



EKS1-110

EKS1-110S

EKS1-110Z

Scope of Application

The EKS1 series star-delta starter (hereinafter referred to as starter) is suitable for AC 50/60Hz, rated voltage 380/400V, rated operating current up to 265A. (Phase currents when the starter is triangularly connected) Controls three-phase squirrel-cage induction motors up to 185kW as a control for starting, running and stopping the stator winding from star to delta to minimize the starting current and the impact on the transmission network when starting the motor.

The starter adopts modular design and one-piece structure, integrating contactor, intelligent controller and auxiliary contact in one body. The intelligent controller can automatically control the starter to run according to the predetermined program, thus completing the star-delta starting of the motor.

Structural Characteristics

Structural optimization

The EKS1 series starter (AC contactor) is an integrated AC starter that combines star-delta starting, mechanical forced starting, dual-speed, reversible, and overload protection functions. This product can replace the original star-delta starter, which was a combination of multiple electrical appliances and components.

Improved reliability

Integrated start control mode, intelligent star-delta conversion, with electrical and mechanical interlocking for enhanced safety. optimized motor starting process, improved service life, and reduced impact Improved reliability: on the power grid.

Comprehensive protection functions

The product features automatic star-delta switching, mechanical emergency (manual forced starting), comprehensive protection functions (such as phase sequence, phase loss, imbalance, overvoltage, undervoltage, etc.), and IoT communication capabilities, providing dynamic terminal data for Comprehensive protection functions: IoT data platforms.

Product miniaturization

The EKS1 series starter (AC contactor) product is 1/3 smaller in size compared to traditional solutions, resulting in reduced space occupation. Its integrated design eliminates messy and disorganized wiring, high material costs, and complex installation procedures.

Complete specifications

The EKS1 series includes electric, manual, and multi-function models, with all products featuring automatic star-delta switching and voltage reduction capabilities.

Solution

Specialized products with diverse types: star-delta starters, mechanical emergency starters, dual-speed starters, reversible starters, auto-transformer starters, and intelligent protection starters. The Ksi series products cater to different applications and requirements.

Model Description

EKS1 - 50 / 50 S

EKS1	50	50	S
↓	↓	↓	↓
Product code	Frame current (A)	Rated Current (A)	Function Mode
EKS1 Series star-delta starter	50, 110, 265	40, 50, 65, 75, 85, 95, 100, 110, 120, 160, 185, 225, 265	None: Automatic type S: Mechanical emergency type Z: Multi-function type

Product Functions

Model	EKS1	EKS1-S	EKS1-Z
Star-delta transformation	●	●	●
Dual speed	□	○	○
Reversible	□	○	○
Main and auxiliary drives	□	○	○
Mechanical emergency (manual override start)	○	●	○
Short-circuit interlocking protection	○	○	●
Overload protection	○	○	●
Locked-rotor protection	○	○	●
Phase loss protection	○	○	●
Three-phase unbalance protection	○	○	●
Over- and under-voltage protection	○	○	●
Fault display	○	○	●
Fault alarm	○	○	●
Fault recording	○	○	●
Adjustable parameters	○	○	●
Status display	○	○	●
Fire-fighting function	○	○	□
Communication function	○	○	□
Residual current protection	○	○	□
Lifecycle management	○	○	●

Notes: ○ indicates not available □ indicates optional ● indicates standard

Technical Parameters

Model		EKS1-50		EKS1-110						EKS1-265				
Rated operating current (A)		40	50	65	75	85	95	100	110	120	160	185	225	265
Rated operating voltage (Ue) (V)		380/400V												
Rated insulation voltage (Ui) (V)		690		800						1000				
Poles		3P												
Electrical life (×10 ⁴ times)		60												
Mechanical life (×10 ⁴ times)		600												
Mechanical life of manual type (operating mechanism)		10000												
Controllable three-phase motor operating power (AC-3) (kW)		22	30	37	45	45	55	55	75	90	110	132	160	
Fuse for matching use (A)		80	100	125		160			200	250	315	400	500	
Wire termination capability of the connection terminal (mm ²)		16		35		50			75			150		
Coil parameters	Rated control voltage (Us)	220/230V												
	Pick-up voltage	80%~110% Us												
	Release voltage	20%~75% Us												
	Coil actuation (VA)	160-210		200-280						≤500				
	Holding power (VA)	19		32						92				

Normal Working and Installation Conditions

- The altitude of the installation location shall not exceed 2000m.
- The upper limit of the normal operating ambient temperature shall not exceed +40°C, the lower limit shall not be lower than -5°C, and the average temperature within 24 hours shall not exceed +35°C. If the ambient temperature exceeds this range, the user needs to consult with the manufacturer.
- For vertically installed starters, the power supply terminals should face upwards, and the load terminals downwards. The inclination angle between the installation surface of all starters and the vertical plane should not exceed $\pm 5^\circ$, without affecting their performance.
- There should be no abnormal vibration or impact.
- Pollution degree: 3.
- Mounting method: Screw Installation.

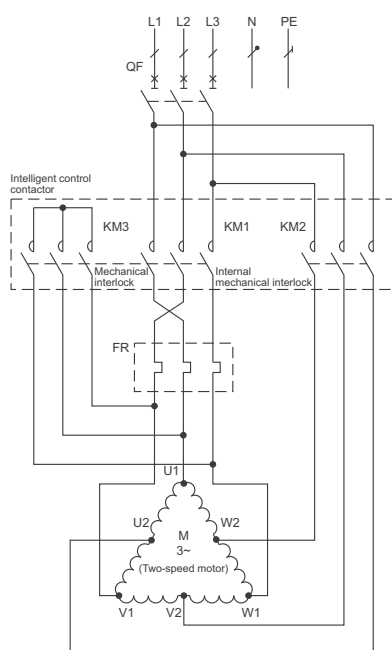
Working Principle

Star-delta starter

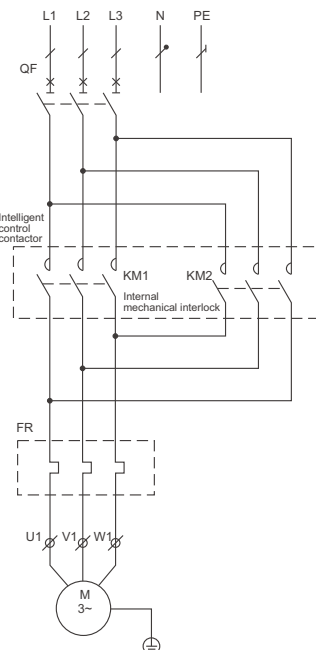
After the control coil is energized with 220V control voltage, the main contactor of the product is engaged to form a star circuit with the star contactor, allowing the motor to start and operate under reduced voltage. When the running time reaches the preset switching time, and the motor speed approaches the normal speed, the main contactor is automatically disconnected and then engaged simultaneously with the delta contactor to form a delta circuit, enabling the motor to operate at full voltage.

Mechanical emergency

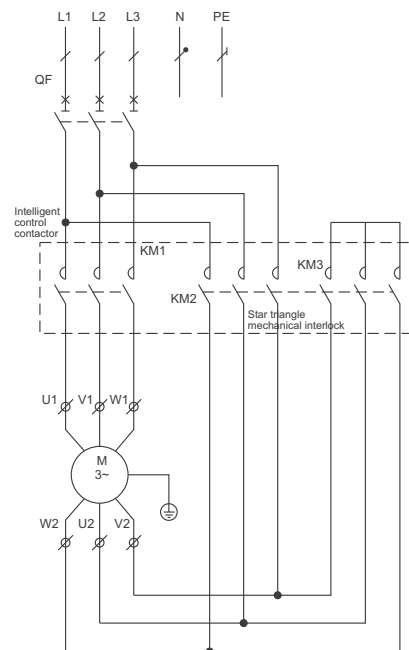
When the fire pump cannot be automatically or manually started due to a fault in the signal line or the control line of the fire pump control box, the fire pump can be started by directly manually closing the main and auxiliary contactors of the fire pump through the mechanical emergency start device on the door of the fire pump control box.



Electrical system diagram of the main circuit of the two-speed motor



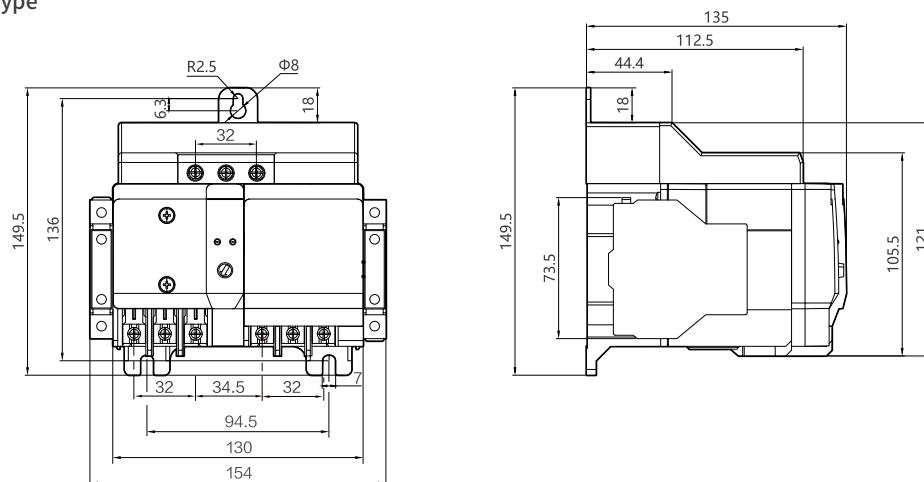
Electrical system diagram of the main circuit of the reversible motor



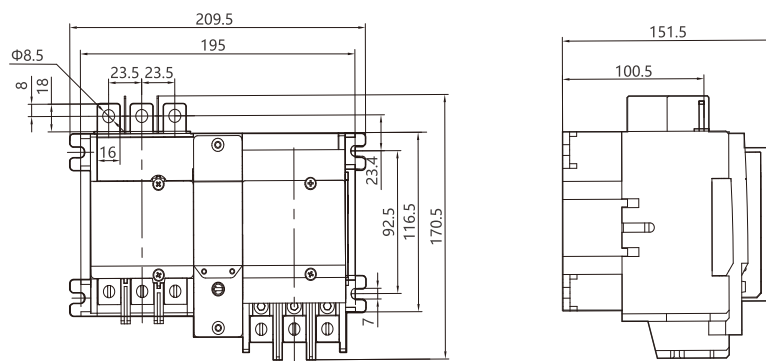
Electrical system diagram of the main circuit for Y-Δ starting motor

Dimension (mm)

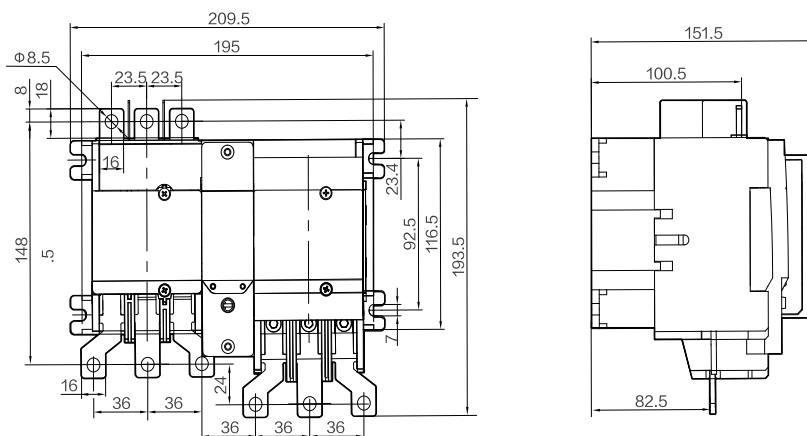
EKS1-50 Automatic Type



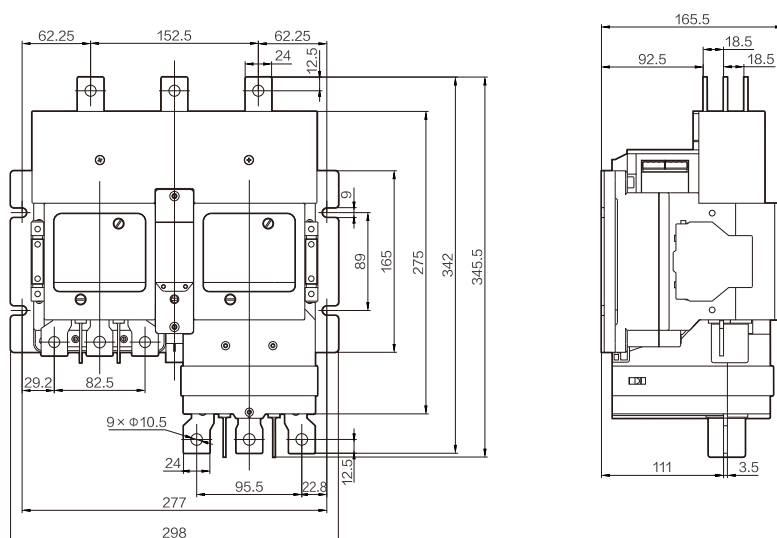
EKS1-110 (65~100A) Automatic Type



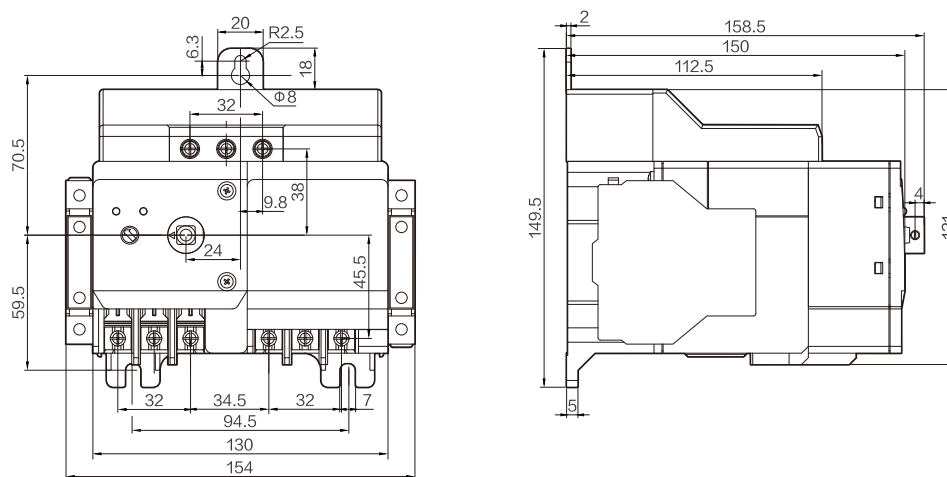
EKS1-110 (110A) Automatic Type



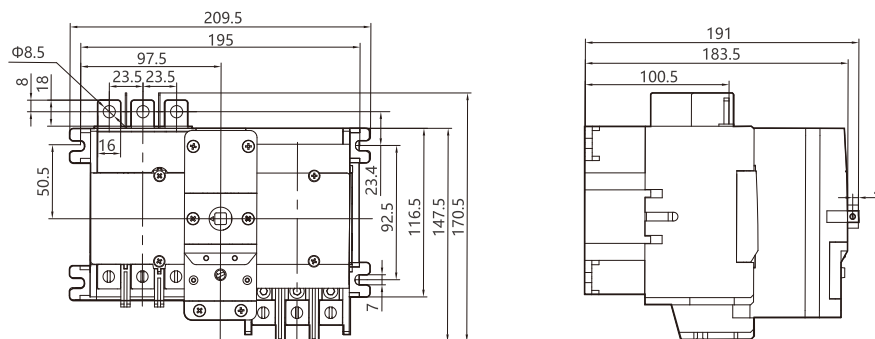
EKS1-265 Automatic Type



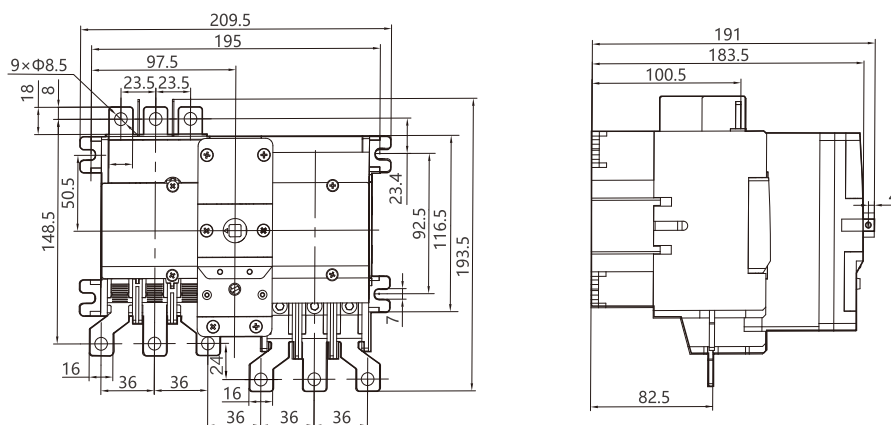
EKS1-50S Mechanical Emergency Type



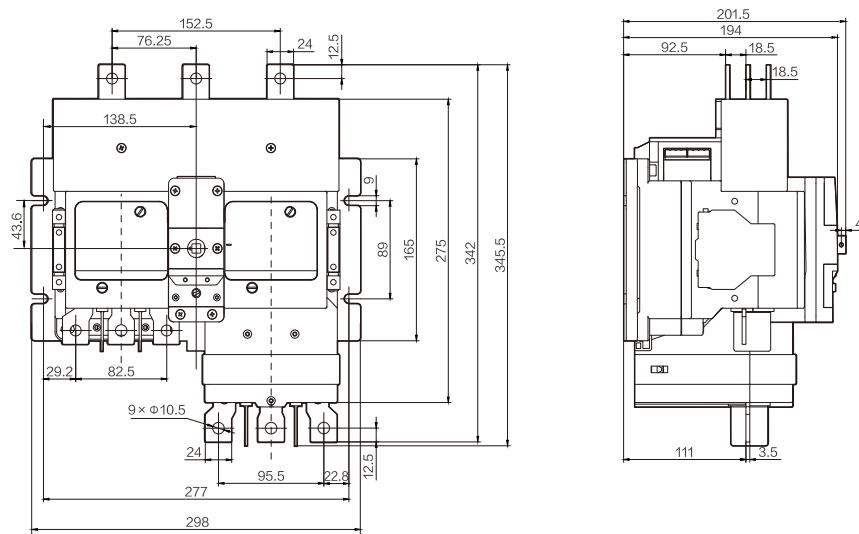
EKS1-110S (65~100A) Mechanical Emergency Type



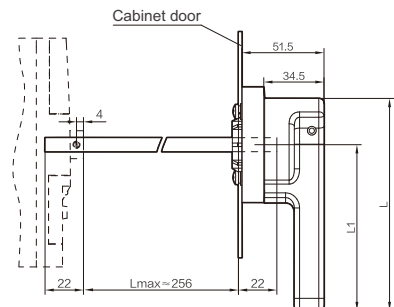
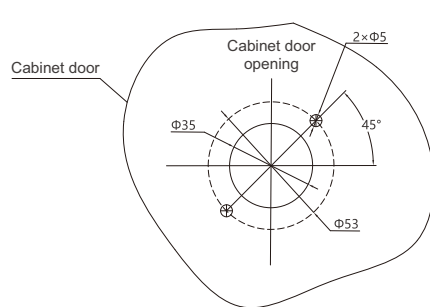
EKS1-110S (110A) Mechanical Emergency Type



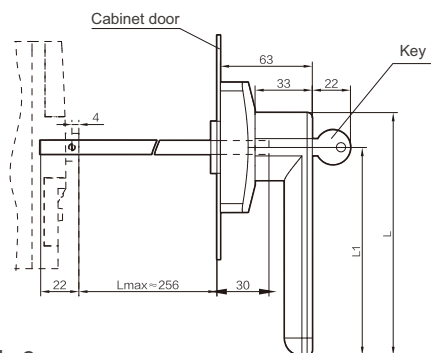
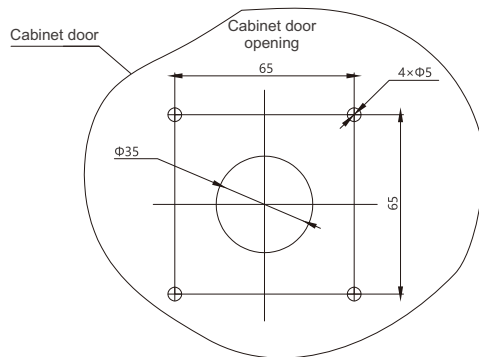
EKS1-265S Mechanical Emergency Type



EKS1-S Mechanical Emergency Type Handle



Handle A, B

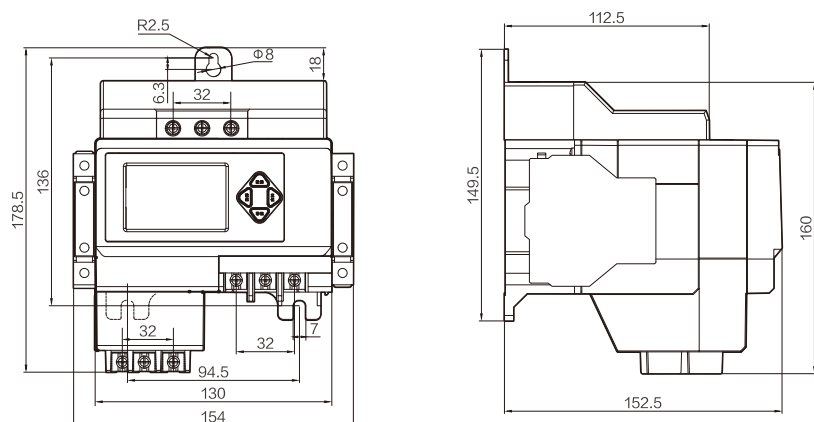


Handle C

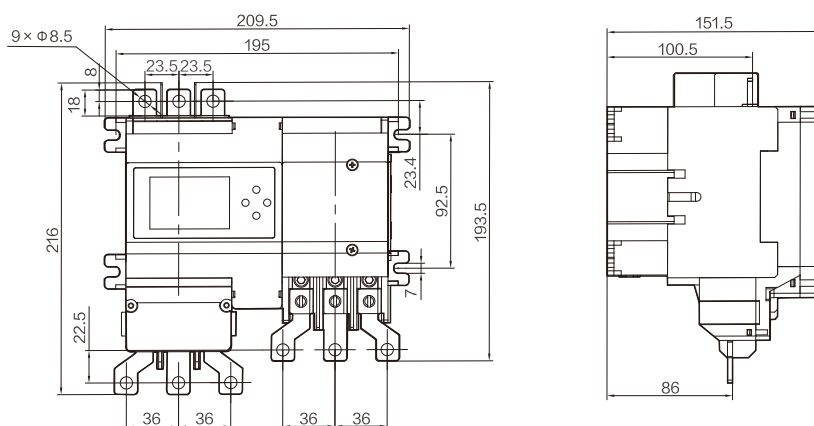
Handle type	Padlock function	L	L1
A	Padlockable	122	95
B	Padlockable	152	125
C	Comes with a lock	140	120

Star Delta Starter

EKS1-50Z Multi-function Type



EKS1-110Z Multi-function Type



EKS1-265Z Multi-function Type

