KYN28-24

Armored Withdrawable Type
AC Metal-Enclosed Switchgear

Overview

KYN28-24 switchgear has a variety of functions to prevent misoperation, including preventing moving handcar with load, preventing grounding switch from closing the circuit breaker, preventing live grounding switch and preventing straying into the live compartment. Switchgear equipped with excellent performance of VS1, VN2 series of medium high voltage AC vacuum circuit breaker and solid sealed vacuum switch. The secondary circuit of the switchgear is equipped with advanced and reliable control and protection elements; The bus bar adopts heat shrink insulation material or epoxy coated insulation means, optimizes the electrode shape, and the cabinet structure is compact. The switchgear is a power distribution equipment with advanced technology, stable performance, reasonable structure, convenient use, safety and reliability.

KYN28-24

Armored Withdrawable Type AC Metal-Enclosed Switchgear

Model meaning

K	Y	N	28	-	24	Z
↓	↓	↓	↓		↓	↓
Metal armoured type	Shifting type	Indoor	Design sequence number		Rated voltage (kV)	Vacuum circuit breaker

Conditions of use

◆ Environmental conditions: maximum temperature +40℃ , minimum temperature -15℃ , and the average measured within 24h does not exceed 35℃ ;

◆ Temperature conditions are as follows: the average daily relative humidity does not exceed 95%; The average monthly relative humidity is less than 90%. The average daily steam pressure does not exceed 2.2kPa; The average monthly vapor pressure does not exceed 1.8kPa;

◆ Altitude does not exceed 1000m;

The surrounding air is not significantly contaminated by dust, smoke, corrosive or combustible gases, vapors or salt spray;

◆ Vibration or ground movement from outside switchgear and control equipment can be ignored;

◆ The amplitude of electromagnetic interference induced in the secondary system does not exceed 1.6kV.

KYN28-24 Armored Withdrawable Type AC Metal-Enclosed Switchgear

Item		Units	Argument			
Rated short-time withstand current (4s)		kA	20		31.5	
Rated peak withstand current		kA	50		80	
Rated voltage of auxiliary control loop		V	Dc or AC 110/220			
Class of protection			IP4X(Open circuit breaker door or IP2X between compartmentalrooms)			
Overall dimensions (W X D X H)		mm	800×1810×2380		1000×1810×2380	
Weight		kg	840~1440		840~1440	
Rated voltage		kV	24		24	
Rated frequency		Hz	50/60		50/60	
Rated insulation level	Lightning impulse withstand voltage (peak)	kV	Interphase	60	Isolation fracture	79
	1min power frequency withstand voltage (RMS)	kV	Interphase	125	Isolation fracture	145
	Auxiliary control loop power frequency withstand voltage	V	2000			
Rated current		A	630,1250,1600,2000,2500,3150			
Rated short-circuit breaking current		kA	20		31.5	
Rated short circuit closing current (peak)		kA	50		80	

Note: The depth of the overhead inlet and outlet cabinet is 2360mm.

VS1-24, VN2-24 vacuum circuit breaker main technical parameters

Item		Units	Argument	
Rated voltage		kV	24	
Rated Insulation level	1min power frequency withstand voltage (RMS)	kV	60	
	Lightning impulse withstand voltage (peak)	kV	125	
Rated frequency		Hz	50/60	
Rated current		A	630,1250,1600,2000	630,1250,1600,2000,2500,3150
Rated short-circuit breaking current		kA	20	32
Rated short circuit closing current (peak)		kA	50	80
Rated short-time withstand current (4s)		kA	20	31.5
Rated peak withstand current		kA	50	80
Rated individual capacitor bank breaking current		A	630	
Rated back-to-back capacitor bank breaking current		A	400	
Rated short circuit breaking current breaking times		time	50	
Mechanical life		time	20000	
Rated operating sequence			O-0.3s-CO-180s-CO	

Technical parameters of spring operating mechanism

Item		Units	Argument
Rated operating voltage	Closing trip coil	V	AC220, AC110, DC220, DC110
	Opening trip coil		
Working current	Closing trip coil	A	The AC220 or DC220 is 1.1 AC110 or DC10 is 3.1
	Opening trip coil		
Energy storage motor power		W	80,100
Rated voltage of energy storage motor		S	AC220, AC110, DC220, DC110
Energy storage time		V	≤ 10

Dimensions and mounting dimensions (mm)

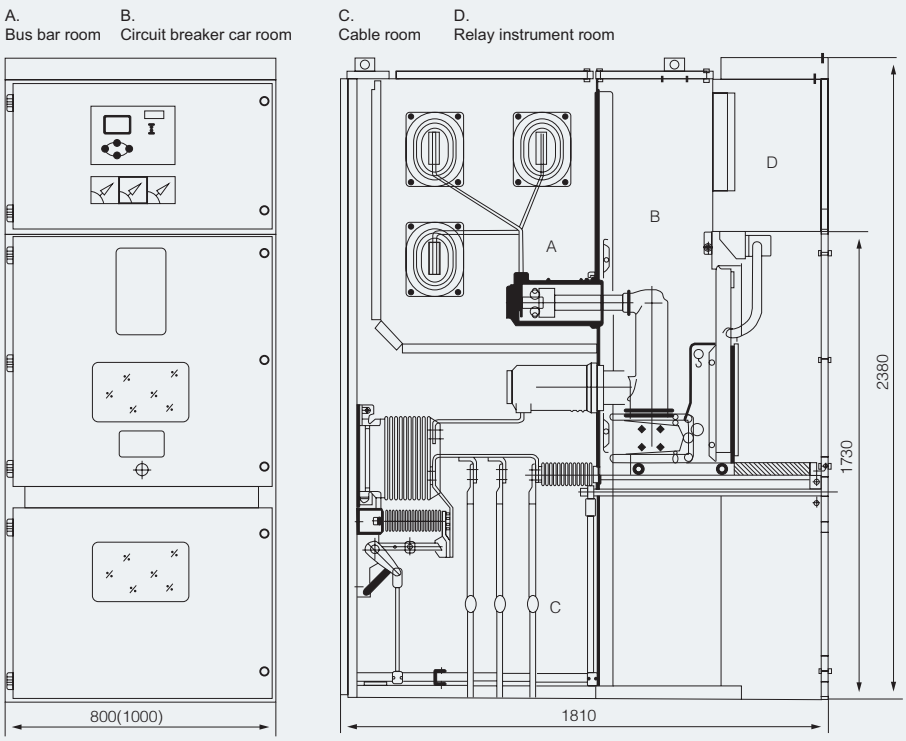


Figure 1 Structure diagram of KYN28–24 switchgear

Foundation Construction (mm)

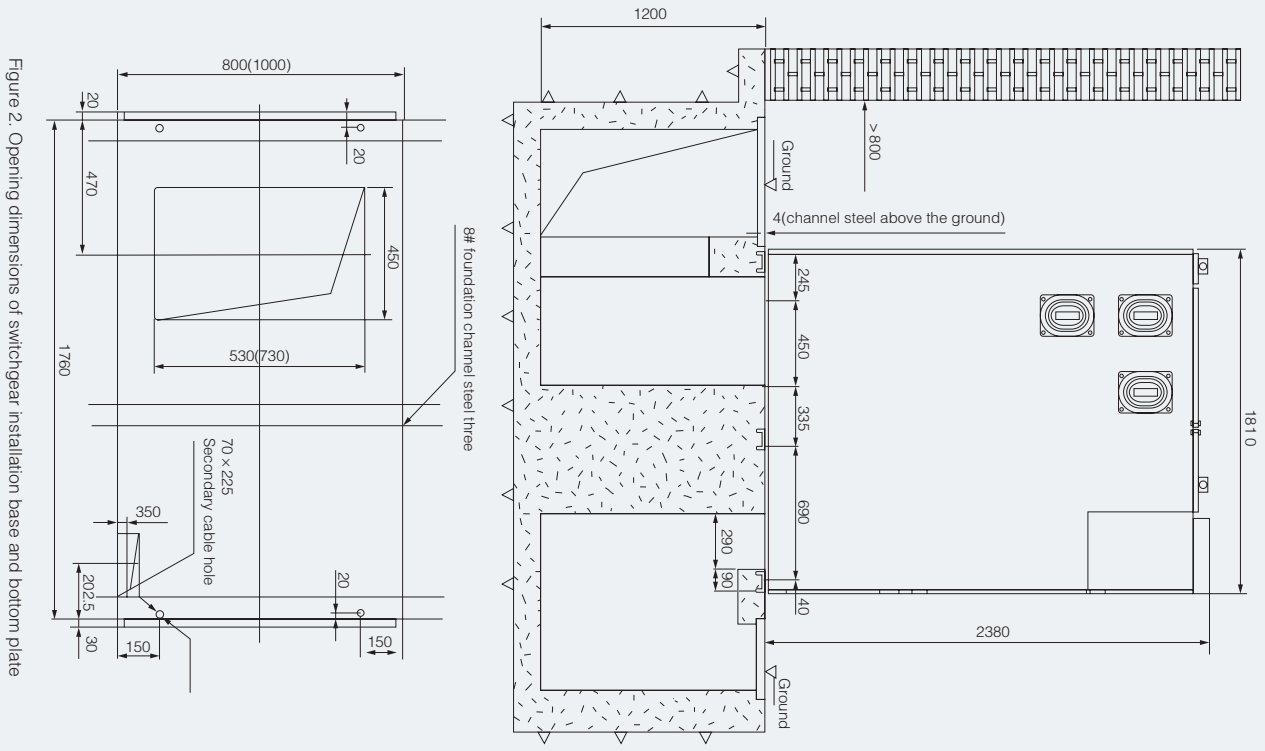
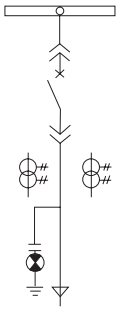
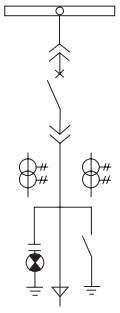
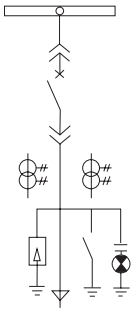
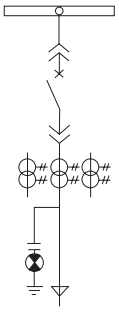
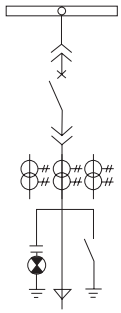
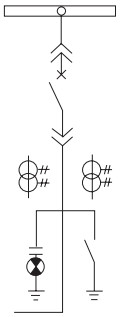
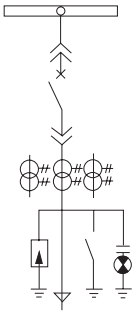
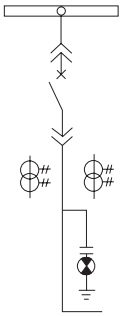
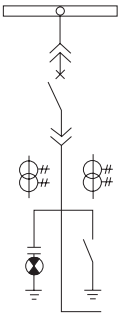
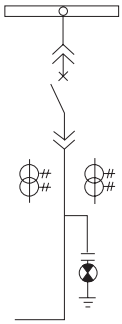


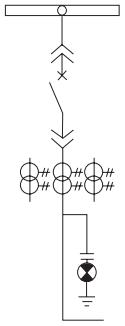
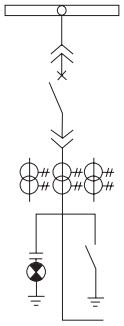
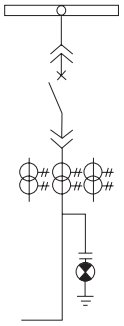
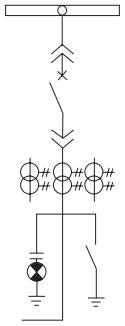
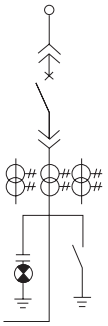
Figure 2. Opening dimensions of switchgear installation base and bottom plate

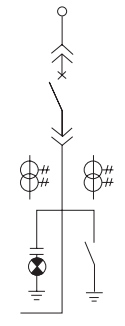
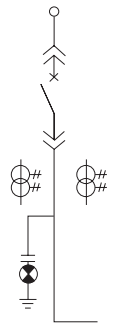
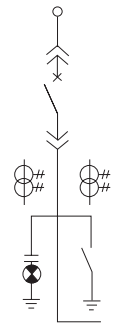
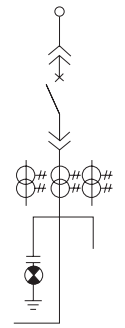
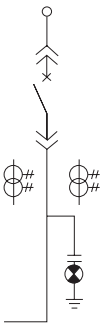
Main circuit scheme diagram

Scheme number		01	02	03	04	05
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	2	2	2	3	3
	Voltage transformer JDZ11-20/JDZX11-20					
	High voltage fuse XRNP-24 0.5A					
	Ground switch JN15-24			1		1
	Lightning arrester HY5WZ-32/84			3		
Use		Receive electricity, feed electricity	Feed	Feed	Receive electricity, feed electricity	Feed

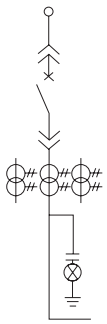
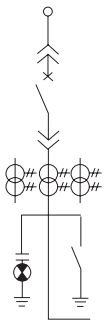
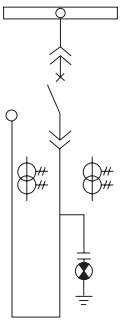
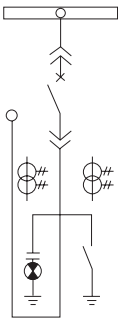
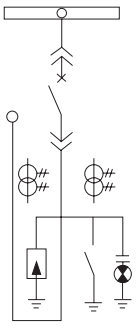
Scheme number		06	07	08	09	10
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	3	2	2	2	2
	Voltage transformer JDZ11-20/JDZX11-20					
	High voltage fuse XRNP-24 0.5A					
	Ground switch JN15-24	1		1		1
	Lightning arrester HY5WZ-32/84	3				
Use		Feed	Contact (right)	Contact (right)	Contact (left)	Contact (left)

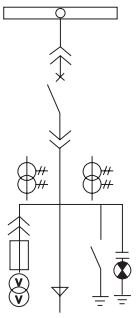
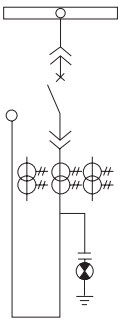
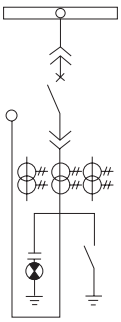
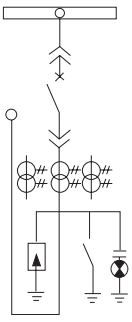
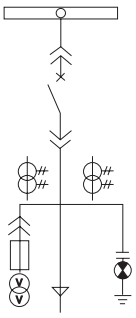
Main circuit scheme diagram

Scheme number		11	12	13	14	15
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	3	3	3	3	2
	Voltage transformer JDZ11-20/JDZX11-20					
	High voltage fuse XRNP-24 0.5A					
	Ground switch JN15-24		1		1	
	Lightning arrester HY5WZ-32/84					
Use		Contact (right)	Contact (right)	Contact (left)	Contact (left)	Overhead line (left link)

Scheme number		16	17	18	19	20
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	3	2	2	3	3
	Voltage transformer JDZ11-20/JDZX11-20					
	High voltage fuse XRNP-24 0.5A					
	Ground switch JN15-24	1		1		1
	Lightning arrester HY5WZ-32/84					
Use		Overhead line (left link)	Overhead line (right link)	Overhead line (right link)	Overhead line (left link)	Overhead line (left link)

Main circuit scheme diagram

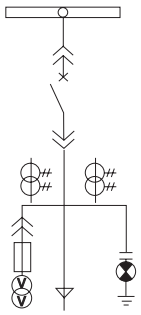
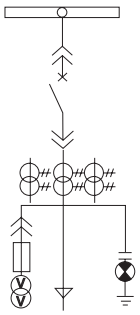
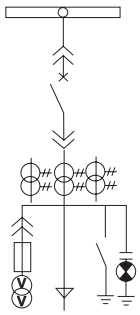
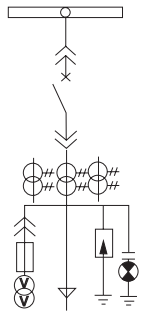
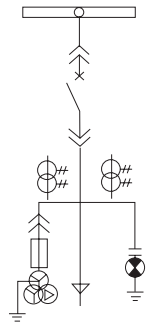
Scheme number		21	22	23	24	25
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24					
	Voltage transformer LZZB9-24	1	1	1	1	1
	Voltage transformer JDZ11-20/JDZX11-20	3	3	2	2	2
	High voltage fuse XRNP-24 0.5A					
	Ground switch JN15-24		1		1	1
	Lightning arrester HY5WZ-32/84					3
Use		Overhead line (right link)	Overhead line (right link)	Overhead inlet and outlet line	Overhead inlet and outlet line	Overhead inlet and outlet line

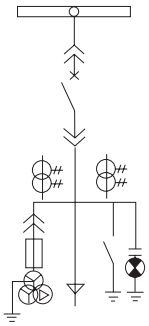
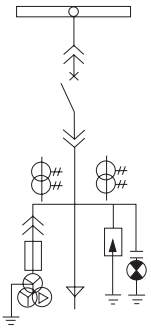
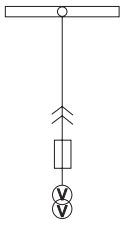
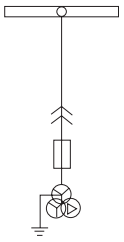
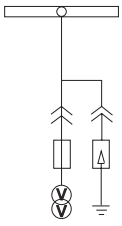
Scheme number		26	27	28	29	30
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	3	3	3	2	2
	Voltage transformer JDZ11-20/JDZX11-20				2	2
	High voltage fuse XRNP-24 0.5A				3	3
	Ground switch JN15-24		1	1		1
	Lightning arrester HY5WZ-32/84			3		
Use		Overhead inlet and outlet line	Overhead inlet and outlet line	Overhead inlet and outlet line	Receive electricity, feed electricity	Feed

KYN28-24

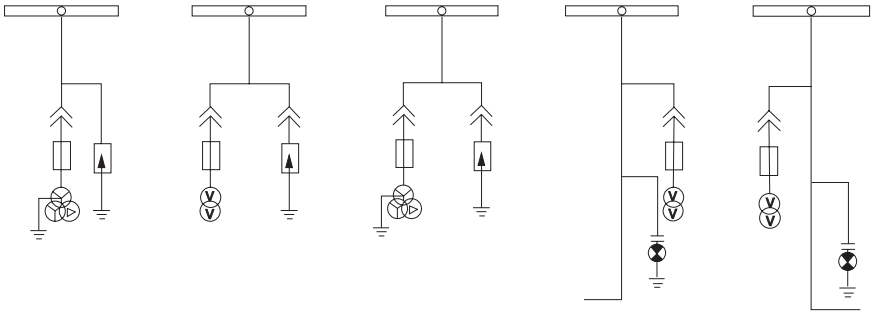
Armored Withdrawable Type AC Metal-Enclosed Switchgear

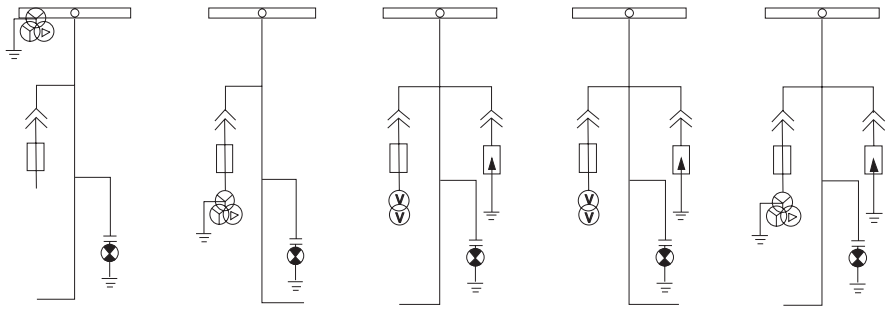
Main circuit scheme diagram

Scheme number		31	32	33	34	35
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	2	3	3	3	2
	Voltage transformer JDZ11-20/JDZX11-20	2	2	2	2	3
	High voltage fuse XRNP-24 0.5A	3	3	3	3	3
	Ground switch JN15-24			1		
	Lightning arrester HY5WZ-32/84	3			3	
Use		Receive electricity, feed electricity	Receive electricity, feed electricity	Feed	Receive electricity, feed electricity	Receive electricity, feed electricity

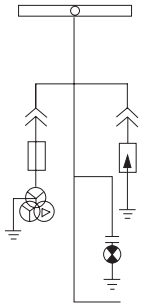
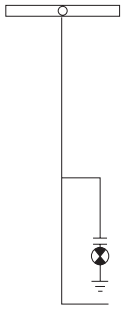
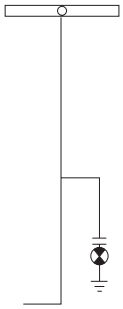
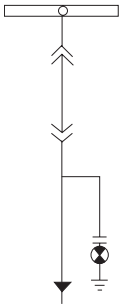
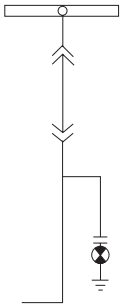
Scheme number		36	37	38	39	40
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1			
	Voltage transformer LZZB9-24	2	2			
	Voltage transformer JDZ11-20/JDZX11-20	3	3	2	3	2
	High voltage fuse XRNP-24 0.5A	3	3	3	3	3
	Ground switch JN15-24	1				
	Lightning arrester HY5WZ-32/84		3			3
Use		Feed	Receive electricity, feed electricity	Voltage measurement	Voltage measurement	Voltage measurement + arrester

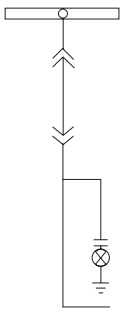
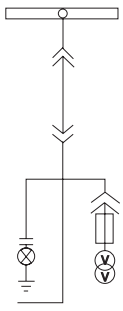
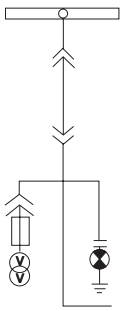
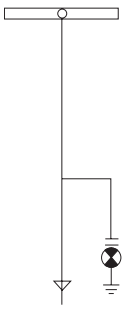
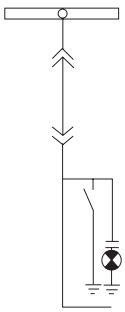
Main circuit scheme diagram

Scheme number		41	42	43	44	45
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24					
	Voltage transformer LZZB9-24					
	Voltage transformer JDZ11-20/JDZX11-20	3	2	3	2	2
	High voltage fuse XRNP-24 0.5A	3	3	3	3	3
	Ground switch JN15-24					
	Lightning arrester HY5WZ-32/84	3	3	3	3	
Use		Voltage measurement + arrester	Voltage measurement + arrester	Voltage measurement + arrester	Voltage measurement + left link	Voltage measurement + right link

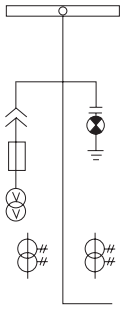
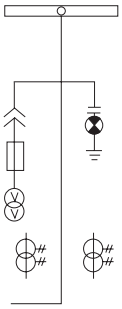
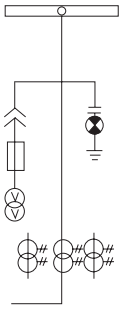
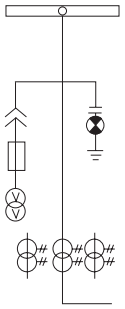
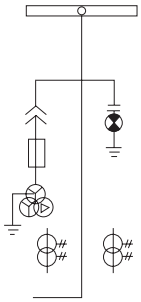
Scheme number		46	47	48	49	50
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1			
	Voltage transformer LZZB9-24					
	Voltage transformer JDZ11-20/JDZX11-20	3	3	2	2	
	High voltage fuse XRNP-24 0.5A	3	3	3	3	3
	Ground switch JN15-24					
	Lightning arrester HY5WZ-32/84			3	3	3
Use		Voltage measurement + left link	Overhead inlet and outlet line	Voltage measurement + arrester + left link	Voltage measurement + arrester + right link	Voltage measurement + arrester + left link

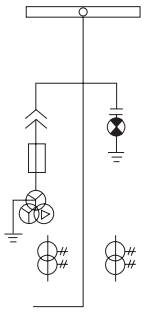
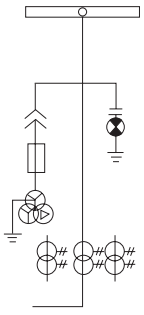
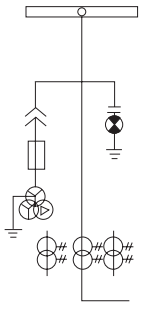
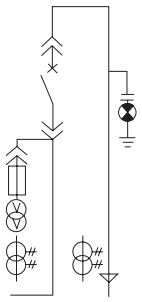
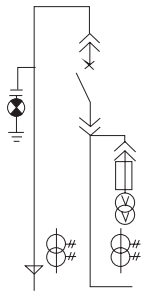
Main circuit scheme diagram

Scheme number	51	52	53	54	55
Main circuit scheme diagram					
Rated current (A)	630~3150				
Primary electrical component: Vacuum circuit breaker VS1-24					
Primary electrical component: Voltage transformer LZZB9-24					
Primary electrical component: Voltage transformer JDZ11-20/JDZX11-20	3				
Primary electrical component: High voltage fuse XRNP-24 0.5A	3				
Primary electrical component: Ground switch JN15-24					
Primary electrical component: Lightning arrester HY5WZ-32/84	3				
Use	Voltage measurement + arrester + right link	Contact (right)	Contact (left)	Isolate	Isolation + Contact (left)

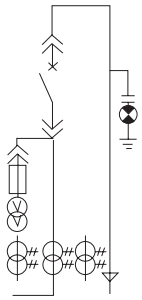
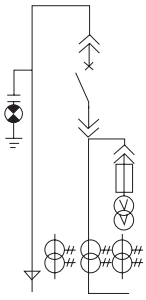
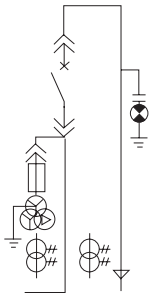
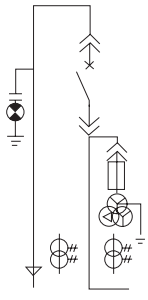
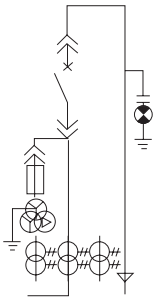
Scheme number	56	57	58	59	60
Main circuit scheme diagram					
Rated current (A)	630~3150				
Primary electrical component: Vacuum circuit breaker VS1-24					
Primary electrical component: Voltage transformer LZZB9-24					
Primary electrical component: Voltage transformer JDZ11-20/JDZX11-20		2	2		
Primary electrical component: High voltage fuse XRNP-24 0.5A		3	3		
Primary electrical component: Ground switch JN15-24					1
Primary electrical component: Lightning arrester HY5WZ-32/84					
Use	Isolation + Contact (right)	Isolation + contact (left) Voltage measurement	Isolation + connection (right) Voltage measurement	Wire in and out	Isolate

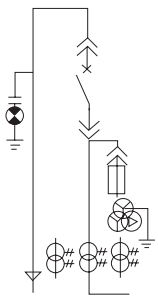
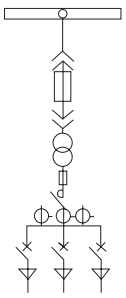
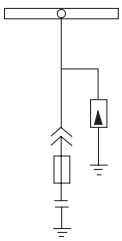
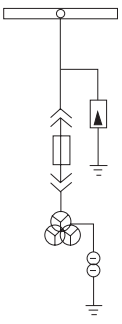
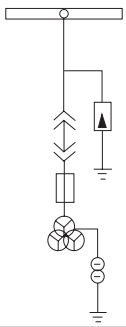
Main circuit scheme diagram

Scheme number		61	62	63	64	65
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24					
	Voltage transformer LZZB9-24					
	Voltage transformer JDZ11-20/JDZX11-20	2	2	3	3	2
	High voltage fuse XRNP-24 0.5A	2	2	2	2	3
	Ground switch JN15-24	3	3	3	3	3
	Lightning arrester HY5WZ-32/84					
Use		Metering + right link	Metrology + Left link	Metrology + Left link	Metering + right link	Metrology + Left link

Scheme number		66	67	68	69	70
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24				1	1
	Voltage transformer LZZB9-24	2	3	3	2	2
	Voltage transformer JDZ11-20/JDZX11-20	3	3	3	2	2
	High voltage fuse XRNP-24 0.5A	3	3	3	3	3
	Ground switch JN15-24					
	Lightning arrester HY5WZ-32/84					
Use		Metering + right link	Metrology + Left link	Metering + right link	Incoming line + metering	Incoming line + metering

Main circuit scheme diagram

Scheme number		71	72	73	74	75
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	3	3	2	2	3
	Voltage transformer JDZ11-20/JDZX11-20	2	2	3	3	3
	High voltage fuse XRNP-24 0.5A	3	3	3	3	3
	Ground switch JN15-24					
	Lightning arrester HY5WZ-32/84					
Use		Incoming line + metering	Incoming line + metering	Incoming line + metering	Incoming line + metering	Incoming line + metering

Scheme numberScheme number		76	77	75	79	80
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1				
	Voltage transformer LZZB9-24	3				
	Voltage transformer JDZ11-20/JDZX11-20	/3	1（Note 1）	3（Note 2）	4	4
	High voltage fuse XRNP-24 0.5A	3	XRNT 3	XRNT 3	3	3
	Ground switch JN15-24				3	3
	Lightning arrester HY5WZ-32/84			3		
Use		Incoming line + metering	All transformer cabinets (The width of the cabinet is determined by the variable size used)	Capacitor cabinet	Voltage measurement + arrester	Voltage measurement + arrester

Note 1: The transformer is from the user Select Recommended Use dry change
Note 2: Parallel capacitor Bm243-16-1