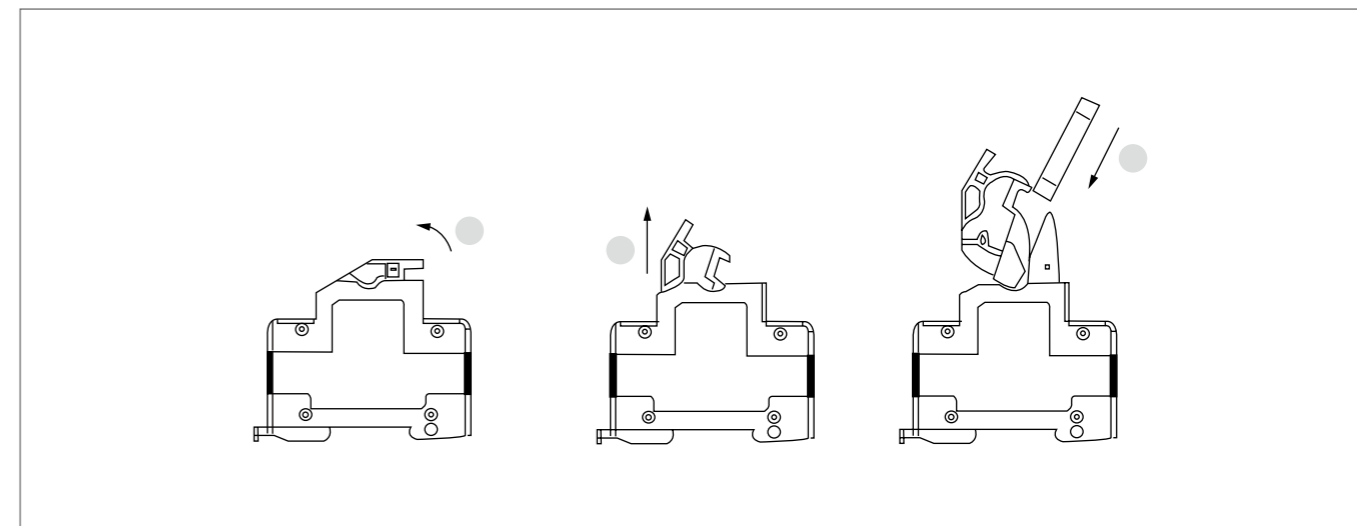
# FDS-63

Solar DC Fuse

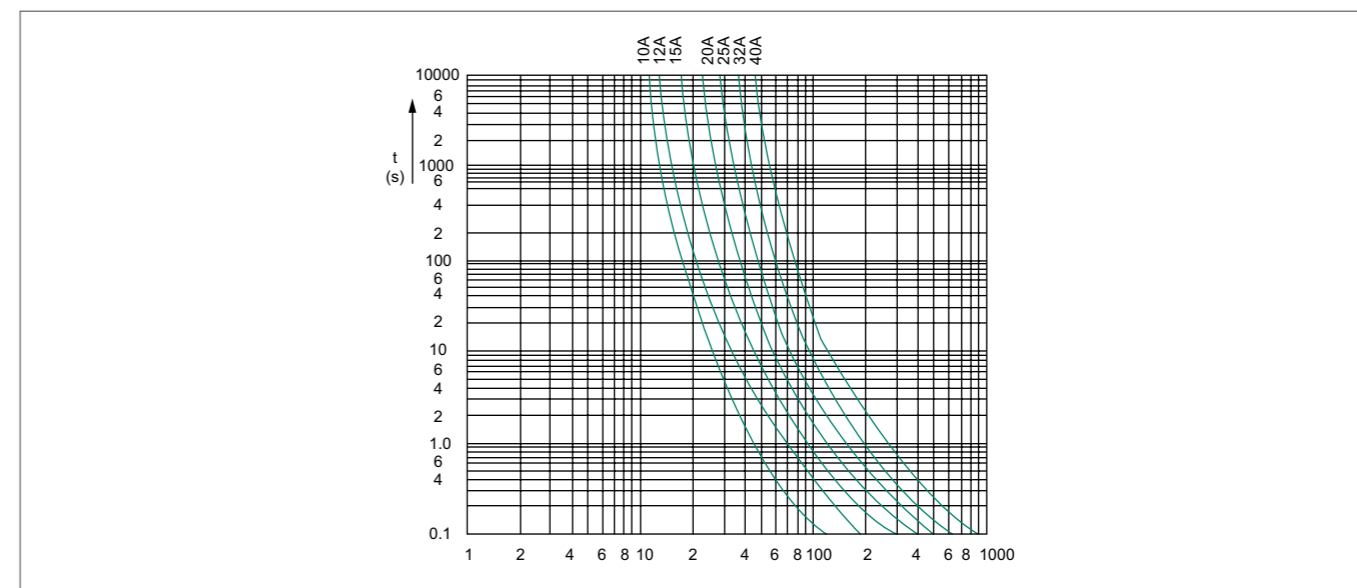
## ► Dimensions



## ► Installation



## ► Characteristic Curve





# FDS-160

Solar DC Fuse

YUEQING FEEO  
ELECTRIC CO.,LTD



## ► Application

Fuse features light in weight, small in size, low in power loss and high in breaking capacity. This product has been widely used in overload and short circuit protection of electric installation. This product conforms to ICE 60269 standard with all of the rating at the world advanced level.



## ► Structural Characteristics

- According to IEC60269-6
- Rated current: 40-160A
- Rated voltage: DC 1000V
- Rated breaking capacity:DC 50kA
- Operating class gPV for Solar protection
- See Model of product:NH00

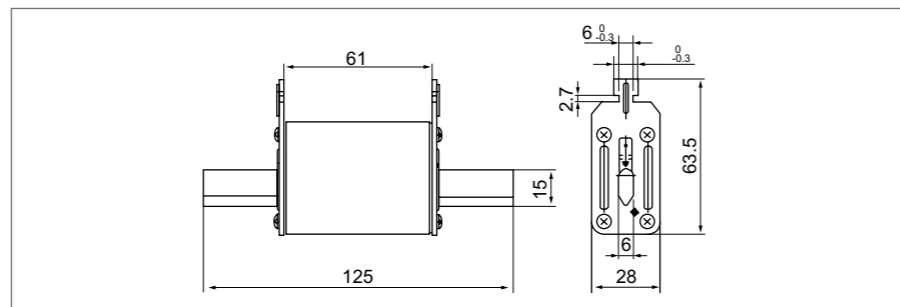
## ► Specifications

Rated Voltage Ue (V DC)	1000
Rated Current In (A)	40,50,63,80,100,125,160
Biggest Block Ability(KA)	50

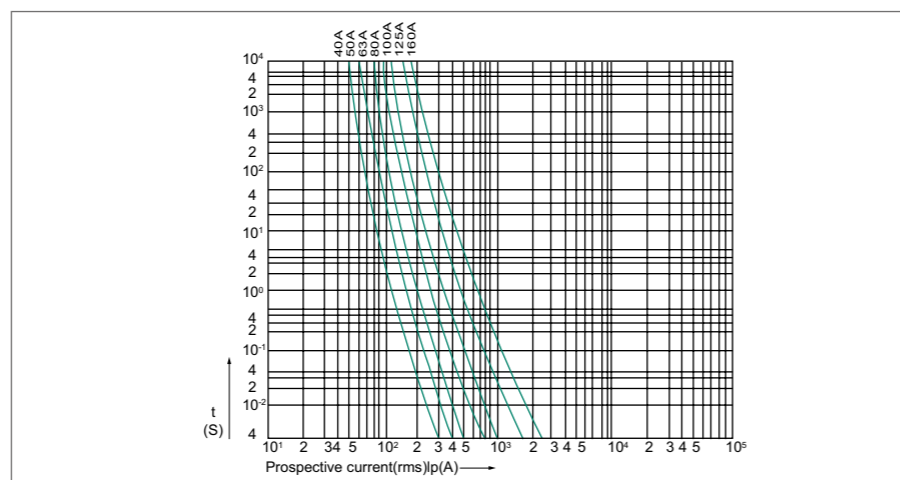
## ► Electrical Characteristics

Rating	Blowing Time	
	1.13In	1.45In
In ≤ 60	1 hour Min	1 hour Max
63 < In ≤ 160	2 hour Min	2 hour Max

## ► Dimensions



## ► Characteristic Curve



# FDS-250

Solar DC Fuse

## ► Application

Fuse features light in weight, small in size, low in power loss and high in breaking capacity. This product has been widely used in overload and short circuit protection of electric installation. This product conforms to ICE 60269 standard with all of the rating at the world advanced level.



## ► Structural Characteristics

- According to IEC60269-6
- Rated current: 32-250A
- Rated voltage: DC 1000V
- Rated breaking capacity:DC 50kA
- Operating class gPV for Solar protection
- See Model of product:NH1

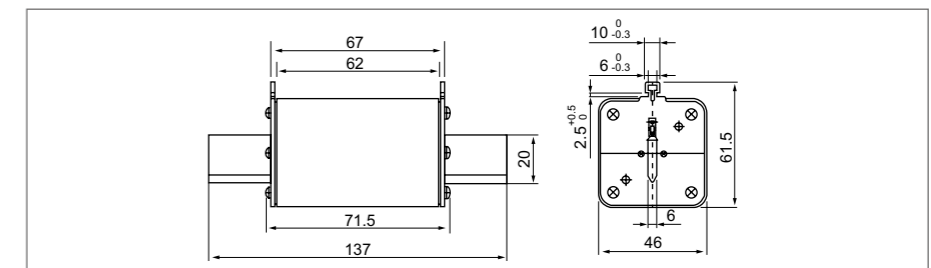
## ► Specifications

Rated Voltage Ue (V DC)	1000
Rated Current In (A)	32,40,50,63,80,100,125,160,200,250
Biggest Block Ability(KA)	50

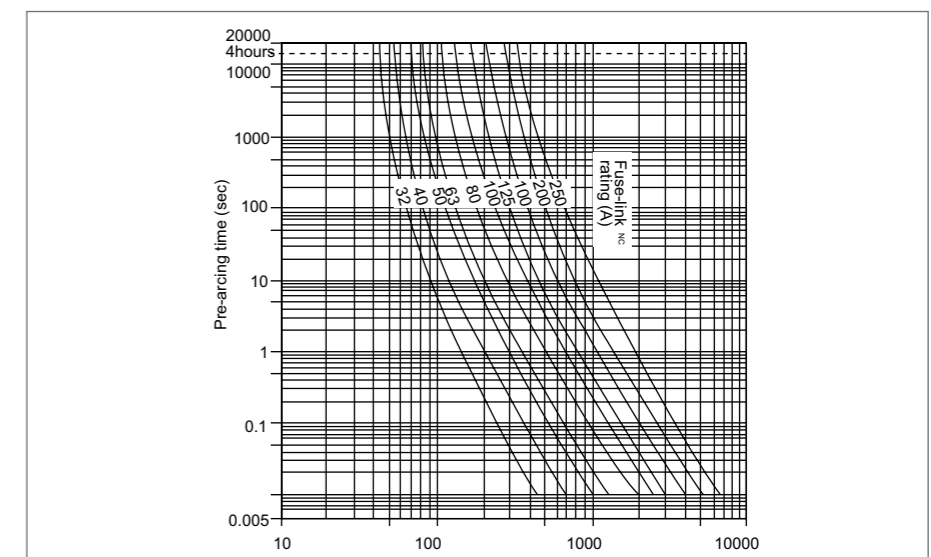
## ► Electrical Characteristics

Rating	Blowing Time	
	1.13In	1.45In
In ≤ 60	1 hour Min	1 hour Max
63 < In ≤ 250	2 hour Min	2 hour Max

## ► Dimensions



## ► Characteristic Curve





# FDS-400

Solar DC Fuse

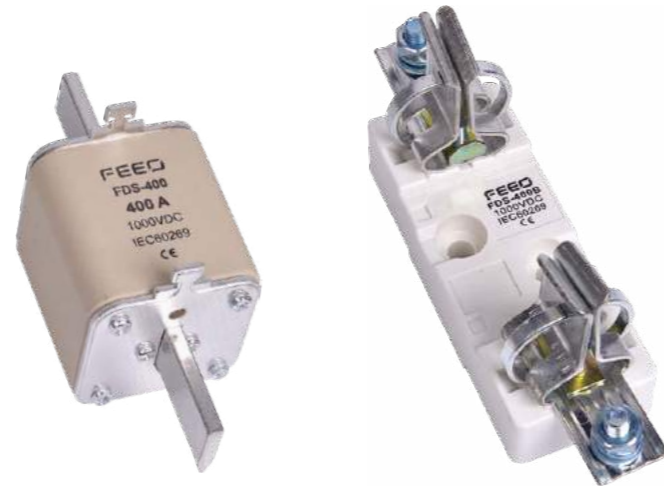
YUEQING FEEO  
ELECTRIC CO.,LTD

## ► Application

Fuse features light in weight, small in size, low in power loss and high in breaking capacity. This product has been widely used in overload and short circuit protection of electric installation. This product conforms to ICE 60269 standard with all of the rating at the world advanced level.

## ► Structural Characteristics

- According to IEC60269-6
- Rated current: 125-400A
- Rated voltage: DC 1000V
- Rated breaking capacity: DC 50kA
- Operating class gPV for Solar protection
- See Model of product: NH2



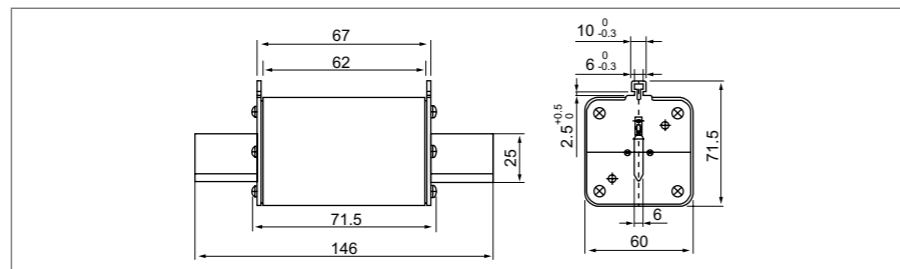
## ► Specifications

Rated Voltage Ue (V DC)	1000
Rated Current In (A)	125,160,200,250,300,315,355,400
Biggest Block Ability(KA)	50

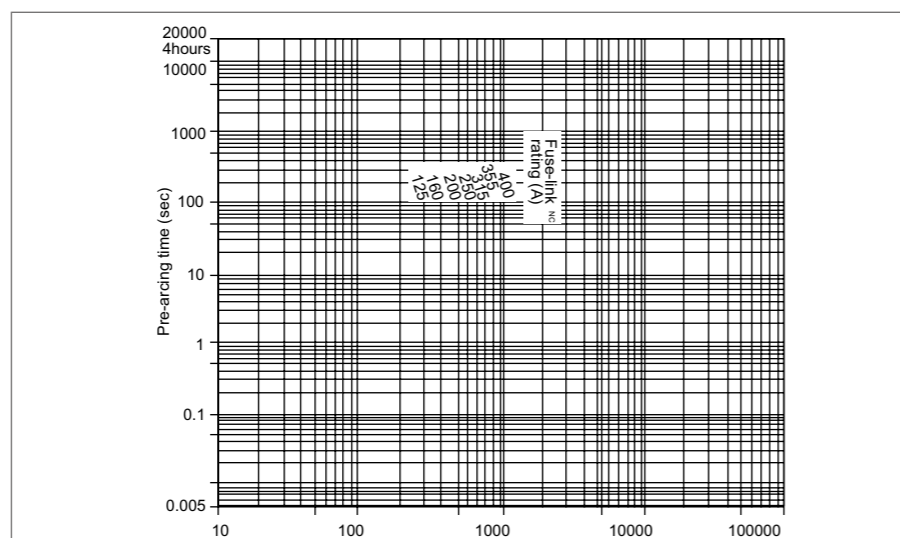
## ► Electrical Characteristics

Rating	Conventional Time(h)	Conventional Current	
		Conventional Non-Fusing Current(A)	Conventional Fusing Current(A)
In ≤ 60	2	1.13In	1.45In
160 < In ≤ 400	3		

## ► Dimensions



## ► Characteristic Curve



# FDS-630

Solar DC Fuse

FEEO

## ► Application

Fuse features light in weight, small in size, low in power loss and high in breaking capacity. This product has been widely used in overload and short circuit protection of electric installation. This product conforms to ICE 60269 standard with all of the rating at the world advanced level.

## ► Structural Characteristics

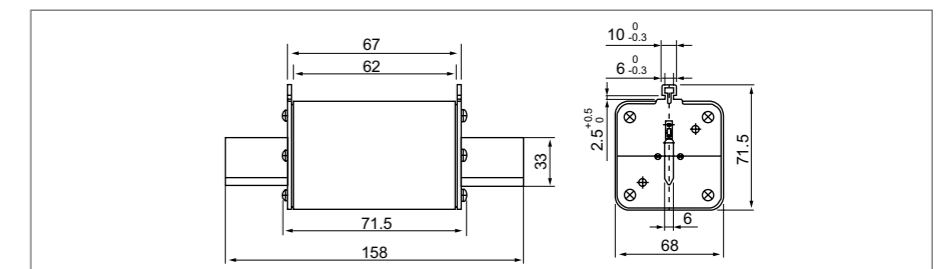
- According to IEC60269-6
- Rated current: 315-630A
- Rated voltage: DC 1000V
- Rated breaking capacity: DC 50kA
- Operating class gPV for Solar protection



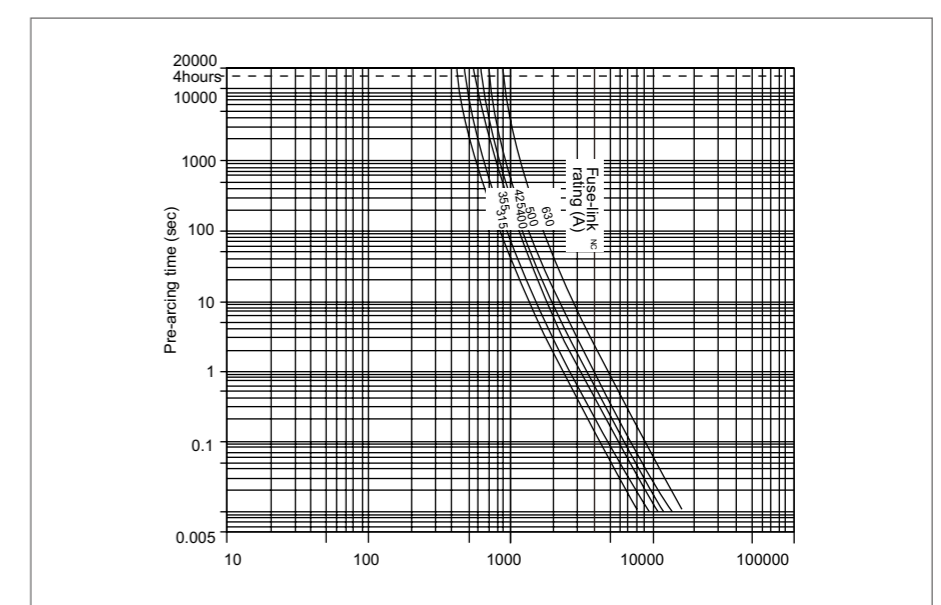
## ► Specifications

Rated Voltage Ue (V DC)	1000
Rated Current In (A)	315,355,400,425,500,630
Biggest Block Ability(KA)	50

## ► Dimensions



## ► Characteristic Curve





### ► Application

A range of 10x85mm PV fuses specifically designed for protecting and isolating photovoltaic strings.

These fuse links are capable of interrupting low overcurrents associated with faulted PV systems (reverse current, multi-array fault).

Available in four mounting styles for application flexibility.

### ► Structural Characteristics

- According to IEC60269-6
- Rated current: 1-30A
- Rated voltage: DC 1500V
- Rated breaking capacity:DC 20kA
- Operating class gPV for Solar protection



### ► Specifications

Pole	1P
Rated Voltage Ue (V DC)	1500
Rated Current In (A)	1,2,3,4,5,6,8,10,12,15,20,25,30
Biggest Block Ability(KA)	20

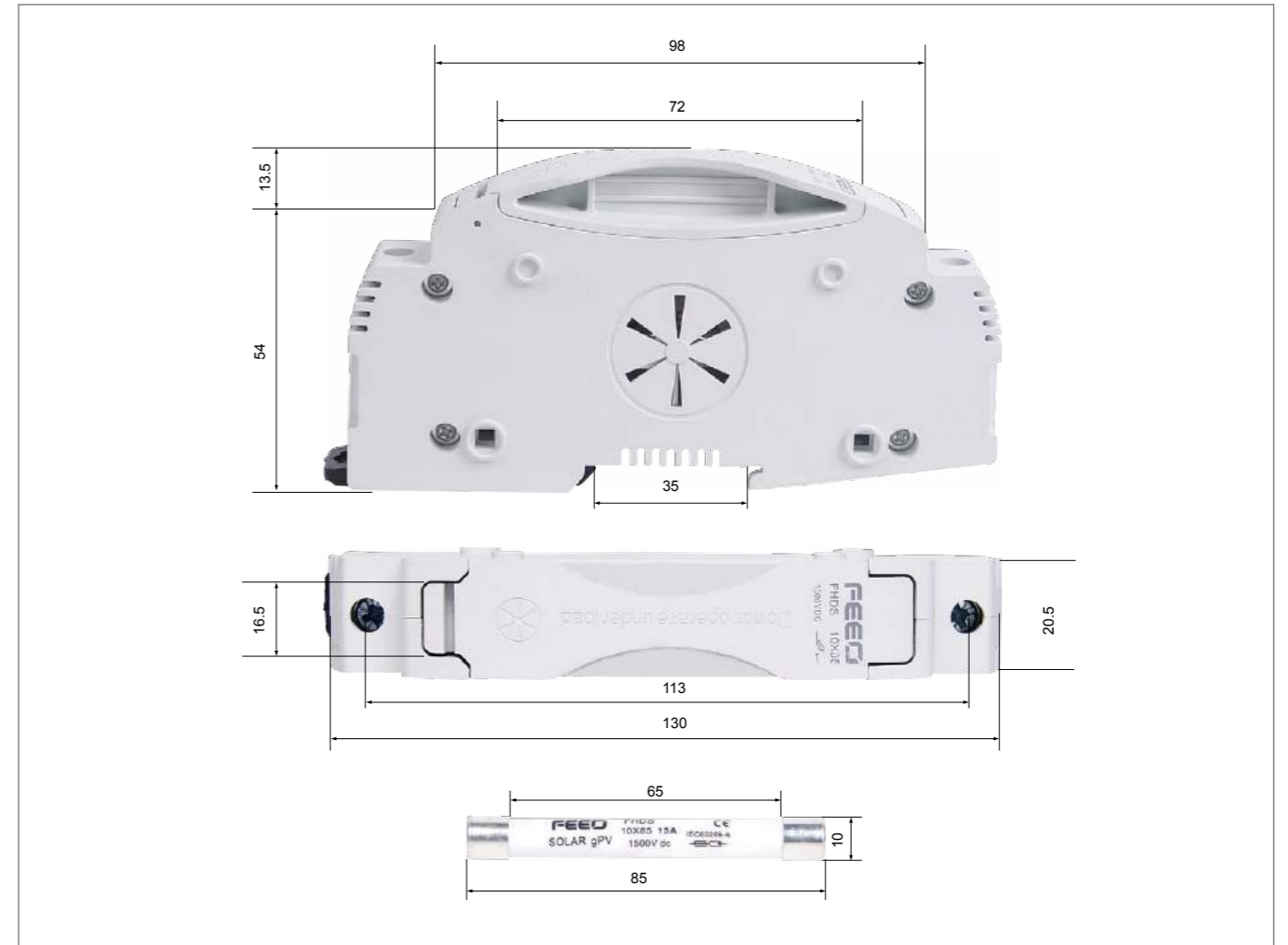
### ► Connection and Installation

Connection(mm <sup>2</sup> )	2.5 - 10
Working Temperature(°C )	-30~+70
Resistance And Damp Hot	Class 2
Altitude(m)	≤ 2000
Relative Humidity	≤ 95%
Protection Class/Degree	IP20
Pollution	3
Installation Environment	No obvious shock and vibration
Installation Class/Type	Class III/DIN rail

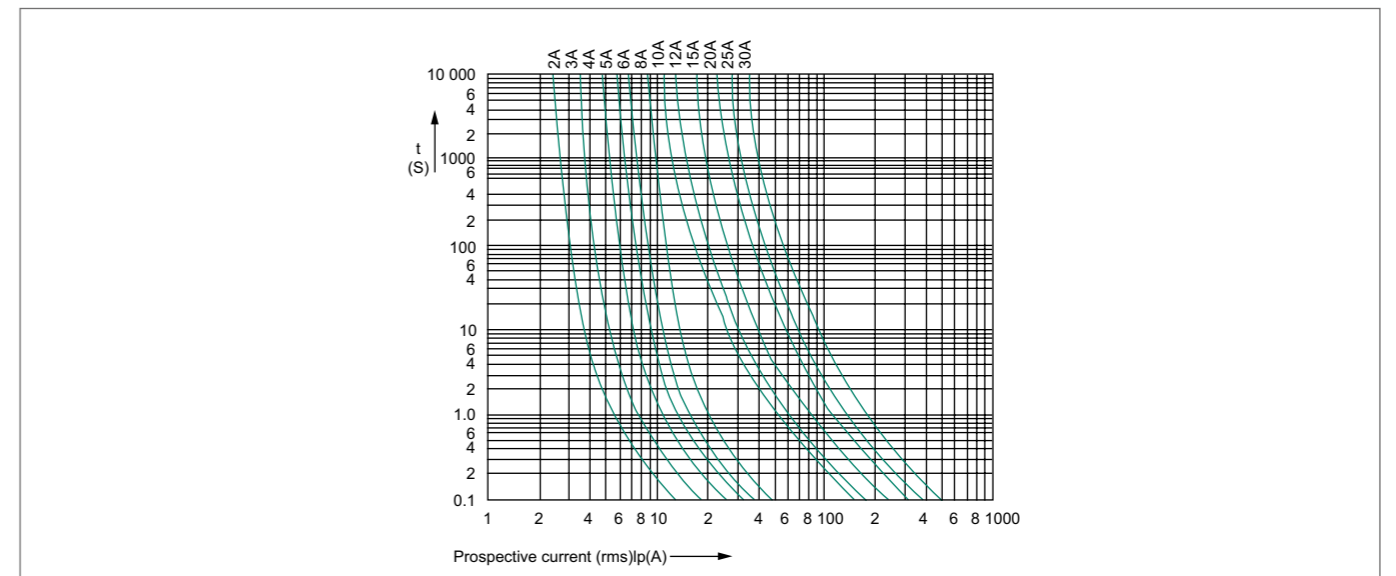
### ► PV fuse Features

- Specifically designed to provide fast-acting protection under low fault current conditions associated with PV systems.
- Variety of mounting options for flexibility.
- Fuses meet IEC photovoltaic standards for global product acceptance.
- Low watts loss for greater PV system efficiency.
- Low heat rise permits more precise sizing.
- In-line crimp terminal version is easy to apply in wire harness construction.

### ► Dimensions



### ► Characteristic Curve



# FHB Series

Fuse Type Isolator Switch

YUEQING FEEO  
ELECTRIC CO.,LTD

## ► Product Application

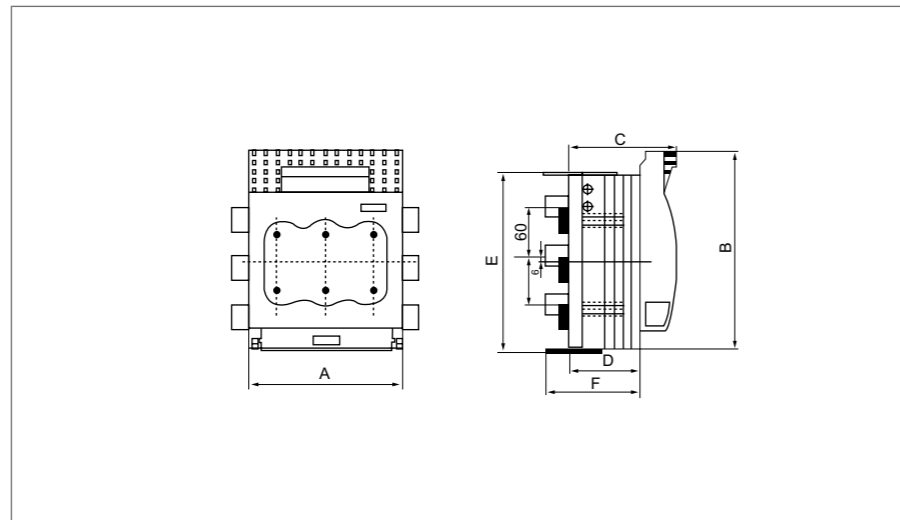
FHB series fuse type isolator is a product with advanced international level in the middle of the 90s. The rated voltage is 800V, rated voltage to 660V, rated current up to 630A, rated frequency 50Hz, power distribution and electric circuit high short-circuit current, used as power switch, isolation switch and emergency switch and circuit protection purposes, but generally not directly as a single motor for opening and closing.



## ► Technical Parameters

Convention heating current Ith	160A	250A	400A	630A
Rated insulation voltage Ui	800V/1500V			
Rated operating voltage Ue	AC400V, 690V/DC1000V			
Rated frequency	50Hz			
Rated connection capacity (A r.m.s)	10le			
Rated breaking capacity (A r.m.s)	8le			
Rated limit short-circuit current (r.m.s)	50KA			
Rated operating current	160A	250A	400A	630A
	100A	200A	315A	425A
Mechanical life (times)	5000	3000	2000	1500
Electric life (times)	1000	600	400	300
Weight (3P) kg	1.2	3.6	4.8	6.5
Auxiliary micro switch main parameters	50Hz, AC-15, 230V, 3A			

## ► Dimensions



Model/Size	A	B	C	D	E	F
FHB-160/3	160	200	97	60	200	87
FHB-250/3	185	247	128	88	221	87
FHB-400/3	210	290	145	97	268	125
FHB-630/3	256	300	160	112	285	139

FEEO  
ELECTRIC

# FDIS ▶▶

## Solar DC Waterproof Isolator Switch

IP66 Protection Level  
Anti-UV Protection



Rotary Switch  
Din Rail Installation

CCC CE TUV RoHS



### ► Application

- Compact and suitable where space is limited
- DIN rail mounting for easy installation
- Load-breaking up to 8 times rated current making it ideal for motor isolation
- Double-break with silver rivets-superior performance, reliability and long lasting
- Highly visible red/yellow handle
- Large padlockable red/yellow or grey/black handles
- Comprehensive range, 16 to 32A models
- High IP66 rating
- High breaking capacity with 12.5 mm contact air gap
- Easy to install and operate
- Easy snap-on fitting of auxiliary switches



### ► Technical Parameters

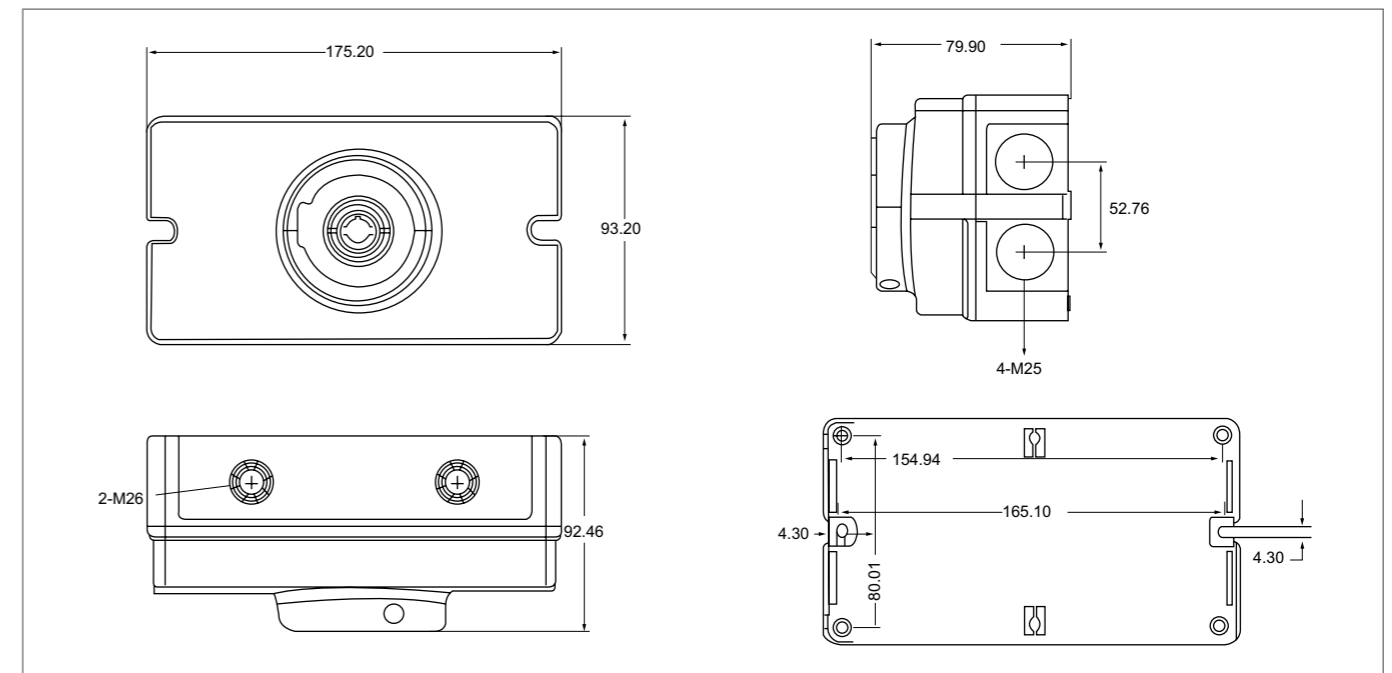
Technical Parameters		Model	FDIS-16	FDIS-25	FDIS-32	
The following CNC according to IEC60947-3, the use of category DC21B						
Main Parameters						
Rated Insulation Voltage	$U_i$	V	1500	1500	1500	
Rated heating Current	$I_{the}$	A	16	25	32	
Rated Impulse Withstand Voltage	$U_{imp}$	V	8000	8000	8000	
Rated Short-time Withstand Current(1s)	$I_{cw}$	2,4	A	800	900	1000
		2H	A	1300	1500	1700
Rated Short-circuit Making Capacity	$I_{cm}$	2,4	A	800	900	1000
		2H	A	1300	1500	1700
Rated Short-circuit Current	$I_{cc}$	A	5000	5000	5000	
Maximum Fuse Specifications	$g_i(g_c)$	A	40	63	80	
Mechanical Life			10,000	10,000	10,000	
DC poles			2or4			
Distance Between Contacts (pole-to-pole)		mm	8			
Operating Temperature		°C	-25 to +70			
Storage Temperature		°C	-45 to +70			
Class of pollution			2			
Over voltage category			I to III			
IP level			IP66			

### ► Wiring Diagram

FDIS-16	...2	...2H	...4	...4S	...4T	...4B
FDIS-25	...2	...2H	...4	...4S	...4T	...4B
FDIS-32	...2	...2H	...4	...4S	...4T	...4B
Contacts Wiring Diagram						
Switching example						

FDIS-16	...6	...3H	...8	...4H
FDIS-25	...6	...3H	...8	...4H
FDIS-32	...6	...3H	...8	...4H
Contacts Wiring Diagram				
Switching example				

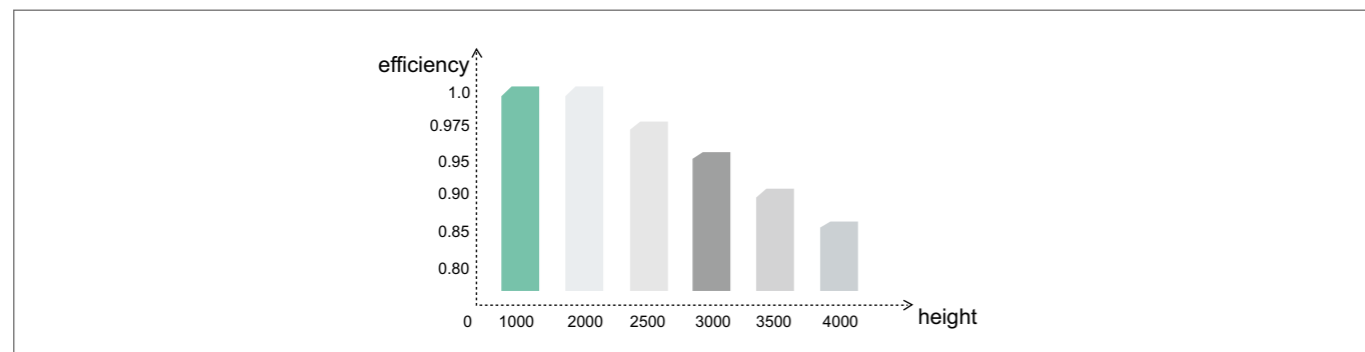
### ► Dimensions



### ► Technical Data

DC21B IEC60947-3							Poles in series	Strings	Model	Contact configuration
500V	600V	700V	800V	900V	1000V	1500V				
16	16	16	16	13	9	3	2	1	FDIS-16-2	
25	25	23	20	16	11	4	2	1	FDIS-25-2	
32	32	27	23	20	13	5	2	1	FDIS-32-2	
29	29	16	16	13	9	3	2	1	FDIS-16-2H	
45	45	23	20	16	11	4	2	1	FDIS-25-2H	
58	50	27	23	20	13	5	2	1	FDIS-32-2H	
16	16	16	16	13	9	3	2	2	FDIS-16-4	
25	25	23	20	16	11	4	2	2	FDIS-25-4	
32	32	27	23	20	13	5	2	2	FDIS-25-4	
16	16	16	16	16	16	16	4	1	FDIS-16-4T	
25	25	25	25	25	25	20	4	1	FDIS-25-4T	
32	32	32	32	32	32	23	4	1	FDIS-32-4T	
16	16	16	16	16	16	16	4	1	FDIS-16-4B	
25	25	25	25	25	25	20	4	1	FDIS-25-4B	
32	32	32	32	32	32	23	4	1	FDIS-32-4B	
16	16	16	16	16	16	16	4	1	FDIS-16-4S	
25	25	25	25	25	25	20	4	1	FDIS-16-4S	
32	32	32	32	32	32	23	4	1	FDIS-32-4S	
16	16	16	16	13	9	3	2	3	FDIS-16-6	
25	25	23	20	16	11	4	2	3	FDIS-25-6	
32	32	27	23	20	13	5	2	3	FDIS-32-6	
29	29	29	29	29	29	9	3	1	FDIS-16-3H	
45	45	38	38	38	38	11	3	1	FDIS-25-3H	
58	50	45	45	45	45	13	3	1	FDIS-32-3H	
16	16	16	16	13	9	3	2	4	FDIS-16-8	
25	25	23	20	16	11	4	2	4	FDIS-25-8	
32	32	27	23	20	13	5	2	4	FDIS-32-8	
29	29	29	29	29	29	16	4	1	FDIS-16-4H	
45	45	45	45	45	45	20	4	1	FDIS-25-4H	
58	58	58	58	58	58	23	4	1	FDIS-32-4H	

### ► Curve



### ► Application

- Max80A and 1500V
- Available in 2 to 12 Pole, suit for 1 ~ 6 MPPT
- CE&TUV Certificated
- Working Temperature: Full efficiency between -25°C ~ 70°C
- 5 years guarantee certificate
- Handy Locking Mechanism while off keeps it safe from Children or Un-Authorized access
- Operator Independent trigger Ratchet Switching and Knife Edge Self Cleaning Contact Mechanism



### ► Technical Data

#### Technical data

Data according to IEC 60947-3,utilization category DC-21B

Main parameters		FDIS-16	FDIS-25	FDIS-32	
Rated insulation voltage	U <sub>i</sub>	1500V	1500V	1500V	
Rated thermal current	I <sub>the</sub>	16A	25A	32A	
Rated impulse withstand voltage	U <sub>imp</sub>	8000V	8000V	8000V	
Rated short-time withstand current(1s)	I <sub>ow</sub>	2,4,6,8	800A	900A	1000A
		2H,3H,4H	1300A	1500A	1700A
Rated short-circuit making capacity	I <sub>cm</sub>	2,4,6,8	800A	900A	1000A
		2H,3H,4H	1300A	1500A	1700A
Rated conditional short-circuit current	I <sub>cc</sub>	5000A	5000A	5000A	
Max.fuse size	gL(g <sub>G</sub> )	40A	63A	80A	

#### Maximum cable cross sections (incl.jumper)

	FDIS-16	FDIS-25	FDIS-32
Solid or standard	4-16mm <sup>2</sup>	4-16mm <sup>2</sup>	4-16mm <sup>2</sup>
Flexible	4-10mm <sup>2</sup>	4-10mm <sup>2</sup>	4-10mm <sup>2</sup>
Flexible (+multicore cable end)	4-10mm <sup>2</sup>	4-10mm <sup>2</sup>	4-10mm <sup>2</sup>

#### Torque

	FDIS-16	FDIS-25	FDIS-32
Tightening torque terminal screws M4.	1.2-1.3Nm	1.2-1.3Nm	1.2-1.3Nm
Tightening torque panel mounting screws ST4.2	NA	NA	NA
Tightening torque knob screws M3	2.0-2.3Nm	2.0-2.3Nm	2.0-2.3Nm
Switching on or off torque	0.5-0.7Nm	0.5-0.7Nm	0.5-0.7Nm
	0.9-1.3Nm	0.9-1.3Nm	0.9-1.3Nm

#### General parameters

Method of mounting		single hole mounting
Knob positions		OFF at 12 hr,ON at 3 hr;(OFF at 9 hr,ON at 12 hr optional)
Mechanical life		10,000
Number of DC poles		2 or 4 ( 6/8/10/12 pole optional )
Distance of contacts (per pole)		8mm
Operation temperature		-25°C ~+70°C
Storage temperature		-40°C ~+70°C
Pollution degree		2
Overvoltage category		I to III
IP rating of shafte and mounting nut		IP66
Weight	2	0.14kg
	2H 4	0.2kg
	3H 6	0.26kg
	4H 8	0.31kg



# FDIS(for inverter)

Solar DC Isolator Switch

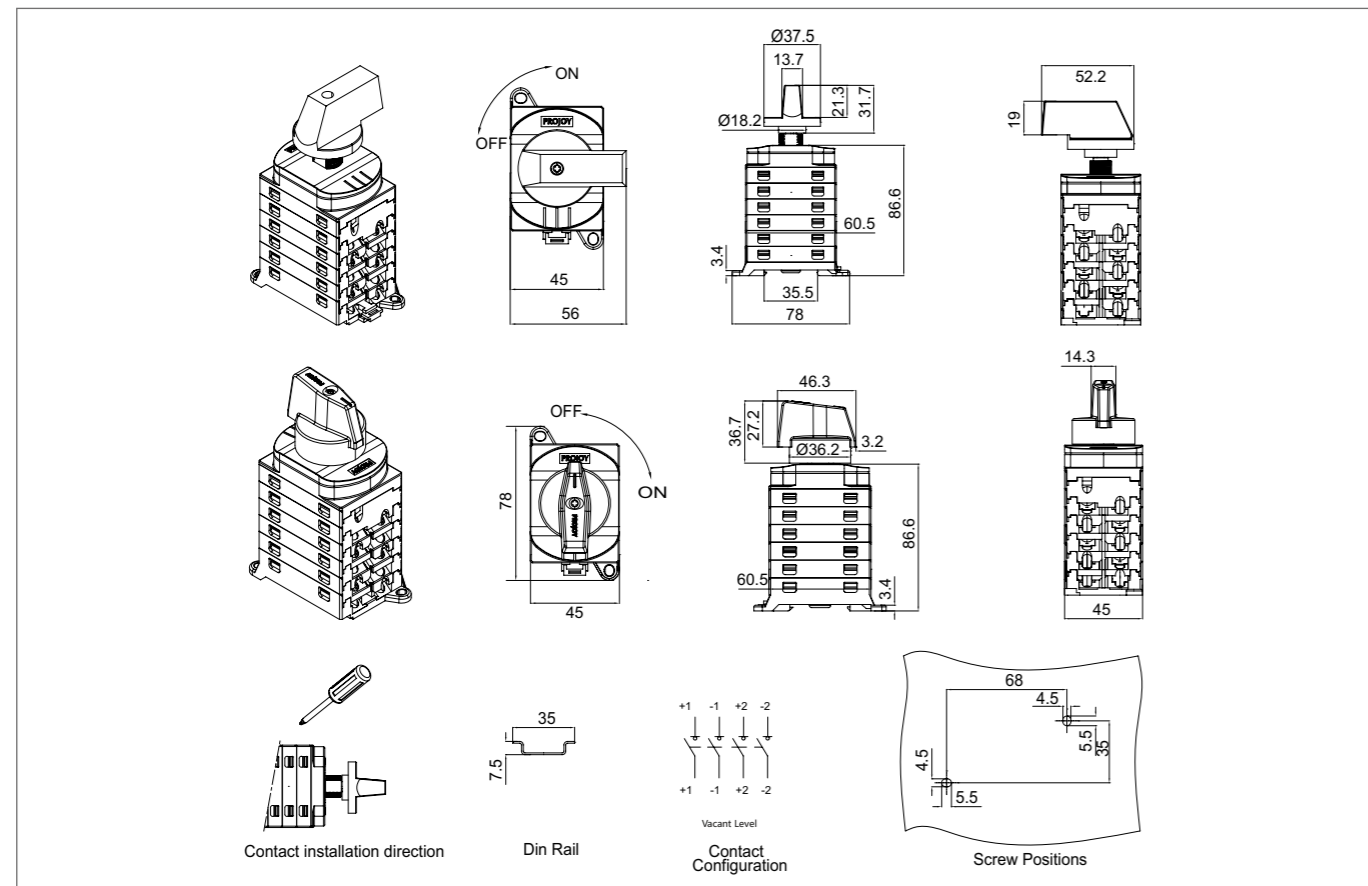
YUEQING FEEO  
ELECTRIC CO.,LTD

## ► Wiring Diagram

	...2	...2H	...4	...4S	...4T	...4B
FDIS-16	...2	...2H	...4	...4S	...4T	...4B
FDIS-25	...2	...2H	...4	...4S	...4T	...4B
FDIS-32	...2	...2H	...4	...4S	...4T	...4B
Contacts Wiring Diagram						
Switching exeample						

	...6	...3H	...8	...4H
FDIS-16	...6	...3H	...8	...4H
FDIS-25	...6	...3H	...8	...4H
FDIS-32	...6	...3H	...8	...4H
Contacts Wiring Diagram				
Switching exeample				

## ► Dimensions



# FDIS(for inverter)

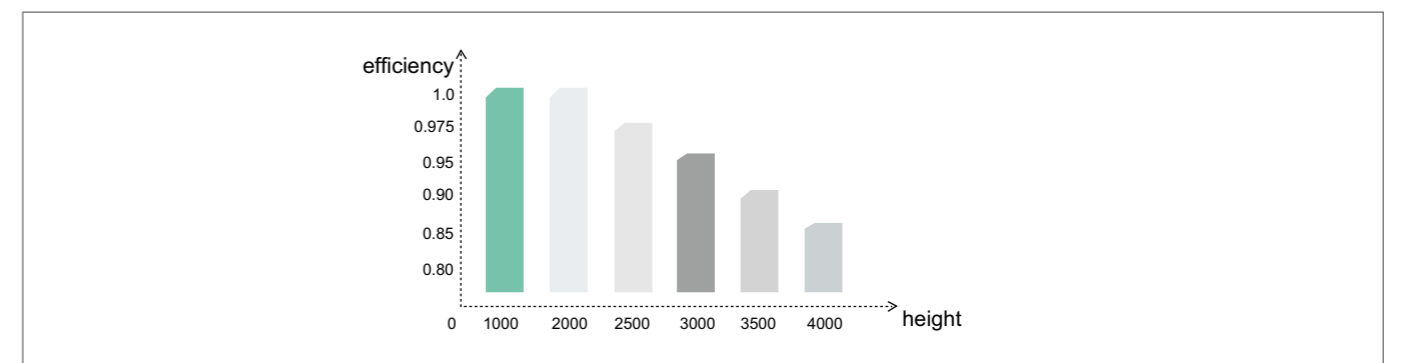
Solar DC Isolator Switch

FEEO

## ► Technical Data

DC21B IEC60947-3							Poles in series	Strings	Model	Contact configuration
500V	600V	700V	800V	900V	1000V	1500V				
16	16	16	16	13	9	3	2	1	FDIS-16-2	
25	25	23	20	16	11	4	2	1	FDIS-25-2	
32	32	27	23	20	13	5	2	1	FDIS-32-2	
29	29	16	16	13	9	3	2	1	FDIS-16-2H	
45	45	23	20	16	11	4	2	1	FDIS-25-2H	
58	50	27	23	20	13	5	2	1	FDIS-32-2H	
16	16	16	16	13	9	3	4	2	FDIS-16-4	
25	25	23	20	16	11	4	4	2	FDIS-25-4	
32	32	27	23	20	13	5	4	2	FDIS-25-4	
16	16	16	16	16	16	16	4	1	FDIS-16-4T	
25	25	25	25	25	25	20	4	1	FDIS-25-4T	
32	32	32	32	32	32	23	4	1	FDIS-32-4T	
16	16	16	16	16	16	16	4	1	FDIS-16-4B	
25	25	25	25	25	25	20	4	1	FDIS-25-4B	
32	32	32	32	32	32	23	4	1	FDIS-32-4B	
16	16	16	16	16	16	16	4	1	FDIS-16-4S	
25	25	25	25	25	25	20	4	1	FDIS-16-4S	
32	32	32	32	32	32	32	4	1	FDIS-32-4S	
16	16	16	16	13	9	3	6	3	FDIS-16-6	
25	25	23	20	16	11	4	6	3	FDIS-25-6	
32	32	27	23	20	13	5	6	3	FDIS-32-6	
29	29	29	29	29	29	9	2	1	FDIS-16-3H	
45	45	38	38	38	38	11	2	1	FDIS-25-3H	
58	50	45	45	45	45	13	2	1	FDIS-32-3H	
16	16	16	16	13	9	3	8	4	FDIS-16-8	
25	25	23	20	16	11	4	8	4	FDIS-25-8	
32	32	27	23	20	13	5	8	4	FDIS-32-8	
29	29	29	29	29	29	16	2	1	FDIS-16-4H	
45	45	45	45	45	45	20	2	1	FDIS-25-4H	
58	58	58	58	58	58	23	2	1	FDIS-32-4H	

## ► Curve



# FDIS(for enclosure)

Solar DC Isolator Switch

YUEQING FEEO  
ELECTRIC CO.,LTD

## ► Application

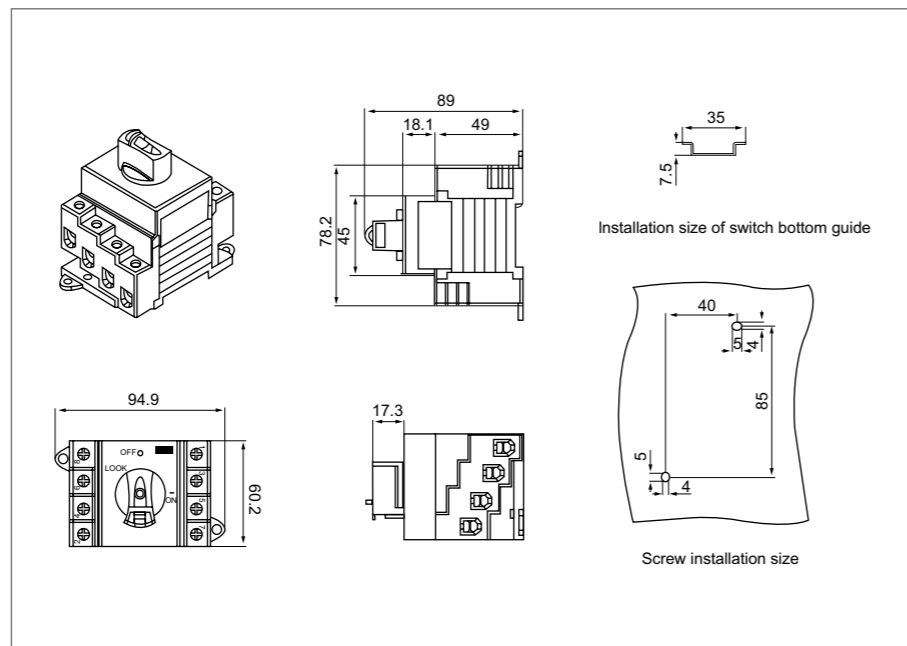
- Max32A and 1500V
- Available in 2 to 4 Pole, application in the distribution box
- TUV certificated
- Working Temperature: Full efficiency between -25°C ~ 70°C
- 5 years guarantee certificate
- Handy Locking Mechanism while off keeps it safe from Children or Un-Authorized access
- Operator Independent trigger Ratchet Switching and Knife Edge Self Cleaning Contact Mechanism



## ► Technical Parameters

Technical data			
Data according to IEC 60947-3,utilization category DC-PV1/ DC-PV2			
Main parameters			FDIS-NHV
Rated insulation voltage	$U_i$		1500V
Rated thermal current	$I_{the}$		32A
Rated impulse withstand voltage	$U_{imp}$		8000V
Rated short-time withstand current(1s)	$I_{cw}$	2,4	1000A
		2H	1700A
Rated short-circuit making capacity	$I_{cm}$	2,4	1000A
		2H	1700A
Rated conditional short-circuit current	$I_{cc}$		5000A
Max.fuse size	$gL(g_d)$		80A
Mechanical life			10,000
Number of DC poles			2 or 4
Distance of contacts (per pole)			8mm
Distance of contacts (per pole)			-25°C ~+70°C
Storage temperature			-40°C ~+70°C
Pollution degree			2
Overvoltage category			I to III
IP rating of shafte and mounting nut			IP20

## ► Dimensions



# FDIS(for enclosure)

Solar DC Isolator Switch

FEEO

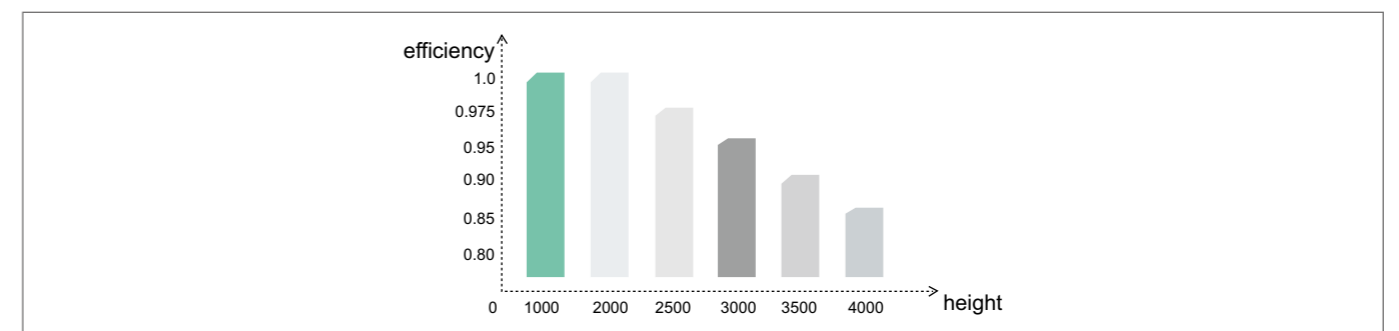
## ► Technical Data

DC21B IEC60947-3								Poles in series	Strings	Model	Contact configuration
500V	600V	700V	800V	900V	1000V	1200V	1500V				
32	32	32	32	23	16	/	/	2	1	FDIS-NHV100-2	+1  -1
32	32	32	32	23	16	13	7	2	1	FDIS-NHV120-2	-1  -1
58	58	58	45	23	16	/	/	4	1	FDIS-NHV100-2H	+1  +1
58	58	58	45	23	16	13	7	4	1	FDIS-NHV120-2H	-1  -1
32	32	32	32	23	16	/	/	4	2	FDIS-NHV100-4	+1  +1
32	32	32	32	23	16	13	7	4	2	FDIS-NHV120-4	-1  -1
32	32	32	32	32	32	/	/	4	1	FDIS-NHV100-4B	+1  +1
32	32	32	32	32	32	32	23	4	1	FDIS-NHV120-4B	-1  -1
32	32	32	32	32	32	/	/	4	1	FDIS-NHV100-4T	+1  +1
32	32	32	32	32	32	32	23	4	1	FDIS-NHV120-4T	-1  -1
32	32	32	32	32	32	/	/	4	1	FDIS-NHV100-4S	+1  +1
32	32	32	32	32	32	32	23	4	1	FDIS-NHV120-4S	-1  -1

## ► Wiring Diagram

FDIS-NHV100	...2	...2H	...4	...4S	...4B	...4T
FDIS-NHV120	...2	...2H	...4	...4S	...4B	...4T
Contacts Wiring Diagram	+1  -1	+1  +1 -1  -1	+1  +1 -1  -1 +2  +2 -2  -2	+1  +1 -1  -1	+1  +1 -1  -1	+1  +1 -1  -1
Switching Example						

## ► Curve





# FDH-63 ▶▶

## Solar DC Mini Isolator Switch

CCC CE RoHS



# FDH-63

## Solar DC Mini Isolator Switch

### ► Product introduction

FEEO research and development FDH photovoltaic dc isolator is mainly used solar power distribution system, namely pv junction box, etc. direct current electrical equipment. Rated voltage 1200 VDC, rated current 63 A, science of arcing design solar photovoltaic power generation system reliable operation.

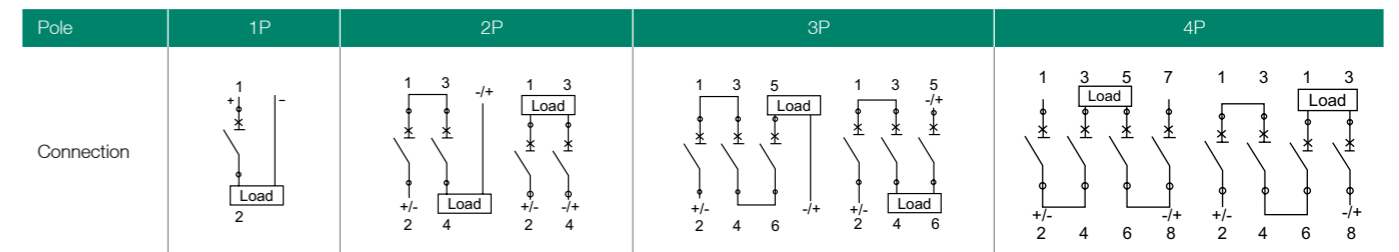
NOTE: This product do not have Thermal trip and magnetic trip.



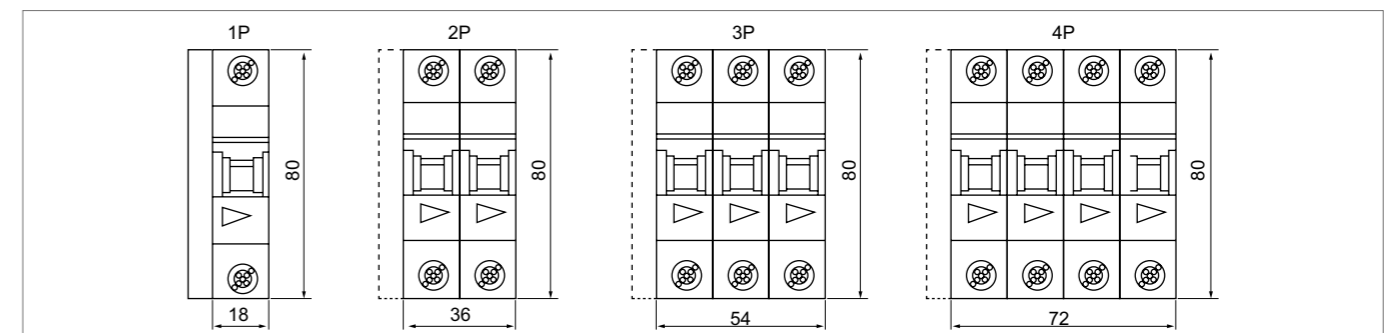
### ► Technical Parameters

Electrical Characteristics					
Code	FDH-63				
Standard	IEC60947-3/GB14048.3				
Pole	1P	2P	3P	4P	
Rated voltage	Ue	250V DC	550V DC	750V DC	1000V DC
Max current	I <sub>max</sub>	63A			
Rated current	I <sub>n</sub>	16, 32, 63			
Rated insulation voltage	U <sub>imp</sub>	1200V DC			
Rated impact voltage		4KV			
Life					
Mechanical life		2000			
Electric life		4000			
Isolation function		Yes			
Installation					
Protection degree		IP20			
Connection		2.5-25mm <sup>2</sup>			
Temperature		-25℃ ~+70℃			
Muggy		Type 2			
Shake degree		2.6 IEC60068			
Impact degree		2.27 IEC60068			

### ► Connection



### ► Dimensions



# FDHM ▶▶

## Solar DC Moulded Case Isolator Switch

CCC CE RoHS



# FDHM

## Solar DC Moulded Case Isolator Switch

### ▶ Product introduction

FEEO Research and development of the photovoltaic dc FDHM series molded isolating switch is mainly used in large scale photovoltaic power distribution system, including pv junction box, photovoltaic inverter, live up to what our dc cabinet, etc. Rated voltage 1500 VDC, rated current is 1250 A, can quickly disconnect fault current of dc power supply distribution system, solar photovoltaic power generation system reliable operation.

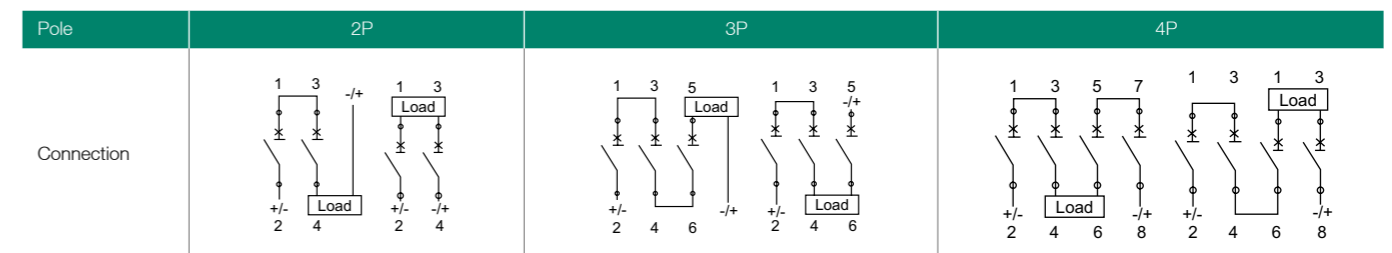
NOTE: This product do not have Thermal trip and magnetic trip.



### ▶ Technical Parameters

FDHM Series Solar DC Isolating Switch										
Code	FDHM-125			FDHM-250			FDHM-400		FDHM-630	
Pole	2P	3P	4P	2P	3P	4P	3P	4P	3P	4P
Max current	125A			250A			400A		630A	
Electrical properties										
Rated voltage(DC)	Ue	550V 800V	750V 1000V 1500V	550V 800V	750V 1000V 1500V	750V 1000V 1500V	750V 1000V 1500V	750V 1000V 1500V	1000V 1500V	1000V 1500V
Rated current	In(A)	63,80,100,125			125,140,160, 180,200,250			315,350, 400		500,630
Rated insulation voltage	Ui	1500V DC								
Rated impact voltage	Uimp	8KV								
Withstand voltage		3.8KV					3.8KV			
Control and indicating										
Shunt release		Yes								
Auxiliary release		Yes								
Life										
Mechanical life		14000			14000			5000		5000
Electric life		5000			5000			1500		1500
Protection degree		IP20								
Installation										
Standard		IEC60947-3/GB14048.3								
Temperature		-45°C ~+70°C								

### ▶ Connection





# AC Series



## Contents ▶▶



**45-48**  
FE7 Series Mini  
Circuit Breaker (AC MCB)



**62-63**  
FAIS AC Waterproof Isolator Switch



**49-50**  
Mini Circuit  
Breaker Accessories



**64-65**  
FAH-63 AC Mini Isolator Switch



**51-52**  
FE-125 Mini  
Circuit Breaker (AC MCB)



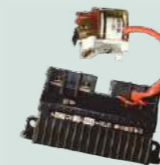
**66-67**  
FAHM AC Moulded Case Isolator Switch



**53-55**  
FEM1 Moulded  
Case Circuit Breaker (AC MCCB)



**68-73**  
Dual Power Series



**56**  
Moulded Case  
Circuit Breaker Accessories



**74-75**  
FOQ Series Automatic  
Transfer Switch Equipment(PC Class)



**58-61**  
AC SPD Series  
Surge Protective Device



**76**  
FCOS-Series Manual Transfer  
Switch (MTS) Interlock Circuit Breaker



# FE7 Series ▶▶

## Mini Circuit Breaker (AC MCB)



CCC CE RoHS



# FE7-63

## Mini Circuit Breaker (AC MCB)



### ▶ Application

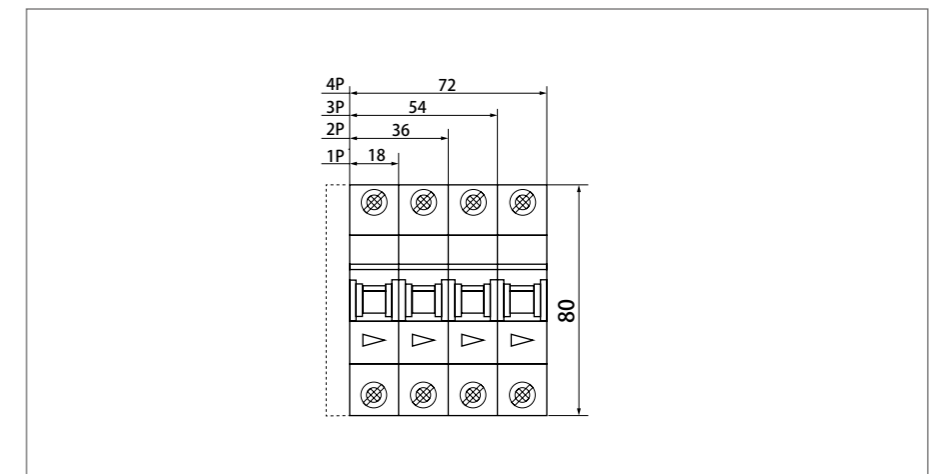
FE7-63 have protective function as overload, and are used in lighting distribution system in industry commerce and dwelling, and protect fractional electric motors. And they also have many merits of high protective grade(up to IP20), high breaking capacity, reliable sensitive, action convenient, multi pole assembling, long life ect. The are mainly adapted to the circuit of AC 50Hz, 250V in single pole, 415V in double, three, four poles for protecting overload and short circuit. Mean while, they are also used in turning on or off the electric apparatus and lighting circuit under the normal conditions.



### ▶ Specifications

Standard	EN60898(IEC60898)/IEC60947-2
Rated Voltage	230V/400V AC(1P), 400V AC(2P, 3P, 4P)
Rated Current	3,6,10,16,20,25,32,40,50,63A
Rated Breaking Capacity	10KA IEC60898( 3~63A)
Characteristic Curve	B, C, D
Max. Fuse That Can Be Connected To	100AGL(>10KA)
Selective Grade	3
Working Ambient Temperature	-5°C ~+40°C
Enclosed Protective Class	IP20
Nominal Frequency	50/60Hz
Maximum Operating Voltage(Ue)	≥ 400V AC
Insulation Voltage(Ui)	≥ 6KV
Voltage Testing Pulse(Uimp)	≥ 10KA
Maximum Cutting Capacity(Icu)	≥ 10KA
Electrical Life	Not less than 8000 times
Mechanical Life	Not less than 20000 times

### ▶ Dimensions

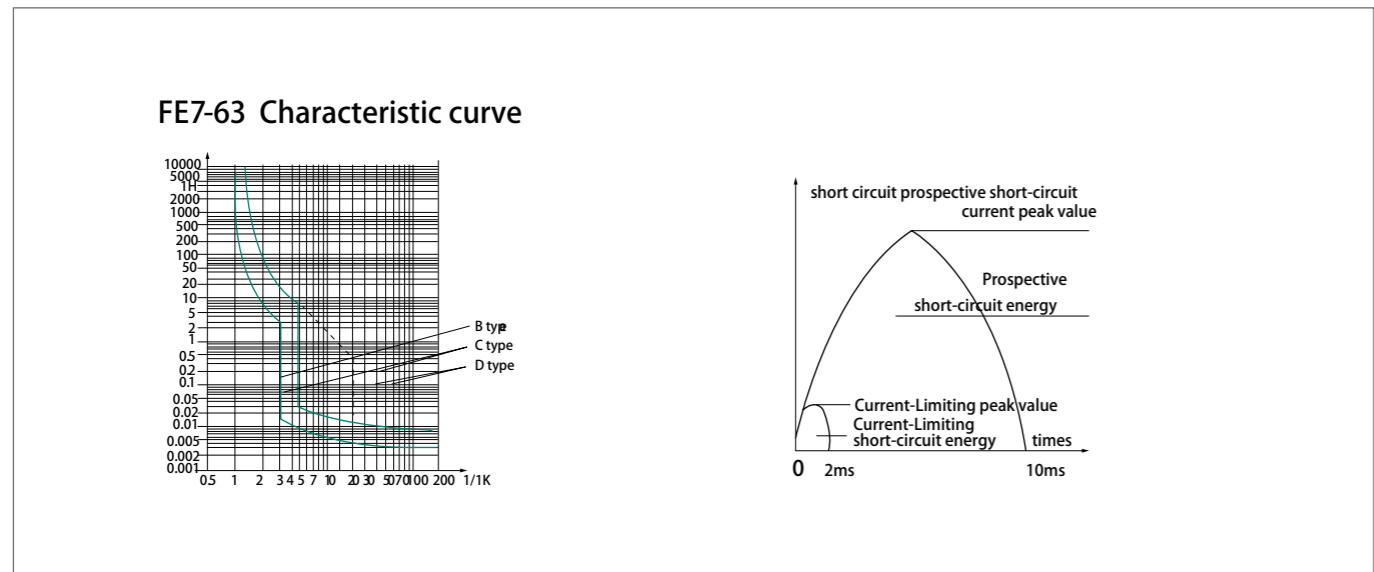




► Over current tripping characteristic

Item	Model	Rated Current(A)	Initial State	Test Current	Limited Time	Limited Time	Remark
a	B, C, D	1~63	Cold state	1.13In	t 1h	Non-tripping	
b	B, C, D	1~63	Immediately after the previous test	1.45In	t<1h	Tripping	The current rise steadily to a fixed value within 5s
c	B, C, D	In≤32	Cold state	2.55In	1s<t<60s	Tripping	
		In 32	Cold state	2.55In	1s<t<120s	Tripping	
	B	1~63	Cold state	3In	t≤0.1s	Non-tripping	
				5In	t<0.1s	Tripping	
	C			5In	t≤0.1s	Non-tripping	
				10In	t<0.1s	Tripping	
	D			10In	t≤0.1s	Non-tripping	
				10In	t<0.1s	Tripping	

► Characteristic Curve



► Current correction values used at different ambient temperatures

Fixed current(A) Rated Current (A)	Temperature											
	-35	-30	-20	-10	0	10	20	30	40	50	60	70
3A	3.9	3.78	3.69	3.57	3.42	3.3	3.12	3	2.88	2.79	2.64	2.49
6A	7.8	7.56	7.38	7.14	6.84	6.6	6.24	6	5.76	5.64	5.28	4.98
10A	13.2	12.7	12.5	12	11.5	11.1	10.6	10	9.6	9.3	8.9	8.4
16A	21.12	20.48	20	19.2	18.4	17.76	16.96	16	15.36	14.88	14.24	13.44
20A	26.4	25.6	25	24	23	22.2	21.2	20	19.2	18.6	17.8	16.8
25A	33	32	31.25	30	28.75	27.75	26.5	25	24	23.25	22.25	21
32A	42.56	41.28	40	38.72	37.12	35.52	33.93	32	30.72	29.76	28.16	26.88
40A	53.2	51.2	50	48	46.4	44.8	42.4	40	38.4	37.2	35.6	33.6
50A	67	65.5	63	60.5	58	56	53	50	48	46.5	44	41.5
63A	83.79	81.9	80.01	76.86	73.71	73.71	66.78	63	60.48	58.9	55.44	52.29

► Current correction factor used at different altitudes

Rated Current (A)	Different altitude correction factors		
	≤2000m	2000~3000m	≥3000m
3,6,10,16,20,25,32,40,50,63A	1.0	0.9	0.8

► Wire connection terminals

Rated current In(A)	Copper wire nominal cross sectional area(mm )
3,6	1
10	1.5
16,20	2.5
25	4
32	6
48	10
63	10

# Mini Circuit Breaker

Accessories

YUEQING FEEO  
ELECTRIC CO.,LTD



## ► Application

Table 1

Item	Code	Application	Standard
Auxiliary Contacts	OF	Offer auxiliary signal control auxiliary circuit	IEC60947-5-1 GB14048.5-2008
Alarm Contacts	SD	Provide a alarm signal when the MCB trip off	IEC60947-2 GB14048.2-2008
Shunt Tripper	HDMX	It will let the MCB trip of when the operating voltage exceed the rated voltage of 70%-110% to protect the MCB	IEC60947-1 GB14048.1-2008
Shunt Tripper+Auxiliary Contact	MX+OF	Remote break the circuit and let the auxiliary contacts to control the circuit	IEC60947-1 GB14048.1-2008
Over/Under Voltage Release	MV+MN	It can protect the MCB from under voltage, over voltage, over/under voltage tripping	IEC60947-2:1999 GB14018,2-2001

## ► Technical Data

Table 2

Item	Rated Current			Contacts	Wiring Diagram
	AC: 380V	AC: 220V	D C: 110V		
Auxiliary Contacts	3	6	1	NO+NC	
Alarm Contacts	3	6	1	NO+NC	

# Mini Circuit Breaker

Accessories

FEEO

## ► Technical Data

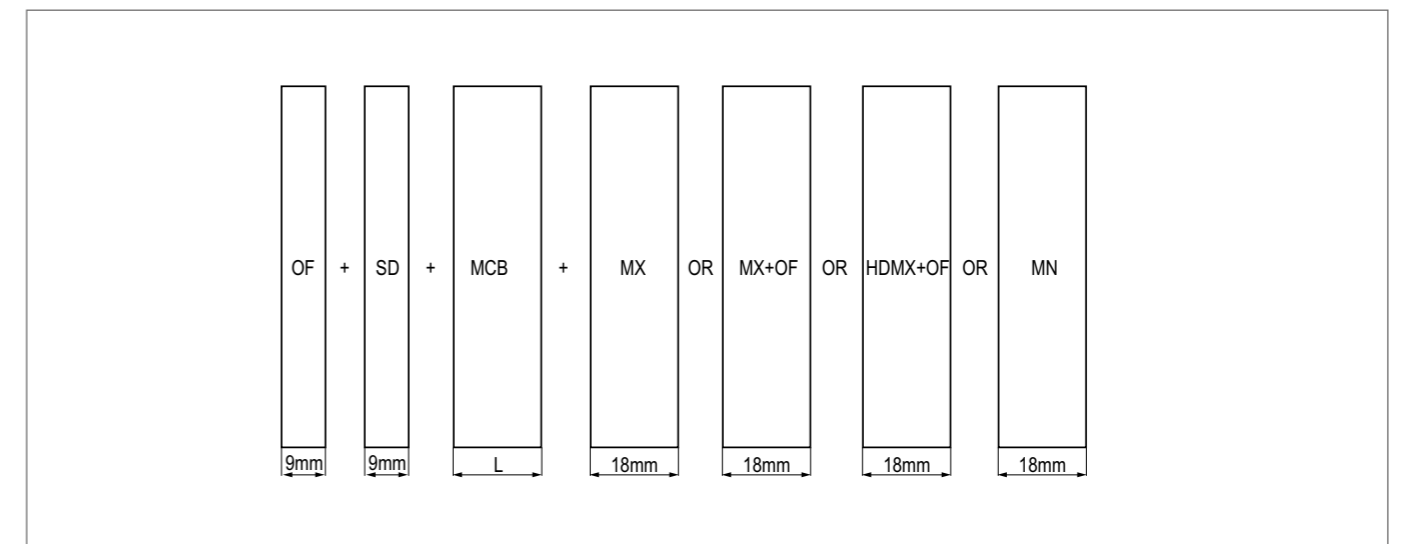
Table 3

Item	Rated Insulation Voltage	Rated Control Voltage	Power Of The Trip Off	Pickup Voltage	Wiring Diagram
MX+OF	415V	AC/DC: 220~380V 110~220V	240	(0.7~1.1)Us	
		AC/DC: 24~48V	120		
Shunt Tripper+Auxiliary Contacts	415V	AC/DC: 220~380V 110~220V	240	(0.7~1.1)Us	
		AC/DC: 24~48V	120		
Shunt Tripper	415V	AC/DC: 220~380V 110~220V	240	(0.7~1.1)Us	
		AC/DC: 24~48V	120		

## ► Working Condition

Temperature: -5°C ~ +40°C ;  
altitude: under 2000m;  
Installation: 35mm din rail

## ► Dimension





# FE-125

Mini Circuit Breaker (AC MCB)

YUEQING FEEO  
ELECTRIC CO.,LTD

## ► Application

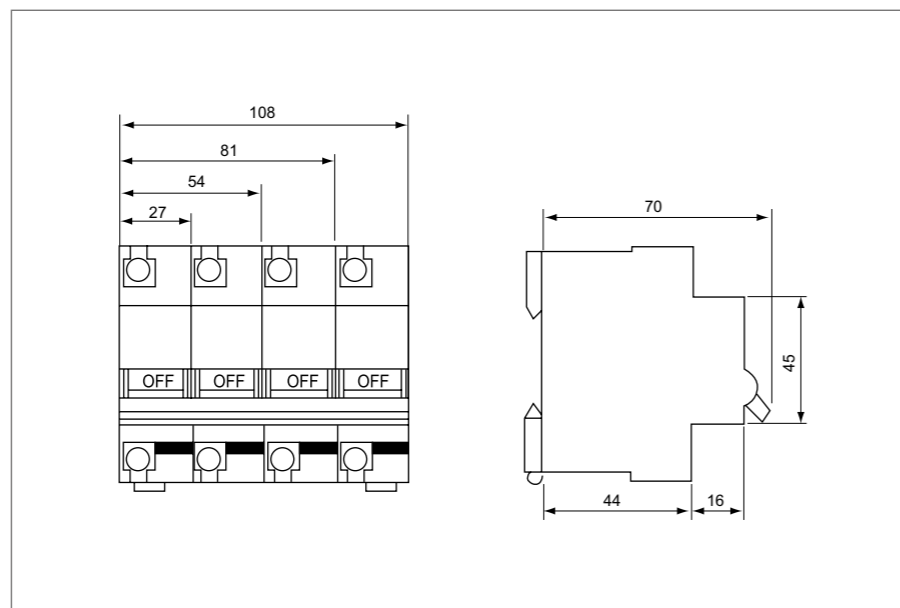
FE-125 high breaking capacity circuit breaker is used for AC 50/60HZ, single-pole 230V or two, three, four-pole 415V circuit for protecting the circuit that overload and short circuit may take place. It can be used in lighting and electric motor distribution system. Mean while it is applicable to an unfrequented switch over the electric apparatus and lighting circuit under normal condition. Breaking capacity is up to standard of IEC60947-7 10KA.



## ► Specifications

Rated Current	63, 80, 100, 125A			
Rated Voltage	230V/415V AC			
Electrical Life	6000 Times			
Mechanical Life	20000 times(C.O.)			
No. of Pole	1P, 2P, 3P, 4P			
Weight	1P	2P	3P	4P
	150	300	450	600

## ► Dimensions



# FE-125

Mini Circuit Breaker (AC MCB)

FEEO

## ► Over current tripping characteristic

Item	Rated Current(A)	Initial State	Test Current	Limited Time	Prospective Result	Starting State
a	$I_n=63$	Cold state	$1.05I_n$	$t \leq 1h$	Non-tripping	The current rise steadily to a fixed Tripping value within 5s
	$I_n > 63$	Cold state	$1.05I_n$	$t \leq 2h$	Non-tripping	
b	$I_n=63$	Hot state	$1.3I_n$	$t < 1h$	Tripping	
	$I_n > 63$	Hot state	$1.3I_n$	$t < 2h$	Tripping	
c	$I_n \geq 63$	Cold state	$8I_n$	$t \leq 0.2s$	Non-tripping	
			$12I_n$	$t < 0.2s$	Tripping	

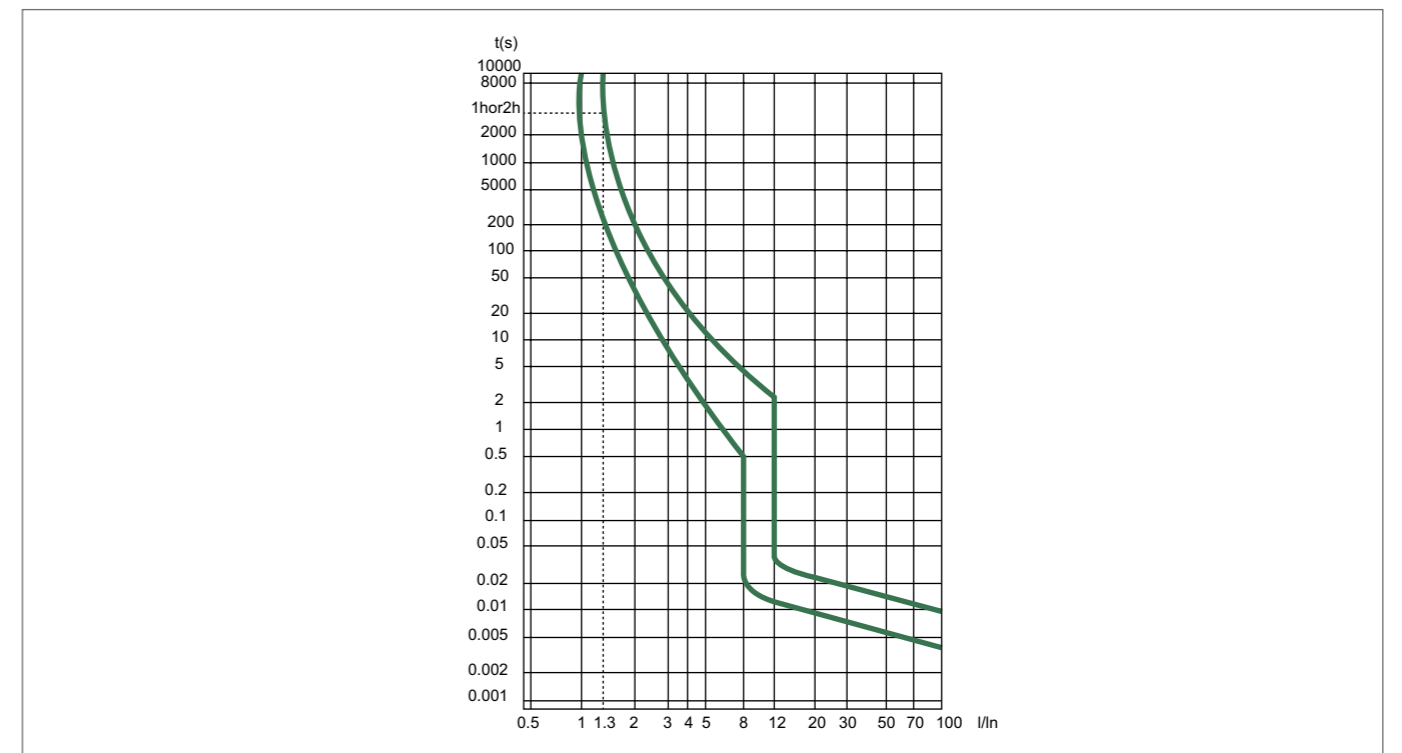
## ► Current correction values used at different ambient temperatures

Fixed current(A) Rated Current (A)	Temperature											
	-35	-30	-20	-10	0	10	20	30	40	50	60	70
63A	90.40	88.52	84.75	80.33	76.55	72.45	67.73	63	57.65	51.98	46.31	40.95
80A	114.8	112	106.8	101.6	96.4	90.8	85.6	80	74	67.6	60.4	53.2
100A	143.5	140.5	134.5	127.5	121	113.5	107.5	100	92.5	84.5	75.5	66.5
125A	178.75	173.75	164.38	156.25	148.75	140.63	135	125	116.25	107.5	97.5	85

## ► Current correction factor used at different altitudes

Rated Current (A)	Different altitude correction factors		
	$\leq 2000m$	2000~3000m	$\geq 3000m$
63,80,100,125A	1.0	0.9	0.8

## ► Characteristic Curve



# FEM1 ▶▶

## Moulded Case Circuit Breaker(AC MCCB)

CCC CE RoHS



# FEM1

## Moulded Case Circuit Breaker (AC MCCB)

### ▶ Application

FEM1 series moulded case circuit breaker is a new type product developed and manufactured by Adopting international advanced technology. It is supplied with rated insulation voltage 800V and used for circuit of AC 50Hz, rated operation voltage AC 400V or below rated operation current up to 1600A for infrequent changing over and starting of the motors. Equipped with the protection devices for over-current, short circuit and under voltage, the product is capable of preventing damage of circuits and supply units. The product conforms to IEC60947-2 standard.



### ▶ Working Condition

- Not over altitude 2000m
- Ambient temperature is between -5°C to+40°C
- Withstand the influence of moist air;
- Withstand the influence of smoke fog,salt mist;
- Withstand the influence of fungus;
- The max. gradient is 22.5°C ;
- Working reliable under the condition of normal vibration in ship;
- Working reliable under the condition of earth quake(4g);
- Working in the medium which not any explosive, no enough dielectric to corrode metal, no gas to damage insulation and elctric conduction dust.
- Working in the place would not be invaded by rain and snow.

### ▶ Working Condition

- According to the pole number of products,it classifies two-pole(100A, 225A), three-pole(no four-pole for FEM1-800), the neutral pole(N-pole) of the four-pole breakers has four types; TypeA: N-pole without over-current release unit, it has been connected all along, and does not act with other three-pole to turn on or off. Type B: N-pole without over-current release unit, it could act with other three-pole; Type C: N-pole fixed with over-current release unit, it could act with other three-pole; Type D: N-pole fixed with over-current release unit, it has been connected all along, and does not act with other three-pole to turn on and off.
- According to rated current of products, it classifies: FEM1-63: (6),10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A, (no over-load protection for 6A); FEM1-125: (10), 10A,16A, 20A, 25A, 32A, 40A, 50A, 63A, 80A,100A, 125A; FEM1-250: 100A, 125A, 140A, 160A,180A, 200A, 225A, 250A; FEM1-400: 225A, 250A, 315A, 350A, 400A; FEM1-630: 400A, 500A, 630A; FEM1-800: 630A, 700A, 800A;
- According to connection mode, it classifies front in wiring,rear in wiring, and plug in type.
- According to over-current release type, it classifies the thermodynamic-magnetic (binary) type and magnetic (instantaneous) releases.



## Moulded Case Circuit Breaker (AC MCCB)

### ► Protective Characteristics

The thermodynamic of a circuit breaker provides the feature of inverse time-delay, while the magnetic release the instantaneous operation as shown on Table 1 (distribution circuit breaker) and Table 2 (motor protection circuit breaker):

Table 1(for distribution)

Rated current of release(A)	Thermodynamic release(ambient temp:land+40 C ,marin+45 C )		Electromagnetic release action current(A)
	1.05In(cold state) Non-action time(h)	1.30In(Hot state) Action time(h)	
10≤In≤63	1	1	10In ± 20%
63≤In≤100	2	2	
100≤In≤800	2	2	5In ± 20% 10In ± 20%

Table 2(for protective motor)

Rated current of release(A)	Thermodynamic release(ambient temp:land+40 C ,marin+45 C )				Electromagnetic release action current(A)
	1.0In(cold state) Non-action time(h)	1.20In(Hot state) Action time(h)	1.50In(Hot state) Action time(h)	7.2In(cold state) Nonaction time(h)	
10≤In≤255	2	2	4min	4s<Tp≤10s	12In ± 20%
225≤In≤800			8min	6s<Tp≤20s	

Note:No 5In magnetic release on 100A, 125A or FEM1-160 and FEM1-225.

### ► Current correction values used at different ambient temperatures

Model	Rated Frame Current (A)	Rated Current (A)	Rated Working Voltage (V)	Rated Insulated Voltage (V)	Rated Ultimate Short-circuit Breaking Capacity KA 400V	Rated Runing Breaking Capacity KA 400V	Overall Dimension			Mounting Dimension(Front in Wiring)		
							L	W 3P/4P	H	A	B	4-Φd
FEM1-63L	63	6,10,16,20,25,32,40,50,63	AC400V	AC500V	25	18	135	78	73.5	25	117	Φ3.5
FEM1-63M					50	35	135	78/103	81.5			
FEM1-125L	125	10,16,20,25,32,40,50,63,80,100,125	AC690V	AC800V	35	22	150	92	68	30	129	Φ4.5
FEM1-125M					50	35	150	92/122	86			
FEM1-125H					85	50						
FEM1-250L	250	100,125,140,160,180,200,225,250	AC690V	AC800V	35	22	165	107	86	35	12	Φ4.5
FEM1-250M					50	35	165	107/142	103			
FEM1-250H					85	50						
FEM1-400L	400	225,250,315,350,400	AC690V	AC800V	50	35	257	150/198	105	44	194	Φ7
FEM1-400M					65	42	257	150	106.5	44	194	Φ7
FEM1-400H					100	65						
FEM1-630L	630	400,500,630	AC690V	AC800V	50	35	270	182/240	110	58	200	Φ7
FEM1-630M					65	42	270	182	110			
FEM1-630H					100	65	275	210	115.5	70	243	Φ7
FEM1-800M	800	630,700,800	AC690V	AC800V	75	50	275	210	115.5	70	243	Φ7
FEM1-800H					100	65						

See Table 4 for sectional area of connecting conductor and the proper rated current:

Rated Current Value	10	16.20	25	32	40.50	63	80	100	125	160	180,220,225	250	315,350	400
Cable(mm²)	1.5	2.5	4	6	10	16	25	35	50	70	95	120	185	240

Table5

Rated Current Value	Cable		Copper Row	
	Cable(mm²)	Quantity	Dimension(mm)	Quantity
500	150	2	30 × 5	2
630	185	2	40 × 5	2
700,800	200	2	40 × 5	2

## Moulded Case Circuit Breaker Accessories

### ► Accessories

The accessories are fixed into the circuit breaker.

- Remote tripping:  
MX or MN releases are used to trip the circuit breaker.
- This release trips the circuit breaker when the control voltage drops below the trip-ping threshold:

- Tripping threshold between 35% to 70% of the rated voltage
- Circuit-breaker closing is possible only if the voltage exceeds 85% of the rated voltage.
- Circuit-breaker tripping by an MN release meets the requirements of standard IEC 60947-2.

### ► Moulded Case Circuit Breaker Accessories



### ► MX(Shunt Release)

Technical Data		
Rated Control Voltage Us(V)	230V, 400V AC	
Operating Voltage(V)	(0.7-1.1) Us	

- Indication contacts
  - These common-point changeover contacts can be used to remotely indicate circuit-breaker status information for indications, electrical locking, relays, etc.
- They comply with international standard IEC 60947-5.

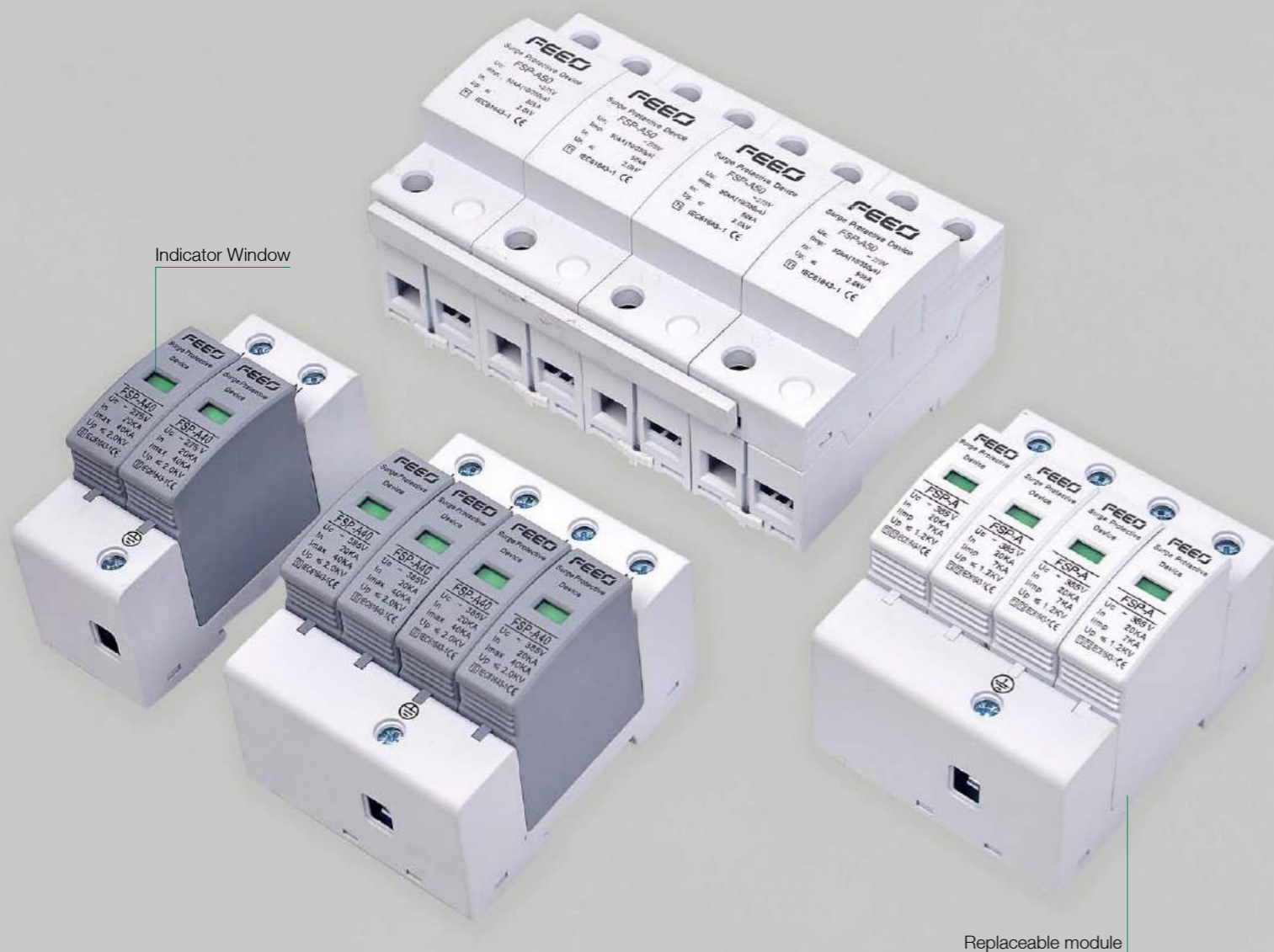
- Functions
- OF (ON/OFF): indicates the position of the circuit-breaker contacts.
- SD (trip indication): indicates that the circuit-breaker has tripped due to:
  - overload,
  - short-circuit,
  - operation of a voltage release,
  - operation of the “push-to-trip” button Returns to de-energised state when the circuit breaker is reset.

# AC SPD Series



## Surge Protective Device

CCC CE RoHS



Indicator Window

Replaceable module

# FRS-A

## Type 1 AC Surge Protective Device



### Accessories

- Large discharge energy
- No leakage
- No follow current
- Modular installation
- High safety coefficient
- Long service life
- Strong environmental resistance
- Voltage protection level is less than 2500V

FRS-A series voltage limiting type/voltage switching type primary power surge protectors are designed according to IEC and EN 61643 standards, and applied to surge protection at the first stage of the power supply system. Products are standard 35mm rail mounting methods.

FRS-A series voltage limiting type/voltage switching type primary power surge protectors with high flow capacity, single module impact current up to 50kA(10/350s), can prevent all kinds of lightning surge. Products are applied to the power supply of the equipment system in the higher risk area of lightning strike. The first surge protection can be used in single phase/three-phase power supply line.



### The scope of products

- Main power distribution panel in buildings
- Overhead distribution box in buildings
- Outdoor distribution cabinet/distribution box

### Product capability parameter

Model	FRS-A15	FRS-A25	FRS-A50
SPD port	2 Poles	3Poles	4Poles
SPD category	Voltage limited type	Voltage limited type	Voltage limited type
Test category	Class I test	Class I test	Class I test
Un	220/380VAC; 50/60Hz		
Uc	275/385/420VAC; 50/60Hz		
Insulation resistance	>100MΩ	>100MΩ	>100MΩ
Imep(10/350 μ s)	15kA	25kA	50kA
Up(1.2/50 μ s)	1.5kV	1.5kV	1.8kV
tA	≤100ns	≤100ns	≤100ns
Size	144 × 90 × 66	144 × 90 × 66	144 × 90 × 66
Sectional area of wires	6~25mm <sup>2</sup>	6~25mm <sup>2</sup>	6~25mm <sup>2</sup>
Installation method	35mm standard rail(EN50022/DIN46277-3)		
Working environment temperature	-40~85℃		
Sheathing material	Plastic, accord with UL94 V-0		
Protection level	IP20		
Authentication	CQC CE Type test		



# FSP-A

Type 2 AC Surge Protective Device

YUEQING FEEO  
ELECTRIC CO.,LTD

## ► Application

FSP-A series surge protection device (in short SPD, alias: surge suppressor surge arrester) is suitable for TN-S, TN-C-S, TT, IT etc, power supply system of AC 50/60Hz, <380V, installed on the joint of LPZ1 or LPZ2 and LPZ3. It's designed according to IEC61643-1, GB18802.1, it adopts 35mm standard rail, there is a failure release mounted on the module of surge protection device, When the SPD fails in breakdown for over heat and over-current, the failure release will help electric equipments separate from the power supply system and give the indication signal, green means normal, red means abnormal, it also could be replaced for the module when has operating voltage.



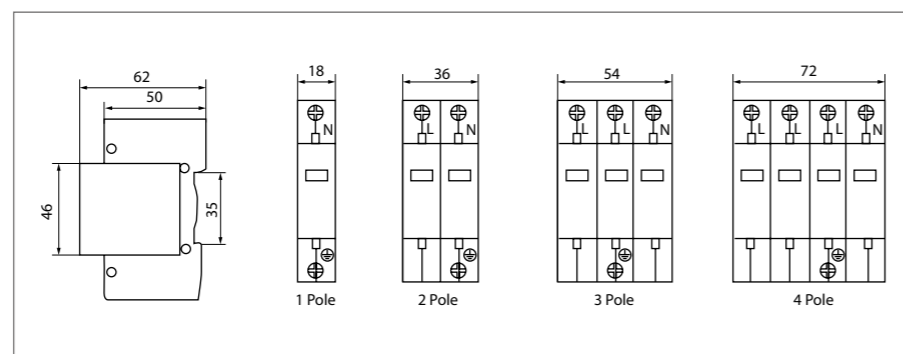
## ► Product Features

- Inside over-current and over-heat protection, temperature control open circuit.
- Module design, convenient installation, could be replaced online.
- Time of response <25ns
- The color of visible window shows operating status, green means normal, red means abnormal

## ► Specifications

Technical Parameters	1P	2P	3P	4P	
Pole	1P	2P	3P	4P	
Rated Operating Voltage Un(V~)	230V/275V		385V/420V		
Maximum Continuous Operating Voltage Uc(V~)	275/385/420VAC				
Voltage protection Level Up(V~)kV	≤2.5				
Nominal Discharge Current In μs kA	5	20	30	40	60
Maximum Discharge Current Imax μs kA	10	40	60	80	100
Response Time (ns)	<25				
Test Standard	IEC61643.1, GB18802.1				
Operating Environment(centigrade)	-40°C ~+85°C				
Max Connection Line	35mm <sup>2</sup> hard wire/35mm <sup>2</sup> strand wire copper line				
Recommended Connection Line	16mm <sup>2</sup> hard wire/25mm <sup>2</sup> strand wire copper line				
Installation	Standard Rail 35mm				
Material of Outer Covering	Burning-proof Nylon				

## ► Overall Dimensions



# FWP-A

Type 1+2 AC Surge Protective Device

FEEO

## ► Application

Type 1 + 2 SPD' s have characteristics of type 1 but also type 2, they are capable of discharging a very high lightning current (T1 10/350 μs) and they have as well a low residual voltage (Up). They are installed in the main distribution switchboard but also in subdistribution board. Because of their power, Type 1 + 2 SPD' s can let pass through a too high residual voltage, if the announced Up is not compatible with the withstand voltage of the equipment to protect or if the cable length to the equipment is longer than 10m,



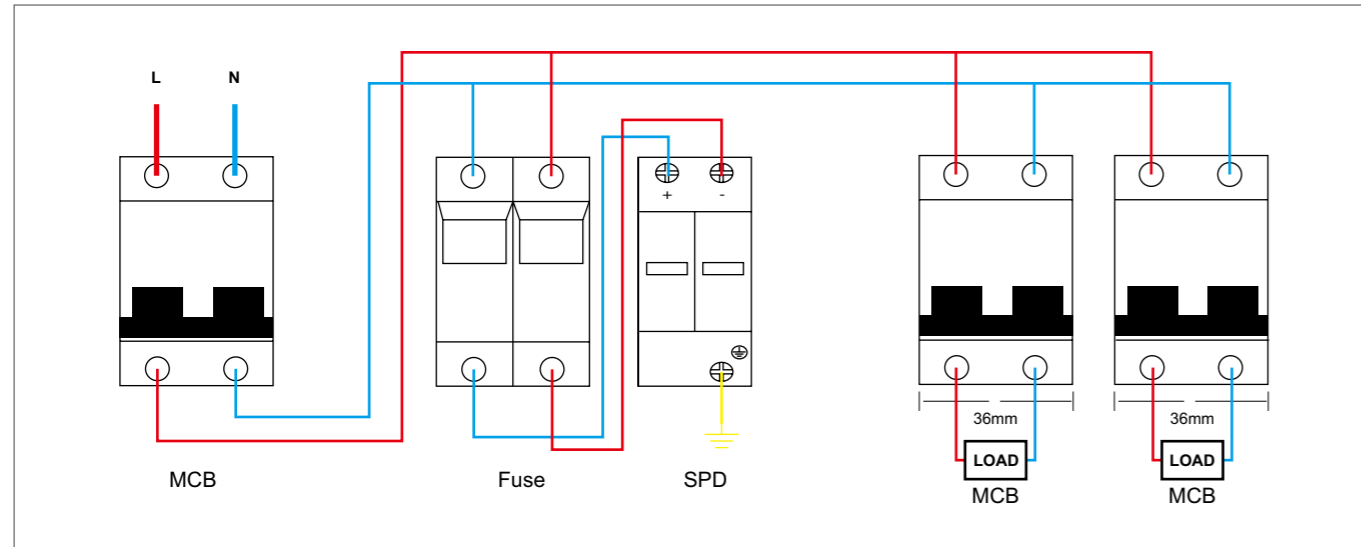
## ► Features

- Patented QuickSafe ® technology
- Safety Reserve system
- Din rail mounting
- Pluggable
- Improved safety
- Back up protection up to 160 A Fuse or 125 A Mcb

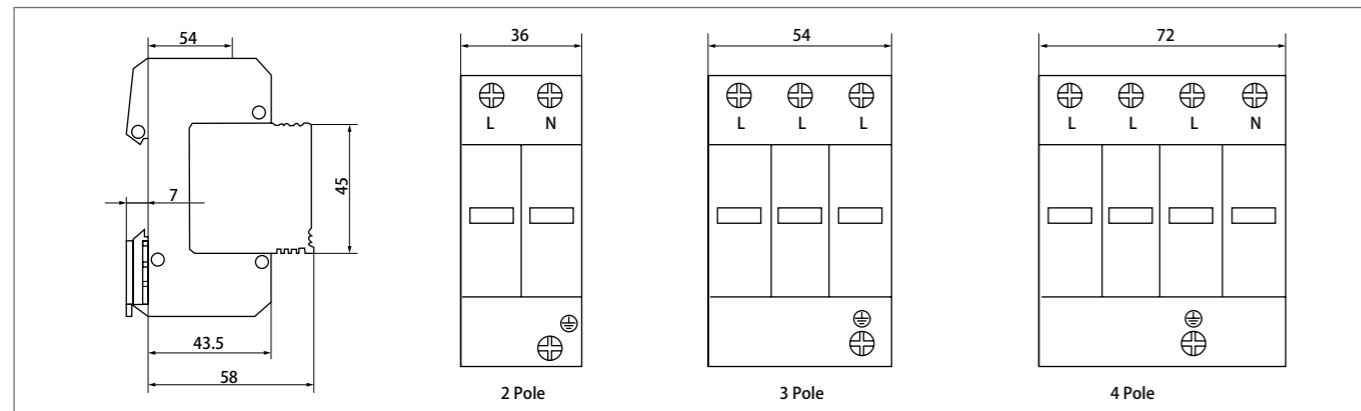
## ► Specifications

Key characteristics			
Protection mode	L-N/L-PE/N-PE		
Number of protected lines	1-4		
Test class	I-II		
Integrated thermal disconnecter	Yes		
End of life indicator	Yes		
Safety reserve	Yes		
Safety reserve	Yes		
Electrical characteristics			
Nominal discharge current	/n (8/20)	kA	20
Maximal discharge current	/max (8/20)	kA	40
Impulse current	/imp (10/350)	kA	7
maximal continuous operating voltage	Uc	V	275/385/420
Type of current/frequency		Hz	a.c.50/60
Voltage protection level at In	Up(L-PE)	kV	1,2
Voltage protection level at In	Up(L-N)	kV	-
Voltage protection level at In	Up(N-PE)	kV	-
Short circuit withstand	/SCCR	kA	100
Total current	/TOTAL	kA	20
Follow current interrupted	/fi	kA	-/-
Ground residual current	/PE	μA	< 350
TOV withstand(L-N:5s/N-PE:200 ms)	UT	V	337
Voltage Combination Wave	Uoc	kV	20
Required thermal/back up protection			
Curve B or C Circuit breaker		A	≤125
gG-gL fuse		A	≤160
Comments			
Mechanical characteristics			
Dimensions	HxWxD	mm	89 × 18 × 69
Wire range:Solid wire		mm <sup>2</sup>	2.5...25
Wire range:Stranded wire		mm <sup>2</sup>	12.5
Stripping length		mm	Per 1
Packing quantities		piece	
Miscellaneous characteristics			
Maximal altitude		m	2000
Weight		g	150
Response time		ns	25
Fire resistance according to UL 94			< V-0

► Product details



► Dimensions



# FAIS ▶▶

## AC Waterproof Isolator Switch

CCC CE RoHS



IP66 Protection Level  
Anti-UV Protection

Safety Lock available



### ► Product Features

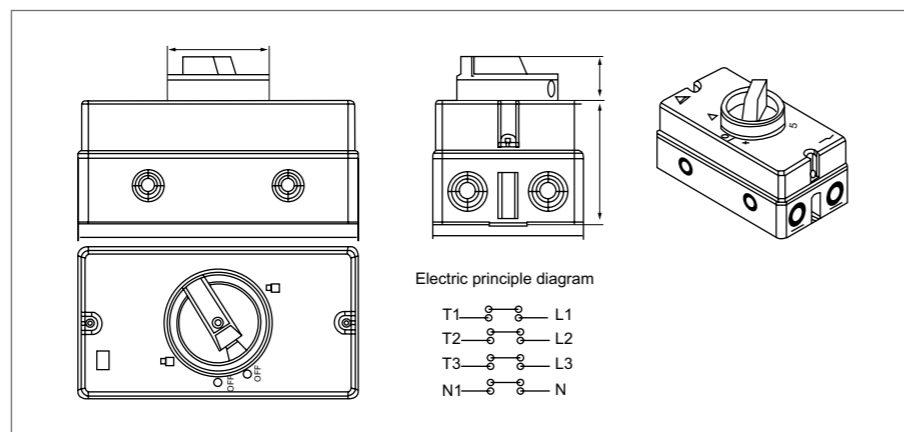
- Rated insulation voltage 690V, current 20A~160A, commonly used in single-phase or three-phase AC system.
- IP66 box body design, with the import of the sealing strip of the safety seal and dust, waterproof, anti ultraviolet materials
- Switch rotating operator(knob)with three lock positin, reliable to peevent misuse
- Suitable for different cable connectors: M25,M20,M16 and M12, optional waterproof cable connectors
- Large wiring operation space , the product is fixed on the box body, the connection is still conevenient
- Adequale internal space, good heat dissipation effect, the whole machine can be loaded at -25℃ -70℃
- Large contrast color design, see to distinguish.
- Protection degree: IP66



### ► Specifications

Technical Parameters		FAIS-20-3 FAIS-20-4	FAIS-25-3 FAIS-25-4	FAIS-32-3 FAIS-32-4	FAIS-40-3 FAIS-40-4	FAIS-63-3 FAIS-63-4	FAIS-80-3 FAIS-80-4
Rated Insulation Voltage	Ui	690	690	690	690	690	690
Rated Current	Ith	20A	25A	32A	40A	63A	80A
Rated Value@415V	AC21	A	20	25	32	40	63
	AC22	A	20	25	32	40	63
	AC23	kw	5.5	7.5	11	15	18.5
Switching Capacity@415V	Aeff	120	150	220	300	370	440
Breaking Capacity@415V	Aeff	110	135	200	250	330	380
Electrical Life Under Rated Load							
Mechanical Life	× 10 <sup>3</sup>	20	20	20	20	10	10
Maximum Cable Size	mm <sup>2</sup>	10	10	10	10	25	25
Weight	g	380	380	380	380	380	380

### ► Dimensions



# FAH-63 ▶▶

## AC Mini Isolator Switch

CCC CE RoHS

Max current: 63Amp

Flame Retardant Shell



# FAH-63

AC Mini Isolator Switch

YUEQING FEEO  
ELECTRIC CO.,LTD

## ► Application

FAH-63 series isolator is suitable for using in the distributing and controlling loop with AC 50Hz or 60Hz, rated working voltage 230 or 400V and below. It is mainly used for terminal electrical main switch, also can be used for controlling different motor, small power electrical and lighting and so on. This product conforms to GB14048.3/IEC60947-3 standards.

NOTE: This product do not have Thermal trip and magnetic trip.



## ► Main Technial Parameter

1. The main technical parameter of the isolator

Rated Voltage(V)	Rated Current	Rated Onoff Capability	Rated Short Time Withstand Current(A)	Rated Short Circuit Onoff Capability	Rated Fuse Short Circuit Current(KA)
230/400	16,32,63	1.05Ue, 3Ie COS φ=0.65	20Ie, t=1s	20Ie, t≥0.1s COS φ=0.9	20

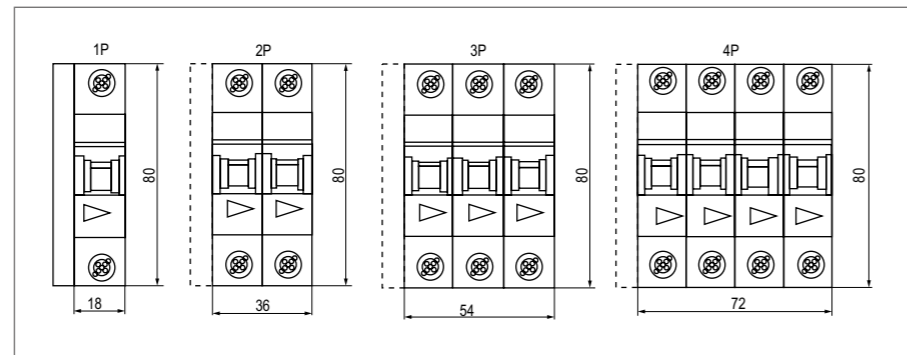
2. The pole No. of the breaker can be classified as:1-pole, 2-pole, 3-pole and 4-pole.

3. This breaker is inlaid installation mode (can be installed on the installation rail).

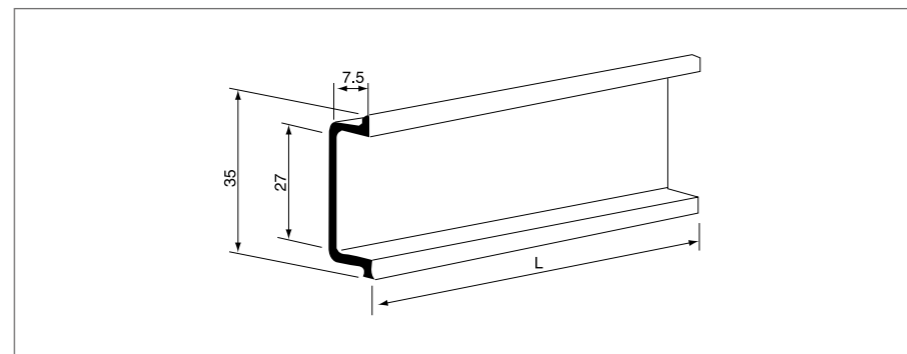
4. Power frequency withstand voltage:after being in condition to hot and humid performance,this breaker can bear 3000V power frequency withstand voltage test for 1 min and without any insulation flashover and breakdown phenomenon.

5. Mechanical and electric life:the mechanical life is 10000 times,and electric life 6000 times.

## ► Overall and Instalation Dimension



## ► Installation



# FAHM ▶▶

## AC Moulded Case Isolator Switch

CCC CE RoHS





### ► Application

FAHM series moulded case isolator switch is a new type product developed and manufactured by Adopting international advanced technology. It is supplied with rated insulation voltage 800V and used for circuit of AC 50Hz, rated operation voltage AC 400V or below rated operation current up to 1600A for infrequent changing over and starting of the motors. The product conforms to IEC60947-3 standard.



NOTE: This product do not have Thermal trip and magnetic trip.

### ► Working Condition

- Not over altitude 2000m
- Ambient temperature is between -5°C to +40°C
- Withstand the influence of moist air;
- Withstand the influence of smoke fog,salt mist;
- Withstand the influence of fungus;
- The max. gradient is 22.5°C;
- Working reliable under the condition of normal vibration in ship;
- Working reliable under the condition of earth quake(4g);
- Working in the medium which not any explosive, no enough dielectric to corrode metal,no gas to damage insulation and elctric conduction dust.
- Working in the place would not be invaded by rain and snow.

### ► Classification

- According to the pole number of products,it classifies two-pole(100A, 225A), three-pole(no four-pole for FAHM-800), the neutral pole(N-pole) of the four-pole breakers has four types;
- According to rated current of products, it classifies:
  - FAHM-63: (6) 32A, 40A, 50A, 63A;
  - FAHM-125: (10) 63A, 80A,100A, 125A;
  - FAHM-250: 125A, 140A, 160A,180A, 200A, 225A, 250A;
  - FAHM-400: 225A, 250A, 315A, 350A, 400A;
  - FAHM-630: 400A, 500A, 630A;
  - FAHM-800: 630A, 700A, 800A;
- According to connection mode, it classifies front in wiring,rear in wiring, and plug in type.
- According to over-current release type, it classifies the thermodynamic-magnetic (binary) type and magnetic (instantaneous) releases.

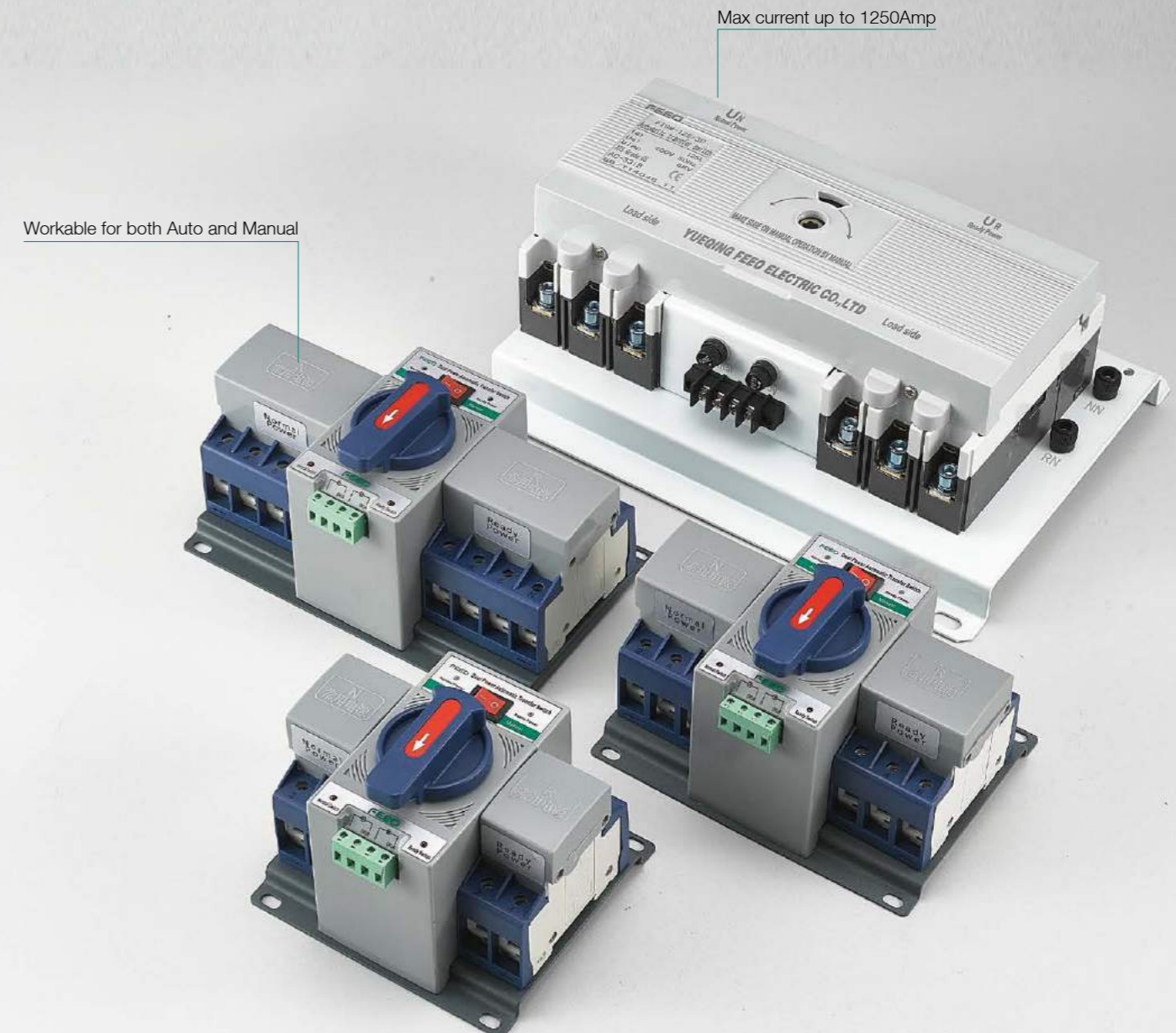
### ► Technical Parameter for The Breaker

Model	Rated Frame Current (A)	Rated Current (A)	Rated Working Voltage (V)	Rated Insulated Voltage (V)	Overall Dimension			Mounting Dimension(Front in Wiring)		
					L	W 3P/4P	H	A	B	4-Φd
FAHM-63	63	6,10,16,20,25,32,40,50,63	AC400V	AC500V	135	78	73.5	25	117	Φ3.5
FAHM-125	125	10,16,20,25,32,40,50,63,80,100	AC690V	AC800V	150	92	68	30	129	Φ4.5
FAHM-250	250	100,125,140,160,180,200,225	AC690V	AC800V	165	107	86	35	12	Φ4.5
FAHM-400	400	225,250,315,350,400	AC690V	AC800V	257	150/198	105	44	194	Φ7
FAHM-630	630	400,500,630	AC690V	AC800V	270	182/240	110	58	200	Φ7
FAHM-800	800	630,700,800	AC690V	AC800V	275	210	115.5	70	243	Φ7

# Dual Power Series

## Automatic Transfer Switch (ATS)

CCC CE RoHS



# FTS-63

Dual Power Transfer Switch(CB Class)

YUEQING FEEO  
ELECTRIC CO.,LTD

## ► Application

FTS Micro-Breaking Dual Power Transfer Switch (hereinafter referred to as transfer switch) is suitable for AC 50/60Hz dual power supply system with rated operating voltage of 400V and rated operating current from 16-63A. Optional transfer of dual power can be made according to requirement. The product owns short circuit, overload, under voltage and loss-of-voltage protection function, as well as fire protection, double-break and output ON signal function. It's especially suitable for lighting circuit of office building, mall, bank, bus station and high-rise building requiring fire product complies with GB/T14048.11 standard.



## ► Working Conditions

- The ambient temperature shall not be higher than +40°C, or lower than -5°C, and the daily average shall not exceed +35°C.
- The altitude of installation site shall not exceed 2000m.
- Relative humidity shall not exceed 50% at the ambient temperature of +40°C, a higher humidity is allowable at a lower temperature, the average maximum relative is 90% in the wettest month at a monthly average minimum temperature of +25°C, and special measures shall be taken for the condensation on surface of product due to temperature change
- Pollution class: class III.
- In place of no intense vibration and impact, no harmful gas corrosive and disruptive to the insulation, no severe dust, no conducting microparticle and explosive substance, no high electromagnetic interference.

## ► Product Features

- Reasonable structure, small volume, nice appearance, with provided with protective shield, safer and more reliable power supply.
- Complete protective functions, including short circuit, overload, open phase and loss-of-voltage protection.
- Reliable remote double-break with EPS fire protection power supply interface DC12-24V
- Noiseless, energy saving, simple installation, easy operation, reliable and stable performance.

## ► Product Performance

- The transfer switch is composed of two FER-63 Micro-Breaking and motor and mechanical rotating device, and make detection to dual power through controller, when abnormality occurs to the circuit, the controller will make a logic judgment for the detection result and drive the operating mechanism to switch on or off according to command of controller, ensuring safe and reliable and stable performance.
- Rated short circuit breaking capacity: 3kA
- Rated short circuit making capacity: 3kA
- transfer time: ≤3S
- Control voltage of transfer switch: AC230V
- Mechanical life of transfer switch(transfer of normal and reserve power): 3000 times, electric life: 1500 times
- Rated insulation voltage: U=500V
- Rated working current: 10A,16A,20A,32A,40A,50A,63A
- The transfer switch has auto throw-in self-restoring function with the normal supply operating preferentially in common condition, the user shall negotiate with the manufacturer during order placing for any other special requirement such as transfer switch of auto throw-in nonself-restoring mode.

## ► Specifications

Making and Breaking Capacity						
Utilization Category	Making and Breaking Test Condition					
	I/e	U/Ue	CosΦ	Electrical time(s)	Duration of cycle(min)	Number of operating cycles
Ac-B33	6.0	1.05	0.5	0.05	≤5	12

Note: AC-B33 motor load or combined load including motor and resistance load under infrequent operation condition

# FTS-63

Dual Power Transfer Switch(CB Class)

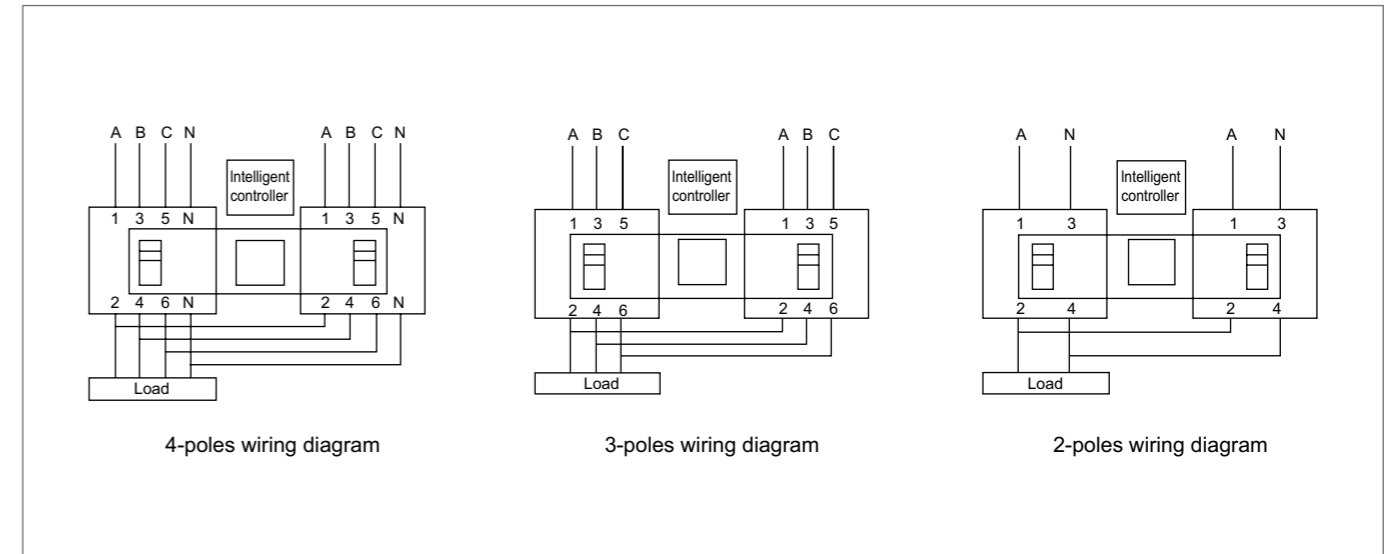
FEEO

## ► Installation

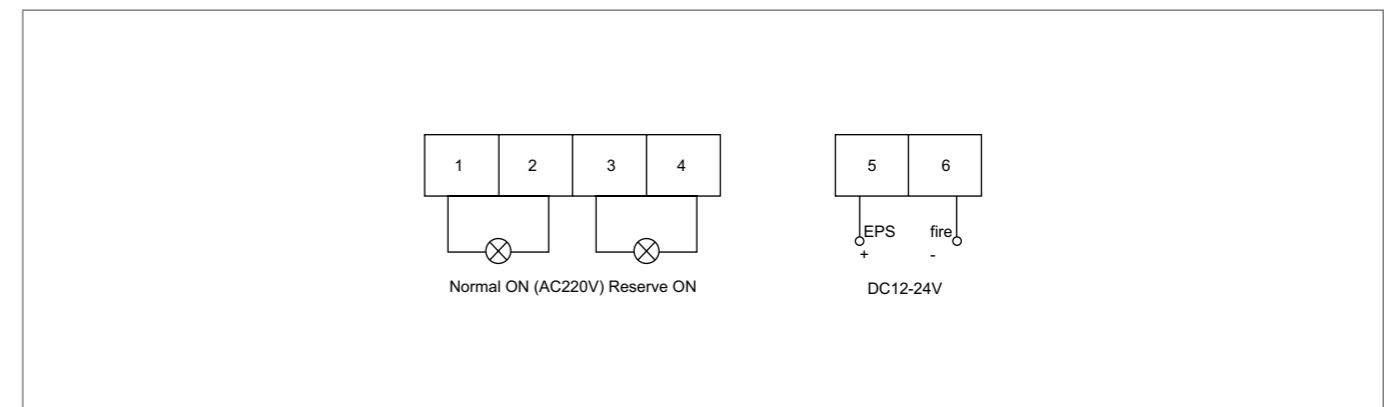
The inlet and outlet line & neutral line of normal and ready power shall be properly wired according to actual requirement of circuit design. The outlet terminals of the two circuit breaker shall be connected in parallel with accordant phase order(refer to the wiring diagram).

As for 3P circuit breaker, the neutral line must be connected to the terminal of neutral line(the normal and reserve neutral line as shown in the fig. 2 Shall be respectively connected to NO.1 and 2 connection terminal).

### 1.Main circuit wiring diagram



### 2.External power ON indication and fire protection power wiring diagram

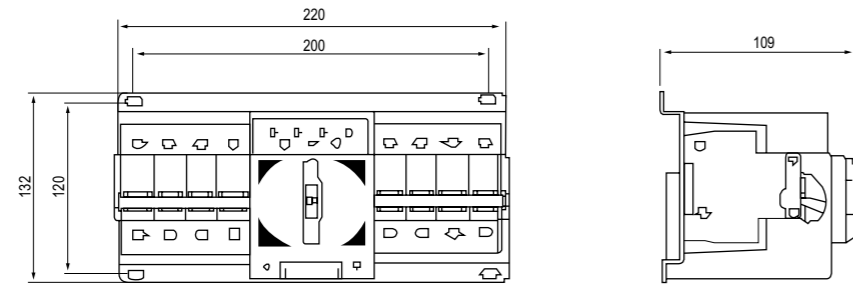


3.When manual operation is required for the transfer switch, as for FTS1-63 type, button switch shall be put to manual position first, then transfer or normal or reserve power can be made by turning the handle, as for FTS2-63 type, transfer or normal or reserve power can be made only by pushing manual/auto button until the manual indicator is on, when the control mode is in automatic position, the transfer will enter automatic work condition and the normal power will operate preferentially.

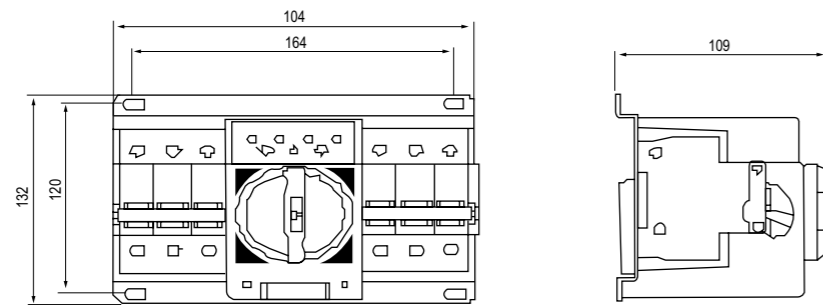
4.When the transfer switch is wired according to wiring diagram, after power on, if the normal and reserve power are in good condition, the indicator(red) of normal or reserve power will be on and the transfer switch will work normally.



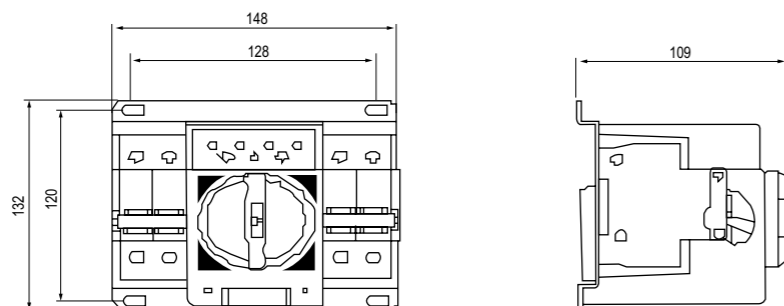
### ► Dimension



Normal ON Reserve ON  
4-Poles overall dimensions



Normal ON Reserve ON  
3-Poles overall dimensions



Normal ON Reserve ON  
2-Poles overall dimensions

### ► Product Features

FTSM series automatic transfer switch are mainly composed of power conversion actuator, circuit breaker and controller. This dual power switch with automatic, manual, power indicator, normal switch indicator, ready switch indicator working state. Switch's features are small volume, long life, low power consumption, light weight, stable work, easy to use and so on.



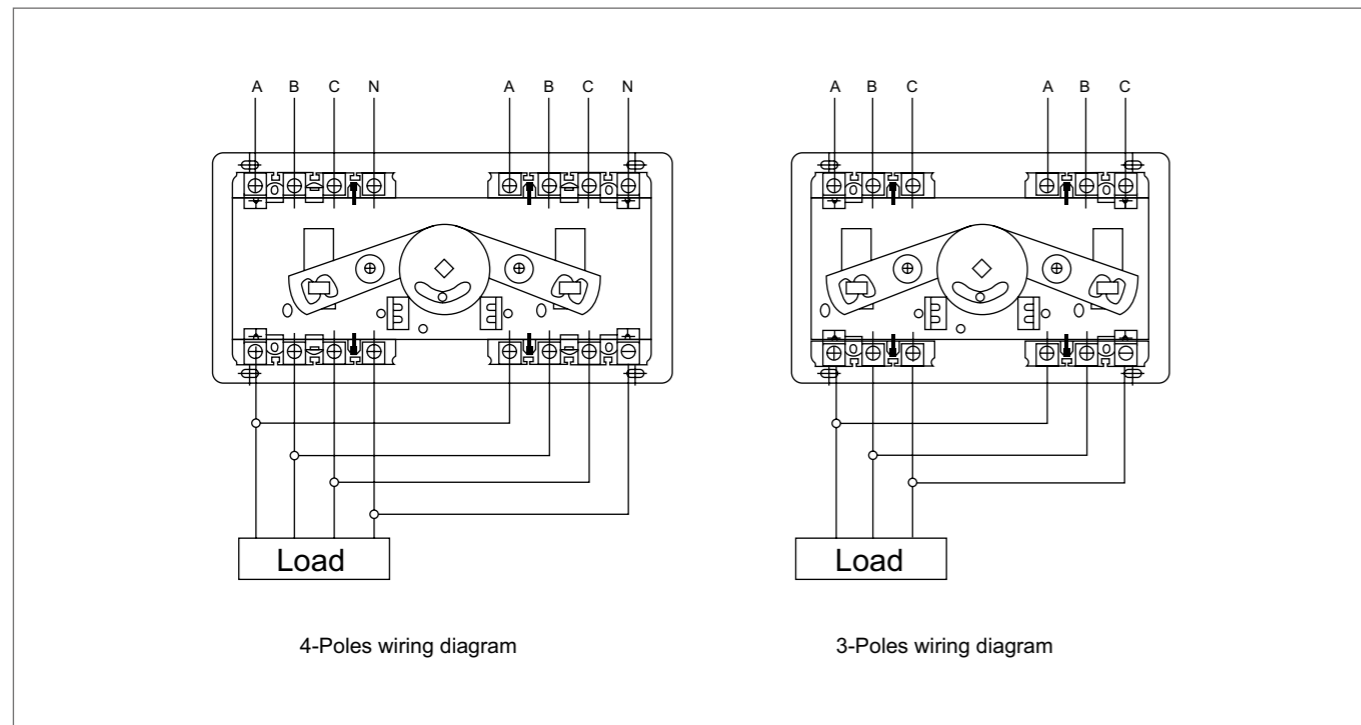
### ► Technical Date

Model	FTSM-63	FTSM-125	FTSM-250	FTSM-400	FTSM-630	
Standard	GB/T 14048.11					
Electrical Characteristic Parameter						
Shell Frame Current	63A	125A	250A	400A	630A	
Rated Current In (A)	10,16,20,25,32,40,50,63	25,32,40,50,63,80,100,125	100,125,140,160,180,200,225,250	225,250,315,350,400	400,500,630	
Rated Operating Voltage Ue	AC400V 50Hz					
Rated Insulation Voltage Ui	AC500V	AC800V	AC800V	AC800V	AC800V	
Rated Impulse Withstand Voltage Uimp	6KV	8KV	8KV	8KV	8KV	
Switching Poles	3P, 4P					
Life	Times	6000	6000	6000	4000	3000
Use Category	AC-33iB					
Electrical Level	CB Class					
Protection Level	IP30					
Control Characteristic Parameter						
Rated Control Supply Voltage Us	AC230V 50Hz					
Switching Time	≤3s	≤3s	≤3s	≤4s	≤4s	

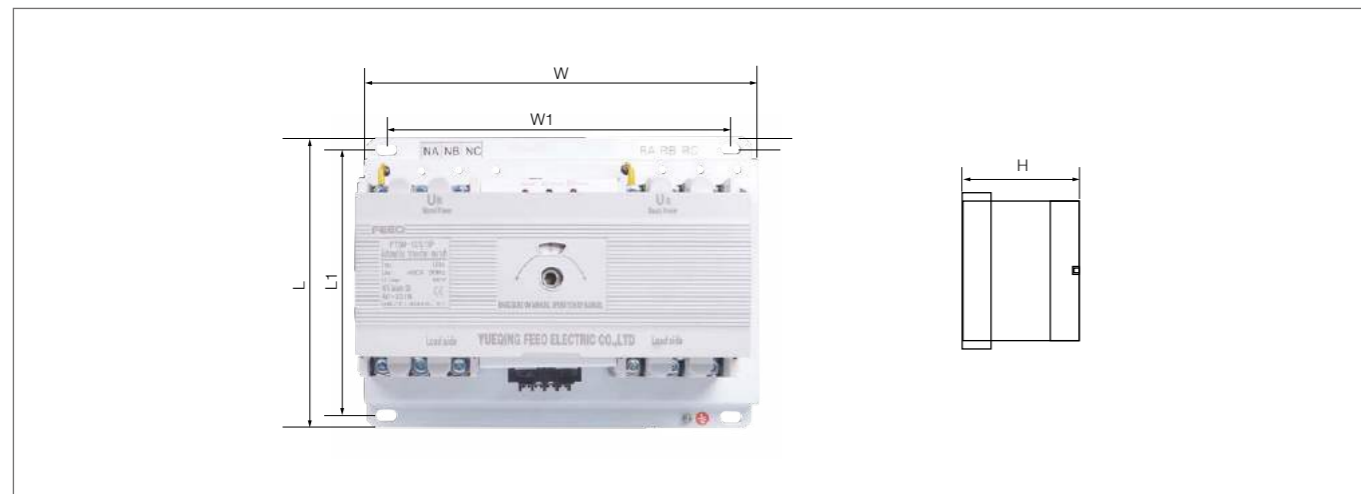
### ► Installation

When installing wiring, normal power N should be access to normal power supply circuit breaker QN, ready power R should be access to ready power supply circuit breaker QR. When QN and QR is 4 poles circuit breaker, wiring mode according to the wiring diagram, which QN and QR's 1, 3, 5 are three-phase ( A, B, C ) into line terminals, 2, 4, 6 are three-phase outgoing line terminals, 7 is zero line (N) into line terminal, 8 is zero line outgoing line terminal. If the use of 3 poles circuit breaker, the normal power N's zero line (NN) and ready power R's zero line (NR) must be respectively received on 3 poles special connection zero line terminal. Specific see wiring diagram. Dual power transfer switch automatic controller's work power supply circuit breaker QN and QR's into line terminal A and zero line N, in the automatic power switch installation, wiring process, Do not let the local controller to forget to connect the signal line, touch off or short circuit and so on, otherwise can not work.

Main circuit wiring diagram



### Dimension



Type	External dimensions			Installation dimensions	
	W	L	H	W1	L1
FTSM-63/3P,4P	290	240	135	255	220
FTSM-125/3P,4P	320	240	140	285	220
FTSM-250/3P,4P	370	240	160	335	220
FTSM-400/3P,4P	525	330	190	465	300
FTSM-630/3P,4P	650	330	190	585	300

### Product Features

Automatic transfer switch equipment (ATSE), is a device integrated with the switching function and logic control, truly perform electromechanical integration function, suitable for operating in the distribution system of AC50Hz, rated voltage AC400V, conventional thermal current up to 3200A in mineral and other enterprises. It provides the operation function of voltage detection, forcedly switching off "0" position, manual emergency operation and etc, widely used to shift between normal power and standby power or two loading equipment, or perform safe isolation and etc. the control circuit board will govern the motor through logic commands, then motor will drive the operating mechanism of main switches, quickly closing or opening or shift the lines, the safe isolation of main switch is obvious and legible by eye.

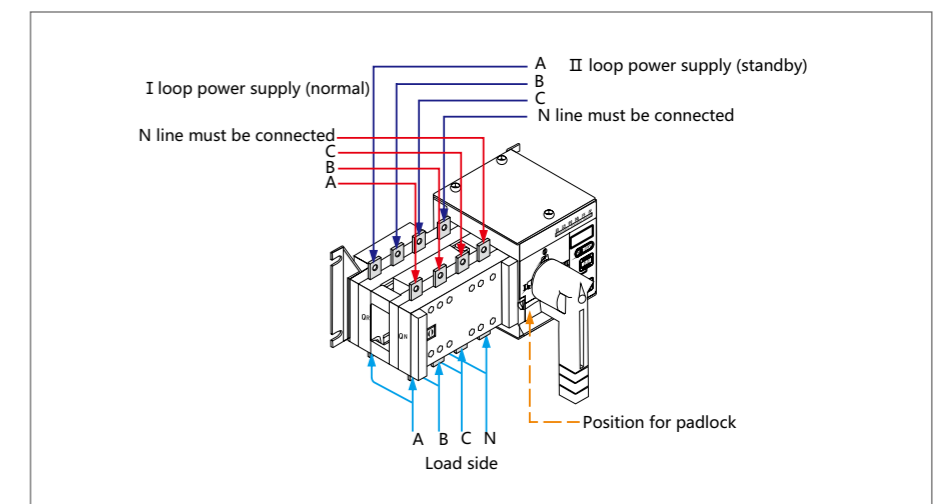


### Technical Parameters

- Standard: IEC947-6-1 GB14048.11-2008;
- Rated working voltage (Ue): AC440V;
- Rated connecting capacity (A Rms): 10le;
- Rated breaking capacity (A Rms): 8le;
- Control supply voltage: DC24V, 48V, 110V, AC220V.

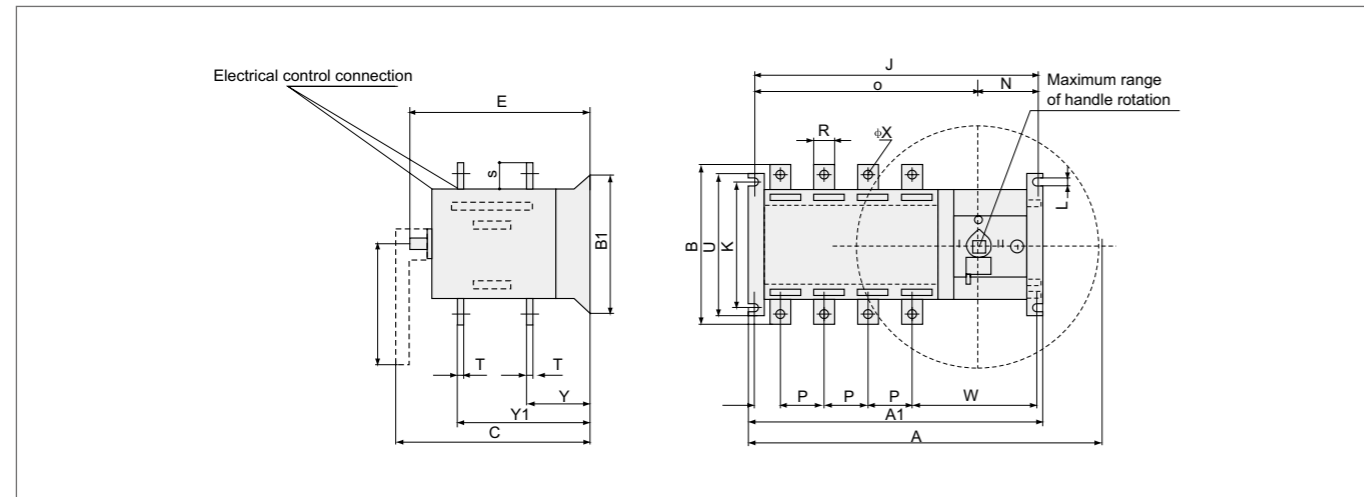
Rated heating current(A)	100	160	250	400	630	1000	1250	1600	2000	2500	3200	
Rated insulation voltage Ui (V)	750					1000						
Rated impact withstand voltage Uimp (kV)	8					12						
Rated operating current Ie (A)	AC-31A	100	160	250	400	630	1000	1250	1600	2000	2500	3200
	AC-35A	100	160	250	400	630	1000	1250	1600	2000	2500	3200
	AC-33A	100	160	250	400	630	1000	1250	1600	2000	2500	3200
Rated short-time withstand current Icw(kA)	7	9	13	50	55							
Rated limit short-circuit current(kA)	100		70		100	120	80					
Control supply voltage(V)	DC24V, 48V, 110V, AC220V											
Conversion time(S)	0.5	1	1.1	1.2	1.25	2.45						

### Wiring Diagram



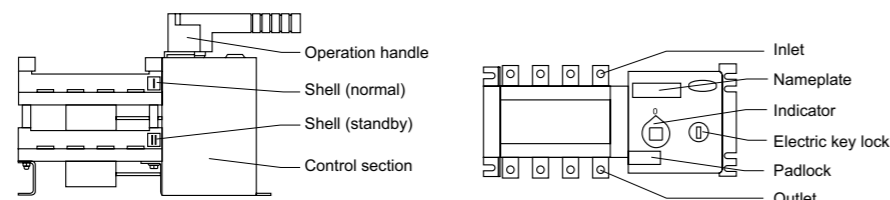


### ► Dimension



### ► Specifications

Product size and installation size																				
In	A	A1	B	B1	C	E	G	J	K	L	N	P	R	S	T	U	W	X	Y	Y1
100A/3	235	232	106	105	134	133	115	221.5	84	7	74.5	30	14	18	2.5	105	126	6	36	86
100A/4	247	244	106	105	134	133	115	233.5	84	7	74.5	30	14	18	2.5	105	126	6	36	86
125A/3	292	270	135	128	230	189	145	254	102	7	91	36	20	25	3.5	127	158	9	55	125
125A/4	322	300	135	128	230	189	145	284	102	7	91	36	20	25	3.5	127	158	9	55	125
160A/3	292	270	135	128	230	189	145	254	102	7	91	36	20	25	3.5	127	158	9	55	125
160A/4	322	300	135	128	230	189	145	284	102	7	91	36	20	25	3.5	127	158	9	55	125
250A/3	356	312	170	142	261	208	145	293	102	7	91	50	25	30	3.5	142	168	11	60	145
250A/4	406	362	170	142	261	208	145	343	102	7	91	50	25	30	3.5	142	168	11	60	145
400A/3	487	368	260	222	284	273	189	351	180	9	93	65	32	40	5	222	203	11	83	193
400A/4	552	433	260	222	284	273	189	416	180	9	93	65	32	40	5	222	203	11	83	193
630A/3	487	368	260	222	284	273	189	351	180	9	93	65	40	50	6	222	203	12	83	193
630A/4	552	433	260	222	284	273	189	416	180	9	93	65	40	50	6	222	203	12	83	193
800A/3	646	519	357	250	363	350	443	499	220	11	87	120	60	69	8	250	207	12.5	109	254
800A/4	760	633	357	250	363	350	443	613	220	11	87	120	60	69	8	250	207	12.5	109	254
1000A/3	646	519	357	250	363	350	443	499	220	11	87	120	60	69	8	250	207	12.5	109	254
1000A/4	760	633	357	250	363	350	443	613	220	11	87	120	60	69	8	250	207	12.5	109	254
1250A/3	646	519	357	250	363	350	443	499	220	11	87	120	80	69	8	250	207	13	110	255
1250A/4	760	633	357	250	363	350	443	613	220	11	87	120	80	69	8	250	207	13	110	255
1600A/3	646	519	357	250	363	350	443	499	220	11	87	120	80	69	10	250	207	13	110	255
1600A/4	760	633	357	250	363	350	443	613	220	11	87	120	80	69	10	250	207	13	110	255
2000A	800	633	460		542		447	610			84.5		80	120	10					169
2500A	800	633	460		542		447	610			84.5		80	125	15					174
3200A	800	633	460		542		447	610			84.5		80	130	20					179



1. Electric key lock: Control switch internal control line power, when the electric lock is turned on, the switch can be fully automatic, operation control, strong set "0" operation; when the electric lock is closed, the switch can only be operated manually.
2. Operating handle: When using the operating handle to operate manually, the electric lock must be closed.
3. Padlock: Maintenance-only, that is, first use the operating handle to make the switch in the "0" position, and then pick up the padlock mechanism and padlock, can be overhauled.
4. Indicator: Indicates the working status of the switch.

### ► Product Application

FCOS Series can be used as a hand-operated miniature dual power transfer switch. In the case of FCOS Series is suitable for use in industrial, shopping malls, shops, one side breaker closing, the other side of the circuit breaker can only be kept disconnected, and the protection functions of the common power supply (mains) and standby power supply line switching can be realized. hospitals, mines, schools, government agencies and other special places with two main lines, often used with voltage regulators and other electrical appliances.



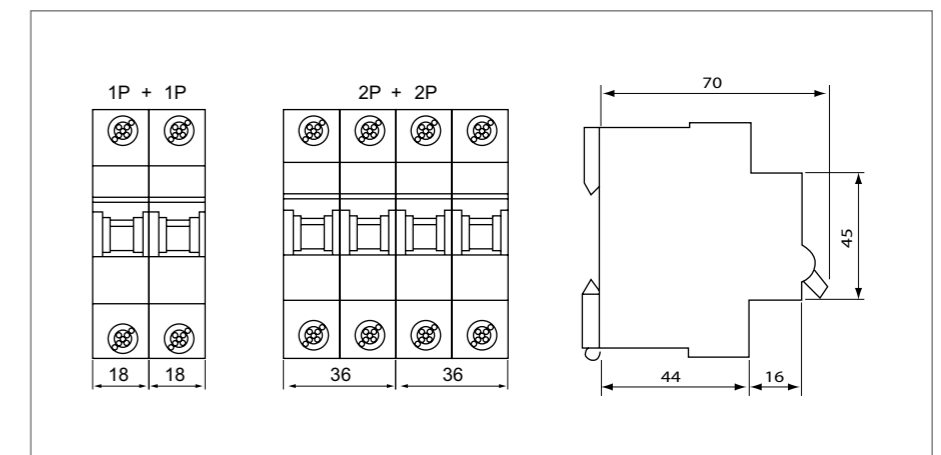
### ► Product Features

- The product has increased the interlocking function, that is, in the case of the closing of one side of the circuit breaker, the other side of the circuit breaker can only maintain the disconnected state, and realize the protection functions such as line switching.
- The product has overload and short circuit protection functions, can be automatically disconnected when a fault occurs on the line, protect the line.
- Power in and out, in line with the characteristics of the power line, easy installation.

### ► Technical Parameters

Name	Manual transfer switch	
Rated current	1-63A	80-125A
Rated current	1P, 2P,3P,4P	
Rated working voltage	230/400VAC; 250/550VDC	
Frequency	50HZ	
Rated short circuit breaking capacity	4000A	10000A

### ► Dimensions(FCOS-63)



## Contents ▶▶



**78**  
MC4 Solar Connector



**83-84**  
F56CB Solar Waterproof Enclosure Box



**79**  
FMC4B Solar Branch Connector



**85**  
FHT /FHVB Distribution Box



**80**  
FMC4H Solar Fuse Connector



**86-87**  
Solar Tools Kit



**81**  
FMC4D Solar Diode Connector



**88-89**  
FSC-KLD Solar Charge Controller



**82**  
PV Cable



**90**  
Other series ...

- Simple on-site processing.
- Acomodates PV cable with different insulation diameters.
- Mating safety provided bykeyed housings.
- Multiple plugging and unplugging cycles .
- High current carrying capacity.



### ► Technical Parameters

Order NO.	Part P/N		Cable special	
	Connector	Terminal	Conductor size(mm2)	CableOD( φ Dmm)
FMC4-CMMM-14	FMC4-CMMM-H	FMC4-CM-T14	AWG14(2.5 mm2)	φ 4.5- φ 8.5
FMC4-CMMM-12		FMC4-CM-T12	AWG12(4.0 mm2)	
FMC4-CMMM-10		FMC4-CM-T10	AWG10(6.0 mm2)	
FMC4-CFPM-14	FMC4-CFPM-H	FMC4-CF-T14	AWG14(2.5 mm2)	φ 4.5- φ 8.5
FMC4-CFPM-12		FMC4-CF-T12	AWG12(4.0 mm2)	
FMC4-CFPM-10		FMC4-CF-T10	AWG10(6.0 mm2)	

### ► Technical Parameters

Rated Current	30A(2.5-6mm2) 45A(4-6mm2)
Rated Voltage	1000V DC 1500V DC
Test Voltage	6000V(50Hz, 1min)
Overvoltage Type/Pollution Degree	CAT III /2
Contact Resistance Of Plug Connector	1mΩ
Contact Material	Copper, Tin-plated
Insulation Material	PPO
Degree Of Protection	IP2X/IP67
Flame Class	UL94-VO
Safety Class	II
Suitable Cable	OD 4.5-8.5(2.5-6.0mm2)
Insertion Force/Withdrawal Force	≤ 50N/ ≥ 50N
Connecting System	Crimp connection
Temperature Range	-40°C ~ +125°C



# FMC4B

Solar Branch Connector

YUEQING FEEO  
ELECTRIC CO.,LTD

- Plug FMC4B-2M1F
- Socket FMC4B-2F1M



## ► Specifications

Type And Meaning	
Available Branch Type	2-1, 3-1, 4-1, 5-1
Rated Current	30A
Rated Voltage	1000V DC
Test Voltage	6000V(50Hz, 1min)
Overvoltage Category/Pollution Degree	CAT III /2
Contact Resistance Of Plug Connector	1mΩ
Contact Material	Copper, Tin-plated
Insulation Material	PA/PRO
Degree Of Protection	IP2*/IP67
Flame Class	UL94-VO
Safety Class	II
Insertion Force	≤ 50N
Withdrawal Force	≥ 50N
Temperature Range	-40°C ~ +110°C

# FMC4H

Solar Fuse Connector

FEEO

## ► Application

A range of 10x38mm fuse links specifically designed for protecting photovoltaic strings. These fuse links are capable of interrupting low overcurrents associated with faulted photovoltaic string arrays (reverse current, multi-array fault).

## ► Structural Characteristics

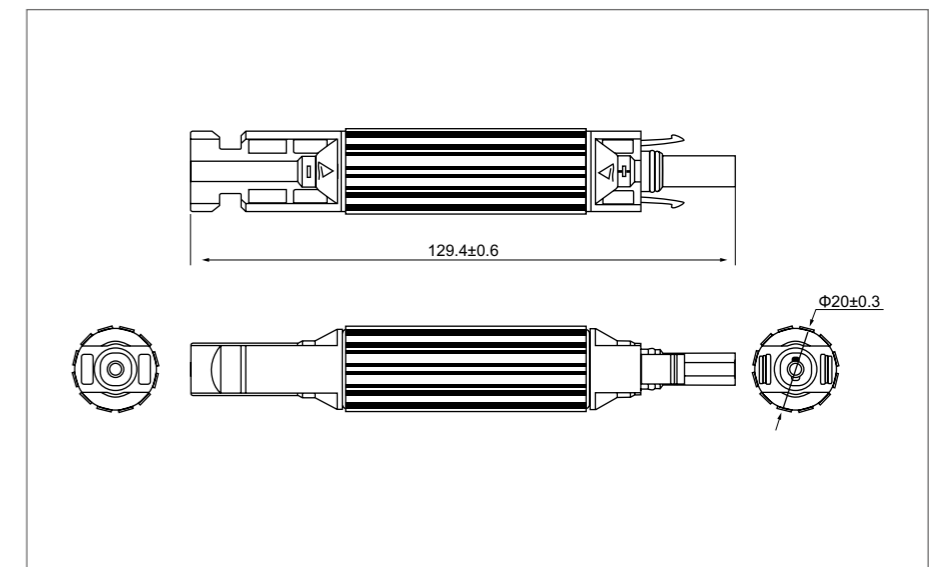
- Solar PV Fuse Holder, DC 1000V, up to 30A fuse.
- IP67, 10x38mm Fuse Copper.
- Suitable connector is MC4 Connector.



## ► Specifications

Technical Data	
Rated Current	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 Connector	1mΩ
Contact Material	Copper, Ag plated
Insulation Material	PPO
Degree Of Protection	IP2*/IP67
Flame Class	UL94-VO
Safety Class	II
Insertion Force/ Withdrawal Force	≤ 50N/≥ 50N
Connecting System	Crimp connection
Temperature Range	-40°C ~ +125°C

## ► Dimensions



### ► Main Speciality

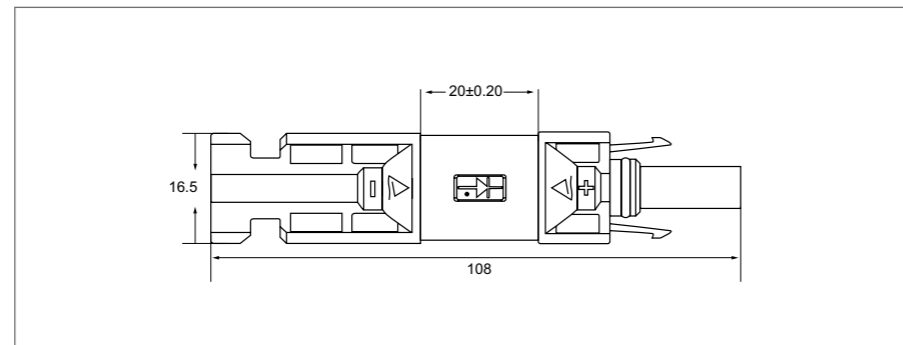
- The fuse/diode series connectors.
- Low power loss.
- Auto-lock equipment of male and female points enable connection more easy and reliable.
- With the capacity of anti-aging and resistance to ultraviolet radiation on the outer cover.
- Popular figure suit most of field installation.
- Simple on-site processing.
- With convenient installation, strong commonality.



### ► Specifications

Technical Data	
Insulation Material	PPO
Contact Material	Copper, Tin plated
Adapting Current	10A
Rated Voltage	1000V(TUV), 600V(UL)
Test Voltage	8000V(TUV50Hz, 1min)
Contact Resistance	<0.5mΩ
Degree Of Protection	IP67
Ambient Temperature Range	-40℃ ~ +85℃
Flame Class	UL94-VO
Safety Class II	II
Pin Dimensions	φ 4mm

### ► Dimensions



## PV Cable

- Dual wall insulation, electron beam cross-linked.
- Excellent resistance to UV, water, ozone, fluids, salt, general weathering.
- Excellent resistance to abrasion.
- Halogen free, flame retardant, low toxicity.
- Excellent flexibility and stripping performance.
- High current carrying capacity.



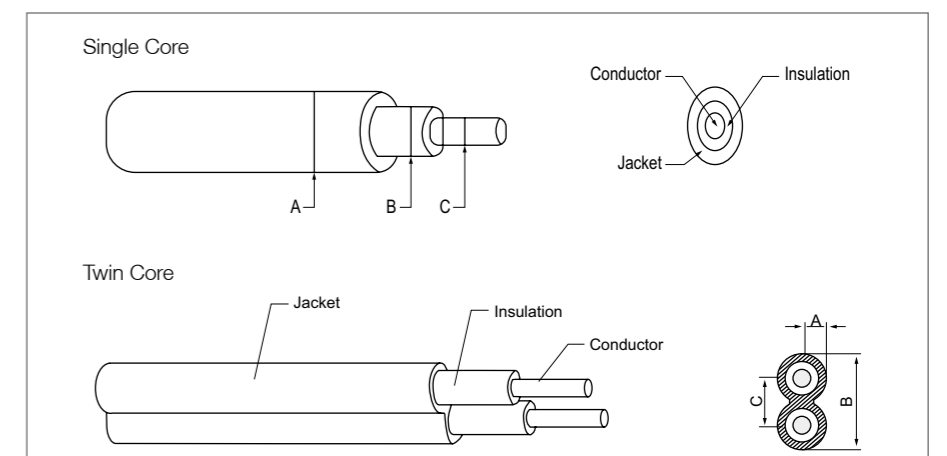
### ► Specifications

Type	Cross Section	Strand design	Conductor diameter	Conductor resistance	Outer diameter A x B	Rated voltage	Rated current
	mm <sup>2</sup>	No. x φ (mm)	mm	Ω/km	mm	VAC/DC	A
Single Core							
PV-1x1.5mm <sup>2</sup>	1.5	30 x φ 0.25	1.6	13.9	4.5	1000/1800	20
PV-1x2.5mm <sup>2</sup>	2.5	50 x φ 0.25	2.0	8.06	5.3	1000/1800	30
PV-1x4.0mm <sup>2</sup>	4.0	56 x φ 0.3	2.6	4.97	6.4	1000/1800	50
PV-1x6.0mm <sup>2</sup>	6.0	84 x φ 0.3	3.3	3.52	7.2	1000/1800	70
PV-1x10.0mm <sup>2</sup>	10.0	200 x φ 0.25	4.4	2.12	8.3	1000/1800	95
Twin Core							
PV-2x1.5mm <sup>2</sup>	1.5	30 x φ 0.25	1.6	13.9	5.80x 9.30	1000/1800	20
PV-2x2.5mm <sup>2</sup>	2.5	50 x φ 0.25	2.0	8.06	6.20x 9.90	1000/1800	30
PV-2x4.0mm <sup>2</sup>	4.0	56 x φ 0.3	2.6	4.97	6.9x 11.30	1000/1800	50
PV-2x6.0mm <sup>2</sup>	6.0	81 x φ 0.3	3.3	3.52	7.1x 14.30	1000/1800	70

### ► Specifications

Wire	Class 5, tinned
Insulation Material	XLPE
Double Insulated	
Halogen-free	
High resistance against oils, greases, oxygen and ozone	
Microbe-resistant	
UV Resistant	
High Wear And Abrasion Resistance	
Flam Test According To	DIN EN 50265-2-1 UL1571(VW-1)
Smallest Permissible Bending Radius	5XD
Temperature Range	-40℃ ~ +90℃
Colours	Black/red

### ► Dimensions





### ► Description

FHT /FHVB series distribution box use high-quality fire-resistant and ABS materials reach IP65 protection Degree the max current can be 125A. Can be used in outdoor environment to protect the heavy weather.



Flammability rating: HB



Flammability rating: V-2

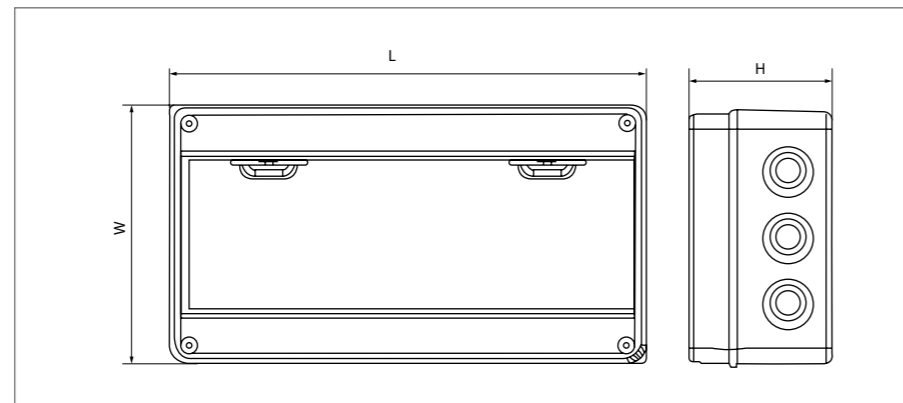
### ► Specifications

Model No	Product Size	Product Weight
FHT-5WAY	120*160*95	0.34KG
FHT-8WAY	200*155*95	0.53KG
FHT-12WAY	250*195*110	0.84KG
FHT-15WAY	310*195*110	0.9KG
FHT-18WAY	365*195*110	1.07KG
FHT-24WAY	360*280*110	1.35KG

Model No	Product Size	
FHVB-4WAY	107*212*82	
FHVB-9WAY	165*200*100	
FHVB-12WAY	219*200*100	
FHVB-15WAY	273*230*110	
FHVB-18WAY	381*230*110	
FHVB-24WAY	273*380*110	
FHVB-36WAY	381*380*110	2 Row

### ► Dimensions



## Solar Tools Kit

### ► MC4-A2546B-4 tool kits including

- 1 PCS A-2546B terminal crimping pliers (crimping range: 2.5-6mm<sup>2</sup> , included a locator)
- 1 PCS W X-0626 cable stripper (stripping range: 0.9-6mm<sup>2</sup> )
- One pair MC4 wrench, one pair MC4 connector
- MC3 and 30J head each pair



### ► Main Speciality

- The new PV Crimping Pliers precision pressure line module locking (self locking and releasing mechanism ) and the overall design;
- In the the repeated pressure line to maintain a higher standard of quality pressure line;
- The excellent lever transmission design, isobar larger cross-section of the wire, the more labor-saving;
- Ergonomic design;
- The positioning device can be fixed in the jaw , to ensure precise positioning of the terminal of the pressure line;
- Pressure line film and locator under the pressure line terminal selected

Type	Capacity	AWG	Length	Weight
A-2546B(MC4)	2.5/4.0/6.0mm <sup>2</sup>	14-10AWG	270mm	0.74kg
A-2546B-4(MC3)	2.5/4.0/6.0mm <sup>2</sup>	14-10AWG	270mm	0.74kg
A-2546B-3	4.0/6.0mm <sup>2</sup>	12-10AWG	270mm	0.74kg

### ► Solar Crimping Plier

- MC 4 2.5 4 & 6mm<sup>2</sup>;
- Precision locator for terminal positions;
- 1.2 metric tones pressure with minimal hand effort;
- Interchangeable die set;
- Length:230 mm;
- Weight:0.55 kg.

Type	Capacity	AWG	Length	Weight
WX-2546B(MC4)	2.5/4.0/6.0mm <sup>2</sup>	14-10AWG	230mm	0.55kg

## Solar Tools Kit

### ► Cable Stripper

- Scissors stripping single strand and standard wire;
- Head and handle 23 °angle design tools and wrist bending closely with;
- Use more comfortable and convenient;
- Automatically spring back, the spring means to facilitate opening;
- The incision ministry precision ground milled, high precision internal stripping;
- Built-in security lock, head clamping function;
- Two-color handle, comfortable grip;
- Tools black heat-treated, more durable.



Type	Wire Stripping	Length	Weight
WX-0626	0.9-6.0mm <sup>2</sup>	165mm	0.16kg

### ► Main Speciality

Apply to the insulated wire, stripping holes to precise, not to hurt the core need to repeat the operation, to ensure consistent stripping length reset the spring automatically stripping length consistent return spring automatically stripping jaw reset Attachment piece,adjustable stripping length, blade long life; It used for the line by the single-stranded and stranded wire.

Type	Wire Stripping	Length	Weight
WX-700A	0.5-2mm <sup>2</sup>	170mm	0.36kg
WX-700B	1.0-3.2mm <sup>2</sup> /0.5-3.2mm <sup>2</sup>	170mm	0.36kg
WX-700C	0.9-5.5mm <sup>2</sup>	170mm	0.36kg
WX-700E	0.5-6.0mm <sup>2</sup>	170mm	0.36kg

### ► Cable Cutter

- Blade made of SUS 420J2 stainless steel with heat treatment, HRC 50~54;
- Bolt made of SUS 302 stainless steel cold forged;
- Lock nut made of SUS 302 stainless steel;
- Washer made of SUS 420J2 stainless steel with heat treatment;
- PP and TPR over molded, for left and right-handed users;
- Spring loaded to reduce fatigue, easy to use safety lock, Extended tang for durability, light weight.

Type	Cutting range Length	Length	Weight
WX-206B	Below 35mm <sup>2</sup>	170mm	0.12kg

### ► MC4 Wrench

- 100% Brand New and High Quality;
- This spanner is suitable for assembling and disassembling of MC4 male/female plug;
- Light weight, portable and easy to use;
- Double wrenches- quick screw down;
- Very light and very strong and smooth;
- Saved time and manpower for installation.

## Solar Charge Controller

### ► Product Features

- Build-in industrial micro controller;
- Big LCD display,all adjustable parameter;
- Fully 4-stage PWM charge management;
- Build-in short-circuit protection,open-circuit protection,reverse protection,over-load protection;
- Dual mosfet Reverse current protection,low heat protection.



### ► Technical Parameters

MODEL	FSC-KLD1210	FSC-KLD1220	FSC-KLD1230	FSC-KLD1230X	FSC-KLD1240X
Batt voltage	12V/ 24V auto				
Charge current	10A	20A	30A	30A	40A
Discharge current	10A	20A	30A	30A	40A
Max solar input	<50V				
Equalization	B01 sealed	B02 Gel		B03 flood	
	14.4V	14.2V		14.6V	
Float charge	13.7V(default,adjustable)				
Discharge stop	10.7V(default,adjustable)				
Discharge reconnect	12.6V(default,adjustable)				
USB output	5V/3A			5V/2A	
Self-consume	<10mA				
Operating temperature	-35℃ ~+60℃				
Size/Weight	149*78*35mm /150g			184*89*42mm /300g	
Note: all red color voltage x2 while using 24V system					

### ► System Connection

- Connect the battery to the charge regulator-plus and minus;
- Connect the photovoltaic module to the regulator-plus and minus;
- Connect the consumer to the charge regulator-plus and minus;
- The reverse order applies when deinstalling !
- An improper sequence order can damage the controller

### ► Display

