ETEC

www.etek-electric.com

EV Charger Selection Guide

Always for your safety

Applicable to all kinds of new energy vehicles

Always for your safety

Company Introduction

Zhejiang ETEK Electric Technology Co., Ltd. (Abbreviation: ETEK Electric) is a professional manufacturing company dedicated to the research, development, production and sales of low-voltage electrical appliances. The company was established in 2011 and is located in Wenzhou City, Zhejiang Province. At present, the company has a modern factory building of more than 12,000 m^2. ETEK Electric focuses on the low-voltage electrical fieldwide and has advanced production management systems and production processes. Its products cover electrical safety products for household, commercial, industrial and similar facilities, such as Miniature Circuit Breakers (MCB), Residual Current Devices (RCD), Isolating Switches, Molded Case Circuit Breakers (MCCB), Distribution Board, AC Contactors, Surge Protectors (SPD), IoT Smart Circuit Breakers and Electric Vehicle Charging Facilities (EV Charger), etc.

Beginning in 2018, ETEK Electric began to invest heavily in the research and development of new energy products. After more than two years of unremitting efforts, the new sub-brand "ETEC" EV Charger products were officially put into production. protection, safety and reliability; humanized design, convenient operation; excellent applicability, simple installation, economical and practical. At the same time, combined with the continuous improvement of the international and domestic markets, especially the European Union's charging standards for new energy electric vehicles, combined with the requirements of the IEC61851 standard, the company independently developed the latest generation of controllers. The product has a DLB current balance working mode, real-time monitoring of the main circuit current, and automatic adjustment of output charging. current, effectively protecting the electricity safety of the main current circuit. The company has also researched and developed the controller system of OCPP2.0 communication protocol to provide convenient and effective technical support for the operation of charging piles.

ETEK Electric always insists on providing customers with safe and reliable electrical products. The company has obtained ISO9001 quality system and RoHS environmental management system certification, and EV Charger products have obtained CE, CB, TUV, UKCA and other certifications.

ETEK Electric is committed to solving the pressure and challenges of customers and creating value for customers. ETEK Electric has rich industry experience and a dynamic, professional and efficient team, we can provide customers with the best OEM, ODM services.

Growth, Efficiency, Innovation and Quality are ETEK's business goals. We are firmly committed to the field of low voltage electrical products which is your trusted partner.

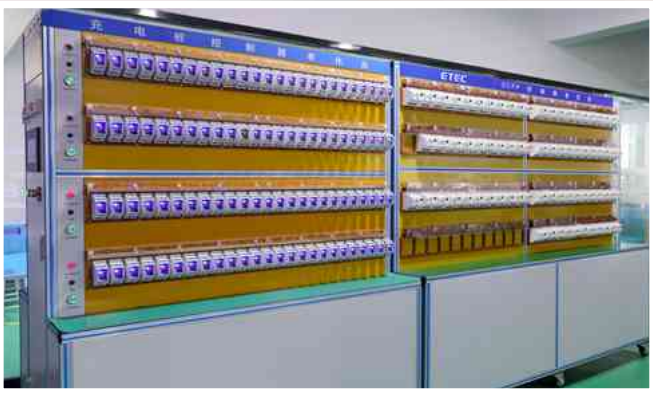
We hope our products can guarantee the power safety of global users and promote the development of green energy.


Wenzhou Factory


Wuhu Factory

ETEK®

Workshop



Certificate of EV Charger and Components

CE

CE

CE

CE

CE

CE

TUV

TUV

TUV

VDE

UKCA

Always for your safety

CONTENTS

EKEC1 Series

EV Charging Station ---------- Standard_ IEC61851-1

Technical Data

EV Charging Modes	Mode 3 Charging
Rated Voltage	AC 240V±10%, AC 420V±10%
Rated Current	Max 16A, Max 32A
Rated Frequency	50Hz
Over Voltage Category (OVC)	OVC III
Insulation Resistance	R > 1 MΩ
AC Withstand Voltage	1430V
Impulse Dielectric Withstand Voltage (1,2 µs/50 µs)(Uimp)	4kV
Protection Against Electric Shock	Class I
Electrical Life(Contactor)	100,000
Electrical Life(Interface)	100,000
Standby Power Consumption	<8W
Type of EV Connection	Case B(Socket Version)/Case C(Cable Version)
Universal Interface	T1: SAE J1772, T2: IEC/EN 62196-2, GB/T: 20234.2-2015
Pollution Degree	PD 3
IP Protection Class	IP54
Altitude During Operation (m)	<2000m
Altitude of Test Laboratory	<50m
Work Humidity	3%~95%
Operation Temperature	-25°C~55°C
Cooling	Natural Air Cooling
Mounting Method	Mounted on Walls, Poles or Equivalent positions
Normal Environmental Conditions	Indoor Use; Outdoor Use
Product Dimension(mm)	357*245*123
Installation Dimension(mm)	180*280

The AC chargers require external MCB for overload protection and short-circuit protection to be installed in upstream distribution box

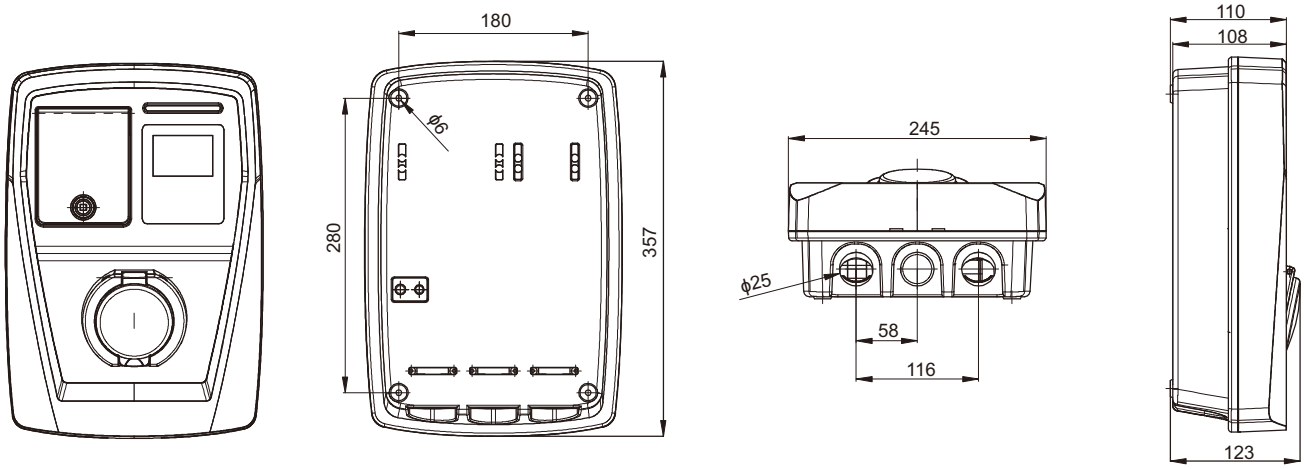
Product Selection

		●: Default Green: Simple Choice Blue: Multiple Choice	Selection Code
Model			EKEC1
Net Mode	Modbus-RTU Protocol	Support RS485 communication baud rate: 9600,8, n,1 address:1-255 default:255(boardcast address) Communication using EKEPC2 controller	M
	Ocpp1.6J Protocol	Suppport Ethernet/Wifi/4G/3G/2G Communication using EKEPC3 controller	O
	Remark	SIM card support band and area: LTE-FDD: B1/B3/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 GSM: B2/B3/B5/B8 Area: EMEA/APAC	
Case B/C	Socket Type(Case B)		S
	Cable type(Case C) default value is 5m, other lengths can be customized		C
Socket & Plug Standard	American standard Type 1(T1): SAE J1772		T1
	Europe standard Type 2(T2)T2: IEC/EN 62196-2		T2
	China standard: GB/T20234.2-2015		GBT
Power	3.6KW,AC230V±10% 50Hz, 16A, 1P+N+PE		3
	7.3KW,AC230V±10% 50Hz, 32A, 1P+N+PE		7
	11KW,AC400V±10% 50Hz, 16A, 3P+N+PE		11
	22KW,AC400V±10% 50Hz, 32A, 3P+N+PE		22

Protection	Configuration Device	Description	
Overtemperature Protection		Chip Overtemperature Protection	●
Residual Current protection	Type A RCCB+RCMU	Type A 30mA+DC6mA Residual Current Protection	A
	Type A EV RCCB		B
	Type B RCCB	Type B 30mA+DC Residual Current Protection	C
	Type A RCBO+RCMU	Type A 30mA+DC6mA Residual Current+Overload +Short Circuit Protection	D
	Type A EV RCBO		E
	RCMU	IEC62955 Standard AC30mA+DC6mA Residual Current protection（Should at least installation a Type A RCD in front of charger）	F
PEN Fault Protection	Relay	Using for UK TN-C-S system for PEN loss protection	0
RFID	RFID module with card	Support swipe RFID card stop and start charging	1
Electronic Lock	Electronic Lock	Support lock the plug when charging	2
DLB	Current Transformer	CT connected in main circuit only for single phase	3
	kWH meter(out Station)	kWH meter connected in main circuit both for single phase or three phase, other brand meter using pls checking the charger usage manual	4
LCD Dispaly	COG 2.8 Inch display screen		5
OV&UV Protection, Over Current Protection, Voltage, Current, Power for Real Time Monitoring	kWH meter（in station）	OCPP1.6J Protocol default chooice a kWH meter with MID certificate	6
Surge Protective	SPD	Only for single phase	7
Emergency Stop	Emergency stop switch		8

Note: Model selection example: EKEC1-M-S-T2-22-A-12345678

EKEC1 Overall Installation Drawing



Product Introduction

Style A

Style B

non-woven bag

Technical Data

EV Charging Modes	Mode 2 Charging
Rated Voltage	AC 240V±10%
Rated Current	Max 16A 3.5kW~ /Max 32A 7.3kW~
Rated Frequency	50Hz
Over Voltage Category (OVC)	OVC III
Insulation Resistance	R > 1 MΩ
AC Withstand Voltage	1430V
Impulse Dielectric Withstand Voltage (1,2 µs/50 µs)(Uimp)	4kV
Protection Against Electric Shock	Class I
Electrical Life(Contactor)	100,000
Electrical Life(Interface)	100,000
Standby Power Consumption	<8w
Residual Current Protection	AC30mA+DC6mA
Strength	IK10
Universal Interface	T1:SAE J1772, T2:IEC/EN 62196-2, GB/T:20234.2-2015
Pollution Degree	PD 3
IP Protection Class	IP65
Altitude During Operation (m)	<2000m
Altitude of Test Laboratory	<50m
Work Humidity	3%~95%
Operation Temperature	-25°C~55°C
Cooling	Natural Air Cooling
Mounting Method	Mounted on Walls, Poles or Equivalent Positions
Normal Environmental Conditions	Indoor Use; Outdoor Use

Function Data

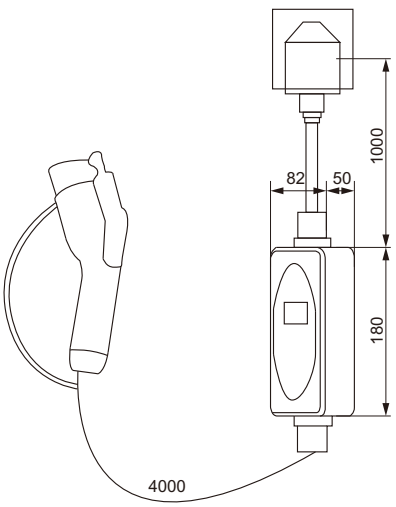
Status Indicating LED	
LCD Display	
Current Selection	3.6kW(6A/8A/10A/13A/16A) 7kW(6A/8A/10A/13A/16A/20A/25A/32A)
Charging Time Reservation	
Free PE Connection	
Over Temperature	
Over/Under Voltage Protection	
Over Current Protection	

Product Selection

		Green：Simple Choice	Selection Code
Model			EKEC2
	Design Style A		A
	Design Style B		B
Power	3.6kW,AC230V±10% 50Hz,16A,1P+N+PE		3
	7.3kW,AC230V±10% 50Hz,32A,1P+N+PE		7
Car Side Plug	American Standard Type 1(T1):SAE J1772		T1
	Europe Standard Type 2(T2)T2:IEC/EN 62196-2		T2
	China Standard :GB/T20234.2-2015		GBT
Power Side Plug	CEE	7kW only can choose CEE	CEE
	Schuko		Schuko
	GB		GB
	UK		UK
	NEMA 6-20		NEMA
	AU		AU
	NZ		NZ
	Other (should be confirm the plug before place a order)		
Bag	Bag with non woven bag B		B
	Without non-woven bag blank		

Note: Model Selection Example: EKEC2-A-3-T2-Schuko-B

EKEC2 Overall Drawing



Technical Data

EV Charging Modes	Mode 3 Charging
Rated Voltage	AC 240V ±10%,AC 420V ±10%
Rated Current	Max 16A, Max 32A
Rated Frequency	50Hz
Over Voltage Category (OVC)	OVC III
Insulation Resistance	R > 1 MΩ
AC Withstand Voltage	1430V
Impulse Dielectric Withstand Voltage (1,2 μs/50 μs)(Uimp)	4kV
Protection Against Electric Shock	Class I
Electrical Life(Contactor)	100,000
Electrical Life(Interface)	100,000
Standby Power Consumption	<8w
Type of EV Connection	Case B(Socket Version)/Case C(Cable Version)
Universal Interface	T1:SAE J1772,T2: IEC/EN 62196-2,GB/T: 20234.2-2015
Pollution Degree	PD 3
IP Protection Class	IP54
Altitude during Operation (m)	<2000m
Altitude of Test Laboratory	<50m
Work Humidity	3%~95%
Operation Temperature	-25°C~55°C
cooling	Natural Air Cooling
Mounting Method	Mounted on Walls, Poles or Equivalent Positions:
Normal Environmental Conditions	Indoor Use; Outdoor Use
Product Dimension(mm)	198*148*118
Installation Dimension(mm)	132*178
The AC charging station needs an external MCB+type A type RCCB/Type A RCBO to be installed in the upstream distribution box	

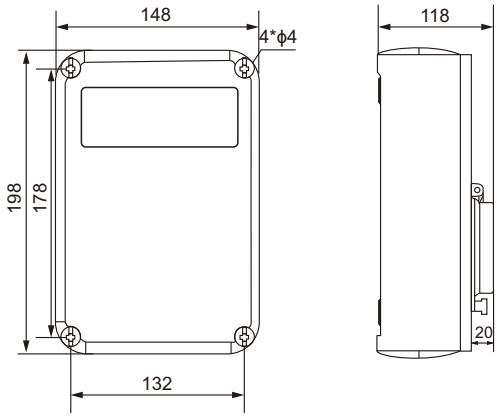
Product Selection

		●: Default Green: Simple Choice Blue: Multiple Choice	Selection Code
Model			EKEC4
Case B/C	Socket Type(Case B)		S
	Cable Type(Case C) default value is 5m, other lengths can be customized		C
Socket & Plug Standard	American Standard Type 1(T1): SAE J1772		T1
	Europe Standard Type 2(T2)T2: IEC/EN 62196-2		T2
	China Standard :GB/T20234.2-2015		GBT
Power	3.6KW, AC230V±10% 50Hz, 16A, 1P+N+PE		3
	7.3KW, AC230V±10% 50Hz, 32A, 1P+N+PE		7
	11KW, AC400V±10% 50Hz, 16A, 3P+N+PE		11
	22KW, AC400V±10% 50Hz, 32A, 3P+N+PE		22

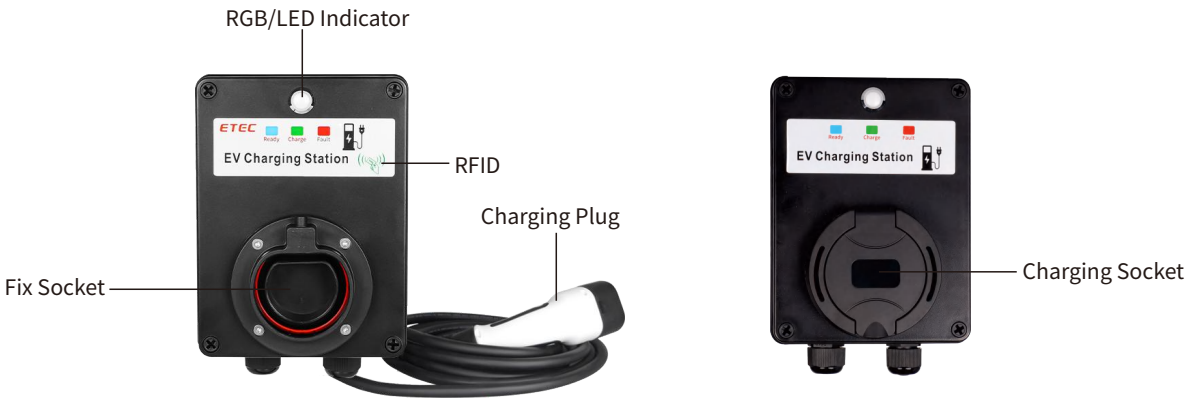
Protection	Configuration Device	Description	
Overtemperature Protection		Chip Overtemperature Protection	●
Residual Current Protection	RCMU	IEC62955 standard AC30mA+DC6mA residual current protection（Should at least installation a Type A RCD in front of charger）	●
PEN Fault Protection	Relay	Using for UK TN-C-S system for PEN loss protection	0
RFID	RFID module with card	Support swipe RFID card stop and start charging	1
DLB	Current Transformer	CT connected in main circuit only for single phase	2
	kWH meter(out Station)	kWH meter connected in main circuit both for single phase or three phase, other brand meter using pls checking the charger usage manual	3
OV&UV protection, Over current protection, voltage, current, Power for real time monitoring	kWH meter（in station）	a kWH meter with MID certificate	4
Surge Protective	SPD	Only for single phase	5
Emergency Stop	Emergency Stop Switch		6

Note: Model Selection Example: EKEC4-S-T2-22-12

EKEC4 Overall Installation Drawing



Product Introduction



Technical Data

EV Charging Modes	Mode 3 Charging
Rated Voltage	AC 240V ±10%
Rated Current	Max 32A
Power	Max:7.3kW
Rated Frequency	50Hz
Over Voltage Category (OVC)	OVC III
Insulation Resistance	R > 1 MΩ;
AC Withstand Voltage	1430V
Impulse Dielectric Withstand Voltage (1,2 µs/50 µs)(Uimp)	4kV
Protection against Electric Shock	Class I
Electrical Life(Contactor)	100,000
Electrical Life(Interface)	100,000
Standby Power Consumption	<8w
Ocpp1.6J Protocol	Suppport Ethernet/Wifi Communication
Type of EV Connection	Case C(Cable Version)
Universal Interface	T1: SAE J1772, T2: IEC/EN 62196-2, GB/T: 20234.2-2015
Pollution Degree	PD 3
IP Protection Class	IP54
Altitude during Operation (m)	<2000m
Altitude of Test Laboratory	<50m
Work Humidity	3%~95%
Operation Temperature	-25°C~55°C
cooling	Natural Air Cooling
Mounting Method	Mounted on Walls, poles or Equivalent Positions
Normal Environmental Conditions	Indoor Use; Outdoor Use
Product Dimension(mm)	241*154*84
Installation Dimension(mm)	245*130

The AC charging station needs an external MCB+type A type RCCB/Type A RCBO to be installed in the upstream distribution box

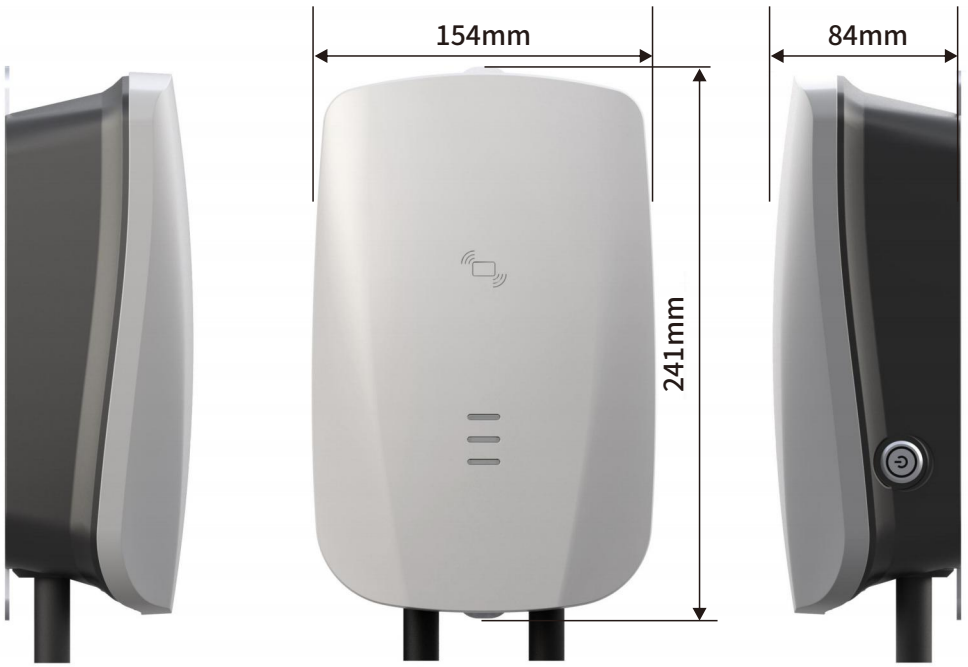
Product Selection

		●: Default Green: Simple Choice Blue: Multiple Choice	Selection Code
Model			EKEC5
Communication Mode	Home version		D
	Commercial version	Support Wifi, Ethernet networking communication Support OCPP1.6 protocol	0
Case C	Cable type(Case C) default value is 5m, other lengths can be customized		●
Socket & Plug Standard	American standard Type 1(T1): SAE J1772		T1
	Europe Standard Type 2(T2)T2: IEC/EN 62196-2		T2
	China Standard: GB/T20234.2-2015		GBT
Power	3.6KW, AC230V±10% 50Hz, 16A, 1P+N+PE		3
	7.3KW, AC230V±10% 50Hz, 32A, 1P+N+PE		7

Protection	Configuration Device	Description	
Overtemperature Protection		Chip Overtemperature Protection	●
Residual Current Protection	RCMU	IEC62955 standard AC30mA+DC6mA residual current protection（Should at least installation a Type A RCD in front of charger）	●
PEN Fault Protection	Relay	Using for UK TN-C-S system for PEN loss protection	0
RFID	RFID Module with Card	Support swipe RFID card stop and start charging	1
DLB	Current Transformer	CT connected in main circuit only for single phase	2
Emergency Stop	Emergency Stop Switch		●
Box Color		Silver Color Box	S
		Green Color Box	G
		Red Color Box	R

Note: Model Selection Example: EKEC5-D-T2-7-1-S

EKEC5 Overall Installation Drawing



Technical Data

EV Charging Modes	Mode 3 Charging
Rated Voltage	AC 240V ±10%, AC 420V ±10%
Rated Current	Max 16A, Max 32A
Rated Frequency:	50Hz
Over Voltage Category (OVC)	OVC III
Insulation Resistance	R > 1 MΩ;
AC Withstand Voltage	1430V
Impulse Dielectric Withstand Voltage (1,2 μs/50 μs)(Uimp)	4kV
Protection against Electric Shock	Class I
Electrical Life(Contactor)	100,000
Electrical Life(Interface)	100,000
Standby Power Consumption	<8w
Type of EV Connection	Case C(Cable Version)
Universal Interface	T1: SAE J1772, T2: IEC/EN 62196-2, GB/T: 20234.2-2015
Pollution Degree	PD 3
IP Protection Class.	IP54
Altitude during Operation (m)	<2000m
Altitude of Test Laboratory	<50m
Work Humidity	3%~95%
Operation Temperature	-25°C~55°C
cooling	Natural Air Cooling
Mounting Method	Mounted on Walls, Poles or Equivalent Positions
Normal Environmental Conditions	indoor Use; Outdoor Use
Product Dimension(mm)	330*225*97
Installation Dimension(mm)	272*210

The AC charging station needs an external MCB+type A type RCCB/Type A RCBO to be installed in the upstream distribution box

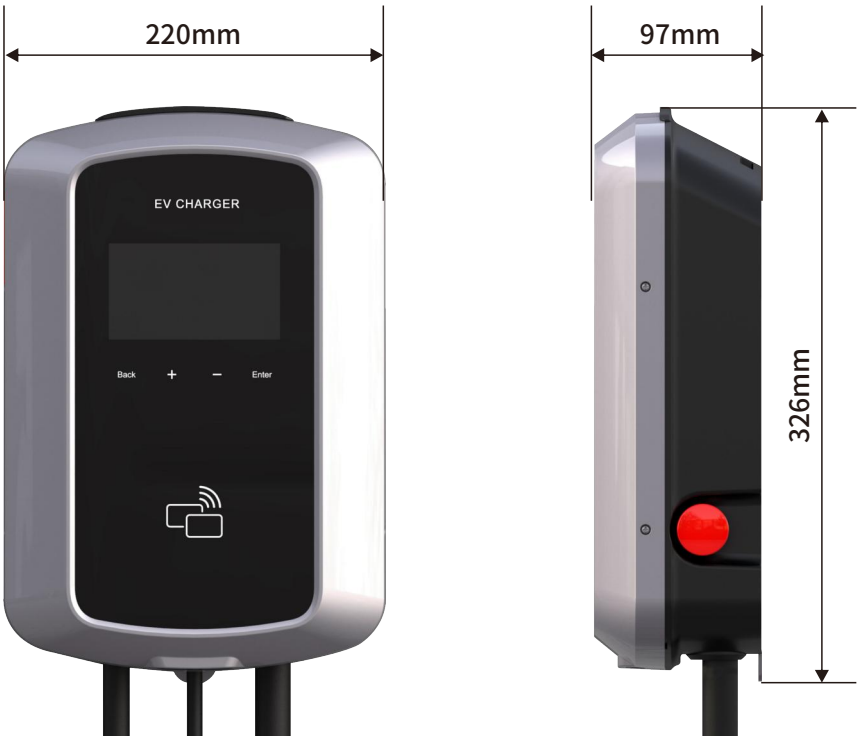
Product Selection

		●: Default Green: Simple Choice Blue: Multiple Choice	Selection Code
Model			EKEC6
Communication Mode	Home version		D
	Commercial version	Support Wifi, Ethernet ,4G networking communication Support OCPP1.6 protocol	0
	Remark	SIM card support band and area: LTE-FDD: B1/B3/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 GSM: B2/B3/B5/B8 Area: EMEA/APAC	
Case C	Cable type(Case C) default value is 5m, other lengths can be customized		●
Socket & Plug Standard	American standard Type 1(T1): SAE J1772		T1
	Europe Standard Type 2(T2)T2: IEC/EN 62196-2		T2
	China Standard: GB/T20234.2-2015		GBT
Power	3.6KW, AC230V±10% 50Hz, 16A, 1P+N+PE		3
	7.3KW, AC230V±10% 50Hz, 32A, 1P+N+PE		7
	11KW, AC400V±10% 50Hz, 16A, 3P+N+PE		11
	22KW, AC400V±10% 50Hz, 32A, 3P+N+PE		22

Protection	Configuration Device	Description	
Overtemperature Protection		Chip Overtemperature Protection	●
Residual Current Protection	RCMU	IEC62955 standard AC30mA+DC6mA residual current protection（Should at least installation a Type A RCD in front of charger）	●
RFID	RFID Module with Card	Support swipe RFID card stop and start charging	1
LCD Dispaly	COG 4.3 Inch Display Screen		2
Emergency Stop	Emergency Stop Switch		●
Box Color		Silver Color Box	S
		Silver+Red Color Box	R
		Silver+Green Color Box	G
		Silver+Blue Color Box	B

Note: Model Selection Example: EKEC6-T2-22-15-S

EKEC6 Overall Installation Drawing



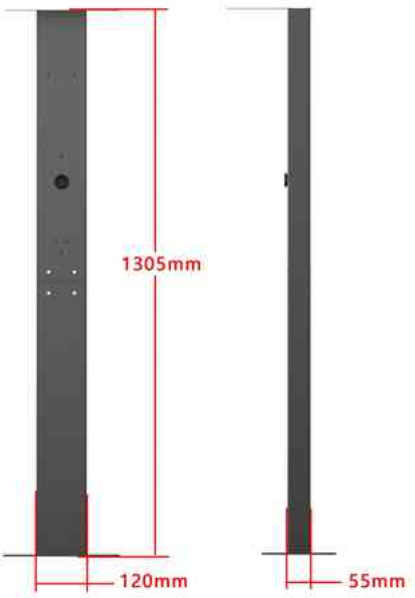
Highlight

1.Suit for all portable EV charger
2.Easy for installation

EKLZ-T EKLZ

EKLZ-T EKLZ

Overall Installation Drawing

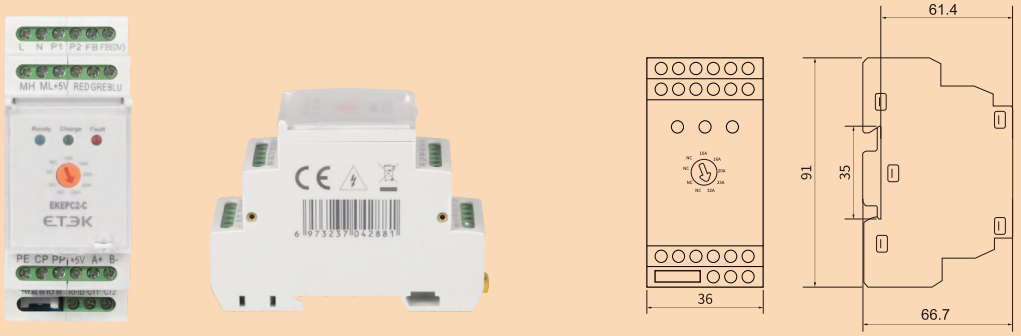


Highlight

1.Combined type, reduce volume
2.Aluminum alloy material, light wight
3.A baffle at the top protecting the sunlight and rain

EKEPC2-C/S Mode 3 EV Charge Controller

Standard_ IEC61851-1
SAEJ1772



Brief Description

EKEPC2-C/S is using for AC EV Charging Station complies with IEC61851-1 or SAEJ1772 standard and DIN EN6075 installation requirement. The output of the controller is used to connect to the AC contactor that switches on/off the load, Max current can up to 63A.
The EKEPC2 controller is Modbus-RTU protocol with RS485 communication, which can communication with controller read or write commands for charger, the controller addtional functions including: non-contact IC card connection module, residual current monitoring unit, DLB management, LCD dislay, kWH Meter, Electronic lock, external emergency stop pushbutton, etc. These function must be NOTED when ordering.

Technical Specification

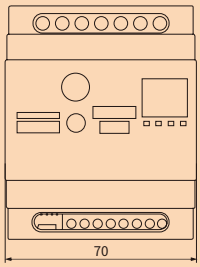
Model	EKEPC2-C/S
Mode	Mode 3 charging
Operating Voltage	AC230V±10%, 50Hz
Output the PWM Signal	Max: 32A,10A/16A/20A/25A/32A adjustable Max: 16A,6A/8A/13A/16A Max: 63A(customized)
Basic Function	Overtemperature protection
Additional Function	1:RCMU DC6mA leakage monitoring with a auxiliary device of RCMU 2:Swipe RFID card/NFC start or stop charging function with a auxiliary device of RFID module and cards 3:LCD display function with a auxiliary device of LCD screen 4:Elecronic lock function with a device electronic lock 5:DLB function with a auxiliary device of CT or kWH meter 6:Overvolatge & undervoltage protection 7:Over current protection 8:Voltage, current, power for real time monitoring with a auxiliary of kWH meter 9:Emergency stop function with a auxiliary device of pushbutton switch
Protocol(communication)	Modbus-RTU protocol and RS485 communication
Output Auxiliary Voltage	DC12V/100mA \ DC5V/100mA
Ambient Temperature	-40°C ~ +50°C
Humidity	<=85%
IP Degree	IP22
Cooling Method	Natural cooling
Installation Method	Din-Rail mounted

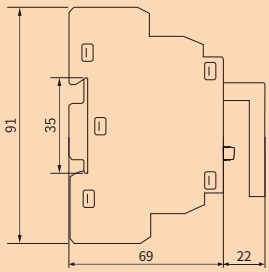
EKEPC3 Mode 3 EV Charge Controller

Standard_ IEC61851-1
SAEJ1772

Antenna-4G

Antenna-WiFi





Brief Description

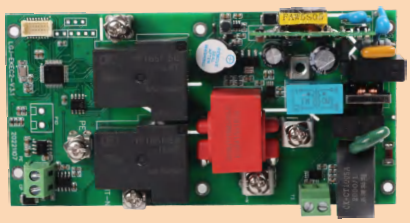
EKEPC3 is using for AC EV Charging Station complies with IEC61851-1 or SAEJ1772 standard and DIN EN6075 installation requirement.
The output of the relay is used to connect to the AC contactor that switches on/off the load, max current can up to 63A.
The EKEPC3 controller is OCPP1.6J protocol with WIFI, 2G-4G, ethernet net communication, which can communication with charger with a OCPP1.6J protocol backend, also we can support a RS485 communication for kWH meter, the controller addtional functions including : non-contact IC card connection module, residual current monitoring unit, DLB management, LCD dislay, kWM Meter, electronic lock, external emergency stop pushbutton, etc. These function must be NOTED when ordering.

Technical Specification

Model	EKEPC3-C/S
Mode	Mode 3 charging
Operating Voltage	AC230V±10%, 50Hz
Output the PWM Signal	Max:32A, 1-32A adjustable
Basic Function	Overtemperature protection
Additional Function	1:RCMU DC6mA leakage monitoring with a auxiliary device of RCMU 2:Swipe RFID card/NFC start or stop charging function with a auxiliary device of RFID module and cards 3:LCD display function with a auxiliary device of LCD screen 4:Elecronic lock function with a device electronic lock 5:DLB function with a auxiliary device of CT or kWH meter 6:Overvolatge & undervoltage protection 7:Over current protection 8:Voltage,current, power for real time monitoring with a auxiliary of kWH meter 9:Emergency stop function with a auxiliary device of pushbutton switch
Protocol(communication)	OCPP1.6J protocol, Wifi, ethernet communication Modbus-RTU protocol and RS485 communication only for kWH meter
Output Auxiliary Voltage	DC12V/100mA \ DC5V/100mA
Ambient Temperature	-40°C ~ +50°C
Humidity	<=85%
IP Degree	IP22
Cooling Method	Natural cooling
Installation Method	Din-Rail mounted

EKEPCB1 Model 2 EV Charger PCB Board

Standard_ IEC61851-1
SAEJ1772



Brief Description

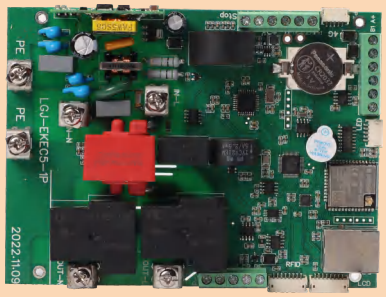
EKEPCB1 is using for mode 2 portable EV charger complies with IEC61851-1 or SAEJ1772 standard, input voltage is 230V~, max current up to 32A, charging current can selection, it has functional of status indicating, LCD display, charging time reservation, free PE connection, protection of over temperature, over/under voltage, over current and residual current current protection AC30mA+DC6mA.

Technical Specification

Model	EKEPCB1-C
Mode	Mode 2 charging
Operating Voltage	AC230V±10%,50Hz
Output the PWM Signal	Max: 16A,6A/8A/10A/13A/16A adjustable Max: 32A,6A/8A/10A/13A/16A/20A/25A/32A adjustable
Basic Function	1:IEC62955 standard AC 30mA and DC6mA leakage monitoring 2:Overtemperature protection 3:Overvolatge & undervoltage protection 4:Over current protection 5:Voltage,current,Power for real time monitoring
Additional Function	LCD display function with a auxiliary device of LCD screen
Output Auxiliary Voltage	DC12V/100mA \ DC5V/100mA
Ambient Temperature	-40°C ~ +50°C
Humidity	<=85%
Cooling Method	Natural cooling
Installation Method	PCB mounted

EKEPCB2 Model 3 EV Charger PCB Board

Standard_ IEC61851-1
SAEJ1772



Brief Description

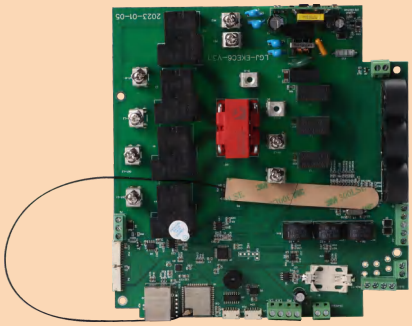
EKEPCB2 is using for AC EV Charging Station complies with IEC61851-1 or SAEJ1772 standard and PCB installation requirement.
The output of the controller adopts relay switching load, the rated voltage is 230V~, and the rated current can be adjusted between 1A and 32A.
The EKEPCB2 controller is OCPP1.6J protocol with WIFI, Ethernet net communication, which can communicate with controller with a OCPP1.6J protocol backend, also we can support a RS485 communication for kWH meter.
The controller addtional functions including :non-contact IC card connection module, residual current monitoring unit, DLB management, LCD dislay, kWH Meter, Electronic lock, external emergency stop pushbutton, etc. These function must be NOTED when ordering.

Technical Specification

Model	EKEPCB2-C/S
Mode	Mode 3 charging
Operating Voltage	AC230V±10%, 50Hz
Output the PWM Signal	Max: 32A, 1-32A adjustable
Basic Function	1:RCMU DC6mA leakage monitoring 2:Overtemperature protection 3:Overvolatge & undervoltage protection 4:Over current protection 5:Voltage, current, power for real time monitoring
Additional Function	1:Swipe RFID card/NFC start or stop charging function with a auxiliary device of RFID module and cards 2:LCD display function with a auxiliary device of LCD screen 3:Elecronic lock function with a device electronic lock 4:DLB function with a auxiliary device of CT or kWH meter 5:Emergency stop function with a auxiliary device of pushbutton switch
Protocol(communication)	OCPP1.6J protocol, Wifi, Ethernet communication Modbus-RTU protocol and RS485 communication only for kWH meter
Output Auxiliary Voltage	DC12V/100mA \ DC5V/100mA
Ambient Temperature	-40°C ~ +50°C
Humidity	<=85%
Cooling Method	Natural cooling
Installation Method	PCB mounted

EKEPCB3 Model 3 EV Charger PCB Board

Standard_ IEC61851-1
SAEJ1772



Brief Description

EKEPCB3 is using for AC EV Charging Station complies with IEC61851-1 or SAEJ1772 standard and PCB installation requirement.
The output the controller is using the relay switches on/off the load, the rated voltage is 230V~, and the rated current can be adjusted from 1A to 32A.
The EKEPCB3 controller is OCPP1.6J protocol with WIFI, Ethernet net communication, which can communicate with controller with a OCPP1.6J protocol backend, also we can support a RS485 communication for kWH meter.
The controller addtional functions including: non-contact IC card connection module, residual current monitoring unit, DLB management, LCD dislay, kWH Meter, Electronic lock, external emergency stop pushbutton, etc. These function must be NOTED when ordering.

Technical Specification

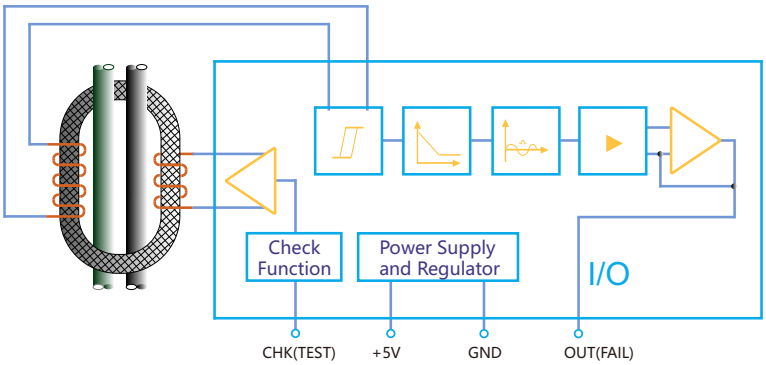
Model	EKEPCB3-C/S
Mode	Mode 3 charging
Operating Voltage	AC400V±10%, 50Hz
Output the PWM Signal	Max: 32A, 1-32A adjustable
Basic Function	1:RCMU DC6mA leakage monitoring 2:Overtemperature protection 3:Overvolatge & undervoltage protection 4:Over current protection 5:Voltage, current, power for real time monitoring
Additional Function	1:Swipe RFID card/NFC start or stop charging function with a auxiliary device of RFID module and cards 2:LCD display function with a auxiliary device of LCD screen 3:Elecronic lock function with a device electronic lock 4:DLB function with a auxiliary device of CT or kWH meter 5:Emergency stop function with a auxiliary device of pushbutton switch
Protocol(communication)	OCPP1.6J protocol, Wifi, Ethernet communication Modbus-RTU protocol and RS485 communication only for kWH meter
Output Auxiliary Voltage	DC12V/100mA \ DC5V/100mA
Ambient Temperature	-40°C ~ +50°C
Humidity	<=85%
Cooling Method	Natural cooling
Installation Method	PCB mounted

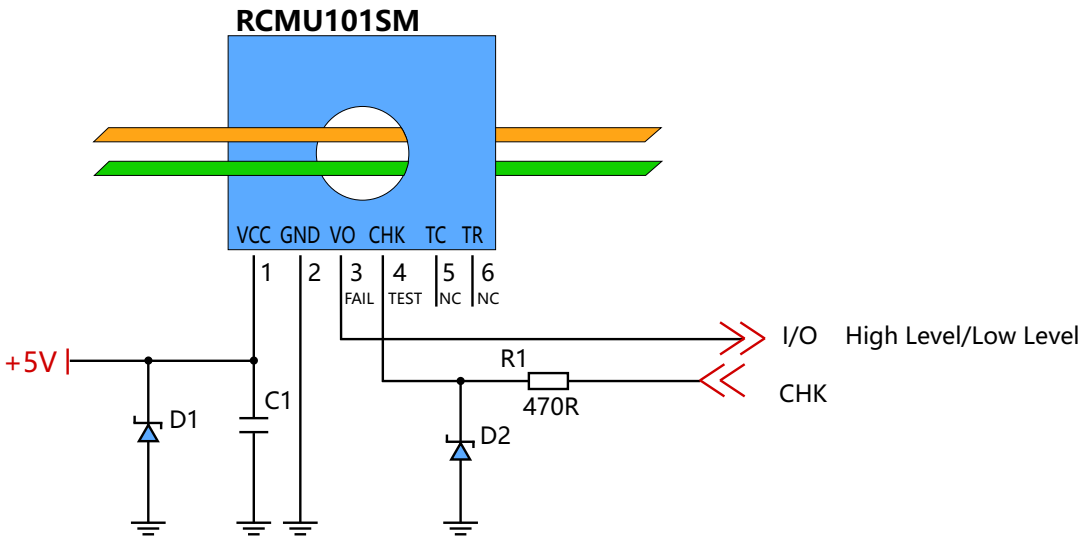
RCMU Function

RCMU Function Brief Outline

When the charging station is working, if there is a DC leakage current signal, the RCMU will immediately output a fault signal and cut off the output power within 300ms, ensuring the safety and reliability of personal and property. If the fault is eliminated, the charging station will automatically restart charging according to the program within 3S. Before charging, the RCMU module of the device will automatically carry out the accuracy and detection of the DC leakage current to ensure the safe and reliable operation of the device.

RCMU Use



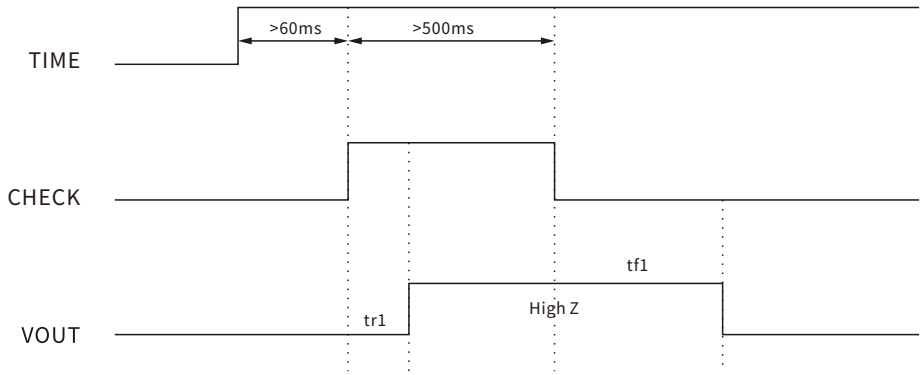


RCMU Function

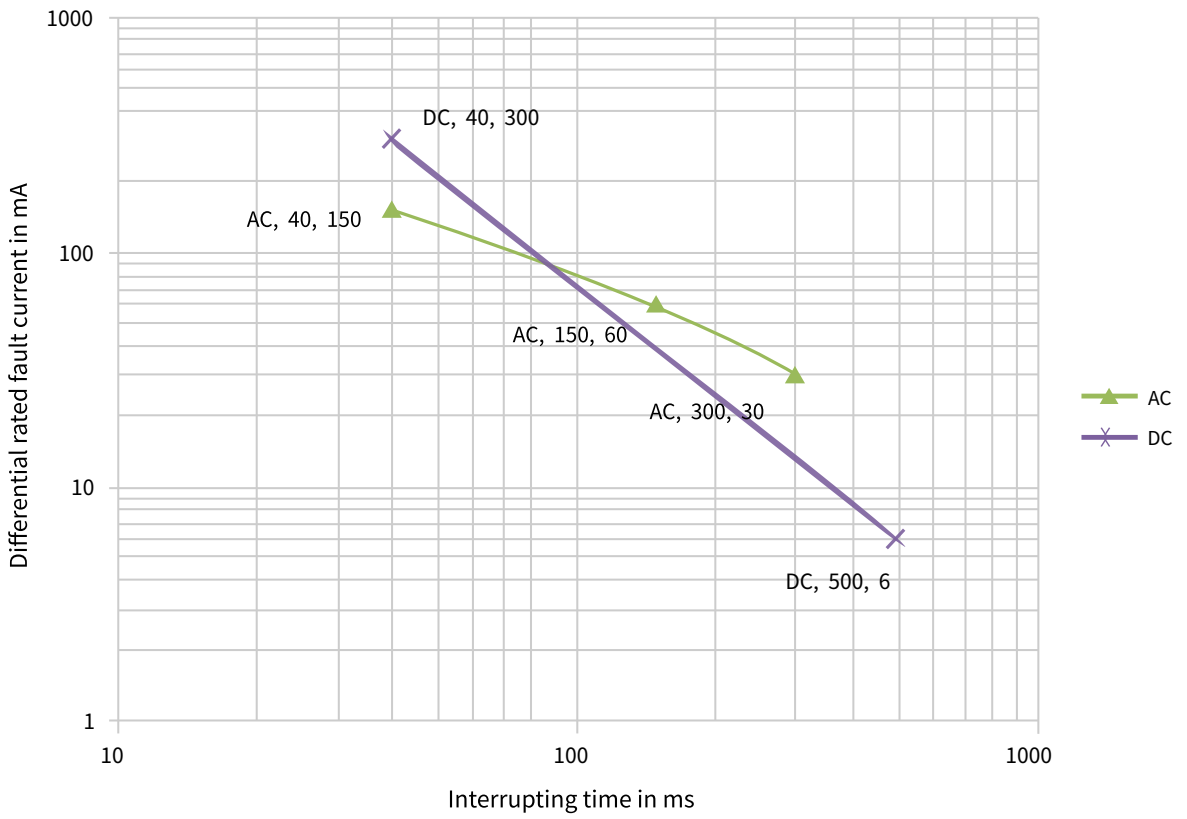
RCMU Self-Check Function

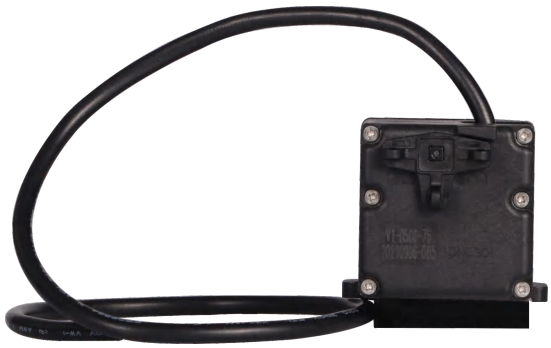
When the main circuit is not working, the leakage current is 0, and Vout is at low level (0V) at this time .
(a)When the CHK PIN pin is set to high level (3.3-5V), Vout rises from low level to high voltage (Vcc) at this time.
(b) When the CHK PIN pin is set to low level (0.2v), the Vout generated at this time drops to low level (0V);
When the above (a) and (b) are completed, it is judged that the residual current sensor is functioning normally.
When the readme function is not working, you can add a 0 ohm resistor to the CHK PIN pin and ground it.

Self test sequence diagram



Interrupt time according to IEC62752 & IEC 62955





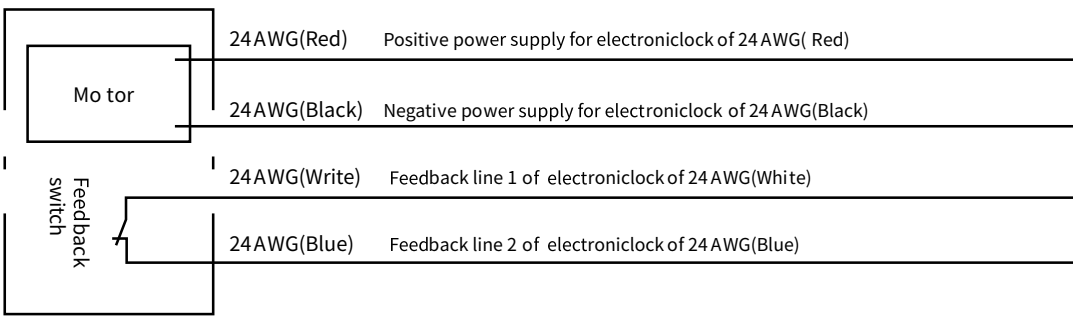
Impluse Electronic Lock Technical Parameters

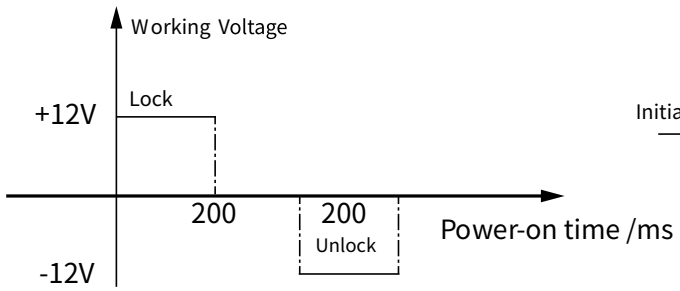
Working Power Supply	DC12V/500mA
Max. Working Current	⩽500mA
No-Load Current	<50mA
Locking Mechanism Retention Force	<80N
Locking Mechanism Breaking Force	⩾200N
Angle of Rotation	⩽90°
Response Time	<50ms
Maximum Power-on Time	3.5s
Complete Lock Time	<300ms
Ambient Temperature	-40°C-+80°C
Electrical Life	⩾30,000 cycles
Insulation Resistance	500MΩ
Power-on Action Time	0.2s<t<1.0s
Pulse Duty Factor	35%
Protection Degree	IP55
Manual Unlocking Pull	⩽5N
Manual Unlock Life	⩾30,000 cycles

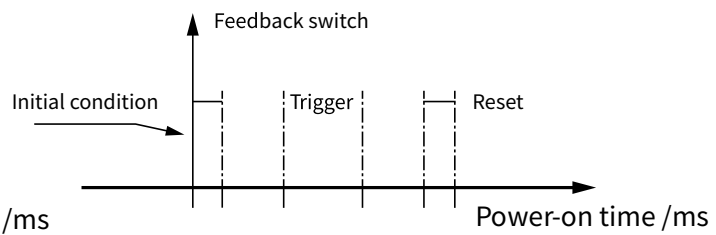
Function Description

Red Line(+12V)	Black Line(0V)	Status	Feedback Signal
+12V	0V	Lock Condition	Switch Connected
0V	+12V	Unlock Condition	Switch Disconnected

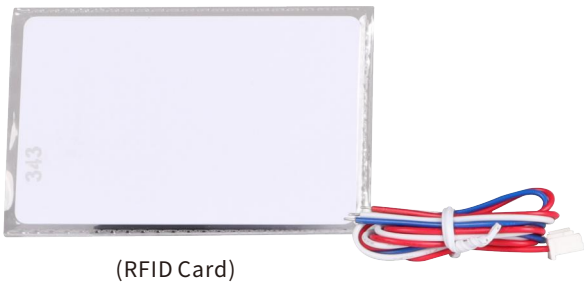
Electrical Wiring Principle



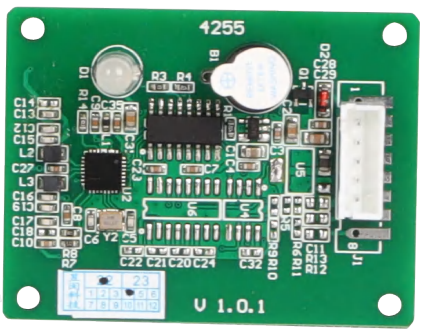




RFID Function



(RFID Card)



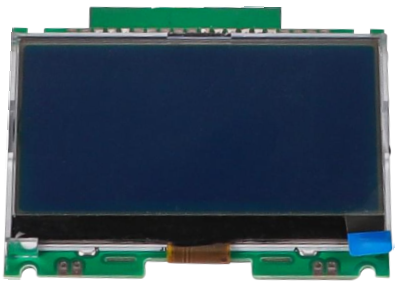
(RFID Module)

Function Brief Introduction

The charging station can be configured with contactless IC card swiping function, and charging can only be carried out through authorized IC card. If the IC card is lost, the internal dip switch can be used to set the IC card losing module. There are 2 IC cards which are authorized by the factory, unless specify that we can provide more IC cards.

LCD Display Function

The charging station can provide an analog input function, the input analog is AC0-1.0V, which is used to display the current working current. When the detected working current is greater than the set current value, the charging station will reduce the charging current to the set current value.
Thereby ensuring the safe and reliable operation of the charging station.



Display Content

EKEC Series Charging Station

Operation voltage: 220V Set current: 32.0A Output Current: 32.0A
Electricity consumption: 15.8kWH
Charging time: 1 h 01 min 01 s
Operation status:Charging
Device status:Normal
Communication status : Connecting

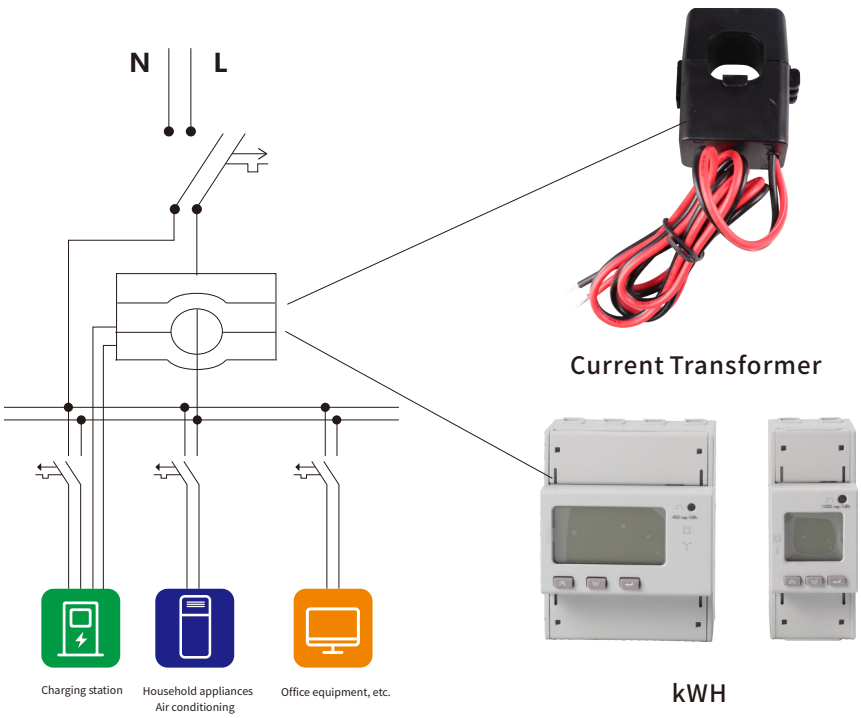
The charging station with a LCD to display which can show the working status and charging related data, it is convenient and intuitive.

DLB Function

Function Brief Introduction

This function is the automatic distribution of charging current, through an external current transformer (the output current is AC5A), the longest wiring length of the transformer is 100mm (2.5 square).
During the charging process, the charging station will monitor the online charging current in real time and make corresponding adjustments.
When it is detected that the current of the main circuit is greater than the set current, the charging station will reduce the charging current until the charging is stopped.
When it is detected that the current of the main circuit is less than the set current, the charging station will continue to increase the charging current until 32A or 63A.
In this state, the maximum charging current of the charging station is 32A and 63A.
While the charging current is uncertain, the current setting switch of the charging station becomes the transformation ratio setting switch of the current transformer. The transformation ratio of the external current transformer is set by software or factory setting.
The factory default current transformer transformation ratio is 100A/5A.

DLB Function Application Legend



Current Transformer Access Function

The charging station can provide an analog input function, the input analog is AC0-50A, which is used to display the current working current. When the detected working current is greater than the set current value, the charging station will reduce the charging current to the set current value.
Thereby ensuring the safe and reliable operation of the charging station.

EKEP Series AC Charging Station Plug

Standard:IEC62196-1、IEC62196-2

Naming Rule

EK EP□ - □ □ □ □

- Company Code
- EP charging plug EP1: Single phase EP3: Three Phase
- T1: American standard T2: European standard GBT: China Standard
- D: Double plug Blank: Single plug
- Rated Current(A): 16A、32A
- Cable Length Blank: 5meter
  other length: pls confirm with sales person before place an order

Brief Description

Humanized appearance design, beautiful and fashionable, in line with modern aesthetics and ergonomic design concept, easy to use.
The products comply with IEC62196-1, IEC62196-2 European standards and SAEJ1772-2010 American standards.
Protection degree: IP65

Product Selection

Model	Specification	Cable
EKEP1-T2	Single phase：16A	3*2.5mm²+2*0.5mm²
	Single phase：32A	3*6mm²+2*0.5mm²
EKEP3-T2	Three phase：16A	5*2.5mm²+2*0.5mm²
	Three phase：32A	5*6mm²+2*0.5mm²

Main Parameter

Electrical Performance

Operation Voltage	230V±10% 50Hz/400V±10%50Hz
Operation Current	16A、32A
Continuously Using Time	Continuously working 24h
Conductive Terminal Temperature Rise	≤50K
Insulation Resistance	≥500MΩ、DC500V
Withstand Voltage	2500V/min
Contact Resistance	≤0.3Ω

Mechanical Features

Mechainical Life	5,0000 times or more
Insertion / Pulling Force During Connection	45N~80N
Withstanding Impact	Tolerable to 2 ton car rolling or 1m height drop without damage

Major Material

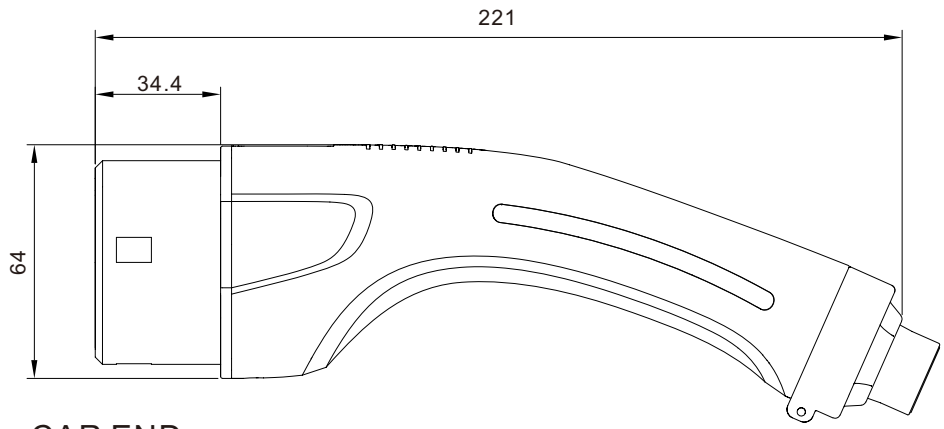
Conductor Material	Copper alloy + silver plating
Enclosure Material	Thermoplastic flame retardant plastic, flame retardant grade UL94V-0

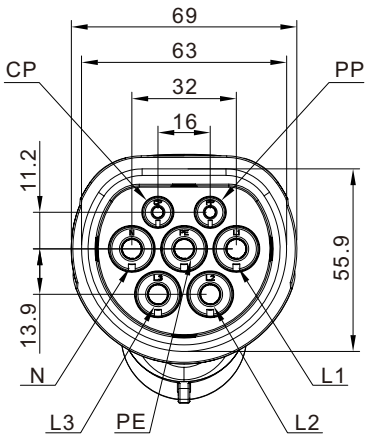
Ambient Condition

Ambient Temperature	-40°C ~ +50°C
Humidity	<85%

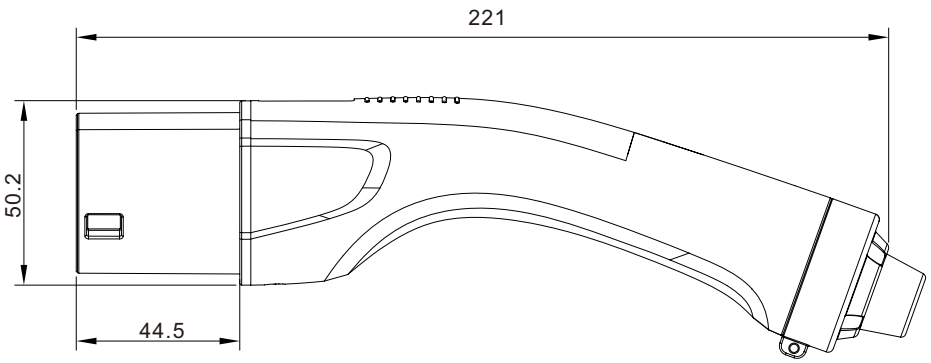
Product Dimension

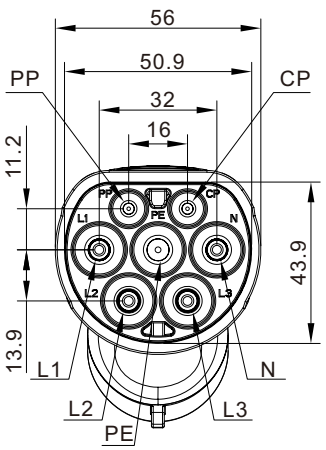
Unit: mm





CAR END

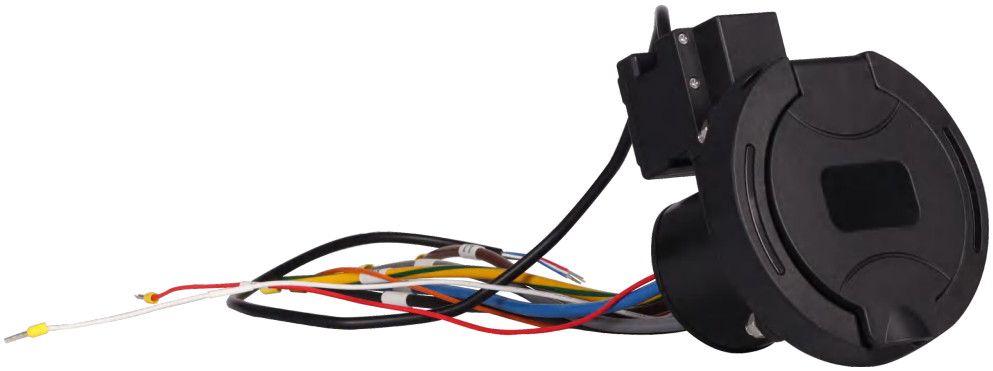


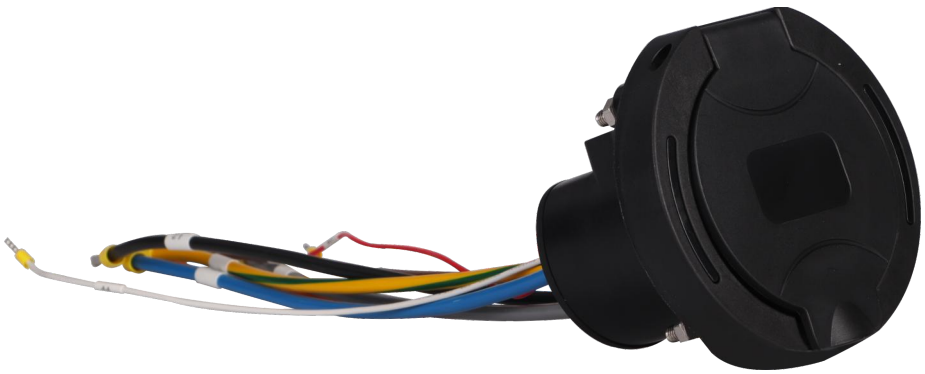


STATION END

EKES Series AC Charging Station Socket

Standard: IEC62196-2





Naming Rules

EK ESL □ - □ □

- T1 American standard、T2 European standard
- Rated current(A): 16A、32A
- 1P: Single phase 3P: Three phase
- ESL: with lock ES: without lock(station end)
- Code

Brief Description

Humanized appearance design, beautiful and fashionable, in line with modern aesthetic and economical design concept, easy to use.
The product complies with IEC62196-2 and SAE J1772 standards.
Protection degree: IP65
Mainly used for charging mode 3 of IEC61851 standard.

EKES Series AC Charging Station Socket

Standard: IEC62196-2

Product Selection

Model	Specification	Cable
EKES-1-16-T2	Single phase：16A/230V	3*2.5mm²+2*0.5mm²
EKES-1-32-T2	Single phase：32A/230V	3*6mm²+2*0.5mm²
EKESL-1-16-T2	Single phase：16A/230V	3*2.5mm²+2*0.5mm²
EKESL-1-32-T2	Single phase：32A/230V	3*6mm²+2*0.5mm²
EKES-3-16-T2	Three phases：16A/400V	5*2.5mm²+2*0.5mm²
EKES-3-32-T2	Three phases：32A/400V	5*6mm²+2*0.5mm²
EKESL-3-16-T2	Three phases：16A/400V	5*2.5mm²+2*0.5mm²
EKESL-3-32-T2	Three phases：32A/400V	5*6mm²+2*0.5mm²

Main Parameter

Electrical Performance

Rated Voltage	230V±10% 50Hz/400V±10% 50Hz
Rated Current	16A、32A
Usage Time	Continuously working 24h
Conductive Terminal Temperature Rise	≤50K
Insulation Resistance	≥500MΩ、DC500V
Withstand Voltage	2500V/min
Contact Resistance	≤0.3Ω

Mechanical Performance

Mechainical Life	50,000 times or more
Insertion / Pulling Force During Connection	<100N(P)，<75N(V)
Withstanding Impact	Tolerable to 2 ton car rolling or 1m height drop without damage

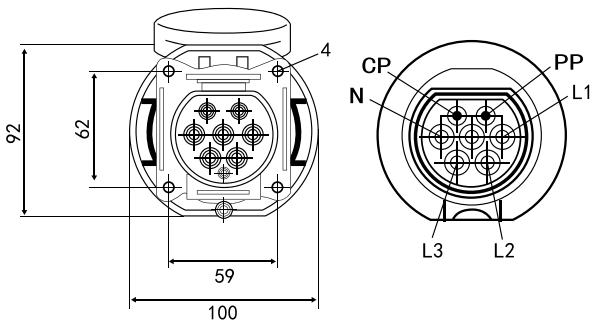
Major Material

Conductor Material	Copper alloy+ Ag plated
Enclosure Material	Thermoplastic flame retardant material, flame retardant grade UL94V-0

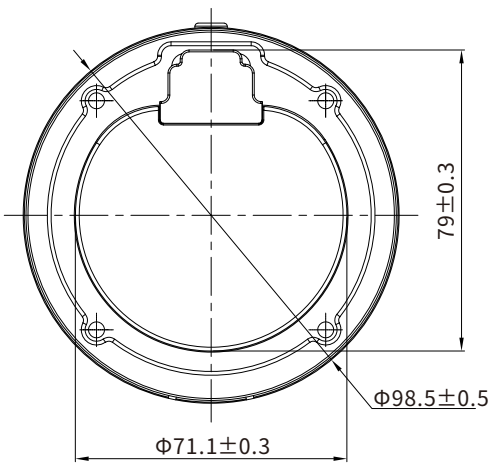
Ambient Condition

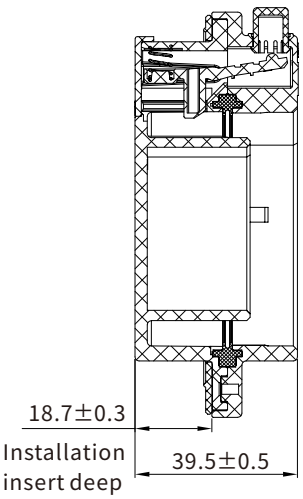
Ambient Temperature	-40℃ ~ +50℃
Humidity	<85%

Product Dimension

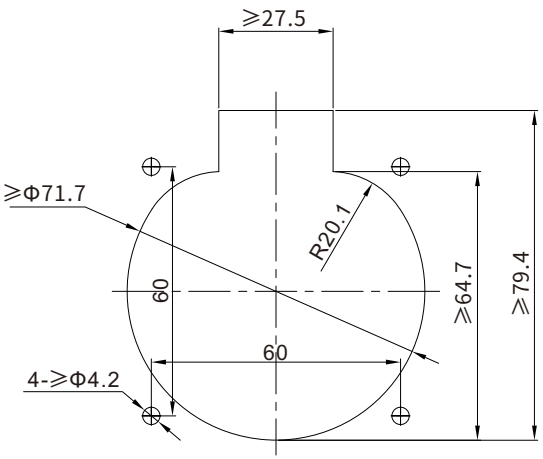


Appearance and Installation Dimension





Hole dimension for Installation:



Unit: mm

EKL1-63B 10kA Type B EV RCCB

Residual Current Circuit Breaker ---------- Standard_ IEC61008-1
IEC62423

Technical Data

Electrical Features	Mode	Electromagnetic
	Type(wave form of the earth leakage sensed)	B
	Rated current In	25,40,63A
	Poles	2P(1P+N), 4P(3P+N)
	Rated voltage Ue	2P 240V~, 4P 415V~
	Insulation voltage Ui	500V
	Rated frequency	50/60Hz
	Rated residual operation current(I△n)	30mA
	Rated residual making and breaking capacity (I△m)	500A(In≤40A), 10In(In>40A)
	Short-circuit current Inc= I△c	10,000A
	SCPD fuse	10000
	Break time under I△n	≤0.1s
	Rated impulse withstand voltage(1.5/50) Uimp	4000V
	Dielectric test voltage at ind.Freq. for 1min	2.5kV
	Electrical life	2,000 Cycles
	Mechanical life	4,000 Cycles
Installation	Contact position indicator	Yes
	Protection degree	IP20
	Ambient temperature(with daily average≤35°C)	-25°C~+55℃
	Storage temperature	-25°C~+70°C
	Terminal connection type	Cable/Pin-type busbar/U-type busbar
	Terminal size top/bottom for cable	25mm² 18-3AWG
	Terminal size top/bottom for busbar	25mm² 18-3AWG
	Tightening torque	2.5Nm 22In-lbs
	Mounting	On DIN rail EN60715(35mm) by means of fast clip device
	Connection	Power supply in both directions

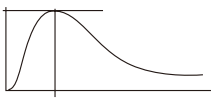
EKL1-63B 10kA Type B EV RCCB

Residual Current Circuit Breaker

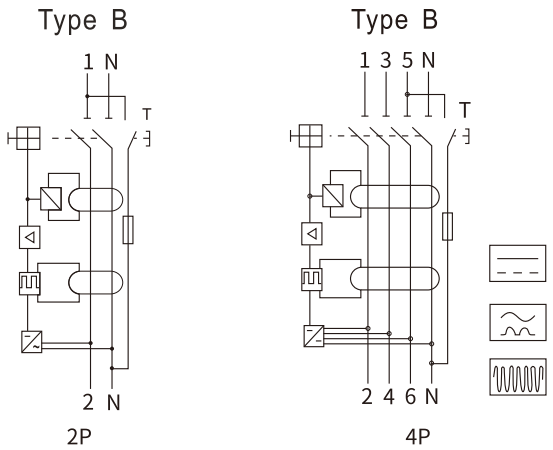
Standard_ IEC61008-1
IEC62423

Tripping Current Range

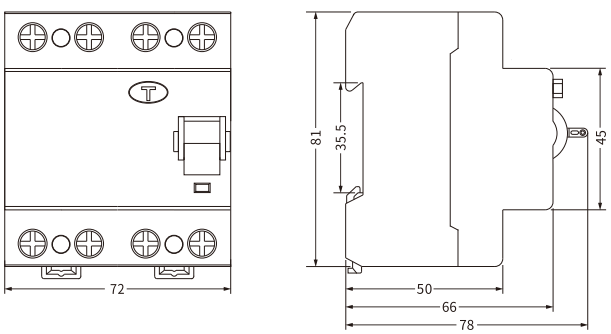
Type	Tripping current I△/A		
AC	0.5I△n<I△<I△n		
A	Lagging Angle	I△n>0.01A	I△n≤0.01A
	0°	0.35I△n≤I△≤1.4I△n	0.35I△n≤I△≤2I△n
	90°	0.25I△n≤I△≤1.4I△n	0.25I△n≤I△≤2I△n
	135°	0.11I△n≤I△≤1.4I△n	0.11I△n≤I△≤2I△n

Alternative Current Sensitive	Pulsating direct current sensitive	Surge current proof
B class Tripping is ensured for sinusoidal AC residual currents pulsed DC residual currents, alternating residual sinusoidal currents up to 1000Hz, pulsating direct residual currents and for smooth direct residual currents, whether applied suddenly or increasing slowly.	 They react to AC and pulsating DC fault current which reach 0 or almost 0 within one time period of the mains frequency.	 RCCB' s surge capacity. Not tripping at standardized 8/20 us surge-current waves acc.to VDE 0432 Part 2 with surge current values of up to 250A.

Circuit Diagram



Overall and Installation Dimension(mm)



EKL6-100B 10kA Type B EV RCCB

Residual Current Circuit Breaker ---------- Standard_ IEC61008-1
IEC62423

Technical Data

Electrical Features	Mode	Electromagnetic
	Type(wave form of the earth leakage sensed)	B
	Rated current In	25,40,63,80,100A
	Poles	2P,4P
	Rated voltage Ue	2P 240V~, 4P 415V~
	Insulation voltage Ui	500V
	Rated frequency	50/60Hz
	Rated residual operation current(I△n)	30mA
	Rated residual making and breaking capacity (I△m)	500A(In≤40A), 10In(In>40A)
	Short-circuit current Inc= I△c	10,000A
	SCPD fuse	10000
	Break time under I△n	≤0.1s
	Rated impulse withstand voltage(1.5/50) Uimp	4000V
	Dielectric test voltage at ind.Freq. for 1min	2.5kV
	Electrical life	2,000 Cycles
	Mechanical life	4,000 Cycles

Installation	Contact position indicator	Yes
	Protection degree	IP20
	Ambient temperature(with daily average≤35°C)	-25°C~+55℃
	Storage temperature	-25°C~+70°C
	Terminal connection type	Cable/Pin-type busbar/U-type busbar
	Terminal size top/bottom for cable	35mm² 18-3AWG
	Terminal size top/bottom for busbar	35mm² 18-3AWG
	Tightening torque	2.5Nm 22In-lbs
	Mounting	On DIN rail EN60715(35mm) by means of fast clip device
	Connection	Power supply in both directions

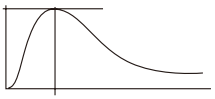
EKL6-100B 10kA Type B EV RCCB

Residual Current Circuit Breaker

Standard_ IEC61008-1
IEC62423

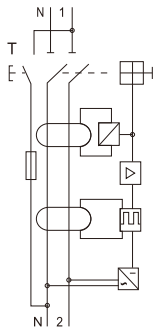
Tripping Current Range

Lagging Angle	I△n>0.01A	I△n≤0.01A
0°	0.35I△n≤I△≤1.4I△n	0.35I△n≤I△≤2I△n
90°	0.25I△n≤I△≤1.4I△n	0.25I△n≤I△≤2I△n
135°	0.11I△n≤I△≤1.4I△n	0.11I△n≤I△≤2I△n

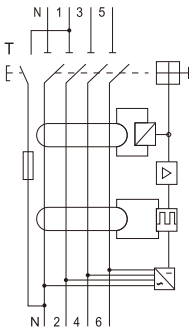
Alternative Current Sensitive	Pulsating direct current sensitive	Surge current proof
B class Tripping is ensured for sinusoidal AC residual currents pulsed DC residual currents, alternating residual sinusoidal currents up to 1000Hz, pulsating direct residual currents and for smooth direct residual currents, whether applied suddenly or increasing slowly.	 They react to AC and pulsating DC fault current which reach 0 or almost 0 within one time period of the mains frequency.	 RCCB’ s surge capacity. Not tripping at standardized 8/20 us surge-current waves acc.to VDE 0432 Part 2 with surge current values of up to 250A.

Circuit Diagram

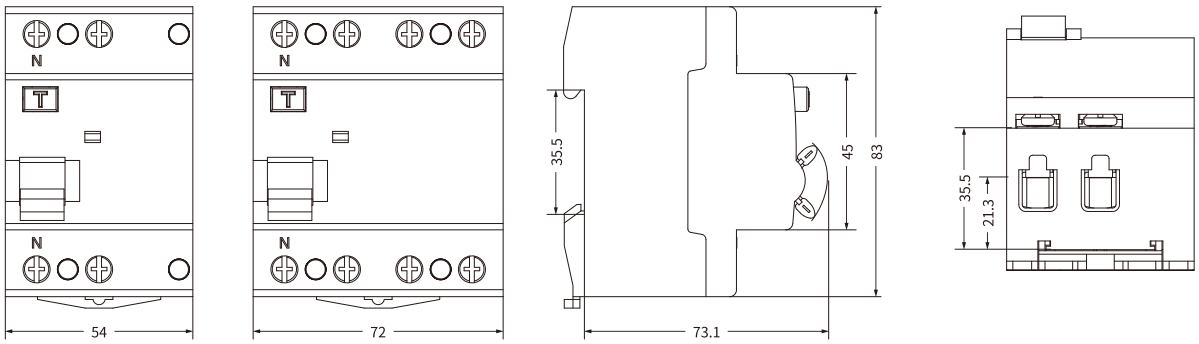
Type B (2P)



Type B (4P)

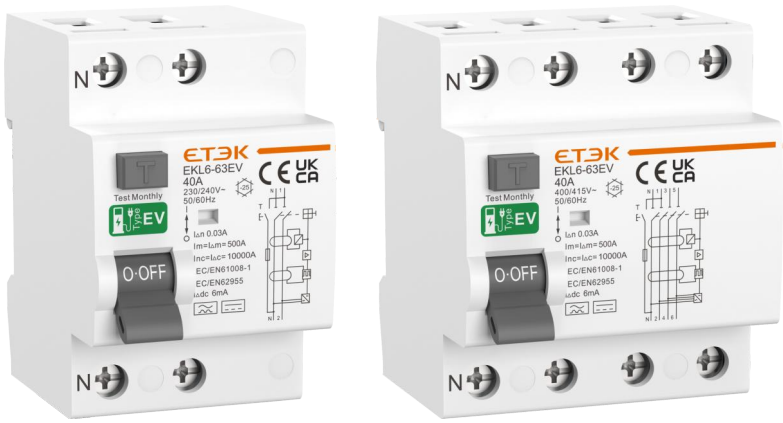


Overall and Installation Dimension(mm)



EKL6-63EV 10kA Type EV RCCB

EV Type RCCB 30mA+RDC-MD DC6mA ---------- Standard_ IEC61008-1
IEC62955



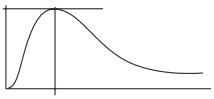
Technical Data

Electrical Features	Mode	Electromagnetic
	Type(wave form of the earth leakage sensed)	A
	Rated current In	25,40,63A
	Poles	2P,4P
	Rated voltage Ue	2P 240V~, 4P 415V~
	Insulation voltage Ui	500V
	Rated frequency	50/60Hz
	Rated residual operation current(I△n)	30mA
	Rated residual operating current(I△dc)	6mA
	Rated residual making and breaking capacity (I△m)	500A(In≤40A), 10In(In>40A)
	Short-circuit current Inc= I△c	10,000A
	SCPD fuse	10000
	Break time under I△n	≤0.1s
	Rated impulse withstand voltage(1.5/50) Uimp	4000V
	Dielectric test voltage at ind.Freq. for 1min	2.5kV
	Electrical life	2,000 Cycles
	Mechanical life	4,000 Cycles
Installation	Contact position indicator	Yes
	Protection degree	IP20
	Ambient temperature(with daily average≤35°C)	-25°C~+55°C
	Storage temperature	-25°C~+70°C
	Terminal connection type	Cable/Pin-type busbar/U-type busbar
	Terminal size top/bottom for cable	35mm² 18-3AWG
	Terminal size top/bottom for busbar	35mm² 18-3AWG
	Tightening torque	2.5Nm 22In-lbs
	Mounting	On DIN rail EN60715(35mm) by means of fast clip device
	Connection	Power supply in both directions

EV Type RCCB 30mA+RDC-MD DC6mA

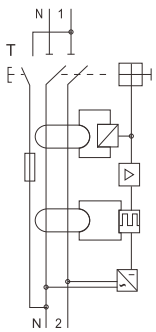
Standard_ IEC61008-1
IEC62955

Tripping Current Range	Lagging Angle	I△n>0.01A	I△n≤0.01A
	0°	0.35I△n≤I△≤1.4I△n	0.35I△n≤I△≤2I△n
	90°	0.25I△n≤I△≤1.4I△n	0.25I△n≤I△≤2I△n
	135°	0.11I△n≤I△≤1.4I△n	0.11I△n≤I△≤2I△n

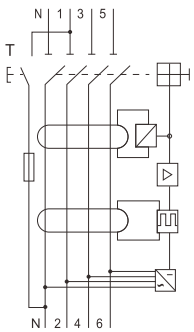
Alternative Current Sensitive	Pulsating direct current sensitive	Surge current proof
B class Tripping is ensured for sinusoidal AC residual currents pulsed DC residual currents, alternating residual sinusoidal currents up to 1000Hz, pulsating direct residual currents and for smooth direct residual currents, whether applied suddenly or increasing slowly.	 They react to AC and pulsating DC fault current which reach 0 or almost 0 within one time period of the mains frequency.	 RCCB' s surge capacity. Not tripping at standardized 8/20 us surge-current waves acc.to VDE 0432 Part 2 with surge current values of up to 250A.

Circuit Diagram

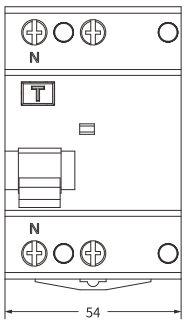
Type EV(2P)

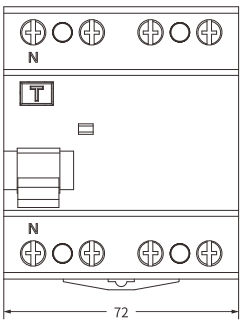


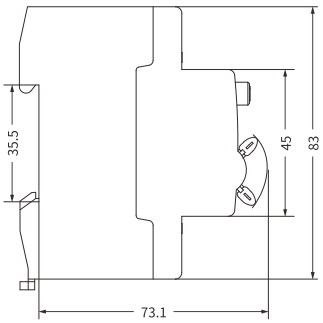
Type EV(4P)

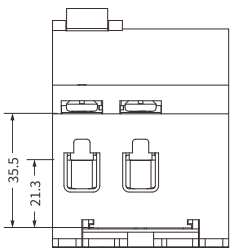


Overall and Installation Dimension(mm)









EKL5-63B 10kA Type B EV RCBO

B TYPE RCCB with Overcurrent Protection

Standard_ IEC61009-1
IEC62423

Technical Data

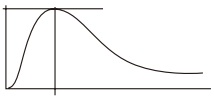
Electrical Features	Mode	Electronic
	Type	B
	Rated current In	16,20,25,32,40,50,63A
	Poles	2P(1P+N),4P(3P+N)
	Rated voltage Ue	2P 240V~
		4P 415V~
	Insulation voltage Ui	500V
	Rated frequency	50/60Hz
	Rated residual operating current(I△n)	30mA
	Break time under I△n	⩽0.1s(S type ＜0.5s)
	Rated breaking capacity	10,000A
	Energy limiting class	3
	Rated impulse withstand voltage(1.5/50) Uimp	4,000V
	Dielectric test voltage at ind.Freq. for 1min	2kV
	Pollution degree	2
	Thermo-magnetic release characteristic	B,C
Mechanical Features	Electrical life	4,000 Cycles
	Mechanical life	10,000 Cycles
	Contact position indicator	Yes
	Protection degree	IP20
	Reference temperature for setting of thermal element	30°C
	Ambient temperature (with daily average⩽35°C)	-25°C~+55°C
	Storage temperature	-25°C~+70°C
Installation	Terminal connection type	Cable/Pin-type busbar/U-type busbar
	Terminal size top/bottom for cable	25mm² 18-3AWG
	Terminal size top/bottom for busbar	25mm² 18-3AWG
	Tightening torque	2.5Nm 22In-lbs
	Mounting	On DIN rail EN60715(35mm) by means of fast clip device
	Connection	From top
Combination with accessories	Auxiliary contact	EKM1-OF
	Alarm contact	EKM1-FB
	Shunt release	EKM1-MX

B TYPE RCCB with Overcurrent Protection

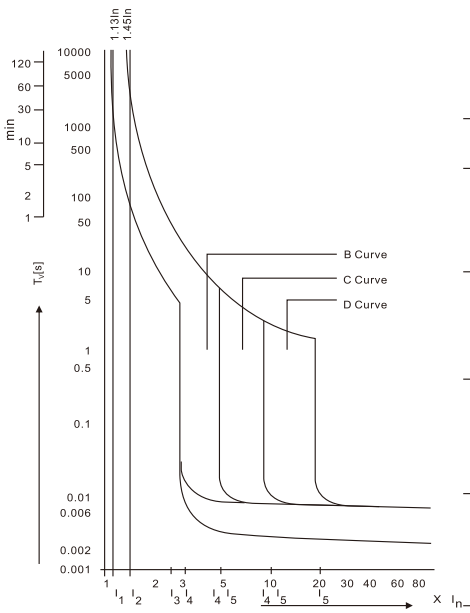
Standard_ IEC61009-1
IEC62423

Tripping Current Range

Lagging Angle	I△n>0.01A	I△n≤0.01A
0°	0.35I△n≤I△≤1.4I△n	0.35I△n≤I△≤2I△n
90°	0.25I△n≤I△≤1.4I△n	0.25I△n≤I△≤2I△n
135°	0.11I△n≤I△≤1.4I△n	0.11I△n≤I△≤2I△n

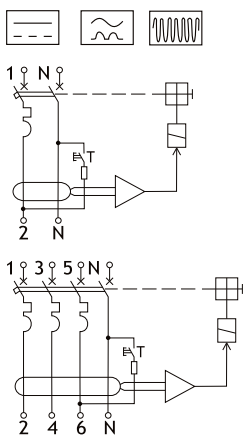
Detectable wave form	Pulsating direct current sensitive	Surge current proof
B class Tripping is ensured for sinusoidal AC residual currents pulsed DC residual currents, alternating residual sinusoidal currents up to 1000Hz, pulsating direct residual currents and for smooth direct residual currents, whether applied suddenly or increasing slowly.	 They react to AC and pulsating DC fault current which reach 0 or almost 0 within one time period of the mains frequency.	 RCCB' s surge capacity. Not tripping at standardized 8/20 us surge-current waves acc.to VDE 0432 Part 2 with surge current values of up to 250A.

Characteristics Curves

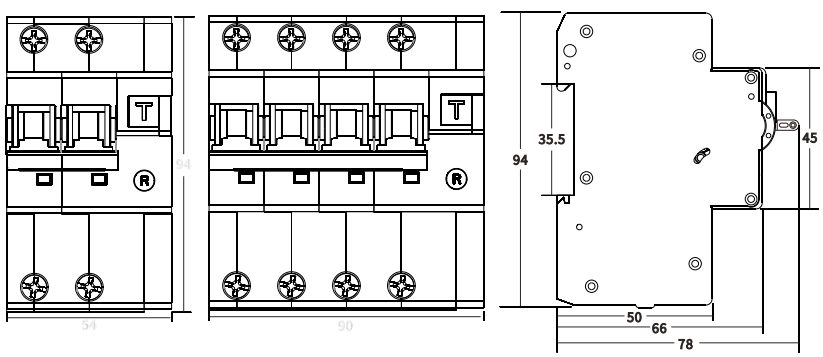


	Thermal Tripping			Magnetic Tripping		
As per IEC60898	No tripping current	Tripping current I_2	Time Limits t	Hold current I_4	Trip current I_5	Time Limits t
B Curve	1.13×I_N	1.45×I_N	⩾1h <1h	3×I_N	5×I_N	⩾0.1s <0.1s
C Curve	1.13×I_N	1.45×I_N	⩾1h <1h	5×I_N	10×I_N	⩾0.1s <0.1s
D Curve	1.13×I_N	1.45×I_N	⩾1h <1h	10×I_N	20×I_N	⩾0.1s <0.1s

Circuit Diagram



Overall and Installation Dimension(mm)



EKL5-63EV 10kA Type EV RCBO

A Type RCBO 30mA+RDC-MD DC6mA ---------- Standard_ IEC61009-1
IEC62955

Technical Data

Electrical Features	Mode	Electronic
	Type	A
	Rated current In	16,20,25,32,40,50,63A
	Poles	2P(1P+N),4P(3P+N)
	Rated voltage Ue	2P 240V~
		4P 415V~
	Insulation voltage Ui	500V
	Rated frequency	50/60Hz
	Rated residual operating current(I△n)	30mA
	Rated residual operating current(I△dc)	6mA
	Break time under I△n	≤0.1s(S type ＜0.5s)
	Rated breaking capacity	10,000A
	Energy limiting class	3
	Rated impulse withstand voltage(1.5/50) Uimp	4,000V
	Dielectric test voltage at ind.Freq. for 1min	2kV
	Pollution degree	2
	Thermo-magnetic release characteristic	B,C
Mechanical Features	Electrical life	4,000 Cycles
	Mechanical life	10,000 Cycles
	Contact position indicator	Yes
	Protection degree	IP20
	Reference temperature for setting of thermal element	30°C
	Ambient temperature (with daily average≤35°C)	-25°C~+55℃
	Storage temperature	-25°C~+70°C
Installation	Terminal connection type	Cable/Pin-type busbar/U-type busbar
	Terminal size top/bottom for cable	25mm² 18-3AWG
	Terminal size top/bottom for busbar	25mm² 18-3AWG
	Tightening torque	2.5Nm 22In-lbs
	Mounting	On DIN rail EN60715(35mm) by means of fast clip device
	Connection	From top
Combination with accessories	Auxiliary contact	EKM1-OF
	Alarm contact	EKM1-FB
	Shunt release	EKM1-MX

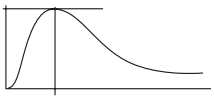
EKL5-63EV 10kA Type EV RCBO

A Type RCBO 30mA+RDC-MD DC6mA

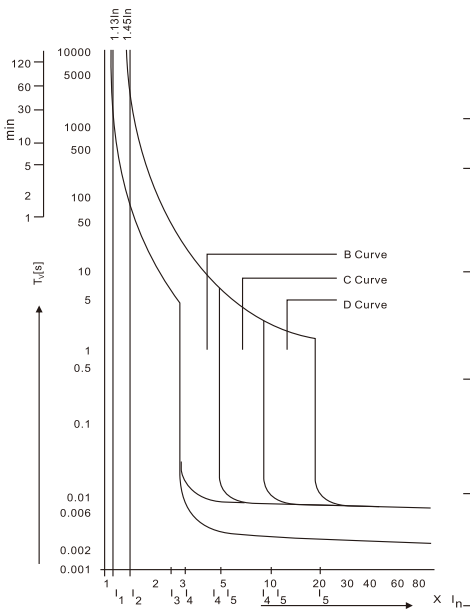
Standard_ IEC61009-1
IEC62955

Tripping Current Range

Lagging Angle	I△n>0.01A	I△n≤0.01A
0°	0.35I△n≤I△≤1.4I△n	0.35I△n≤I△≤2I△n
90°	0.25I△n≤I△≤1.4I△n	0.25I△n≤I△≤2I△n
135°	0.11I△n≤I△≤1.4I△n	0.11I△n≤I△≤2I△n

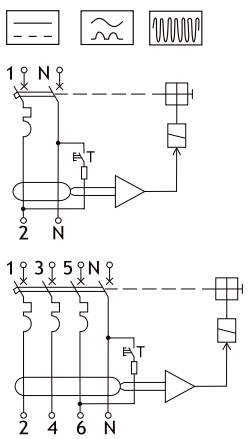
Detectable wave form	Pulsating direct current sensitive	Surge current proof
B class Tripping is ensured for sinusoidal AC residual currents pulsed DC residual currents, alternating residual sinusoidal currents up to 1000Hz, pulsating direct residual currents and for smooth direct residual currents, whether applied suddenly or increasing slowly.	 They react to AC and pulsating DC fault current which reach 0 or almost 0 within one time period of the mains frequency.	 RCCB' s surge capacity. Not tripping at standardized 8/20 us surge-current waves acc.to VDE 0432 Part 2 with surge current values of up to 250A.

Characteristics Curves

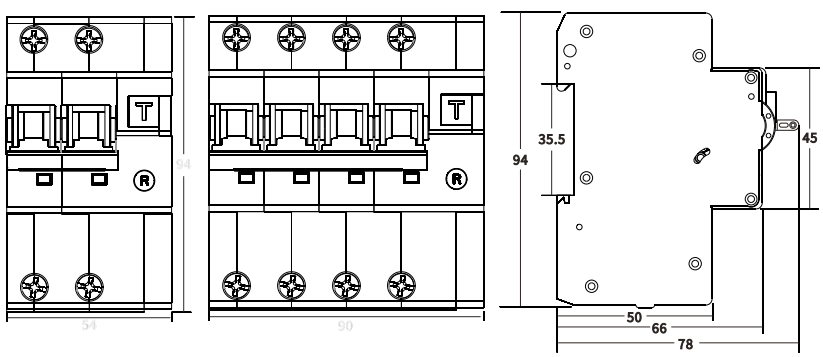


	Thermal Tripping			Magnetic Tripping		
As per IEC60898	No tripping current	Tripping current I_2	Time Limits t	Hold current I_4	Trip current I_5	Time Limits t
B Curve	1.13×I_N	1.45×I_N	⩾1h <1h	3×I_N	5×I_N	⩾0.1s <0.1s
C Curve	1.13×I_N	1.45×I_N	⩾1h <1h	5×I_N	10×I_N	⩾0.1s <0.1s
D Curve	1.13×I_N	1.45×I_N	⩾1h <1h	10×I_N	20×I_N	⩾0.1s <0.1s

Circuit Diagram



Overall and Installation Dimension(mm)



Modular Contactor

Standard_ IEC61095
IEC60947-4-1

Automatic Type

2P/25A

4P/25A

2P/40、63A

4P/40、63A


Aux.

Manual Type

2P/25A

4P/25A

2P/40、63A

4P/40、63A

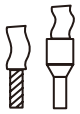
Technical Data

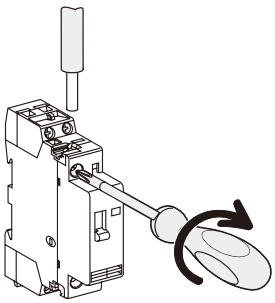
◆Electrical Features

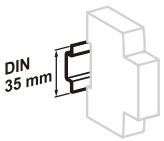
Voltagerating(Ue)	1P,2P	250V AC
	3P,4P	400V AC
Frequency		50/60Hz
Endurance(O-C)		1,000,000
Electrical Life		100,000
Maximum Number of Switching Operation a Day		100
Additional Characteristics		
Insulation Voltage(Ui)		500V AC
Pollution Degree		2
Rated Impulse With Stand Voltage(Uimp)		2.5kV(4kV@ 12/24/48VAC)
Degreeofprotection(IEC 60529)		IP20
		IP40
Operating Temperature		-5°C~+60°C(1)
Storage Temperature		-40°C~+70°C
Tropicalization(IEC 60068-1)		Treatment 2(relative humidity 95% at 55°C)
ELSV Compliance(Extra Low Safety Voltage)for 12/24/48VAC Versions		
The Product Control Conforms To The SELV(safety extra low voltage) Requirements		

(1)In the case of contactor mounting in a enclosure for whICh the interior temperature is in range between 50°Cand60°C,it is necessary to use a spacer,between each contactor.

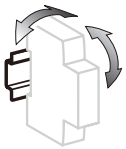
Connection

Type		Rating(In)	Spacer cat	Circuit	Tightening Torque	Copper Cables	
						Rigid	Flexible or Ferrule
							
EKMF	PZ1:4MM	16-100A	9mm	Control	0.8N.m	1.5~2.5mm² 2×1.5mm²	1.5~2.5mm² 2×2.5mm²
		16~25A		Power		1.5~6mm²	1~4mm²
	PZ2:6MM	40A-63A	14mm		3.5N.m	6~25mm²	6~16mm²
		100A				6×3.5mm²	6~35mm²

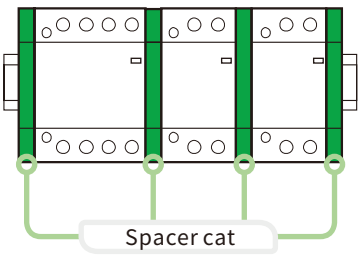


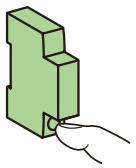


Clipon DIN rail 35mm

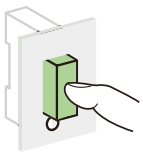


±30°vertICal.a





IP20



IP40

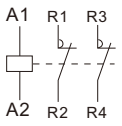
EKMF Contactors-50Hz

	Rating(In)		Control Voltage (VAC)(50/60Hz)	Consumption		Max.Power
	AC-7a	AC-7b		Holding	Inrush	
2P	16A	6A	220...240	2.7VA	9.2VA	1.2W
	20A	7A	220...240	2.7VA	9.2VA	1.2W
	25A	9A	220...240	3.8VA	15VA	1.2W
	40A	18A	220...240	4.6VA	34VA	1.6W
	63A	25A	220...240	4.6VA	34VA	1.6W
	100A	-	220...240	6.5VA	53VA	2.1W
4P	16A	6A	220...240	4.6VA	34VA	1.6W
	25A	9A	220...240	4.6VA	34VA	1.6W
	32A	12A	220...240	6.5VA	53VA	2.1W
	40A	18A	220...240	6.5VA	53VA	2.1W
	63A	25A	220...240	6.5VA	53VA	2.1W
	100A	-	220...240	13VA	103VA	4.2W

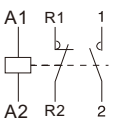
EKMF Manual Control Contactor-50Hz

	Rating(In)		Control Voltage (VAC)(50/60Hz)	Consumption		Max.Power
	AC-7a	AC-7b		Holding	Inrush	
2P	25A	9A	220...240	2.7VA	9.2VA	1.2W
	40A	18A	220...240	4.6VA	34VA	1.6W
	63A	25A	220...240	4.6VA	34VA	1.6W
4P	25A	9A	220...240	4.6VA	34VA	1.6W
	40A	18A	220...240	6.5VA	53VA	2.1W
	63A	25A	220...240	6.5VA	53VA	2.1W

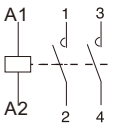
Circuit Diagram



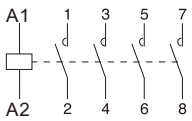
2NC



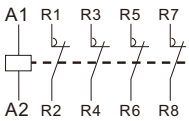
1NC+1NO



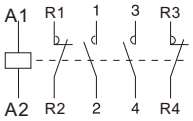
2NO



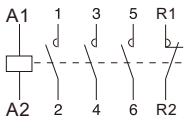
4NO



4NC

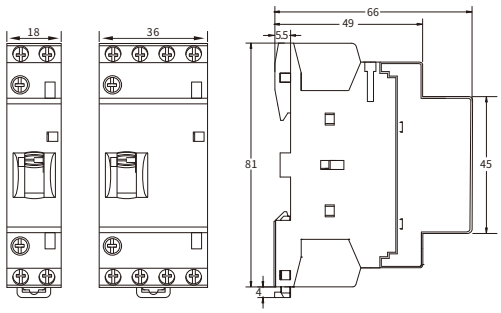


2NO+2NC

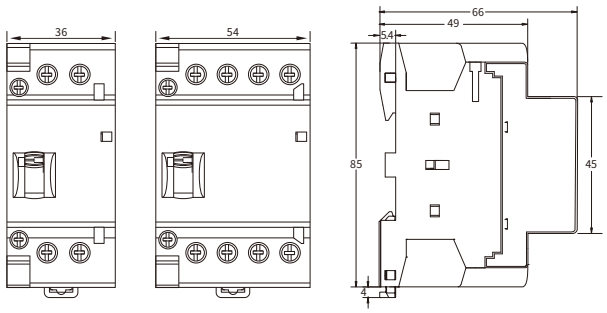


3NO+1NC

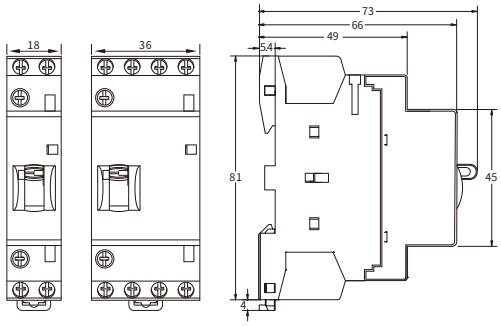
Overall and Installation Dimension(mm)



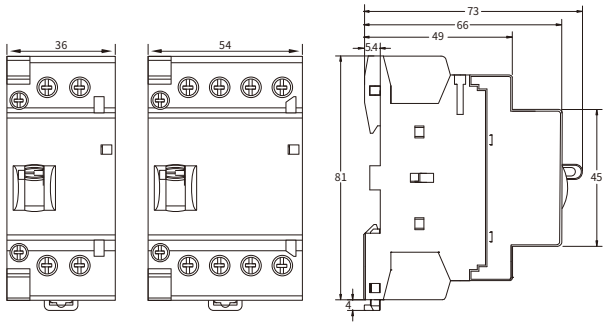
EKMF-16/20/25A



EKMF-32/40/63A



EKMF manual control contactor 16/25A



EKMF manual control contactor 40/63A

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ZHEJIANG ETEK ELECTRICAL TECHNOLOGY CO.,LTD.

Http://www.etek-electric.com
Head office: 0086-577-62718777
Sales office: 0086-571-87837035
Head office: sales@etek-china.com
Sales office: sales@etek-electric.com
Wenzhou ETEK (Head office):
No.288 Wei 17th Road,Economic Development Zone,Yueqing City,Zhejiang China.
Hangzhou ETEK (Sales office):
No.411-412,Building 16,Singapore-Hangzhou Science&Technology Park,Baiyang Street,
Qiantang New Zone,Hangzhou City Zhejiang China.