Composite-housed Metal-oxide Surge Arresters without Gaps

For A.C. Systems

Installation and Operation Instruction

Shandong Taikai Instrument Transformer Co., Ltd.

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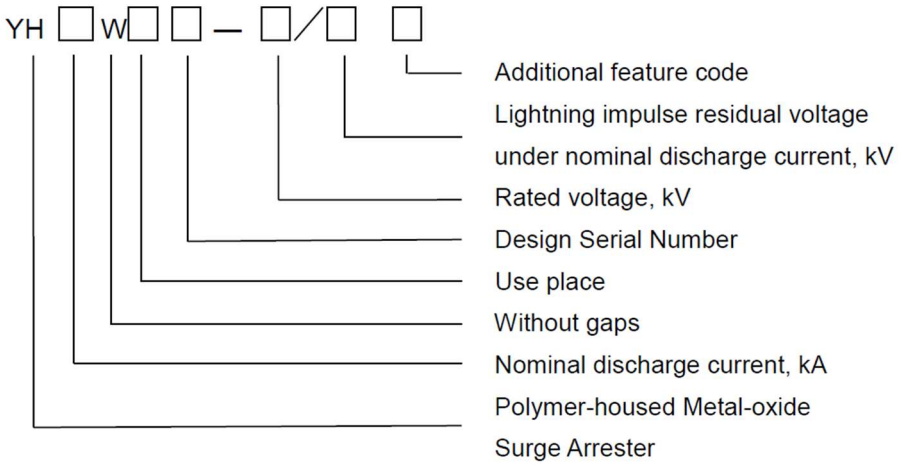
1 Product description

1.1 Product application

The gapless composite-housed metal oxide arrester (hereinafter referred to as the arrester) is used to limit system overvoltage and protect power transmission and transformation products from overvoltage damage.

1.2 Model designation



Type code

YH - Composite-housed Metal-oxide Surge Arrester

Use site code

S - For distribution

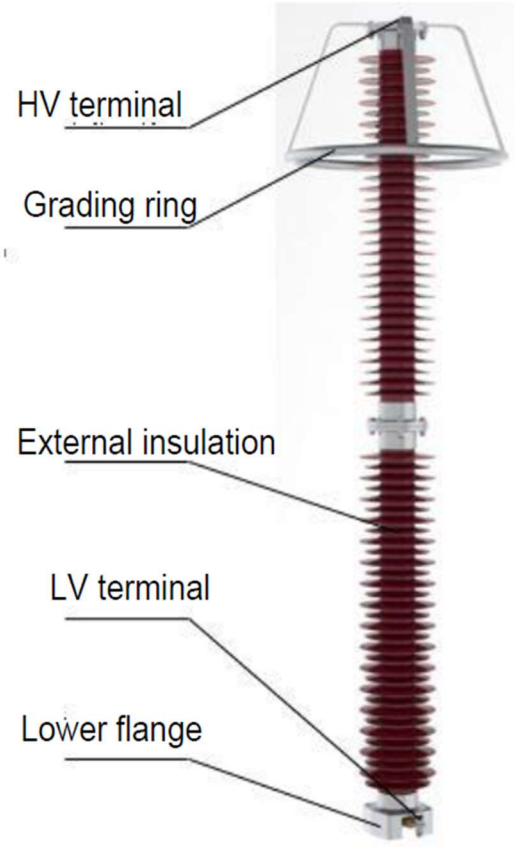
Z -For power station

X - For protecting the line side of substations

Additional feature code

W - Heavy polluted area

G - High altitude area



1.3 Product construction

The arrester is mainly composed of high-voltage terminals, metal oxide resistors, external insulation, low-voltage terminals, and lower flanges.

1) The outer insulation is made of high temperature vulcanized silicone rubber (HTV). Injection molding at one time.

2) The low-voltage terminal of the arrester is used to connect the online monitor or discharge counter, and

the high-voltage terminal of the arrester with rated voltage level of 192kV and above is equipped with the grade ring. .

2 Normal service conditions

Maximum temperature: +40℃

Daily average temperature does not exceed: +35℃

Minimum temperature: -40℃

Monthly mean maximum relative humidity: 95%（At 25℃）

Maximum wind speed: 34 m/s

Power frequency: (48～62) Hz

There is no contamination and corrosive and explosive media in the atmosphere that seriously affect the insulation of the transformer

For areas with seismic intensity not greater than 8 degrees

Ice thickness not more than 20mm

There should be no heat source near the arrester

The power frequency voltage applied between the arrester terminals for a long time should not exceed the continuous operating voltage of the arrester.

3 Storage and Transportation

The product should be stored in an environment free of flammable, explosive and corrosive gases and well ventilated. During long-term storage and transportation, the product should be packaged to avoid damage to the product. During transportation and storage, the arrester should be kept in a vertical direction, and strong vibration and collision are strictly prohibited.

4 Installations

4.1 Check before installation

1) Please check the delivery list to confirm that the products, accessories and documents are complete. The documents include installation instructions and certificates of conformity.

2) Check the transport package to make sure that the packaging is complete and not

damaged.

3) Check the product to confirm that there is no external damage.

4) Measure the DC reference voltage of the arrester and the leakage current at 0.75 times the DC 1mA reference voltage.

5) If any questions, please contact the manufacturer's service department in time.

4.2 Hoisting

If hoisting is required, operate as shown in Figure 1.

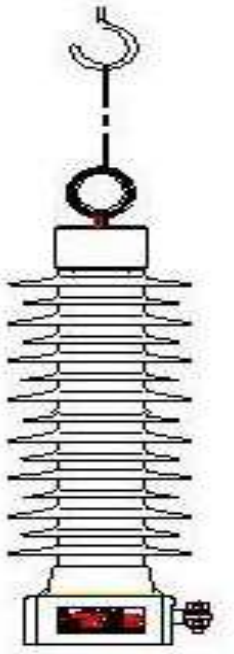


Fig.1 Schematic of hoisting of composite bushing arrester

4.3 Product Installation

1) The product must be installed vertically on a horizontal, flat surface.

2) The arrester with voltage class of 220kV and above is a multi-section component stacking structure, which should be installed according to the relationship between the upper and lower sections corresponding to the product serial number on the component nameplate. **It is strictly forbidden to interchange the upper and lower sections of the arrester with the same product serial number and the upper and lower sections of the arrester with different product serial numbers.** Install the grade ring on high voltage side.

4.4 High Voltage Terminal Connection

Before connecting to the high-voltage terminal, remove the dirt and oxide layer on each contact surface to ensure good electrical contact performance. See Table 1 for recommended tightening torques.

Table 1 Torque recommendation

bolt specification，mm	Torque recommendation	
	N·m	kgf·m
M12	48±5	4.8±0.5
M16	120±10	12±1

Note: The tensile force of the high-voltage terminal should be within the static load range which it can bear.

4.5 Low-voltage terminal Connection

1) If an on-line monitor or discharge counter is used, the low-voltage terminal of the arrester is connected to the high-voltage end of the on-line monitor or discharge counter, and the low-voltage end (housing) of the on-line monitor or discharge counter should be grounded reliably.

2) If the online monitor or discharge counter is not used, the low voltage terminal of the arrester should be grounded reliably.

3) It is strictly forbidden to suspend the low voltage terminal of the arrester.

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