



TZN1-12/M Series(系列)

户内永磁型 真空断路器

Indoor Permanent-magnetic Vacuum Circuit Breaker

产品概述 General

TZN1-12/M系列户内永磁型真空断路器适用于电压12kV、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。

TZN1-12/M series of indoor permanent-magnetic vacuum circuit breakers are used in the switchgear rated 12kV, 50(60)Hz. They are suitable for making different loads and frequent operation, to protect and control the electric equipments in industrial & mining enterprises, power plants and substations.

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	12			
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	42			
4	额定雷电冲击耐受电压 Rated lightning impulse withstand voltage	kV	75			
5	额定电流 Rated current	A	630	630	630、1250	1600、2000
			1250	1250	1600、2000	2500、3150
			1600	1600	2500、3150	4000
6	额定短时耐受电流 Rated short-time withstand current	kA	20	25	31.5	40
7	额定峰值耐受电流 Rated peak withstand current	kA	50	63	80	100
8	额定短路开断电流 Rated short-circuit breaking current	kA	20	25	31.5	40
9	额定短路关合电流 Rated short-circuit making current	kA	50	63	80	100
10	额定操作顺序 Rated operating sequence	/	O-0.3s-CO-180s-CO O-180s-CO-180s-CO (40kA)			
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	630/400 800/400 (40kA)			
13	断路器机械寿命 Mechanical lifespan (circuit breaker)	次 times	M2级(class)10000			
14	永磁机构的机械寿命 Mechanical lifespan (permanent-magnetic device)	次 times	100000			

产品特点 Feature

TZN1-12/M系列户内永磁型真空断路器采用永磁操动机构，主导电回路采用固封极柱。

TZN1-12/M series of indoor permanent-magnetic vacuum circuit breaker adopts permanent-magnetic operation device. The main electric conduction loop adopts the design of embedded poles.

该产品可在工作电流范围内进行频繁的操作或多次开断短路电流；永磁机构机械寿命可高达100,000次。断路器寿命30,000次；短路开断次数274次；M2级。

The product is suitable for frequent operation and breaking short-circuit current under normal working current. The mechanical lifespan of permanent-magnetic device can be up to 100,000 times. The mechanical lifespan of circuit breaker is 30,000 times; the short-circuit breaking times is 274; M2 class.

体积小,重量轻,结构简单,操作可靠,免维护,使用寿命长。

Small size, light weight, simple structure, reliable operation, maintenance free, long lifespan.

- ◆ 高绝缘 High insulation
- ◆ 防凝露 Water-condensation proof
- ◆ 抗污秽 Pollution-proof
- ◆ 小型化 Small size
- ◆ 低阻值 Low resistance

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.

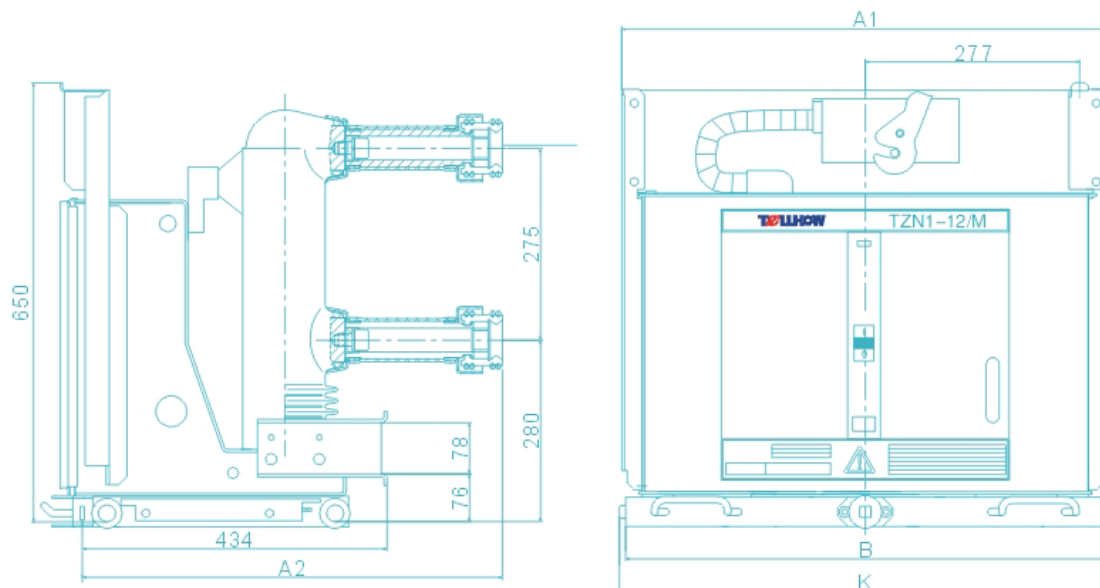
- ◆ 地震烈度不超过8度；

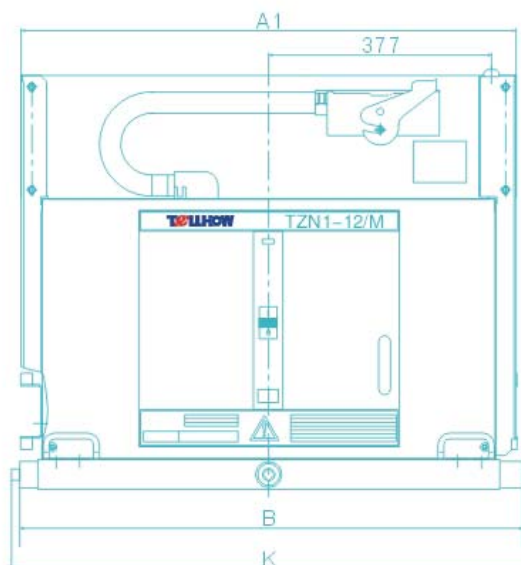
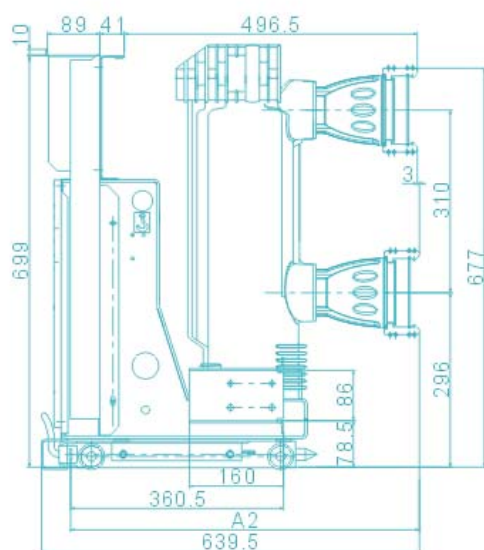
The earthquake intensity ≤ 8 degree

- ◆ 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)

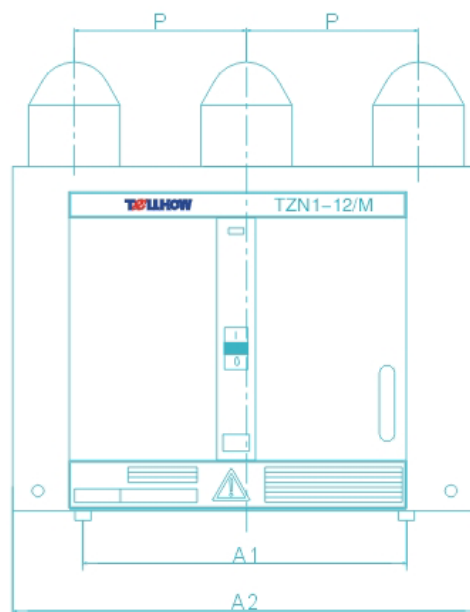
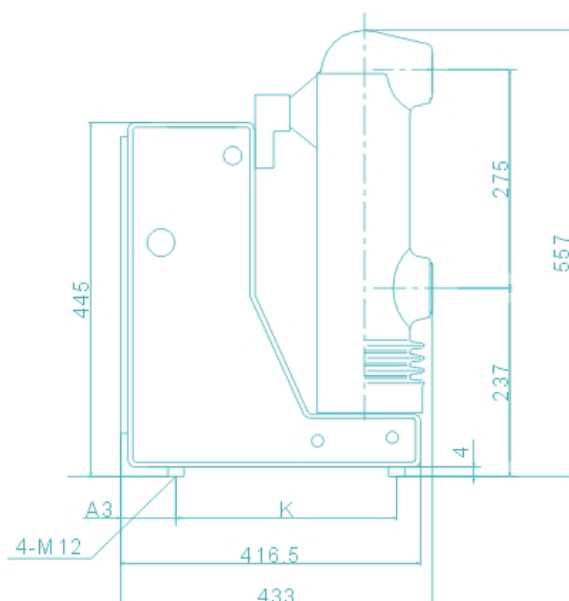


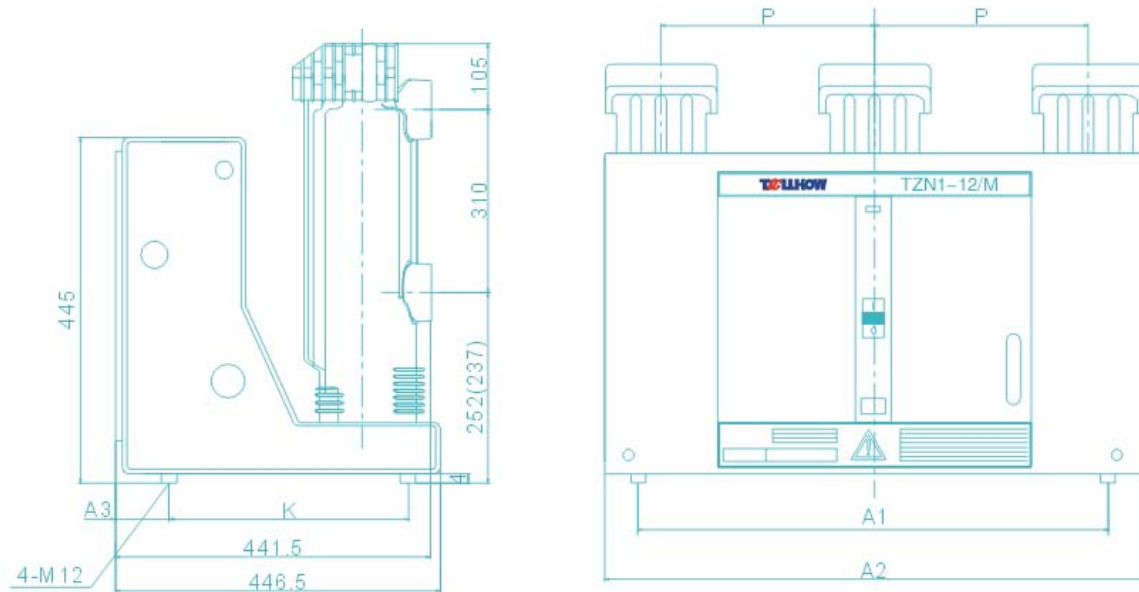


单位 Unit: mm

手车式参数 Parameter(withdrawable type)		相间距 Distance between phases	A1	A2	B	K
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 φ35 φ49	25kA, 31.5kA	210	638	598	652	681
1600A, 2000A, 2500A, 3150A φ55 φ79 φ109	31.5kA, 40kA	275	838	590	852	880

外形尺寸（固定式） Dimension (fixed type)



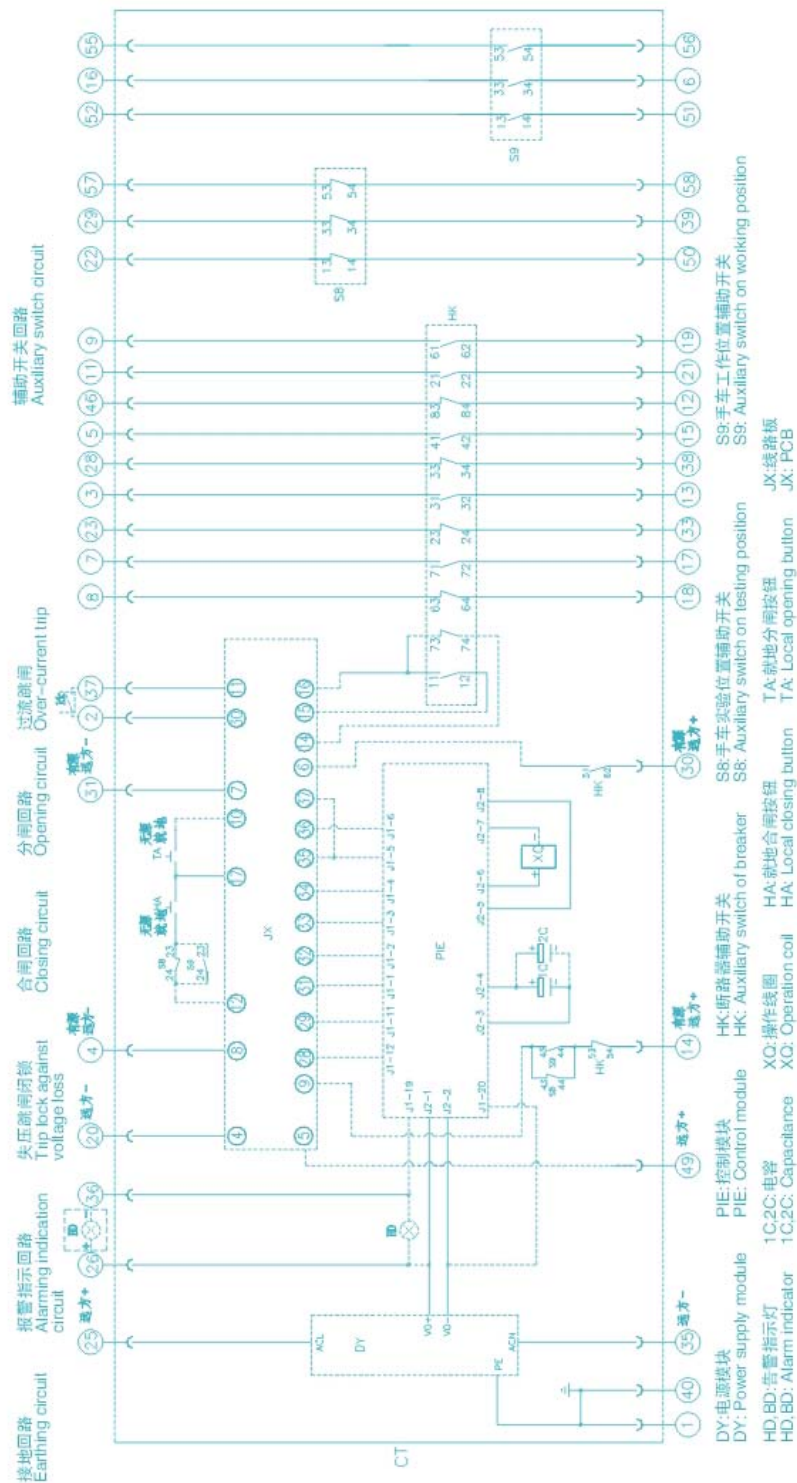


单位 Unit: mm

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	25kA,31.5kA	210	520	588	121.5	275
1600A,2000A,2500A,3150A	31.5kA,40kA	275	720	770	121.5	275

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

TZN1-12/M Series Permanent-magnet Vacuum Circuit Breaker Diagram(withdrawable type)

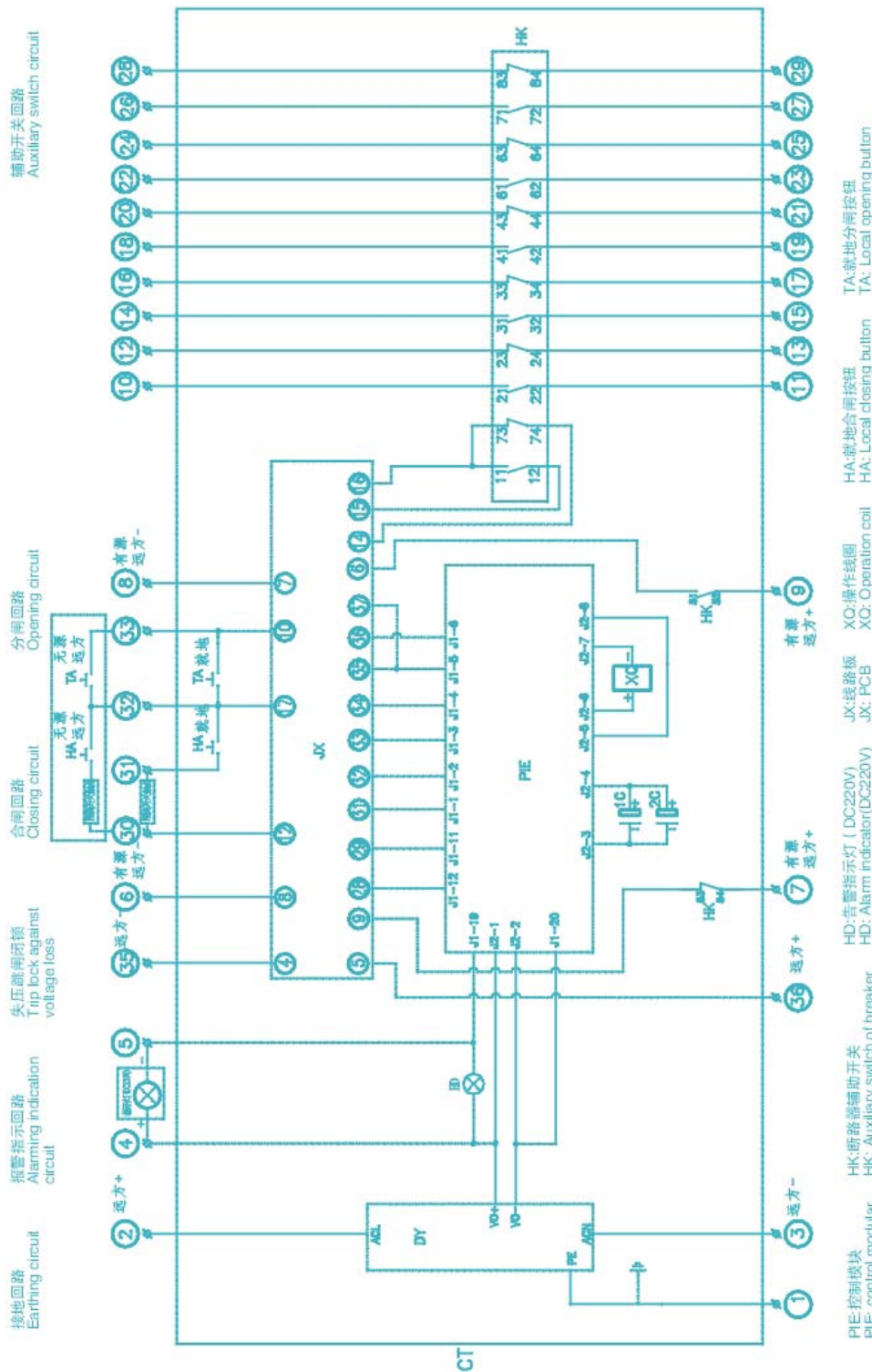


注意Note:

- 1、插头上14号、25号、30号和49号连接同电源电源接点。
14,25,30 and 49 pins of the plug assembly contact with same power source.
- 2、插头上4号、20号、31号和35号连接同电源电源接点。
4,20,31 and 35 pins of the plug assembly contact with same power source.
- 3、虚线框内元件及接线由用户自行完成。
Elements and wires within the dotted lines should be provided by the user.
- 4、如果不需要失压跳闸闭锁，则取掉JX: 37与PIE: 8的连线。
If trip lock for voltage loss is not wanted, please remove the connection lines with JX: 37 and PIE: 8.
- 5、插头上2号和37号连接无源开点（切勿接电源），过流跳闸信号由外部提供。
2 and 37 pins of the plug assembly wire with the passive terminals (don't wire it with power), the trip signal for over-current will be available from outside.

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

TZN1-12/M系列永磁型真空断路器接线原理图 (固定式) TZN1-12/M Series Permanent-magnet Vacuum Circuit Breaker Diagram(fixed type)



注意Note:

- 1、虚线框内元件及接线由用户自行完成。
- 2、Elements and wires within the dotted lines should be provided by the user.
- 3、端子排上2、7和9连接正电源；3、6和8连接负电源。
- 4、2,7 and 9 terminals wire to positive power only;3,6 and 8 terminals wire to negative power.
- 5、如无闭锁回路，必须将JX; 35与JX; 37断开。
- 6、JX; 35 and JX; 37 must be disconnected without locking circuit.
- 7、端子的4和5之间只能接灯，不能接电源。
- 8、4 and 5 terminals wire to lamp only, don't wire them to power supply.
- 9、在端子排的32和33之间连接一个电流继电器的常开触点，即可实现过流。
- 10、Wiring a current relay between the terminals 32 and 33, it will be over-current.