

Production Catalog

High voltage and extra high voltage power cable

Product overview

High voltage and extra high voltage power cable is used for high-capacity high voltage power transmission. With the development of social and economic and increasing of power demand, the demand of 66kV–500kV XLPE insulated A.C power cable is more urgent for large scale urban power grid transformation, especially, the previous XLPE insulated A.C power cable circuit with rated voltage of 10kV, 20kV, 33kV, 35kV in urban power grid would be changed to XLPE insulated A.C power cable circuit with rated voltage of 66kV, 69kV, 110kV, 132kV, the overhead line with rated voltage of 220kV, 230kV, 275kV, 330kV, 380kV, 400kV, 500kV in peri-urban areas would be changed to underground XLPE insulated A.C power cable.

Product category differentiate

High voltage power cable:

36、38、48、50/66kV
36、38、48、50/69kV
64/110kV
76/132kV

Extra high voltage power cable:

127/220kV
127/230kV
160/275kV
190/330kV
220/380kV
220/400kV
290/500kV

Executive standard

66kV、69kV、110kV、132kV high voltage power cable: IEC60840
220kV、230kV、275kV、330kV、380kV、400kV、500kV extra high voltage power cable: IEC62067

Product qualification

110kV–1600mm² Type test report issued by Shanghai Cable Research Institute
132kV–1600mm² Cable system type test report issued by KEMA Laboratories
220kV–2500mm² Cable system type test report issued by Shanghai Cable Research Institute
220kV–2500mm² Cable system pre-identification test report for Shanghai Cable Research Institute

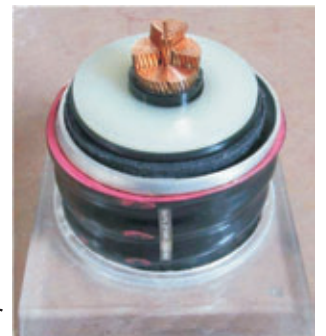
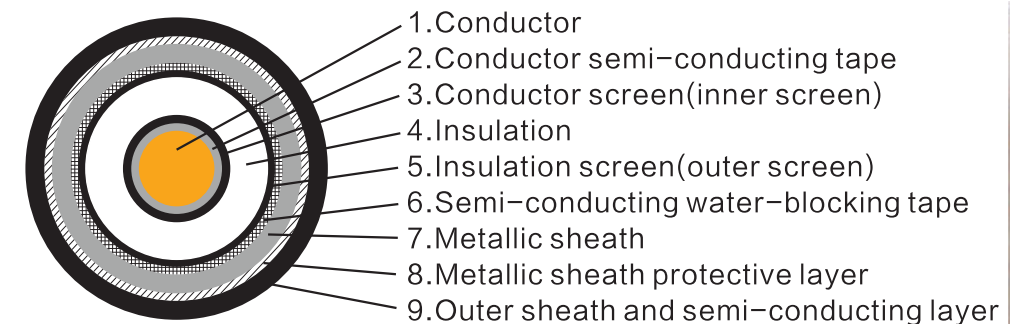
Typical cable type and name

Cable type	Voltage grade	Type description
YJA03	48/66kV	XLPE insulated metallic composite PE sheathed power cable with rated voltage of 48/66kV
ZC-YJLW03-Z	64/110kV	XLPE insulated weld corrugated aluminum sheathed flameretardant PE sheathed longitudinal water-blocking flame retardant cat. C power cable with rated voltage of 64/110kV
FY-YJQ03	127/220kV	XLPE insulated lead sheathed anti-termite PE sheathed power cable with rated voltage of 127/220kV
YJLW02-Z ₂	290/500kV	XLPE insulated weld corrugated aluminum sheathed PVC sheathed conductor water-blocking power cable with rated voltage of 290/500kV

Manufacturing scope

Cable type	Specification		
	No. of cores	Conductor material	Nominal cross section (mm ²)
66kV、69kV、110kV、132kV high voltage power cable	1	Copper, aluminum	240 ~ 1600
220kV、230kV、275kV Extra high voltage power cable	1	Copper	400 ~ 2500
330kV、380kV、400kV、500kV extra high voltage power cable	1	Copper	800 ~ 2500

Typical structure drawing



Production Catalog

Main performance index for cable

S.N	Items	Technical performance
1	Power frequency withstand voltage test	2.5U ₀ , 2U ₀ , maintain for 30min, 60min, no breakdown occurs on insulation
2	Partial discharge test	1.5U ₀ , no detectable partial discharge more than the specified test sensitivity (test sensitivity shall be 5Pc or better)
3	Outer sheath D.C voltage test	25kV, 1 min no breakdown
4	Air tightness test	Nitrogen, 4 kg, 2h (state grid) or 30min (South Grid)
5	Conductor D.C resistance test	As per GB/T 3956 (IEC 60228)
6	Structure size	As per corresponding product standard
7	XLPE insulation hot set	Test according to GB/T 2951.5 (200 °C, 20 N/cm ² , 15 min), max elongation shall not more than 125%, the permanent elongation after cooling shall not more than 10%.
8	Capacitance measurement	Not more than 8% of declared value
9	Insulation, micropore, impurity, protuberance semi-conducting layer	As per corresponding product standard
10	Cable system outer sheath D.C withstand voltage after installation	10kV, 1min no breakdown
11	Cable system insulation A.C withstand voltage after installation	2U ₀ , 1.7U ₀ , 1h no breakdown; U ₀ , 24h no breakdown

Computer and instrument cable

Product overview

This product is used for computer, instrumentation, automatic detect devices and other signal transmission and control system with rated voltage of 300/500V in energy, metallurgy, petroleum, chemical engineering and other field.

Voltage grade:

U₀/U: 300/500V

Note: U₀—Rated power frequency voltage between earth and metal shield to conductor for cable design

U—Rated power frequency voltage among conductors for cable design

Executive standard:

BS 5308

Control and instrument cable

BS EN 50288-7

Sectional specification for instrument and control cable

Product features

Working temperature as following:

Conductor working temperature at normal operation /°C			Allowable minimum working temperature /°C		
XLPE insulation	PVC insulation	PE Insulation	LSZH sheath	PVC insulation	PE sheath
90	70	70	-15	-15	-40

Min bending radius:

Armored or metallic tape screened cable: 12 × OD;

Non-armored or metallic wire braiding screened flexible cable: 6 × OD;

Note: OD—finished cable diameter, mm

Flame retardant performance:

Flame retardant medium voltage power cable could pass the bunched cable flame vertical extension test specified in IEC 60332 or BS 4066.

LSZH performance:

LSZH flame retardant cable meet the requirements of IEC 60754&IEC 61034-1 for pH value, conductivity, min smoke luminousness.

Fire resistant performance:

fire resistant cable could pass the circuit integrity test under fire condition specified in IEC 60331.

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Typical cable type and name

Cable type	Voltage grade	Description
DJYPV	300/500V	Copper core PE insulated copper wire braiding individual screened PVC sheathed computer and instrument cable
DJYPVP	300/500V	Copper core PE insulated copper wire braiding individual and overall screened PVC sheathed computer and instrument cable
DJYVP	300/500V	Copper core PE insulated copper wire braiding overall screened PVC sheathed computer and instrument cable
DJYP2V	300/500V	Copper core PE insulated copper plastic composite tape individual screened PVC sheathed computer and instrument cable
DJYP2VP2	300/500V	Copper core PE insulated copper plastic composite tape individual and overall screened PVC sheathed computer and instrument cable
DJYVP2	300/500V	Copper core PE insulated copper plastic composite tape overall screened PVC sheathed computer and instrument cable
DJYVP22	300/500V	Copper core PE insulated copper wire braiding individual screened steel tape armored PVC sheathed computer and instrument cable
DJYPVP22	300/500V	Copper core PE insulated copper wire braiding individual and overall screened steel tape armored PVC sheathed computer and instrument cable
DJYVP22	300/500V	Copper core PE insulated copper wire braiding overall screened steel tape armored PVC sheathed computer and instrument cable
DJYP2V22	300/500V	Copper core PE insulated copper plastic composite tape individual screened steel tape armored PVC sheathed computer and instrument cable
DJYJPV	300/500V	Copper core XLPE insulated copper wire braiding individual screened PVC sheathed computer and instrument cable
DJYJVP	300/500V	Copper core XLPE insulated copper wire braiding overall screened PVC sheathed computer and instrument cable
DJYJPVP	300/500V	Copper core XLPE insulated copper wire braiding individual and overall screened PVC sheathed computer and instrument cable

Cable type	Voltage grade	Description
DJYJP2VP2	300/500V	Copper core XLPE insulated copper plastic tape individual and overall screened PVC sheathed computer and instrument cable
DJYJPV	300/500V	Copper core XLPE insulated copper wire braiding individual screened PVC sheathed computer and instrument cable
WDZ-DJY P2Y23	300/500V	Copper core PE insulated copper plastic tape individual screened steel tape armored PO sheathed LSZH flame retardant computer and instrument cable
WDZN-DJY P2YP2-23	300/500V	Copper core PE insulated copper plastic tape individual and overall screened steel tape armored PO sheathed LSZH flame retardant fire resistant computer and instrument cable
WDZN-DJY YP2-23	300/500V	Copper core PE insulated copper plastic tape overall screened steel tape armored PO sheathed LSZH flame retardant fire resistant computer and instrument cable
WDZN-DJY P2Y23	300/500V	Copper core PE insulated copper plastic tape individual screened steel tape armored PO sheathed LSZH flame retardant fire resistant computer and instrument cable
WDZN-DJY P2YP2-23	300/500V	Copper core PE insulated copper plastic tape individual and overall screened steel tape armored PO sheathed LSZH flame retardant fire resistant computer and instrument cable
WDZ-DJY P2Y23	300/500V	Copper core PE insulated copper plastic tape individual screened steel tape armored PO sheathed LSZH flame retardant fire resistant computer and instrument cable

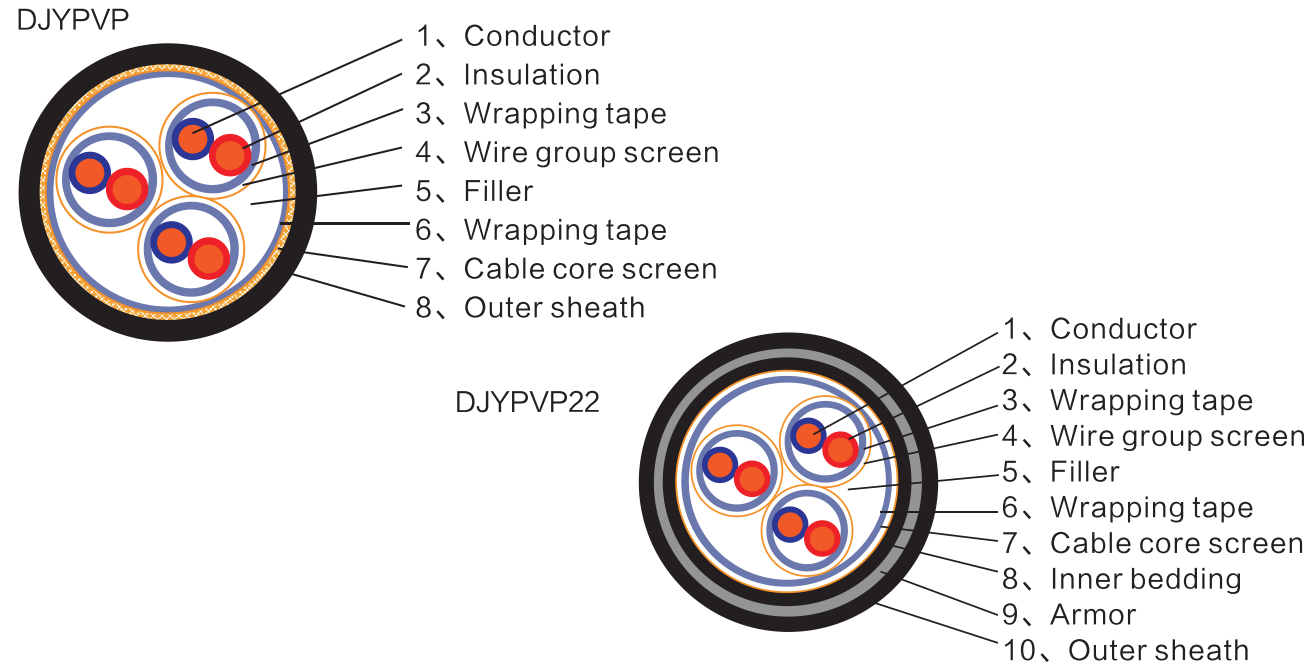
The type in this table is proposed type, the unlisted cable types could be combined as per standard according to cable actual service conditions.

Manufacturing scope

Cable category	Voltage grade	Specification	
		No. of cores	Nominal cross section (mm ²)
Computer and instrument cable	300/500V	1~61 groups (2, 3 or 4 cores)	0.5~4

Production Catalog

Typical structure drawing



Main performance index for cable

S.N	Items	Technical performance
1	Conductor D.C resistance test	As per IEC 60228 requirement
2	Power frequency voltage test	For the cable with ordinary insulation thickness, add 40Hz-62Hz, 2000V sine-wave voltage for 1min. No breakdown occurs on insulation
3	Bunched combustion test	Flame retardant cable conforms to the cat. A/B/C bunched combustion test in IEC 60332 standard.
4	LSZH performance	LSZH flame retardant cable meet the requirement of IEC 607541&IEC 61034-1 for pH value, conductivity and minimum light luminousness: the pH value of gas released in combustion ≥ 4.3 , conductivity $\leq 10 \mu s/mm$, min smoke light luminousness $\geq 60\%$.
5	Fire resistant performance	Fire resistant cable could pass the circuit integrity test under fire condition in IEC 60331: Flame temperature: 750~800°C Fire time: 90min+15min Test voltage; rated voltage Qualified index: 2A fuse not break, the light keep on.

Control cable

Product overview

This product apply to control, monitoring loop and protective circuit with rated voltage of 450/750V.

Voltage grade:U₀/U: 450/750V

Note: U₀—Rated power frequency voltage between earth and metal shield to conductor for cable design

U —Rated power frequency voltage among conductors for cable design

Executive standard:

IEC 60502-1

Extruded and insulated power cable and accessory at rated voltage from 1kV (U_m=1.2kV) to 30kV (U_m=36kV), Part 1—Cable at rated voltage from 1kV (U_m=1.2kV) to 3kV (U_m=3.6kV)

Product features

Working temperature as following:

Conductor working temperature at normal operation /°C		Conductor working temperature at short circuit /°C		Allowable minimum working temperature /°C		
XLPE insulation	PVC insulation	XLPE insulation	PVC insulation	LSZH sheath	PVC sheath	PE sheath
90	70	250	160	-15	-15	-40

Min bending radius:

Armored or copper tape screened cable: 12 × OD;

Non-armored or screened flexible cable: 6 × OD;

Note: OD—finished cable diameter, mm

Cable installation ambient temperature: for PVC insulated or PVC sheathed cable, the ambient temperature during installation shall not less than 0°C.

Flame retardant performance: flame retardant control cable would pass the bunched cable flame vertical extension test in IEC 60332 or BS 4066.

Low smoke halogen-free performance: LSZH flame retardant cable would meet the requirements of IEC 60754 & IEC 61034-1 for pH value, conductivity, and minimum smoke luminousness.

Fire resistant performance: fire resistant cable could pass the circuit integrity test under fire condition in IEC 60331.

Production Catalog

Typical cable type and name

Cable type	Voltage grade	Type description
KYJV	450/750V	Copper core XLPE insulated PVC sheathed control cable
KVV	450/750V	Copper core PVC insulated PVC sheathed control cable
KYJVP	450/750V	Copper core XLPE insulated copper wire braided screened PVC sheathed control cable
KYJVP2	450/750V	Copper core XLPE insulated copper tape overall screened PVC sheathed control cable
KYJVP22	450/750V	Copper core XLPE insulated copper wire braiding screened double steel tape armored PVC sheathed control cable
KYJVP2-22	450/750V	Copper core XLPE insulated copper tape screened double steel tape armored PVC sheathed control cable
KVVP22	450/750V	Copper core PVC insulated copper wire braiding screened double steel tape armored PVC sheathed control cable
KVVP2-32	450/750V	Copper core PVC insulated copper tape screened steel wire armored PVC sheathed control cable

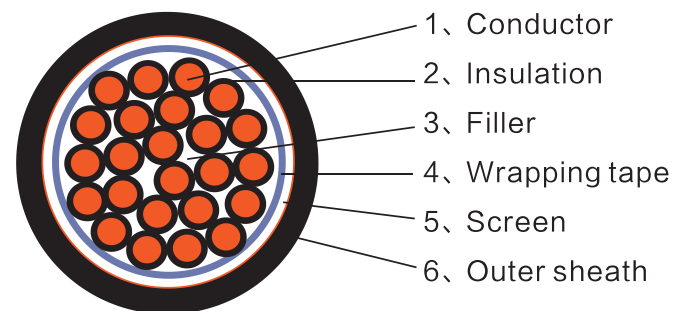
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Production scope

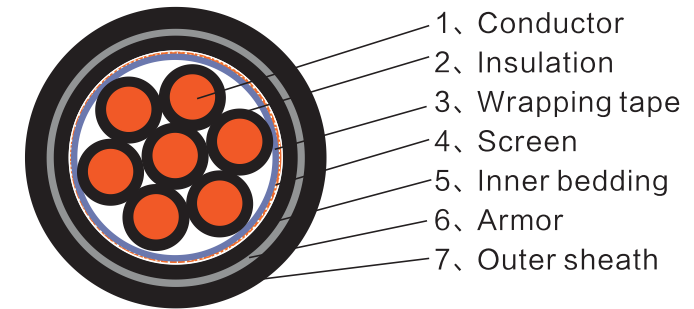
Cable category	Voltage grade	Specification	
		No. of cores	Nominal cross section (mm ²)
Control cable	450/750V	2~61	0.5~10

Typical structure drawing

KYJVP



KYJVP22



Main performance index for cable

S.N	Items	Technical performance
1	Conductor D.C resistance test	As per IEC 60228 requirement
2	Insulation resistance at working temperature	As per product standard
3	Power frequency voltage test	Test voltage 3000V, 5min, no breakdown
4	Insulated core voltage test	Insulation thickness not more than 0.6mm, test voltage 2000V Insulation thickness more than 0.6mm, test voltage 2500V 5min, no breakdown occurs on insulation
5	Bunched combustion test	Flame retardant cable conforms to the cat. A/B/C bunched combustion test in IEC 60332 standard.
6	LSZH performance	LSZH flame retardant cable meet the requirement of IEC 60754-1&IEC 61034-1 for pH value, conductivity and minimum light luminousness: the pH value of gas released in combustion ≥ 4.3 , conductivity $\leq 10 \mu s / mm$, min smoke light luminousness $\geq 60\%$.
7	Fire resistant performance	Fire resistant cable could pass the circuit integrity test under fire condition in IEC 60331: Flame temperature: 750~800°C Fire time: 90min+15min (cooling time) Test voltage; rated voltage Qualified index: 2A fuse not break, the light keep on.