



TZN1-12 Series (系列)

户内固封极柱中压 真空断路器

Indoor Medium-voltage Vacuum Circuit Breaker with Embedded Poles

产品概述 General

TZN1-12系列户内固封极柱中压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 series of indoor MV vacuum circuit breakers are used in the indoor switchgear rated 12 kV, 50(60)Hz. They are suitable for making different types of 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	1250	1250、1600
					1600	2000、2500
			1250	1250	2000	3150
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	机械寿命 Mechanical lifespan	次 times	10000			

产品特点 Feature

TZN1-12系列真空断路器采用成熟的APG工艺将真空灭弧室、主导电路用环氧树脂固封为一个整体、绝缘强度高、体积小，真空灭弧室表面不受外界环境的影响，真正实现免维护；

The main electric conduction loop of the circuit breaker (TZN1-12 series) is made by APG technics, embedding its vacuum arc extinguish chamber and main loop with epoxy resin for an integration. Thereby, its insulation performs with high strength, the size is small, and the surface of its vacuum arc-extinguish chamber avoids the influence of ambient environment, realizing the maintenance-free purpose.

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

正常使用条件 Normal Service Condition

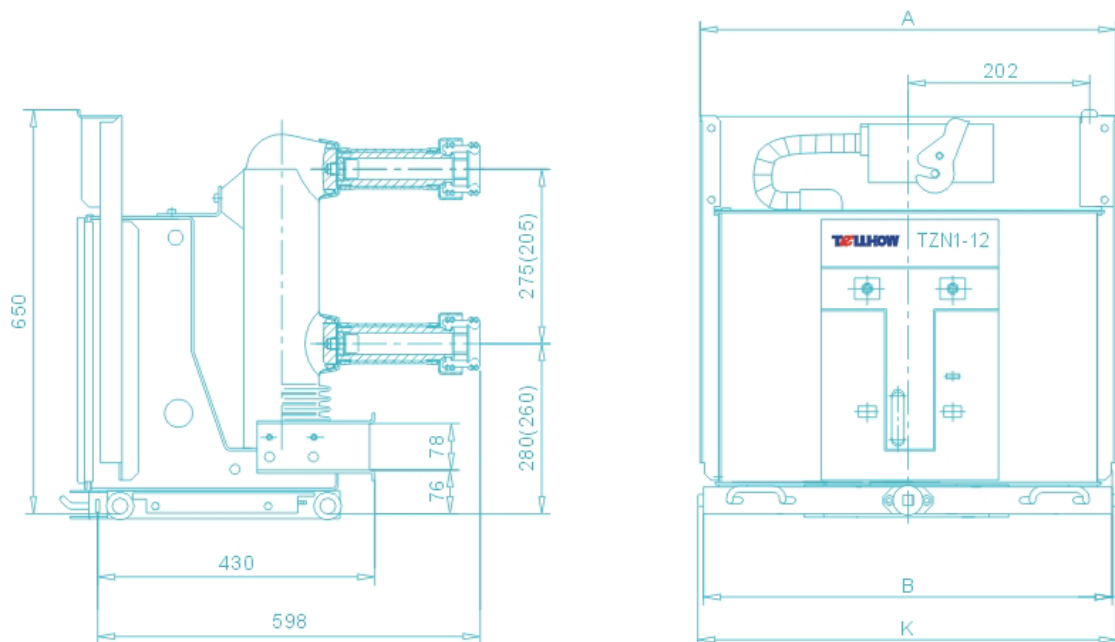
- ◆ 环境温度：上限 +40℃；下限 -15℃ Ambient temperature: -15℃ ~ +40℃;
- ◆ 海拔：≤1000m Altitude: ≤1000m;
- ◆ 无火灾、爆炸危险、严重污秽、化学腐蚀及激烈振动场所

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。

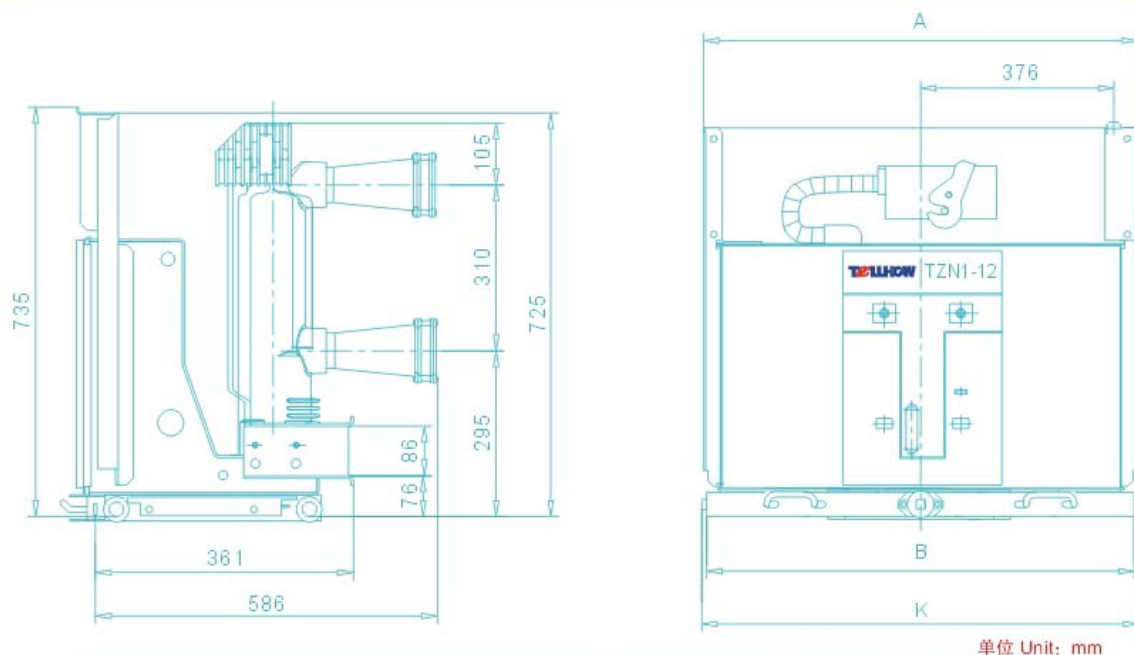
If the service condition differs with the above condition, the user should consult the manufacturer.

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



单位 Unit: mm

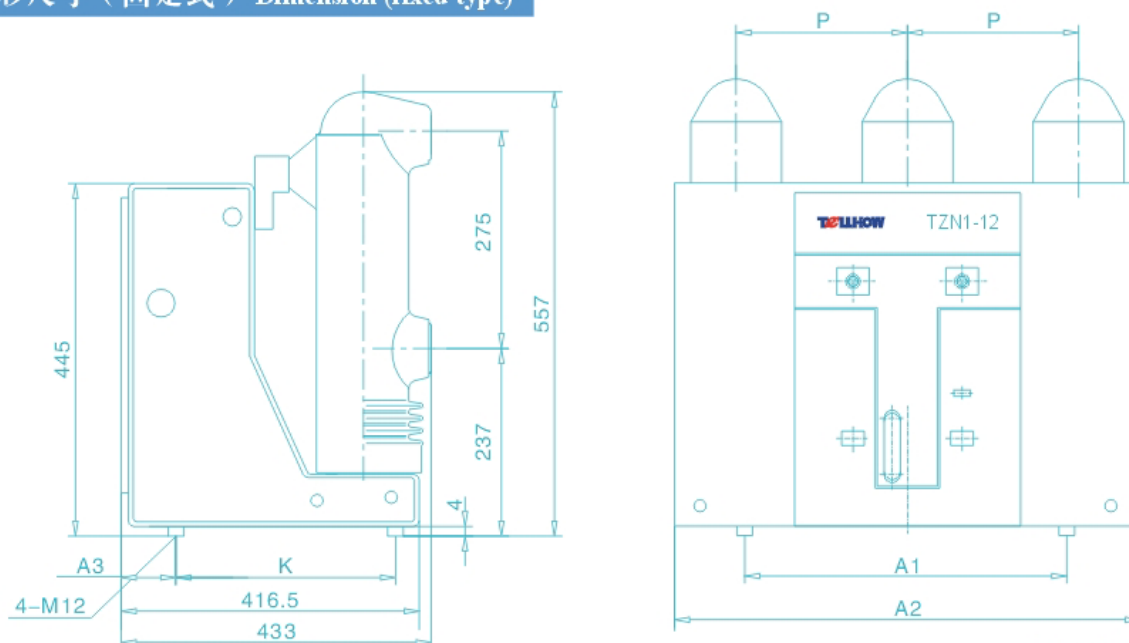
手车式参数 Parameter(withdrawable type)		相间距 Distance between phases	A	B	K
额定电流 Rated current 配合静触头尺寸 Fixed tulip contact size	额定短路开断电流 Rated short-circuit breaking current				
630A, 1250A, 1600A	20kA, 25kA, 31.5kA	150	490	502	531
φ 35 φ 49 φ 55		210	638	652	681



单位 Unit: mm

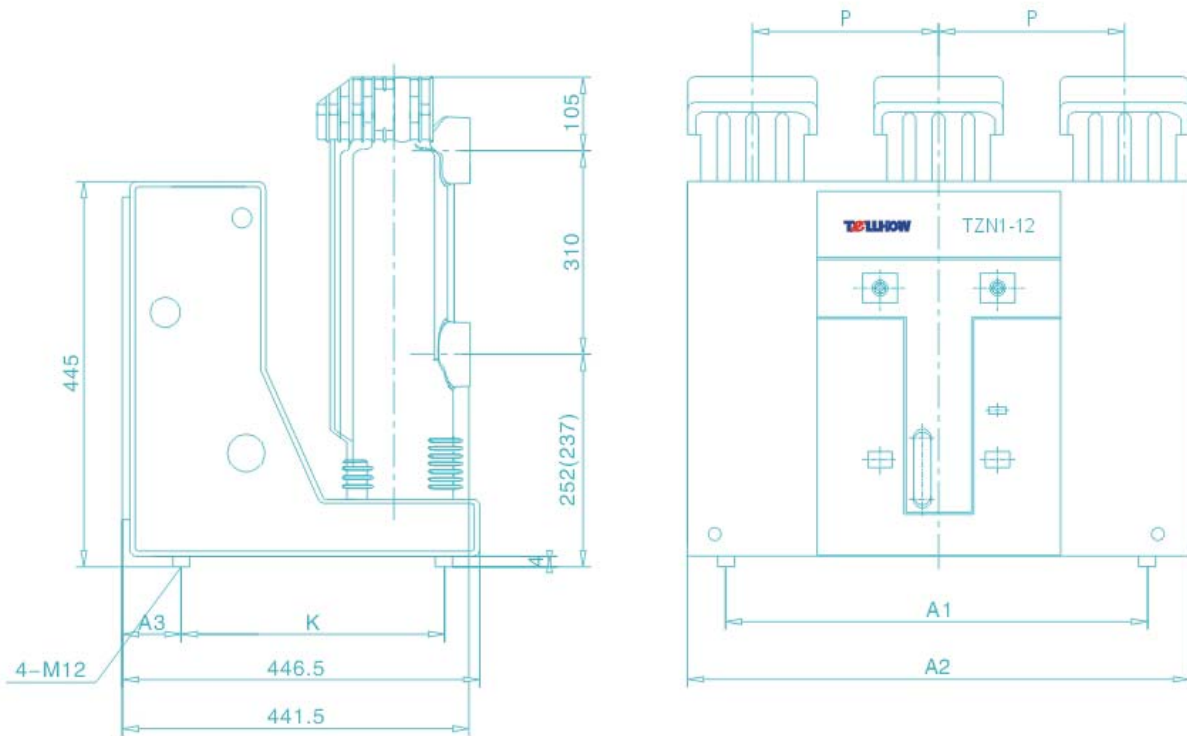
手车式参数 Parameter(withdrawable type)		相间距 Distance between phases	A	B	K
额定电流 Rated current 配合静触头尺寸 Fixed tulip contact size	额定短路开断电流 Rated short-circuit breaking current				
1600A,2000A,2500A,3150A	31.5kA,40kA	275	838	852	881
φ 55 φ 79 φ 109					

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,1600A	20kA,25kA,31.5kA	150	398	450	121.5	275
		210	520	588	121.5	275

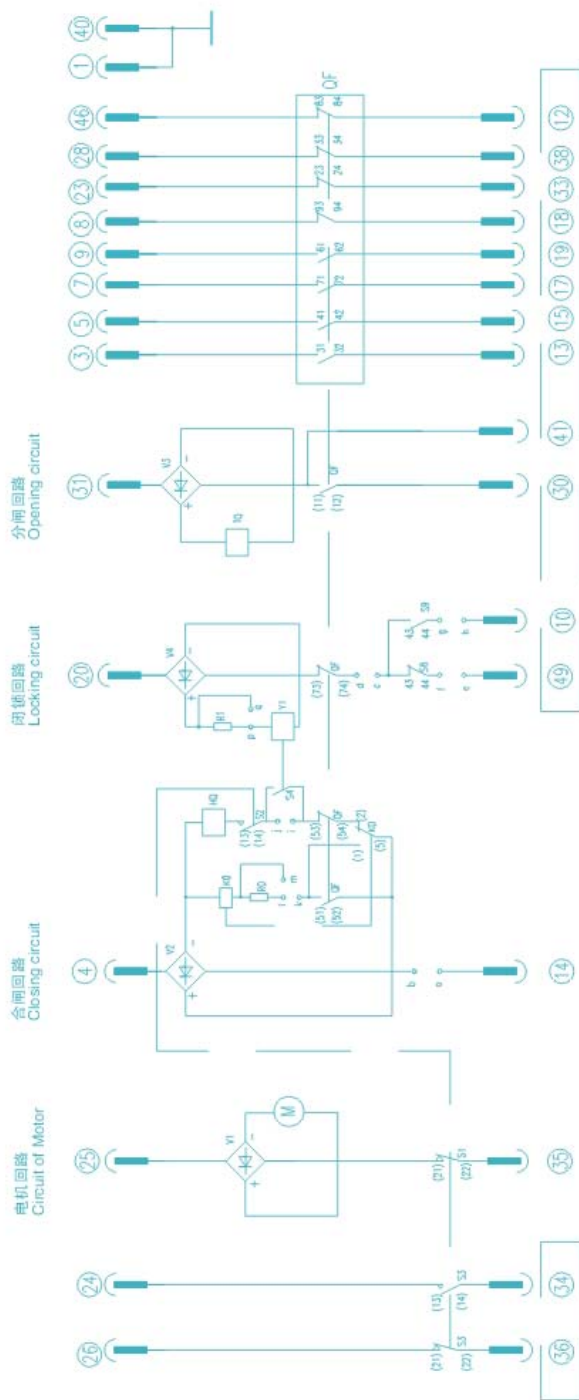


单位 Unit: mm

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					
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系列真空断路器接线原理图（手车式）
TZN1-12 Series Vacuum Circuit Breaker Diagram(withdrawable type)



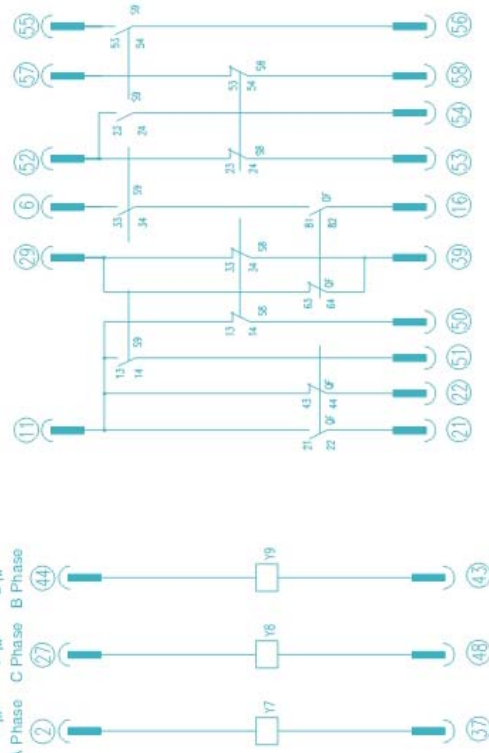
操作电源选择:
Choice of operation power supply

操作电源 Power supply for operation	接线 Jumper wires	p-q	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

配置 Configuration	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	a-b	c-d	e-f	g-h	a-f	a-g	b-c	l-k
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	/	/	/	/	/	/	/	/	/	/	/	/



说明Note:

1. 图示为断路器处于试验位置、分闸、手车状态。
The figure shows the status when circuit breaker is on testing position.
2. 当操作电源为直流时，须保证直流中极性——。
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)

TZN1-12系列真空断路器接线原理图（固定式） TZN1-12 Series Vacuum Circuit Breaker Diagram (fixed type)

