ZN139-12/G系列固封式真空断路器

ZN139-12/G Series Solid-Insulation-Embedded Pole Vacuum Circuit Breaker

产品特点

- 采用固封式真空灭弧室，实现产品的免维护；
- 抗盐雾试验水平达300小时；
- 采用德国INA定制的铜基高压力合金无油轴承；
- 引进马来西亚锌钴合金六价铬钝化表面处理工艺；
- 机构优化设计，提高综合强度刚度；
- 机械寿命30000次；
- 弹簧机构自带储能手柄，方便快捷。

Product Features

- The solid-insulation-embedded pole vacuum interrupter is used to realize maintenance-free of products;
- The level of salt spray resistance test is up to 300 hrs;
- Use the German INA customized copper-based high-pressure alloy oil-free bearings;
- The passivation surface treatment process of zinc-cobalt alloy hexavalent chromium in Malaysia is introduced;
- The design of mechanism is optimized, with comprehensive strength and rigidity at leading level;
- Mechanical life of 30,000 cycles;
- The spring mechanism is self-contained with energy-storage lever, both convenient and expedient.

机构优化设计，综合强度及刚度处于领先水平

The design of mechanism is optimized, with comprehensive strength and rigidity at leading level

产品结构 Product Structure

概述

ZN139-12/G型真空断路器主回路采用固封极柱形式，操作机构分为**弹操式和永磁式两种**。可靠性高、使用寿命长，广泛应用于电网、发电厂、变电站、工业及其他行业。

ZN139-12/G型真空断路器既可以单独使用，也可用于中置式开关柜和固定式开关柜。并可方便与国内其他断路器实现手车互换，具有广泛的兼容性和互换性。

绝缘形式

ZN139-12/G型真空断路器总体结构为操动机构与一次导电回路前后布置形式。主导电回路部分为三相落地式结构。其主回路为固封绝缘方式。

Overview

The main circuits of ZN139-12/G-type vacuum circuit breakers are in form of solid-insulation-embedded pole. The operating mechanisms are divided into two types: spring-operated type and permanent magnet type. The products have advantages of high reliability and long service life, and are widely used in power grids, power plants, substations, industry and other sectors.

The ZN139-12 / G-type vacuum circuit breaker products can be used separately, or used in the mid-set switchgear and fixed switchgear. It can facilitate the handcart interchangeability with other home-made circuit breakers, and have a wide range of compatibility and interchangeability.

Insulation Form

The ZN139-12/G vacuum circuit breaker is in overall structure of front-and-rear arrangement of the actuator and the primary conductive circuit. The main electrical circuit part is in three-phase floor-type structure, and its main circuit is in form of solid-insulation-embedded pole.

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使用环境条件

- 环境温度：
  最高温度：+45℃
  最低温度：-25 ℃（允许在-30℃储运）
- 环境湿度：
  日平均相对湿度：≤ 95%
  月平均相对湿度：≤ 90%
  海拔高度：1000m (1000~4000m可定制)；
- 地震烈度不超过8级；
- 使用场所无滴水、无易燃和爆炸危险、无严重污秽、无化学腐蚀性气体以及无剧烈震动。

Environmental Conditions for Use

- Ambient temperature:
  Maximum temperature: + 45 ℃
  Minimum temperature: -25 ℃ (allowable for storage and transportation at -30℃)
- Environmental Humidity:
  Daily average relative humidity: ≤95%
  Monthly average relative humidity: ≤90%
  Altitude: 1, 000m (1, 000~4, 000m can be customized);
- Earthquake intensity not more than M8;
- The place of use must not have any dripping, combustion and explosive hazards, severe contamination, chemical corrosive gases and severe vibration.

主要规格及技术参数 Main Specifications and Technical Parameters

断路器主要规格及技术参数

Main Specifications and Technical Parameters of Circuit Breaker

序号 No.	名称 Description	单位 Unit	参数 Parameters		
1	额定电压 Rated voltage	kV	12		
2	额定工频耐受电压相间、相对地/断口（1min） Rated power frequency withstand voltage (1 min)	kV	42/48		
3	额定雷电冲击电压相间、相对地/断口（峰值） Rated lightning impulse/fracture withstand voltage (peak)	kV	75/85		
4	额定频率 Rated frequency	Hz	50		
5	额定电流 Rated current	A	630–2500	630–3150*	1250–4000*
6	额定短路开断电流 Rated short–circuit breaking current	kA	20 25	31.5	40
7	额定短路关合电流 Rated short–circuit making current	kA	50 63	80	100
8	额定峰值耐受电流 Rated peak withstand current	kA	50 63	80	100
9	额定热稳定电流（有效值） Rated thermal stability current (effective value)	kA	20 25	31.5	40
10	额定短路持续时间 Rated short–circuit duration	s	4		
11	额定短路开断电流次数 Rated operations of short–circuit breaking current	次 Number of cycles	30	30	20
12	机械寿命 Mechanical life	次 Number of cycles	30000		
13	额定单个/背对背电容器组开断电流 Rated single/back to back capacitor bank breaking current	A	630/400 (800/400 for 40kA)		
14	相间距 Phase–to–phase spacing	mm	210 275		
15	触头开距 Contacts spacing	mm	9 ± 1		
16	接触超行程 Contact overtravel	mm	3 ± 0.5		
17	动、静触头允许磨损累积厚度 Allowable wearing accumulation thickness of dynamic and static contacts	mm	3		
18	三相分、合闸不同期性 Time interval between opening of first and last phase of three phase circuit–breaker	ms	≤ 2		
19	分闸时间 Opening time	ms	20–55		
20	合闸时间 Closing time	ms	35–70		
21	额定操作顺序 Rated operating sequence		0.3s 180s 0—CO—CO		180s 180s 0—CO—CO
22	机械机构抗腐蚀能力（盐雾试验） Mechanical system corrosion resistance (salt spray test)	h	300		

注：*3150A及以上需要强制风冷。数据以最终出厂产品为准

Note: *3150A requires forced air cooling. Data shall be prevailed by the final manufactured products.