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Super A Class Flame Retardant Power Cable

Product Description

1. Applicable Standards: IEC60332-1、IEC60332-2、IEC60332-3

Q/DXHGK0005-2015 (GB/T12706-200、GB/T19666-2005、GB/T18380-2008、
GB/T17651-1998、GB 31247-2014)

2. Usage: This products used for the power plants, power stations, metallurgy, chemical, oil, high-rise buildings and so on which requirement the high grade flame retardant properties of the power systems.

3. Type Descriptions and Product Examples:

Features Code:

Copper Conductor------(T) Omission

Aluminum Conductor----L

Cross Linked Polyethylene Insulation----YJ

Polyolefin Barrier Sleeve or Sheath---Y or E

Polyethylene or Polyolefin Outer Sheath---3

Steel Tape Armor-----2

Steel Wire Armor-----3

Thick Steel Wire Armor---4

Non-magnetic Steel Tape--6

Non-magnetic Steel Wire---7

Characteristics Code:

Halogen-free-----W

Low Smoke-----D

Super A Class Flame Retardant---- ZA⁺ (CZA)

Product Example: Copper conductor XLPE insulated polyolefin sheathed super A Class flame retardant low smoke halogen-free power cable. Rated Voltage 0.6/1kv, three



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core nominal cross section 120mm^2 shows WDZA⁺-YJY-0.6/1kV 3*120 (or WDCZA-YJY)-0.6/1kV 3*120

4. Product Features:

4.1 Rated Voltage of Cable U₀/U: 0.6/1、1.8/3、6/6、6/10、8.7/10、8.7/15、12/20、18/30、21/35、26/35;

4.2 Conductor doesn't allow the maximum temperature to exceed 90°C;

4.3 20°C conductor DC resistance meets GB/T3956;

4.4 Laying temperature not lower than 0°C;

4.5 The minimum bend radius when cable installed

Project	Single Core		Three Cores	
	Without Armor	Armor	Without Armor	Armor
the small bend radius when cable installed	20D	15D	15D	12D
Close to the junction box and terminals cable small bending radius,(but be careful bending control, such as used the molded guides)	15D	12D	12D	10D
Note: D indicates the cable outer diameter.				

4.6 Cables meet the latest Country enforcement standard GB31247-2014 combustion performance B1 grade.

Cable and Light Cable Combustion Performance Grade Criterion

Combustion Performance Grade	Experiment Method	Classification Criterion	
B1	GB/T31248-2014	Flame Spread	FS≤1.5m

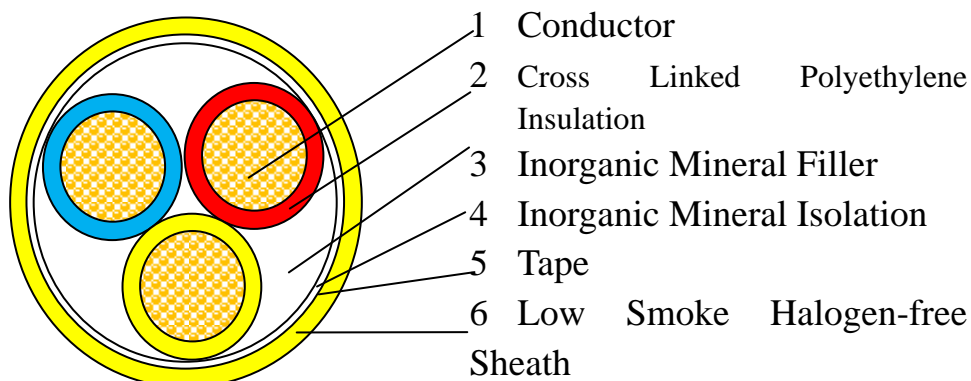
		Peak Heat Release Rate	HRR≤30kW
		Total Amount of Heat Released by Fire Inside 1200s	THR1200≤15MJ
		Combustion Longer Rate Index	FIGRA≤150W/s
		Smoke Peak Rate	SPR ≤0.25m ² /s
		Total Smoke Amount within Fire 1200s	TSP ₁₂₀₀ ≤50m ²
		GB/T17251.2	Smoke Density (Minimum Light Transmittance)
GB/T18380.12	Vertical Flame Spread	H≤425m	

4.7 Low Smoke Halogen-free Characteristics: ph weighted value ≥4.3; conductivity weighted value ≤10μs/mm.

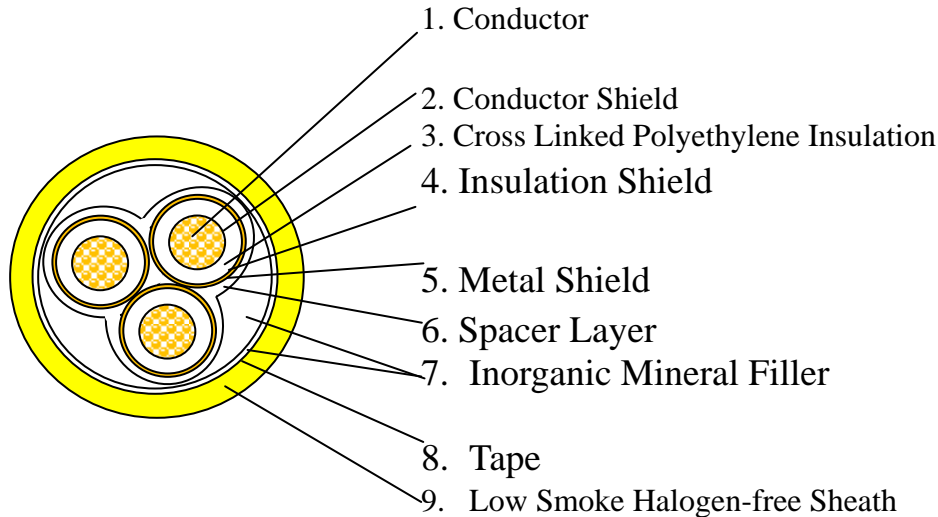
4.8 Fire retardant grade meet super A Class bunched combustion flame retardant performance requirements, super A Class bunched combustion flame performance retardant requirements for 28L/m and for fire time 80min (A Class bunched combustion flame performance retardant standard for the volume of non-metallic materials 7L/m and for fire time 40min) test, results on the sample requirements carbonization length should not exceed 1.0m up from the bottom nozzle and stopping the fire supply after the flaming time should not exceed 10s on the sample.

5. Product Structure

Model: WDZA⁺-YJY-0.6/1 or (WDCZA-YJY)-0.6/1)



Model: WDZA⁺-YJY-8.7/15 or (WDCZA-YJY)-8.7/15)



6. Feature Description

(1) Superior Flame Retardant

The greatest difference between super A Class flame retardant cable and general cable structure design is that it has metal hydrate of inorganic mineral material such as magnesium hydroxide instead of the traditional polypropylene tear film rope or glass fiber filled material. Under the influence of flame, metal hydrate transformed into metal oxide and water. Not only reduces the combustion temperature of cable but also its remnants wrapped in densely cross linked polyethylene insulation, the heat makes it impossible to participate in the reaction with oxygen. So even in this type of cable laying capacity over 28L/m, it will instantly self-extinguishing (which carbonized standard reduced from 2.5m to 1.0m less).

Cable retardant performance related to cable capacity more or less. Investigate its reason, is the greater capacity of cable organic matter, the higher calorific value. The oxygen index of the organic material reduced as the temperature rise.

(2) Superior Water Resistance

WDZA+-YJY cable has the superior waterproof performance than ordinary cross linked cable. In closing to insulated cores, there have pure cross linked polyethylene



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waterproof shield sheath. Its water absorption is PVC 1/2, halogen-free polyethylene 1/20.

(3) Steady and Excellent Carrying Capacity

Metal hydrate of inorganic mineral material (filled with oxygen barrier material), under normal operating conditions, its thermal conductivity is about 15 to 30 times larger of glass fiber or PP rope. So, the cable heat well, it's below 90 steady-carrying capacities than the same specifications of the ordinary models about 15% larger.

7. Selection of Reference

WDZA+-YJY series cable used to city power grid transmission lines, whether choose its more than 15% carrying capacities to reduce the conductor cross-section, making the lower investment costs, or remain the cross section size, to let cable run a state below 90°C rated temperature (65~68°C), in order to reduce the line losses by 7% to extend the working life of cable.

Our advice is relatively abundant resources for electricity, electricity price is relatively cheap and urban power grids onerous task but also highlight areas, the former is appropriate and immediate quick; on the contrary, according to the original design specifications, consume not only the festival, but also for future increase longevity expansion of capacity left to live on normal.

(1) Narrowing the cross section and increasing conductor resistance will affect to reduce the voltage?

WDZA+-YJY relative to the ordinary YJY has more than 15% transmission capacity and above. If the users choose the rated current value as a reference, the reduced use of a cross section profile is able to meet. Despite the reduction of cross section profile, the conductor resistance will increase accordingly. This drop increment for 10KV medium-voltage transformer primary winding is negligible in terms. Of course, increasing the value of line loss should be a different matter.

(2) Since the flame retardant performance of super A Class flame retardant cable



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is very strong, can be laid in the shaft or tunnel is no longer to use other auxiliary fire prevention measures?

From many times of the bunched vertical flame tests to prove: with oxygen barrier AL (OH) 3, Mg (OH) 2, for low and medium voltage cable filler, its fire resistant and self-extinguishing endurance capacity is incomparable to other cable (except mineral magnesium oxide non-sheathed cables). Its self-extinguishing time after 80 minutes at 815°C flame injection, almost is zero. Its charring height is generally only around 0.6m (part of the flame caused by high temperature, rather than the retardant result).

(3) How many differences of outer diameter and weight between medium voltage super A Class flame retardant cable and ordinary cable?

Outer diameter of medium voltage super A Class flame retardant cable increase 1-3mm or so, the weight will increase about 8%. Things are always divided into two, losing something and getting something or getting something and losing something, how to choose is the key. Increasing the outer diameter, gaining the weight will effect the laying, (but laying bending diameter ratio remains unchanged). There is a comprehensive consideration view: for example WDZA+-YJY 8.7/10KV 3*185 rates 375A more than 10a, both the outer diameters are 69.4mm and 68.7mm. If you use (WDZA+-YJY) 3 * 150 to replace the ZR-YJY 3*185, the outer diameter and capacity of transmission are well-matched, but save a lot.

Secondly, ordinary ZR-YJV belongs to the flame retardant cable category, but only Class C. They still need use fire-retardant package, fire clay or blocking firewalls and other auxiliary measures to prevent the spread of fire occurred. Not only costs work and money, carrying capacity will drop 13% points to 15% (at blocking heat blocked). WDZA+-YJY has the strong self-extinguishing capacity and delay flammable. Generally, no longer need additional 'seasoning' to achieve safe and sound effects, as it has the fire barrier material blocking firewall features melt into the inner sheath of the cable. Thus, from the comprehensive viewpoint, the pros and cons on the obvious. 8%



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increment in return was a crystalline ultra-retardant and 115% carrying capacity.

Construction program is relatively simplified, relatively time consuming cost savings.

