



TZN3-24 Series(系列)

高压交流 真空断路器

High-voltage AC Vacuum Circuit Breaker

产品概述 General

TZN3-24系列户内高压交流真空断路器适用于电压24kV、额定频率为50(60)Hz的电力系统的户内开关设备,用于投切各种不同性质的负荷及频繁操作场所,可供工矿企业、发电厂及变电站电气设备的保护和控制之用;尤其适用于开断重要负荷。

TZN3-24 series of indoor HV vacuum circuit breakers are used in the switchgear rated 24 kV, 50(60)Hz. They are suitable for making different types of loads and frequent operation, to protect and control the electric equipment in industrial & mining enterprises, power plants and substations, especially suitable for breaking important loads.

技术数据 Technical Data

序号 Number	项目 Item	单位 Unit	参数 Parameter		
1	额定电压 Rated voltage	kV	24		
2	额定频率 Rated frequency	Hz	50 (60)		
3	额定短时工频耐受电压 (1min) Rated short-time power frequency withstand voltage(1 min)	kV	60		
4	额定雷电冲击耐受电压 Rated lightning impulse withstand voltage	kV	125		
5	额定电流 Rated current	A	630	630	1250
			1250	1250	1600
6	额定短时耐受电流 Rated short-time withstand current	kA	20	25	31.5
7	额定峰值耐受电流 Rated peak withstand current	kA	50	63	80
8	额定短路开断电流 Rated short-circuit breaking current	kA	20	25	31.5
9	额定短路关合电流 Rated short-circuit making current	kA	50	63	80
10	额定操作顺序 Rated operating sequence	/	O-0.3s-CO-180s-CO		
11	短路电流开断次数 Short-circuit current breaking times	次 times	274		
12	额定电容器组开断电流 Rated capacitor bank breaking current	A	630/400		
13	断路器机械寿命 Mechanical lifespan (circuit breaker)	次 times	10000		

产品特点 Feature

TZN3-24系列户内高压交流真空断路器是以真空绝缘的户内开关设备元件，导电部分可采用固封极柱，也可采用绝缘筒式结构。

TZN3-24 indoor AC high-voltage vacuum circuit breaker is a vacuum-insulation switching component. The electric conduction part can be made with embedded poles or insulation canisters.

该产品机械寿命完全达到M2级断路器水平，10,000次免维护，机械寿命总数提高到20,000次。

Its mechanical lifespan can achieve the class-M2 circuit breaker, i.e. maintenance free for 10,000 times. The mechanical lifespan is up to 20,000 times (60,000 times, with permanent-magnetic device).

该产品具有体积小,机构简单,可靠性高,机构模块化,工艺性好。

Small size, simple structure, high reliability, modular design and excellent technics.

正常使用条件 Normal Service Condition

◆ 环境温度：上限 +40℃；下限 -15℃ Ambient temperature: -15℃ ~ +40℃;

◆ 海拔：≤1000m Altitude: ≤1000m;

◆ 无火灾、爆炸危险、严重污秽、化学腐蚀及激烈振动场所

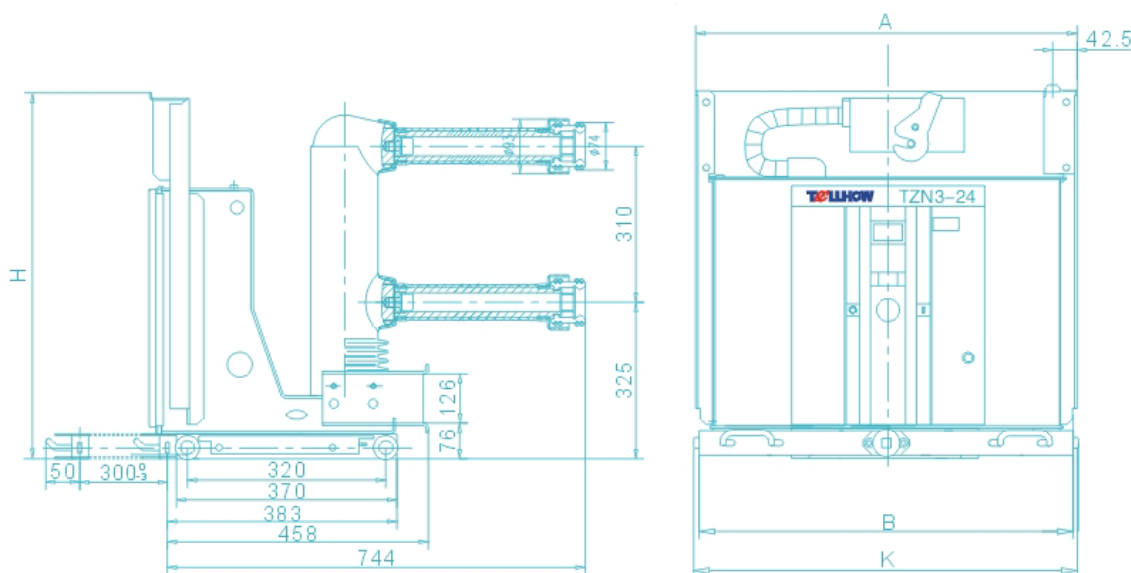
Free from fire, explosion, heavy pollution, chemical corrosion and severe vibration.

◆ 地震烈度不超过8度； The earthquake intensity ≤ 8 degree

◆ 超出正常使用条件时，由用户与制造厂协商。

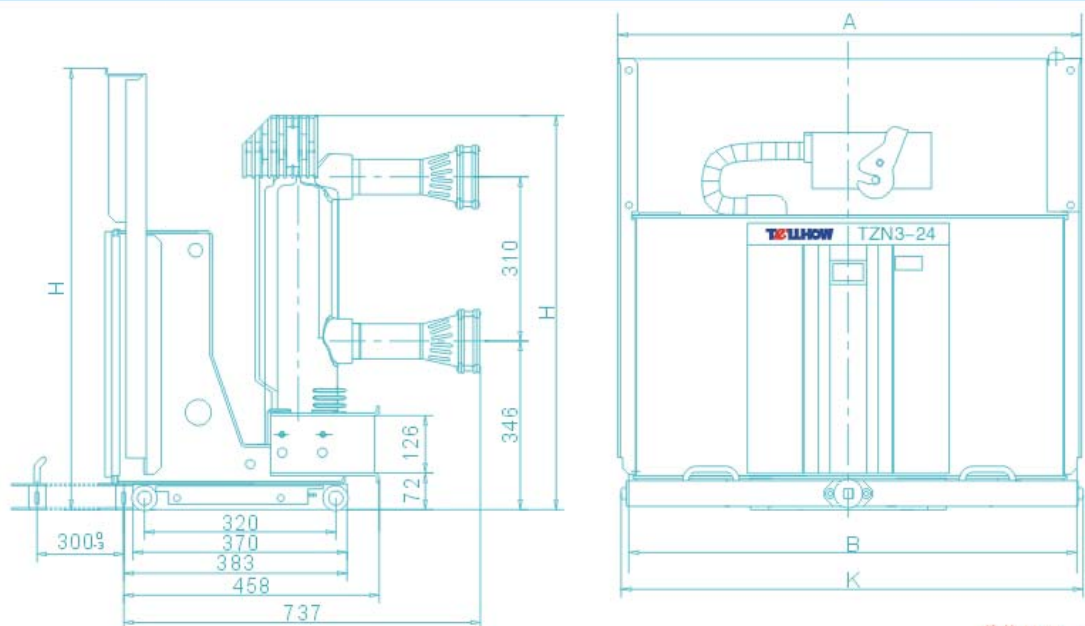
If the service condition differs with the above condition, the user should consult the manufacturer

外形尺寸（手车式） Dimension (withdrawable type)



单位 Unit: mm

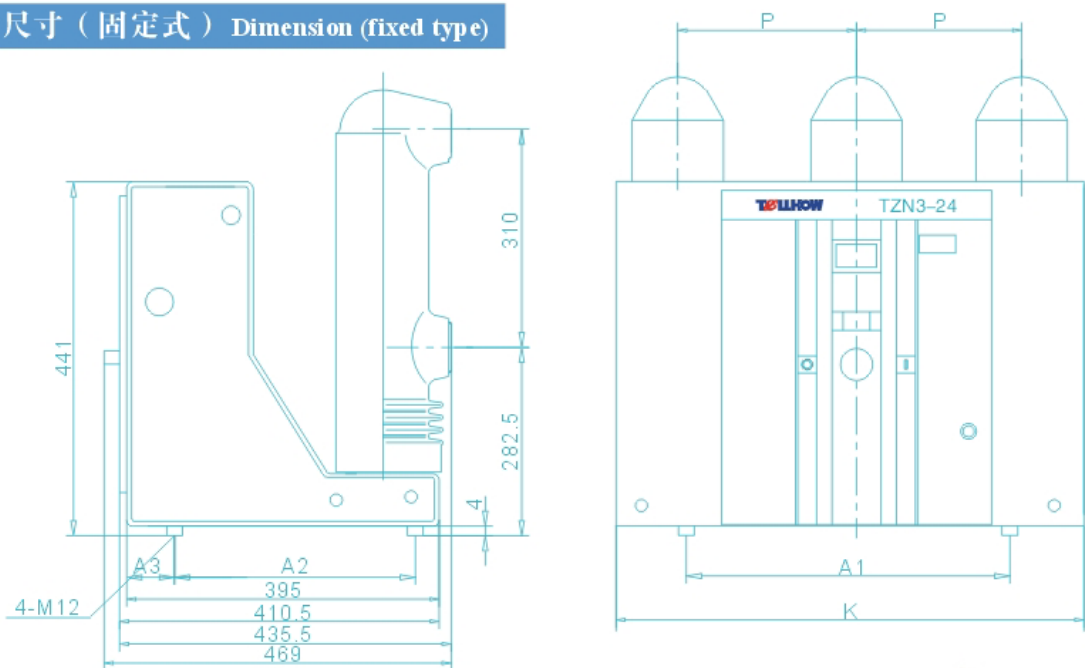
手车式参数 Parameter(withdrawable type)		相间距 Distance between phases	A	B	K	H
额定电流 Rated current 配合静触头尺寸 Fixed tulip contact size	额定短路开断电流 Rated short-circuit breaking current					
630A, 1250A	20kA, 25kA	210	638	652	679	780
φ 35 φ 49		275	838	852	879	825



单位 Unit: mm

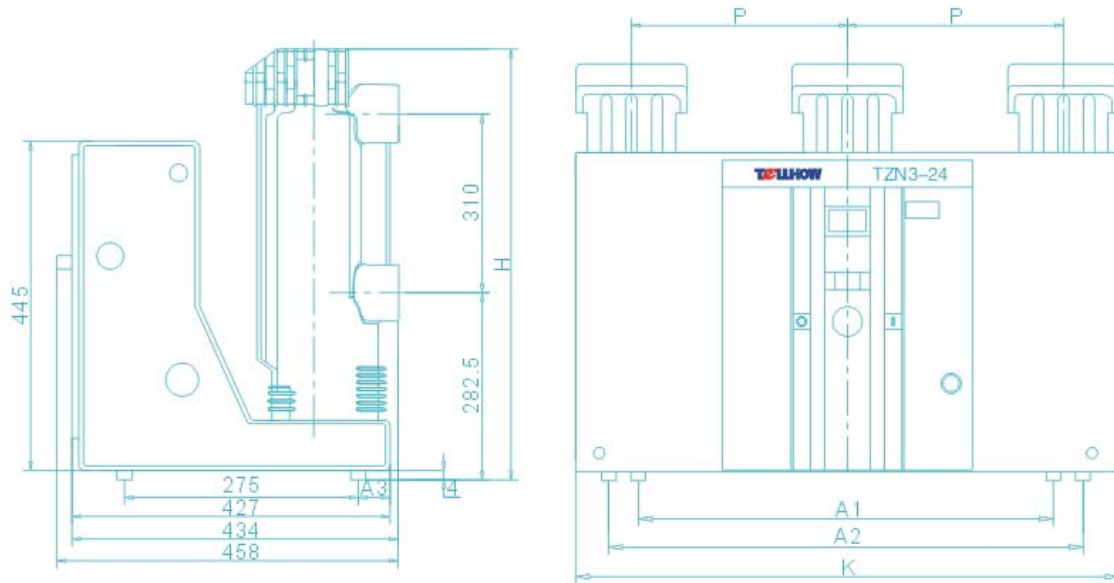
手车式参数 Parameter(withdrawable type)		相间距 Distance between phases	A	B	K	H
额定电流 Rated current 配合静触头尺寸 Fixed tulip contact size	额定短路开断电流 Rated short-circuit breaking current					
1600A,2000A	20kA,25kA	275	838	852	881	706
φ 79						
2500A,3150A	20kA,25kA					785
φ 109						

外形尺寸（固定式） Dimension (fixed type)



单位 Unit: mm

固定式参数 Parameter(fixed type)		P	A1	A2	A3	K
额定电流 Rated current	额定短路开断电流 Rated short-circuit breaking current					
630A, 1250A	20kA,25kA	210	520	275	20	588
		275	650	275	40	788

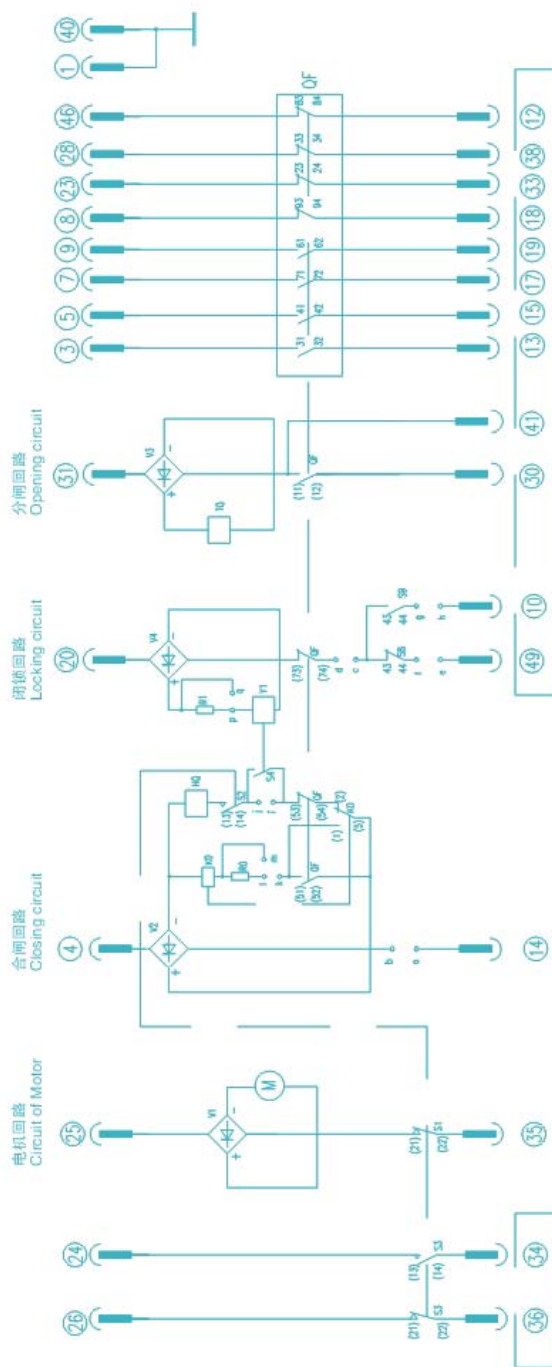


单位 Unit: mm

固定式参数 Parameter(fixed type)		P	A1	A2	A3	K	H
额定电流 Rated current	额定短路开断电流 Rated short-circuit breaking current						
1600A,2000A	20kA,25kA	275	650	720	40	788	643
2500A	20kA,25kA						722
3150A	25kA						722

典型电气原理图（手车式）
Typical Electric Diagram(withdrawable type)

TZN3-24 Series Vacuum Circuit Breaker (hand type)
TZN3-24 Series Vacuum Circuit Breaker Diagram (withdrawable type)



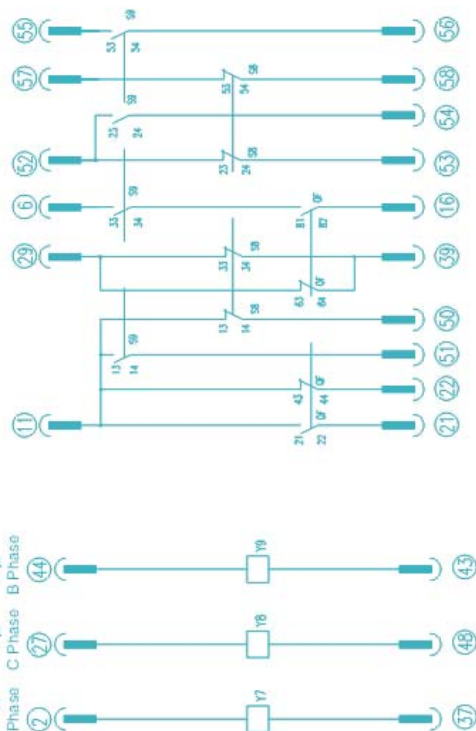
操作电源选择:
Choice of operation power supply

操作电源 Power supply for operation	接线 Jumper wires	m-l
AC/DC 220V	/	/
AC/DC 110V	✓	✓

注: “/”表示断开 “✓”表示连接
Note: “/” means disconnected
“✓” means connected

可选件接线位置:
Connection of the optional

接线 Jumper wires	a-b	c-d	e-f	g-h	a-f	a-g	b-c	d-e	f-g	h-i
带闭锁 With locking device	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
不带闭锁 Without locking device	/	/	/	/	/	/	/	/	/	/
带闭锁 With locking device	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
不带闭锁 Without locking device	/	/	/	/	/	/	/	/	/	/



Y1: 闭锁电磁铁 (可选)
Y1: Locking electromagnet(optional)

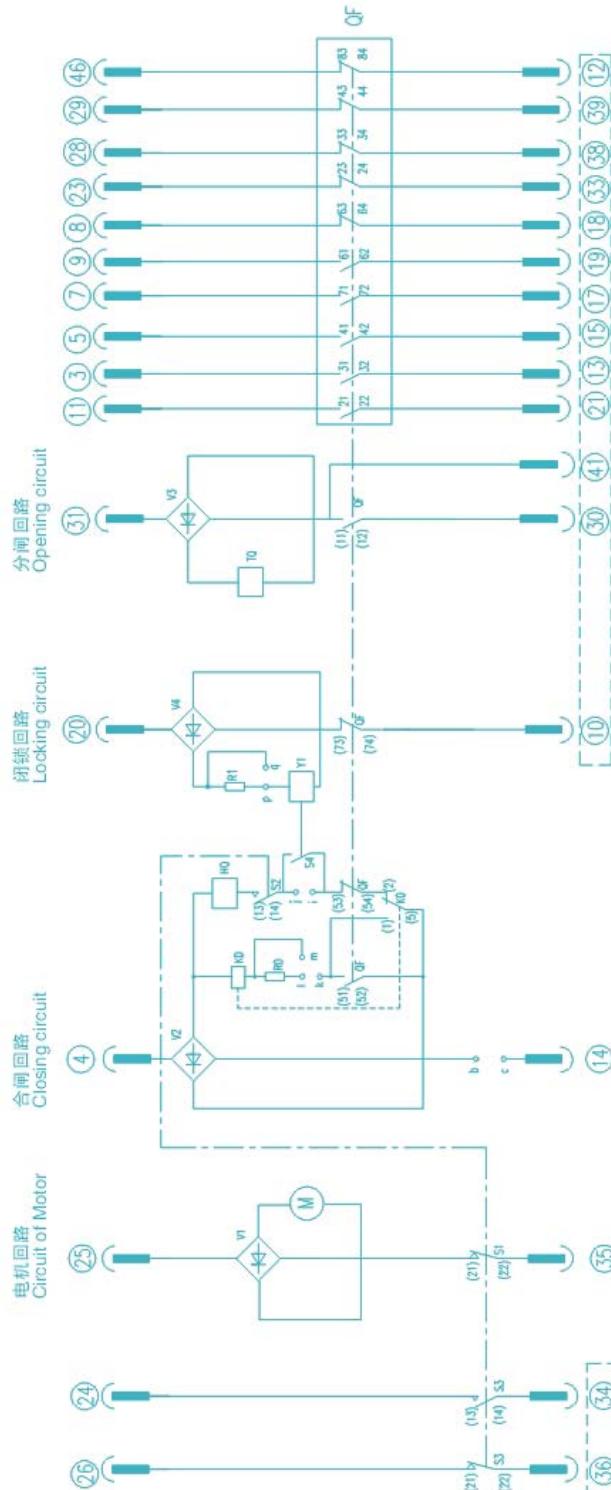
Y8: 线圈过流脱扣线圈 (可选)
Y8: Coils of indirect over-current release(optional)

说明Note:
图1: 为断路器处于试验位置, 分闸, 未闭锁状态
The Figure shows the status when circuit breaker is on testing position

2. 当操作电源为直流时, 应保证图中虚线——
The polarity of the devices and circuits in the dotted line should be same when the power supply for operation is direct current

典型电气原理图（固定式） Typical Electric Diagram (fixed type)

TZN3-24 Series Vacuum Circuit Breaker Diagram (fixed type)



操作电源选择:
Choice of operation power supply

操作电源 Power supply for operation	接线 Jumper wires	P-Q	M-H
AC/DC 220V	/	/	/
AC/DC 110V	/	✓	✓

注: “/”表示断开 “√”表示连接
Note: “/” means disconnected “√” means connected

可选件接线设置:
Connection of the optional

配置 Configuration	带闭锁 With anti- bouncing device	无闭锁 Without locking device	带闭锁 With locking device	无闭锁 Without locking device	带闭锁 With locking device	无闭锁 Without locking device	带闭锁 With locking device	无闭锁 Without locking device
带闭锁 With anti- bouncing device	✓	✓	✓	✓	✓	✓	✓	✓
无闭锁 Without locking device	✓	✓	✓	✓	✓	✓	✓	✓
带闭锁 With locking device	✓	✓	✓	✓	✓	✓	✓	✓
无闭锁 Without locking device	✓	✓	✓	✓	✓	✓	✓	✓

注: “/”表示断开 “√”表示连接
Note: “/” means disconnected “√” means connected

说明Note:
当操作电源为直流时, 原图中虚线中横线——
The polarity of the devices and circuits in the dotted line should be same when the power supply for operation is direct current