ZW32-12(G)/M Outdoor Medium-voltage AC Permanent Magnet Vacuum Circuit Breaker

1 Overview

Three-phase AC 50Hz outdoor Medium voltage switchgear, used in the 10kV electrical power systems of rural power grid and urban power grid for opening and closing load current, overload current, and short circuit current, and in other similar applications.

2 Type Designation

Z W 32 - 12 (G) / M □ - □

- Rated short-circuit breaking current (kA)
- Rated current (A)
- Permanent magnet operating mechanism
- With isolating switch
- Rated voltage (kV)
- Design code
- Outdoor
- Vacuum circuit breaker

3 Technical Parameters

No.	Parameter Name			Unit	Value	
1	Rated voltage			kV	12	
2	Rated current			A	630, 1250	
3	Rated frequency			Hz	50	
4	Rated insulation level	Power frequency withstand voltage for 1 minute	Dry test	kV	P/phase to phase, P/phase to earth: 42 O/open contacts: 48	
			Wet test		34	
		Lightning impulse withstand voltage (peak)			P/phase to phase, P/phase to earth 75 O/open contacts: 85	
5	Rated circuit-breaker breaking current			kA	20	25
6	Rated short-circuit making current (peak)			kA	50	63
7	Rated peak withstand current			kA	50	63
8	4s thermal stability current			kA	20	25
9	Rated operating sequence				O-0.3s-CO-180s-CO	
10	Closing time			ms	25~65	
11	Opening time				15~35	
12	Rated short-circuit breaking current ON/OFF times			Times	30	
13	Mechanical life				30,000	
14	Control circuit and auxiliary circuit, power frequency withstand voltage for 1 minute			V	2000	
15	Rated operating voltage and auxiliary voltage				DC220/110	
16	Rated current of overcurrent trip coil			A	5	
17	Allowable wear thickness of dynamic and static contacts in arc extinguish chamber			mm	3	

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4 Operating Conditions

4.1 Ambient air temperature: Max. temperature: +55°C; Min. temperature: -40°C; Max. daily temperature difference: 25K;

4.2 Relative humidity: Daily mean is not greater than 95%, and monthly mean is not greater than 90%;

4.3 Altitude: Not exceed 2,000 meters;

4.4 Wind: Not exceed 35m/s (equivalent to air pressure 700Pa);

4.5 Pollution degree 4;

4.6 Radial thickness of ice: 10mm;

4.7 Installed in places where there is no fire, explosion, chemical corrosion and frequent severe vibration.

When out of the normal working conditions, please contact the manufacturer.

5 Features

5.1 The product mainly consists of three-phase pole, spring operating mechanism, drive system, conducting loop, control unit and housing (made of ordinary carbon steel spray or stainless steel). The overall structure is of the three-phase pole type with miniaturization design, full-closed structure and good sealing property, especially suitable for cold and wet areas;

5.2 The efficient and reliable permanent magnet operating mechanism (electric OFF/ON; electric ON and manual OFF) or the dual mechanism of permanent magnet mechanism plus spring mechanism is used to realize manual ON function. The operating mechanism is sealed in the box to effectively prevent rust to parts, guaranteeing the reliable action of mechanism;

5.3 The pole is made of imported epoxy resin and coated with silicone rubber featuring with high temperature, low temperature, ultraviolet ray and aging resistance;

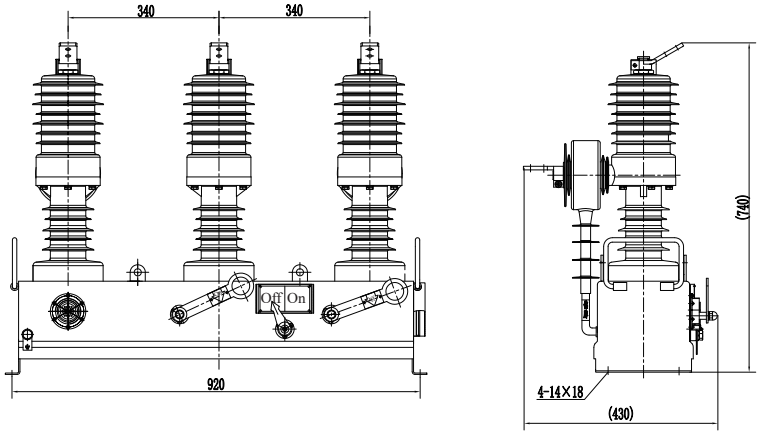
5.4 An external two-phase or three-phase protective current transformer is provided to realize overcurrent protection and fault current quick-break protection together with permanent magnet controller, and the protection delay time can be adjustable;

5.5 The interphase protection CT and zero-sequence CT integrated structure can be configured to realize parameter setting, single-phase grounding protection, three-section protection, reclosing, and fault accident memory together with the intelligent controller (the external power supply PT is used to supply the operating power); the controller has the corresponding communication module with data uploading to master station, fault feedback and “four-remote” functions to form an intelligent circuit breaker achieving distribution network automation;

5.6 The circuit breaker can be equipped with an isolating knife switch (at single or dual sides) with three-phase linkage to form an obvious isolating distance at the incoming (outgoing) side; a reliable mechanical anti-misoperation interlock is provided between the main switch and the isolating switch to guarantee safe and reliable operation.

6 Outline and Installation Dimensions

6.1 ZW32-12/M Circuit breaker outline drawing (conventional type with CT)



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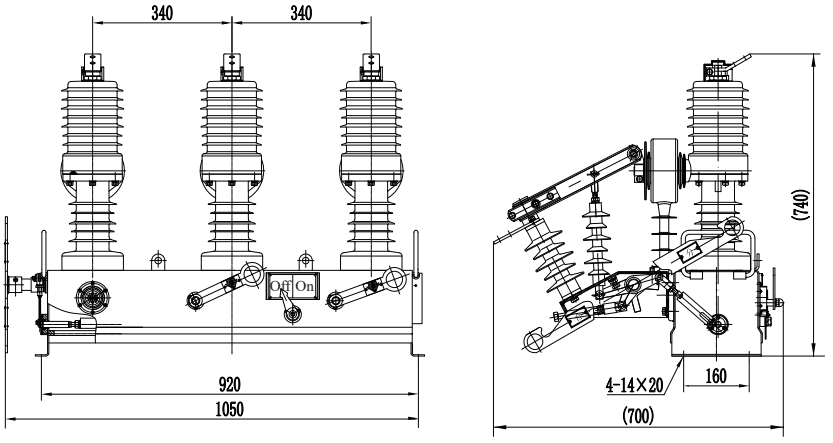
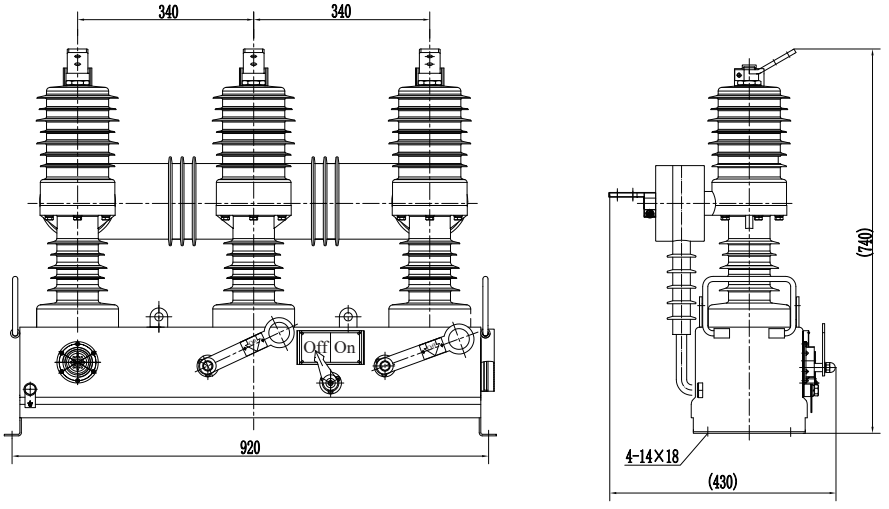
6.2 ZW32-12G/M Circuit breaker outline drawing (conventional type with CT)



6.3 ZW32-12/M Circuit breaker outline drawing (intelligent type)



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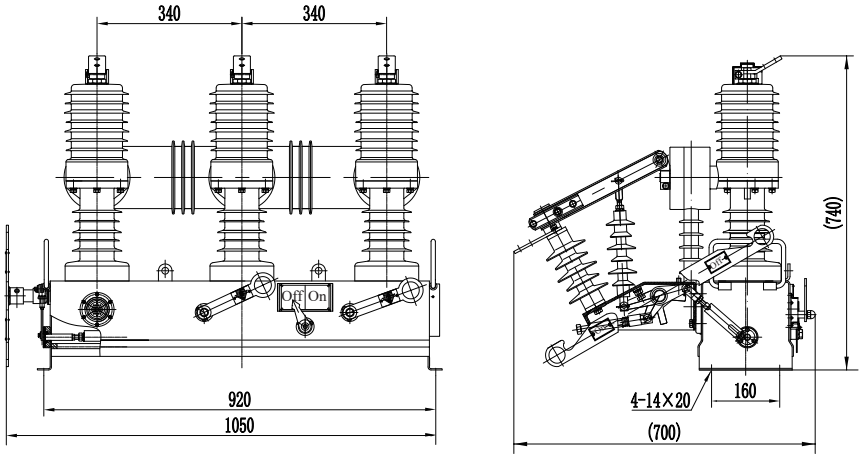
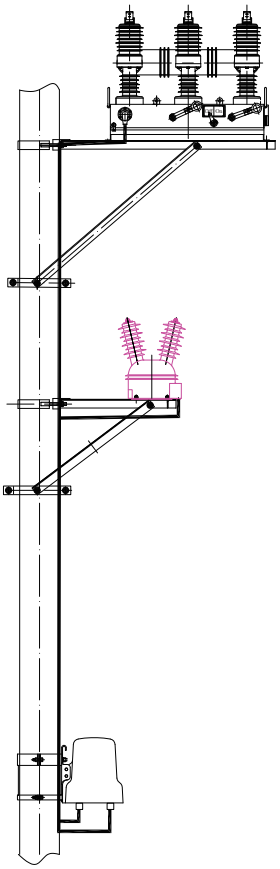
6.4 ZW32-12G/M Circuit breaker outline drawing (intelligent type)



6.5 ZW32-12M Circuit breaker outline drawing (intelligent type)



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7 Ordering Notice

7.1 Product model, name, specification, and quantity;

7.2 Rated current, rated short-circuit breaking current;

7.3 Pole type (split type, integrated type);

7.4 Three-phase or two-phase current transformer transformation ratio, accuracy and capacity;

7.5 Zero-sequence transformer (independent or combined) transformation ratio, accuracy and capacity;

7.6 Operating mechanism type (single or dual mechanism) and operating voltage;

7.7 Configuration requirements of voltage transformer (quantity, transformation ratio, accuracy and capacity);

7.8 Configuration requirements of controller (structure type, functions, and interfaces);

7.9 Names and quantity of accessories or spare parts;

7.10 For special requirements, please contact our company and sign the technical agreement.

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8 Ordering Technical Confirmation Form

ZW32(F)-12(G)/M outdoor vacuum circuit breaker order technical confirmation form

Determine your requirements according to the items listed in table below:

Current grade	Rated current (A): □630 □1250	
	Rated short-circuit breaking current (kA): □20 □25	
Qty. (pcs)		
Pole type	□Split type (standard configuration) □Solid-sealed typ □Integrated type	
Phase distancing	□340mm (Standard configuration)	
Housing requirement	□Carbon steel spray □Stainless steel polishing (standard configuration) □Others_____	
Permanent magnet operating mechanism and operating voltage	□Monostable (Standard configuration) □Bistable stat □Permanent magnet (monostable) – spring dual mechanism	
	□DC220V □Others:_____	
Isolating knife switch requirements	□No (standard configuration) □With single-side isolation □With dual-side isolation	
Zero-sequence transformer (not required for common type)	□20/1(Standard configuration) □Combined □Others:_____	
Configuration requirements for current transformer	□No □Two-phase (standard configuration) □Three-phase	
	□Standard configuration: 200-400-600/5, accuracy: Grade 10P; connected to:__/5 before shipment; □Others:_____	
Configuration requirements for voltage transformer	□No (standard configuration) □Single-side PT □Dual-side PT	
	□Transformation ratio 10/0.22kV; capacity 300VA; □Others:_____	
Controller requirements	Cover-type: □Common type □Intelligent type (with GPRS) Box-type: □Common type □Intelligent type (with GPRS) Others: _____	
Mounting bracket requirements	□No (standard configuration) □With single-pole bracket (hot dip galvanizing) □Others:	
Other special requirements		Ordering unit (seal) Sign: _____ Confirmation date:_____ Tel:_____

Note: If not ticked, all options shall be manufactured according to the TENGEN's standard configurations.