HIGH AND LOW
VOLTAGE SWITCHGEAR
SERIES

KYN61-40.5

Metalclad Removable
AC Metal-enclosed Switchgear

Overview

KYN61-40.5(Z) type armored movable AC metal closed switchgear (hereinafter referred to as "switchgear") It is suitable for three-phase AC 50Hz power system, for power plants, substations and industrial and mining enterprises of the distribution room to accept and distribute electrical energy, and the circuit control, protection and monitoring.

This product conforms to the standards: GB3906 "3~35kV AC metal enclosed switchgear", GB/T11022 "High voltage switchgear and control equipment standard common technical requirements", IEC60298 "rated voltage above 1kV and below 50kV AC metal enclosed switchgear and control equipment".

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Metalclad Removable AC Metal-enclosed Switchgear

Model meaning

K	Y	N	61	-	40.5	□	/	□	□
↓	↓	↓	↓		↓	↓		↓	↓
Metal armoured type	Shifting type	Indoor	Design sequence number		Rated voltage (kV)	Type of circuit breaker Z: Vacuum SF: 6Sulfur hexafluoride		Rated current (A)	Rated short circuit Breaking current (kA)

Conditions of use

- Ambient air temperature: maximum temperature +40℃ , minimum temperature -15℃ ;
- Altitude: ≤ 2000m;
- Surrounding relative humidity: daily average ≤ 95%, monthly average ≤ 90%;
- Ambient air: not suitable for places with corrosion, serious pollution, flammable gas and violent vibration;
- If an earthquake occurs, the intensity of the earthquake cannot exceed 8 degrees.

Structural characteristics

Switchgear structure GB3906-2006 and IEC298 armored metal closed switchgear standard design, the whole by the cabinet and withdrawable part (hand car) of two levels. The structure of the cabinet is assembled, and the part of the switchgear body is separated into the circuit breaker room, the main bus room, the cable room and the relay instrument room with a metal partition. The protection level of the enclosure reaches IP3X, the protection level of the compartments is IP2X, and all metal structural parts are reliably grounded, and the compartments of the main circuit system have independent exhaust pressure relief channels.

According to the use of the handcart can be divided into circuit breaker handcart, voltage transformer handcart, measuring handcart, isolation handcart, etc., all kinds of handcart outline size is the same, the same purpose of the handcart has good interchangeability; The cart has a test/isolation position and a working position in the cabinet, and each position is equipped with an interlock device to ensure that the cart cannot move freely when it is in the above two positions.

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Parameter		Unit	Value
Rated Voltage		KV	40.5
Rated Current	Rated current of main bus bar	A	1250,1600,2000,(2500)
	Rated current of matched VCB	A	1250,1600,2000,(2500)
Rated Insulation Level	1 min power frequency withstand voltage	KV	95
	Lightning impulse withstand voltage	KV	185
	"Power frequency withstands voltage of auxiliary circuit and control circuit"	V/1min	2000
Rated Frequency		Hz	50
Rated short-circuit breaking current		KA	20 25 31.5
Rated short-time withstand current		KA/4s	20 25 31.5
Rated withstands current (peak)		KA	50,63,80
Rated voltage of control circuit		V	DC:110, 220 AC:110, 220

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Metalclad Removable AC Metal-enclosed Switchgear

ZN85-40.5 Circuit Breaker with Spring Operating Mechanism (Integrated)

Parameter		Unit	Value
Rated Voltage		KV	40.5
Rated Current		A	630 1250 1600 2000
Rated Frequency		Hz	50
Rated Insulation Level	1min Power Frequency Withstand Voltage	KV	Phase to phase, phase to earth 95 Gaps 110
	Lightning Impulse Withstand Voltage (Peak)		Phase to phase, phase to earth 185, Gaps 215
	"Power frequency withstands voltage of auxiliary circuit and control circuit"	V/1min	2000
Rated Short-Circuit Breaking Current		KA	20、25、31.5
Rated Short-time Withstand Current (4s)			20、25、31.5
Rated Peak Withstand Current (Peak Value)			50、63、80
Rated Short-Circuit Making Current (Peak Value)		KA	50、63、80
Rated Short-Circuit Current Duration		S	4
Mechanical Lifetime (Operations)		Time	10000
Rated Power Frequency Withstand Voltage for Secondary Circuits (1-Minute)		V	2000
Rated Operating Sequence			O-0.3s-CO-180s-CO

Structural feature

This product is divided into cabinet, hand car two parts. The cabinet body is made of bent steel plate and assembled by bolts after spraying. According to the function characteristics, it can be divided into four parts: small bus room, relay instrument room, handcart room, cable room and bus room, and each part is separated by grounded metal partition. The protection grade of the cabinet shell is IP4X; The door of the car compartment is opened and the protection level is IP2X.

The switchgear has the main circuit scheme of cable inlet and outlet line, overhead inlet and outlet line, busbar connection, isolation, voltage transformer, lightning arrester, etc. The bus bar adopts composite insulation, and the interphase and connecting head are equipped with insulation sleeves made of flame retardant material by injection molding. The adjacent cabinets of the main bus bar are separated by bus bushing, which can effectively prevent the spread of accidents and play an auxiliary supporting role for the main bus bar. The cable room is equipped with ground switch and overvoltage protection device.

The metal valve is installed in front of the contact box. The upper and lower valve automatically opens when the hand car moves from the disconnect/test position to the working position, and automatically closes when the hand car moves in the opposite direction, effectively isolating it from high pressure. The interlock between the main switch, the handcar, the ground switch and the cabinet door adopts the mandatory mechanical locking mode to meet the "five prevention" function requirements.

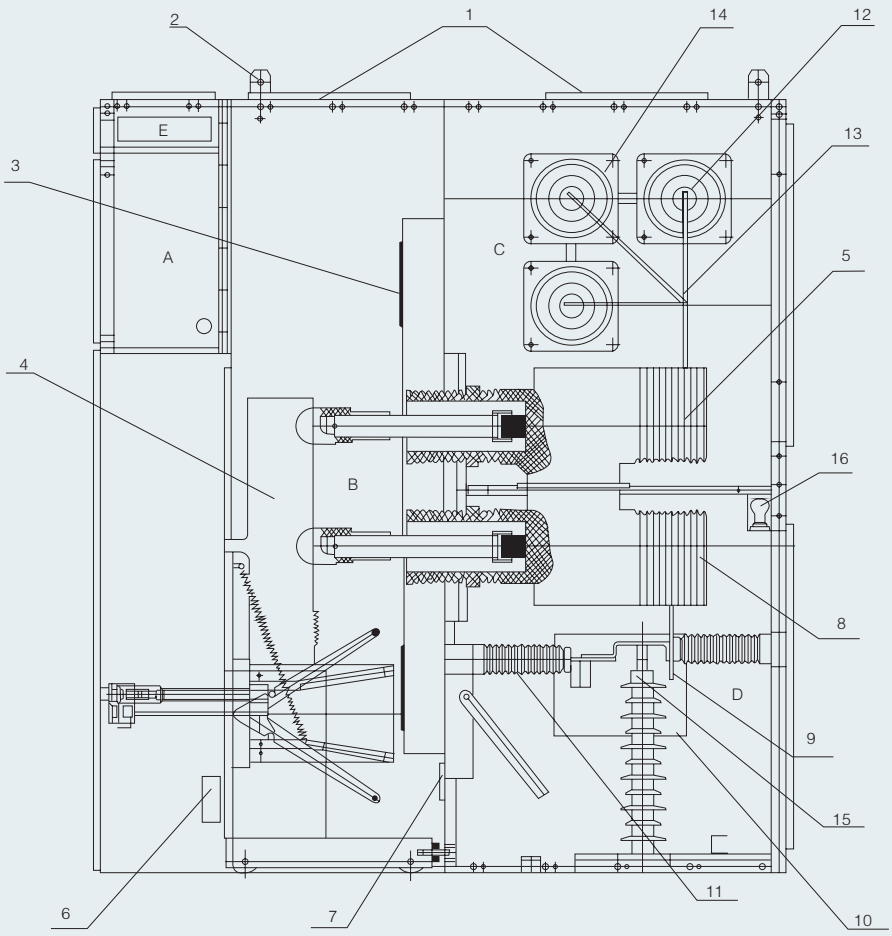
Circuit breaker hand car adopts screw drive propulsion mechanism, overrunning clutch. The screw nut propulsion mechanism can easily operate to move the handcart between the test position and the working position, and the self-locking of the screw nut can make the handcart reliably locked in the working position to prevent accidents caused by the action of electric power. Overrunning clutch plays a role when the hand car moves back to the test position and to the working position, so that the operating shaft and the lead screw shaft are automatically detached and idling, which can prevent misoperation and damage the propulsion mechanism. Other handcars use lever propulsion mechanism. The test working position has positioning and locking.

Cabinet dimensions: width × depth × height (mm) : 1400×2200×2600

Overall dimensions (mm)

Parameter		Value
Altitude		2650
Breadth	Rated current 1600A and below	1400
Profundity	Cable inlet and outlet	2870
Profundity	Overhead inlet and outlet line	2950

Equipment structure drawing



A. Instrument room
B, circuit breaker room
C, bus room
D, cable room
E, small bus room

1. Pressure relief plate
2. Hanging rings
3. Valve
4. Circuit breaker
5. Contact box

6. Secondary plug
7. Heating device
8. Current transformer
9. Cable
10, insulation partition

11. Ground switch
12. Main bus cable
13. Support bus bars
14. Bus bushing
15. Lightning arrester
16. Lights

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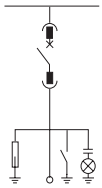
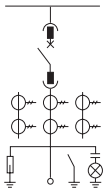
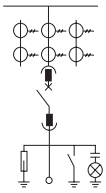
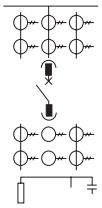
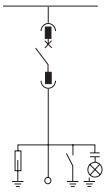
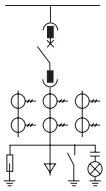
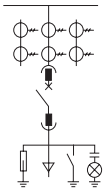
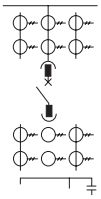
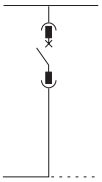
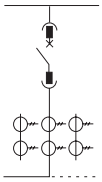
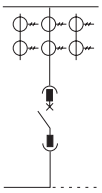
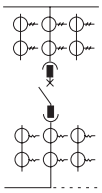
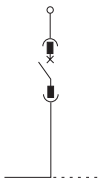
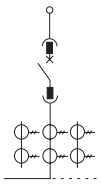
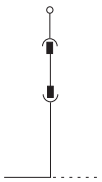
Metalclad Removable AC Metal-enclosed Switchgear

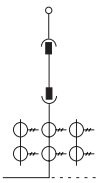
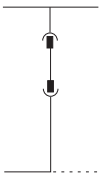
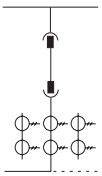
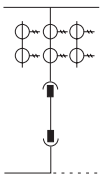
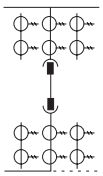
Main circuit scheme diagram

Scheme number		01	02	03	04	05
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5	1	1	1	1	1
	Current transformer LDJ5-35		3	3	6	
	Voltage transformer JDJ9-35					
	A lightning arrester	Select 0 or 3	Select 0 or 3	Select 0 or 3	Select 0 or 3	Select 0 or 3
	Ground switch JN12-35	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1
	Live display	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1
	Fuse XRNP-35					
Transformer SC9-35						
Use		Overhead inlet (outlet) line	Overhead inlet (outlet) line	Overhead inlet (outlet) line	Overhead inlet (outlet) line	Cable in (out) line

Scheme number		06	07	08	09	10
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5	1	1	1	1	1
	Current transformer LDJ5-35	1-3	1-3	4-6		1-3
	Voltage transformer JDJ9-35					
	A lightning arrester	Select 0 or 3	Select 0 or 3	Select 0 or 3		
	Ground switch JN12-35	Select 0 or 1	Select 0 or 1	Select 0 or 1		
	Live display	Select 0 or 1	Select 0 or 1	Select 0 or 1		
	Fuse XRNP-35					
Transformer SC9-35						
Use		Cable in (out) line	Cable in (out) line	Cable in (out) line	Left (right) contact	Left (right) contact

Main circuit scheme diagram

Scheme number		11	12	13	14	15
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5	1	1	1	1	1
	Current transformer LDJ5-35	1-3	4-6		1-3	
	Voltage transformer JDJ9-35					
	A lightning arrester					
	Ground switch JN12-35					
	Live display					
	Fuse XRNP-35					
Transformer SC9-35						
Use		Left (right) contact	Left (right) contact	Overhead inlet (outlet) line connection	Overhead inlet (outlet) line connection	Overhead inlet (outlet) line connection

Scheme number		16	17	18	19	20
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5					
	Current transformer LDJ5-35	1-3		1-3	1-3	4-6
	Voltage transformer JDJ9-35					
	A lightning arrester					
	Ground switch JN12-35					
	Live display					
	Fuse XRNP-35					
Transformer SC9-35						
Use		Cable in (out) line	Left (right) contact	Left (right) contact	Left (right) contact	Left (right) contact

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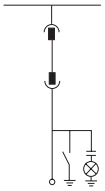
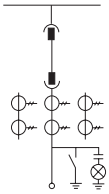
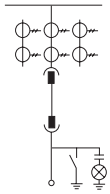
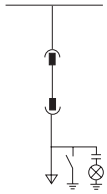
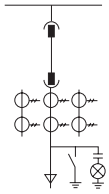
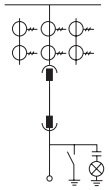
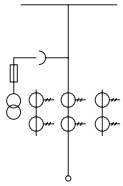
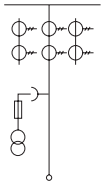
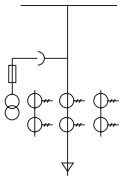
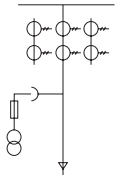
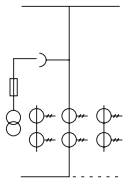
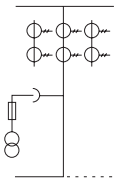
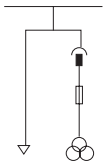
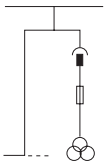
Metalclad Removable AC Metal-enclosed Switchgear

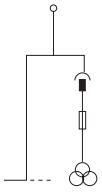
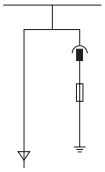
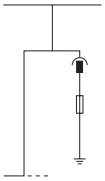
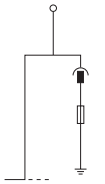
Main circuit scheme diagram

Scheme number		21	22	23	24	25
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5					
	Current transformer LDJ5-35		1-3	1-3		1-3
	Voltage transformer JDJ9-35					
	A lightning arrester					
	Ground switch JN12-35	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1
	Live display	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1
	Fuse XRNP-35					
Transformer SC9-35						
Use		Overhead inlet (outlet) line	Overhead inlet (outlet) line	Overhead inlet (outlet) line	Cable in (out) line	Cable in (out) line

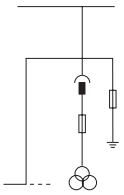
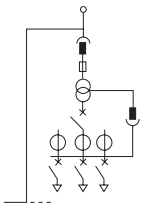
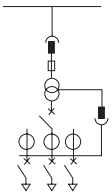
Scheme number		26	27	28	29	30
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5					
	Current transformer LDJ5-35	1-3	1-3	1-3	1-3	1-3
	Voltage transformer JDJ9-35		2	2	2	2
	A lightning arrester					
	Ground switch JN12-35	Select 0 or 1				
	Live display	Select 0 or 1				
	Fuse XRNP-35		3	3	3	3
Transformer SC9-35						
Use		Cable in (out) line	Metering and overhead line	Metering and overhead line	Metering and overhead line	Metering and overhead line

Main circuit scheme diagram

Scheme number		31	32	33	34	35
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5					
	Current transformer LDJ5-35	1-3	1-3			
	Voltage transformer JDJ9-35	2	2	1-3	1-3	1-3
	A lightning arrester					
	Ground switch JN12-35					
	Live display					
	Fuse XRNP-35	3	3	3	3	3
Transformer SC9-35						
Use		Measurement and liaison	Measurement and liaison	Voltage transformer	Voltage transformer and cable inlet and outlet line	Voltage transformer and liaison

Scheme number		36	37	38	39	40
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5					
	Current transformer LDJ5-35	1-3		1-3	1-3	4-6
	Voltage transformer JDJ9-35					
	A lightning arrester		3	3	3	3
	Ground switch JN12-35					
	Live display					
	Fuse XRNP-35	3			3	3
Transformer SC9-35						
Use		PT overhead feed and contact	Lightning arrester	Lightning arrester and cable inlet and outlet line	Lightning arrester and liaison	Arrester overhead and liaison

Main circuit scheme diagram

Scheme number		41	42	43
Main circuit scheme diagram				
Major electrical component	Vacuum circuit breaker ZN85-40.5			
	Current transformer LDJ5-35			
	Voltage transformer JDJ9-35	1-3		
	A lightning arrester	3		
	Ground switch JN12-35			
	Live display			
	Fuse XRNP-35	3		
Transformer SC9-35			1	1
Use		With lightning arrester and contact Voltage transformer	Use transformer overhead and liaison	Applied variation