

UKM32 PV Series Moulded Case Circuit Breaker for PV System

系列光伏专用直流塑壳断路器

Outline

概述

UKM32-250/400PV 光伏用直流塑壳断路器：适用于额定电流250/400A以下，直流额定电压至DC1500V光伏发电、配电线路。本断路器具有过载长延时，短路瞬时保护功能，使光伏配电线路及用电设备免受过载、短路等故障的危害；

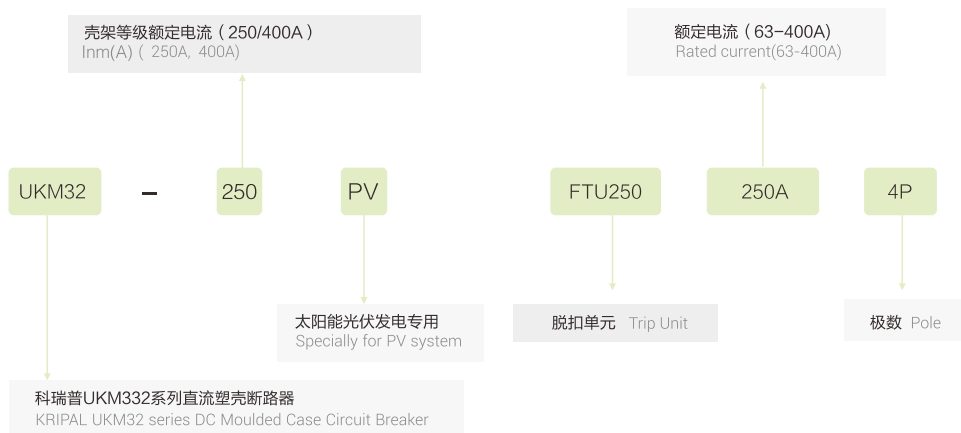
UKM32-250/400PV 光伏用直流塑壳断路器的额定分断能力分为N型20kA、H型50kA,使用类别为A，可广泛应用于汇流箱、直流屏、逆变器、储能系统等设备中。

UKM32-250/400PV DC Molded Case Circuit Breaker: It is suitable for photovoltaic power generation and distribution lines with rated current below 250/400A and DC rated voltage up to DC1500V. The circuit breaker has the functions of overload long-time delay and short-circuit instantaneous protection, so that photovoltaic power distribution and lines and electrical equipment are protected from overload, short-circuit and other faults;

The rated breaking capacity of UKM32-250/400PV DC molded case circuit breaker for photovoltaics is divided into N type 20kA, H type 50kA, and the use category is A, which can be widely used in combiner boxes, DC panels, inverters, energy storage systems and other equipment middle.

Definition of Model

型号编制含义



提示：1、样本断路器图片中，延长接线铜排为L型连接排，属处部附件。

2、如需符合UL 489B的产品请特殊注明。

Note: 1. The extended connection in pictures are "L" connection bus-bar (external accessories)

2. Please specify, if you need the items in line with the UL4998.

UKM32 PV Series Moulded Case Circuit Breaker for PV System

系列光伏专用直流塑壳断路器

Main technical parameter

主要技术性能指标

产品型号 Model		UKM32-250PV	
外形 铜排为接线示意图 Photo			
壳架等级额定电流 Inm(A)		250	
额定电流In(A) Rated current		63,80,100,125,160,200,250	
极数 Poles		3P	4P
额定工作电压Ue(V)DC Rated working voltage Ue VDC		DC750V	DC1000V
额定绝缘电压Ui(V) Rated insulation voltage Ui(V)		DC1000V	DC1000V
额定冲击耐受电压Uimp(kV) Rated impulse withstand voltage		8kV	
额定运行分断能力Ics Rated operating breaking capacity(Ics)		100Icu	
额定极限分断能力Icu Rated ultimate breaking capacity(Icu)		20kA	
机械寿命 Mechanical life	总次数 total	10000	
电气寿命 Electrical life	总次数 total	2000	1000
保护功能 Protective function	脱扣方式 Trip Method	热磁式 Thermomagnetic	
	过电流 Overcurrent	0.8-1xIn(Fixed)	
	瞬时动作值 Instantaneous trip	6In(5-10)	
是否具有隔离特性 Isolation (Y/N)		是 Y	
标准 Standard		执行IEC 60947-2、GB/T 14048.2	
使用类别 Utilization category		A	
可选内部附件 Optional Internal Accessories		UVT SHT AX AL	
可选外部附件 Optional External Accessories		旋转操作手柄 Rotary Operating Handle	
外形尺寸 Dimension	L×W×H	105x160x86	140x160x86
安装方式 Mounting		固定式、插入式 Fixed, withdrawal	

*0飞弧需在订货时注明。"0" arcing distance: please specify when ordering if you require.

UKM32 PV Series Moulded Case Circuit Breaker for PV System

系列光伏专用直流塑壳断路器

Main technical parameter

主要技术性能指标

产品型号 Model		UKM32-400PV	
外形 铜排为接线示意图 Photo			
壳架等级额定电流 Inm(A)		400	
额定电流In(A) Rated current		300,350,400	
极数 Poles		3P	4P
额定工作电压Ue(V)DC Rated working voltage Ue VDC		DC750V	DC1000V
额定绝缘电压Ui(V) Rated insulation voltage Ui(V)		DC1000V	DC1000V
额定冲击耐受电压Uimp(kV) Rated impulse withstand voltage		12kV	
额定运行分断能力Ics Rated operating breaking capacity(Ics)		100Icu	
额定极限分断能力Icu Rated ultimate breaking capacity(Icu)		20kA	
机械寿命 Mechanical life	总次数 total	10000	
电气寿命 Electrical life	总次数 total	2000	1000
保护功能 Protective function	脱扣方式 Trip Method	热磁式 Thermomagnetic	
	过电流 Overcurrent	0.8-1xIn(Fixed)	
	瞬时动作值 Instantaneous trip	6In(5-10)	
是否具有隔离特性 Isolation (Y/N)		是 Y	
标准 Standard		执行IEC 60947-2、GB/T 14048.2	
使用类别 Utilization category		A	
可选内部附件 Optional Internal Accessories		UVT SHT AX AL	
可选外部附件 Optional External Accessories		旋转操作手柄 Rotary Operating Handle	
外形尺寸 Dimension	L×W×H	142x260x110	188x260x110
安装方式 Mounting		固定式、插入式 Fixed, withdrawal	

*0飞弧需在订货时注明。"0" arcing distance: please specify when ordering if you require.

UKM32 PV Series Moulded Case Circuit Breaker for PV System

系列光伏专用直流塑壳断路器

Working Environment 工作环境

旋转操作手柄
Rotary handle

环境温度 Ambient temperature	运行 Operation	-40℃~+70℃
	储存 Storage	-40℃~+70℃
温度降容 Temperature derating	当环境温度高于+40℃时，过载保护特性会受到温度变化的影响，需要将断路器降容使用 When the ambient temperature is higher than +40℃degrees, the overload protection characteristics will be affected by temperature changes, and the circuit breaker needs to be derated.	
海拔降容 Altitude derating	海拔高于2000m时需降容使用 When the altitude is higher than 2000m, derating is required	
环境温度 Ambient temperature	在周围空气温度为+40℃条件下，大气相对湿度不能超过50%，如果温度较低，则可以在较高的湿度条件下使用，最湿月份的月平均相对湿度为90%；需要考虑产品表面产生的凝露对产品性能的影响； When the ambient air temperature is +40 degrees, the relative humidity of the atmosphere cannot exceed 50%. If the temperature is lower, it can be used under higher humidity conditions. The monthly average relative humidity in the wettest month is 90%; the influence of condensation on the product surface on the product performance needs to be considered;	

Temperature Derating Parameters 温度降容参数

额定电流A Rated current A			根据环境温度补偿的额定电流A Rated current A compensated according to ambient temperature										联接铜排 Connection copper bar	
			+40℃		+45℃		+50℃		+60℃		+70℃			
63	63	100%	63	100%	62	98%	60	95%	56	89%	52	83%	250 Busbar 5T	
80	80	100%	80	100%	78	98%	76	95%	71	89%	66	83%		
100	100	100%	100	100%	98	98%	84	95%	89	89%	83	83%		
125	125	100%	125	100%	122	98%	119	95%	111	89%	104	83%		
160	160	100%	160	100%	155	97%	150	94%	141	88%	131	82%		
200	200	100%	200	100%	196	98%	190	95%	178	89%	166	83%	Custom Busbar 4T 250 Busbar 5T	
250	200	80%	200	80%	196	77%	185	74%	173	69%	160	64%		
	250	100%	250	100%	243	97%	235	94%	220	88%	205	82%		
300	300	100%	300	100%	291	97%	281	94%	264	88%	246	82%	400 Lower + Upper Busbar 6T	
350	350	100%	350	100%	339	97%	328	94%	308	88%	287	82%		
400	400	100%	400	100%	388	97%	375	94%	355	88%	328	82%		

注：联接铜排Busbar为实验基准，不属于选购附件。Load侧使用端子盖时降容电流为90%。

Note: The connecting copper busbar is the experimental benchmark and is not an optional accessory.
When the terminal cover is used on the load side, the derating current is 90%.

Altitude derating parameters 海拔降容参数

海拔高度 Altitude	250			400		
	Ue(Vdc)		In(A)	Ue(Vdc)		In(A)
	电压 Voltage	系数 Coefficient		电压 Voltage	系数 Coefficient	
2000m	1000V	1.00	100%	1000V	1.00	100%
3000m	870V	0.87	98%	870V	0.87	98%
4000m	770V	0.77	93%	770V	0.77	93%
5000m	670V	0.67	90%	670V	0.67	90%

UKM32 PV Series Moulded Case Circuit Breaker for PV System

系列光伏专用直流塑壳断路器

Internal Accessories And Installation Positions

内部附件及安装位置

分励脱扣器(SHT): 在外部施加电压信号使得断路器分闸, 并在断路器跳闸后自动切断外部信号。

分压脱扣器(UVT): 当电压下降到电压额定值的35%~70%时, 欠压脱扣器会使得断路器脱扣。

欠压脱扣为瞬时脱扣, 而且断路器不能合闸, 直到电压恢复到85%之后才能重新合闸。

辅助触头 (AX): 用于远程 “ON” 和 “OFF” 指示, 一个常触点, 一个常闭触点。

辅助报警触头 (AL): 当断路器因过载、短路、欠压、受到外部分励信号跳闸等时控制外部光电报警系统工作。

Shunt release (SHT): Applying a voltage signal externally makes the circuit breaker open, and automatically cuts off the external signal after the circuit breaker trips.

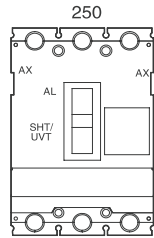
Undervoltage release (UVT): When the voltage drops to 35%-70% of the voltage rating, the undervoltage release will trip the circuit breaker.

The undervoltage trip is instantaneous, and the circuit breaker cannot be closed until the voltage returns to 85%.

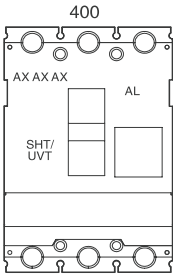
Auxiliary contact (AX): for remote "ON" and "OFF" indication, one normally contact, one normally closed contact.

Auxiliary alarm contact (AL): When the circuit breaker trips due to overload, short circuit, undervoltage, external excitation signal, etc., it controls the external photoelectric alarm system to work.

断路器 Breaker	闭合 Closure	断开 Disconnect	脱扣 Trip
辅助触头AX位置 Auxiliary contact AX position	AXc1—AXa1 —AXb1	AXc1—AXa1 —AXb1	AXc1—AXa1 —AXb1
报警AL Alarm AL	AXc1—AXa1 —AXb1	AXc1—AXa1 —AXb1	AXc1—AXa1 —AXb1



安装位置 Installation location	附件 Accessories	250	400
左装 (R相) (2P、4P) Left mounted (R phase)(2P, 4P)	辅助触头AX Auxiliary contact (AX)	1	3
	辅助报警触头AL Auxiliary alarm contact (AL)	1	—
	分励SHT、欠压UVT Shunt SHT, undervoltage UVT	1	1
右装 (T相) (4P) Right mount (T phase)(4P)	辅助触头AX Auxiliary contact (AX)	1	—
	辅助报警触头AL Auxiliary alarm contact (AL)	—	1



* 如需附件, 须在订购本体同时订购; SHT/UVT不可同时使用;

If accessories are needed, they must be ordered at the same time as ordering the body; SHT/UVT cannot be used at the same time;

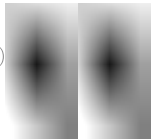
Internal Accessories

外部附件



电操MOP
Electric Operation MOP

绝缘隔板 (标配)
Insulation barrier (standard)



端子盖 (非标)
Terminal cover (non-standard)



电操机构: 可实验远程操作, 控制断路器的分、合闸。

Electric operating mechanism: It can be operated remotely to control the opening and closing of the circuit breaker.

电操接线示意图

Electrical wiring diagram

适配塑壳断路器型号 Compatible model with MCCB	电操型号 Electric operation model	控制电压 Control voltage	驱动电流 Drive current	响应时间 Response time		功耗 Power consumption	机械寿命 Mechanical life
				闭合 Closure	断开 Disconnect		
400	MOP-3	@DC24V @AC100~110V @DC110V @AC230V @DC220V	≤5A(DC) ≤2A(DC)	500 ms	350 ms	35W	20000次



直流电源: P1接正极, P2接负极
power supply: P1 is connected to the positive pole,
P2 is connected to the negative pole

UKM32 PV Series Moulded Case Circuit Breaker for PV System

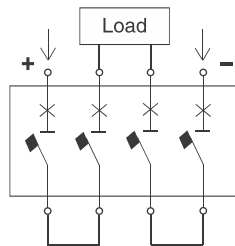
系列光伏专用直流塑壳断路器

Wiring

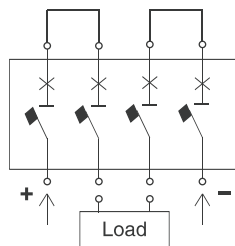
接线方式

非接地系统(4P)

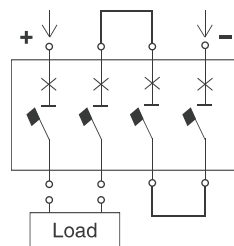
Ungrounded system(4P)



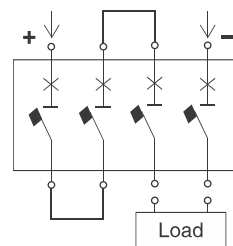
a.



b.



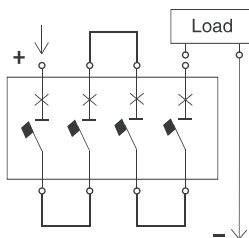
c.



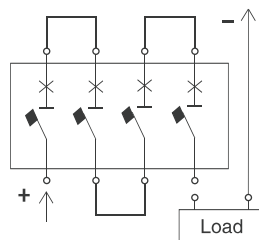
d.

接地系统(4P)

Grounding system(4P)



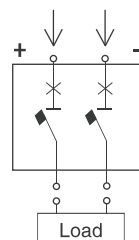
e.



f.

非接地系统(2P)

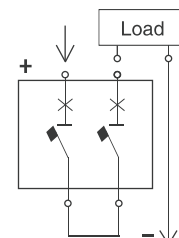
Ungrounded system(2P)



g.

接地系统(2P)

Grounding system(2P)

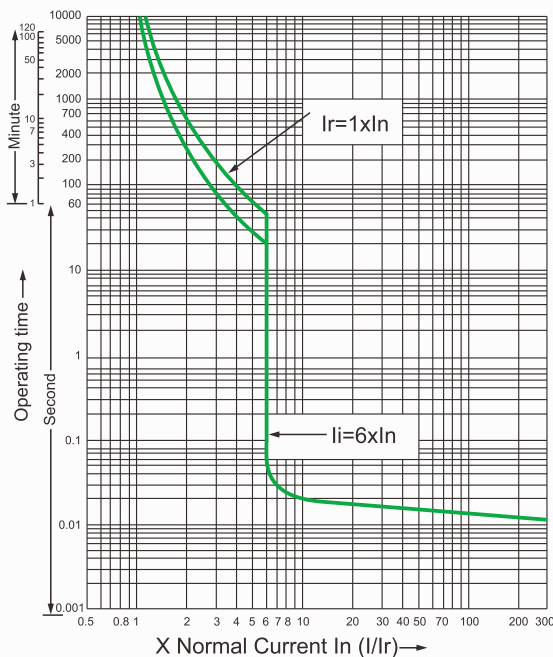


h.

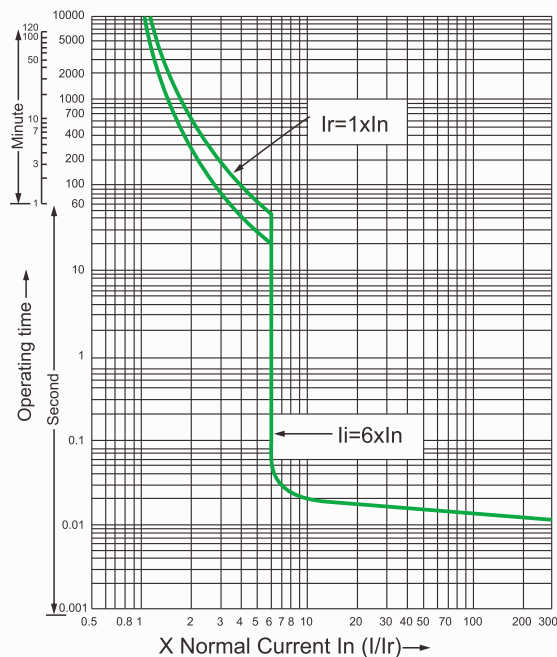
Characteristic Curve

特性曲线

250(63~250A)



400(300~400A)

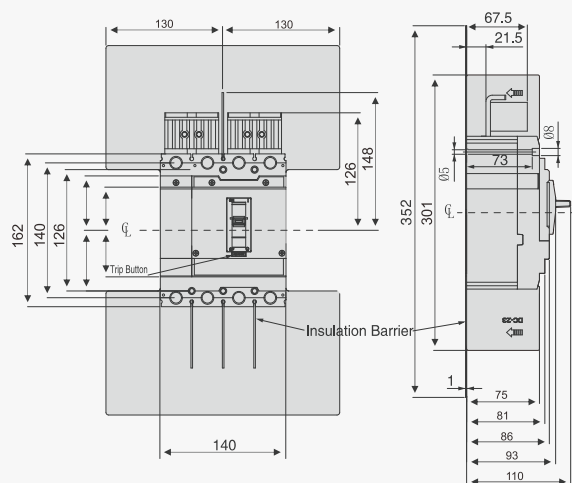


UKM32 PV Series Moulded Case Circuit Breaker for PV System

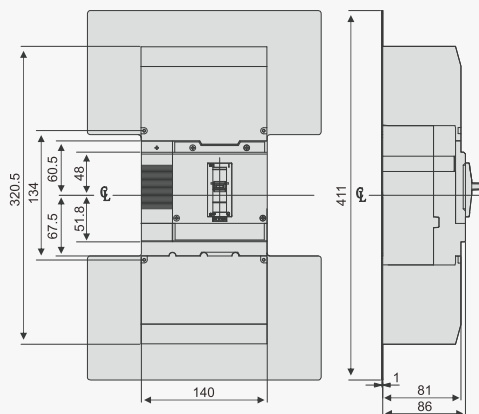
系列光伏专用直流塑壳断路器

UKM32-250PV/4P Outline & Mounting Dimension

UKM32-250PV/4P外形及安装尺寸



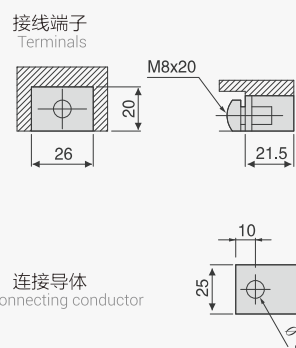
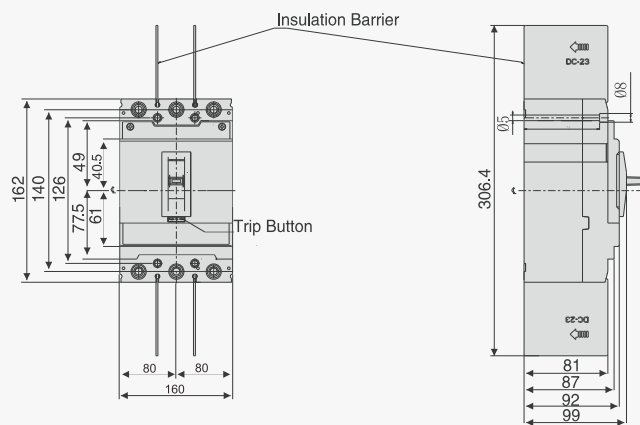
注：含短接铜排、散热片、底部隔板、绝缘隔板尺寸
Note: Including the size of short-circuit copper bars, heat sinks, bottom partitions, and insulating partitions



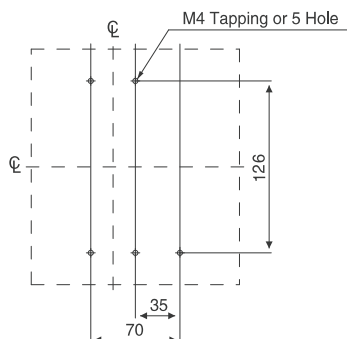
注：含增加端子盖尺寸
Note: Including increased terminal cover size

UKM32-250PV/3P Outline & Mounting Dimension

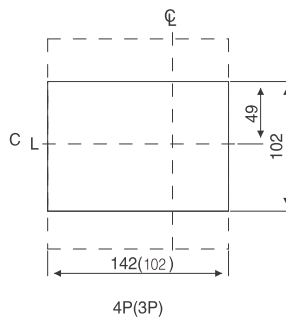
UKM32-250PV/3P外形及安装尺寸



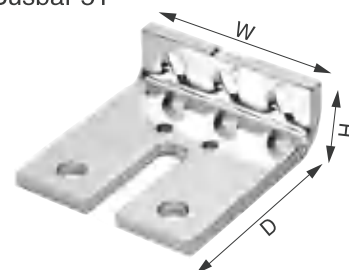
安装孔尺寸
Mounting hole size



面板开孔尺寸
Panel cutout size



Busbar 5T



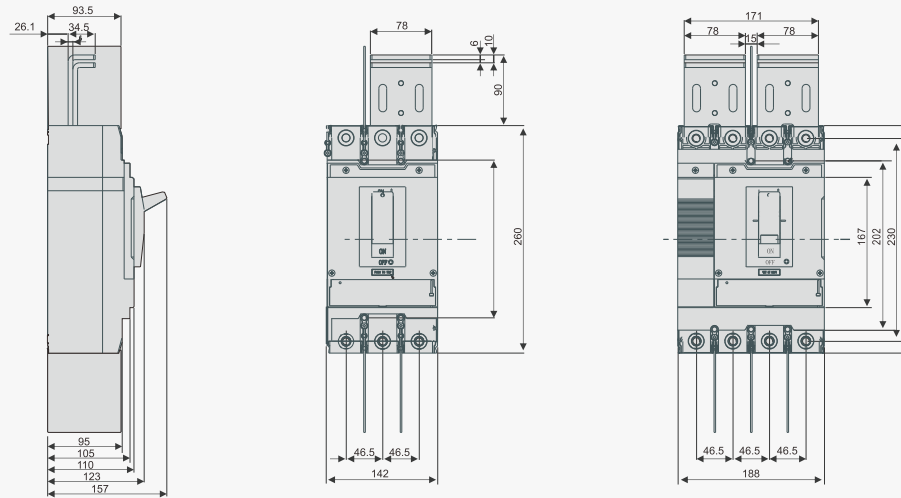
尺寸(size) : 65(W)X60(D)X22(H)

UKM32 PV Series Moulded Case Circuit Breaker for PV System

系列光伏专用直流塑壳断路器

UKM32-400PV Outline & Mounting Dimension

UKM32-400PV外形及安装尺寸

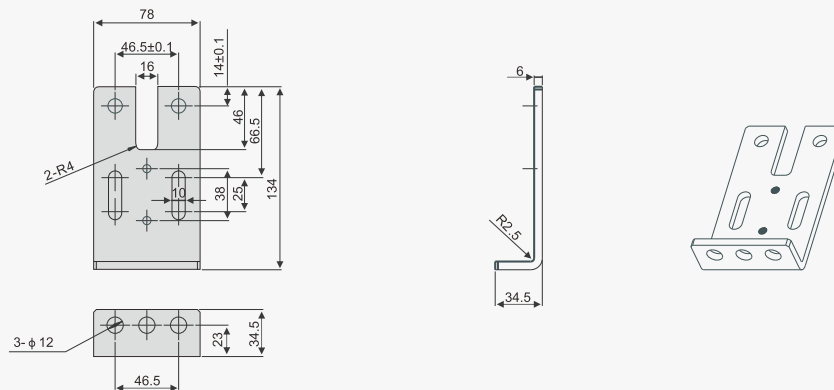


注：含短接铜排、散热片、底部隔板、绝缘隔板尺寸

Note: Including the size of short-circuit copper bars, heat sinks, bottom partitions, and insulating partitions

Lower Recommended Size Of Shorting Copper Bar

Lower短接铜排推荐尺寸



Upper Recommended Size Of Shorting Copper Bar

Upper短接铜排推荐尺寸

