

# 本安计算机用屏蔽电缆 (或称本安DCS系统用电缆)

## Intrinsic Safety Type Computer Shielding Cable(Intrinsic Safety Type Cable for DCS System)

本产品适用于石油、化工、电力、煤气工程、矿山等存在爆炸危险的场合以及其它防爆安全要求较高的场合, 传输自动控制信号。该电缆具有低电容、低电感集散型仪表信号电缆, 简称本安型DCS电缆, 具有优异的屏蔽性能和抗干扰性能, 因此防爆安全性能明显高于一般DCS电缆和计算机控制电缆。

It is used to transmit automatic control signal in the environment not only with exploding danger such as petroleum, chemical plant, power, gas project and mine but also with high demand on explosion proof performance. It is decentralized type instrument signal cable with the feature of low capacitance & low inductance & good shielding performance and interference proof performance, which is also named as Intrinsic safety type cable for DCS system. So, its performance of explosion-proof & safety is apparently higher compared with common computer control cable and cable for DSC.

一、生产执行标准 企业标准(等效BS5308-86)。

Executive standard: enterprise standard (asBS5308-86)

### 二、使用特性

- 1、交流额定电压U0/U: 300/500V。
- 2、电缆导体长期允许最高工作温度: 聚乙烯绝缘为70°C; 交联聚乙烯绝缘为90°C; 无卤低烟阻燃聚烯烃绝缘为70°C。
- 3、最低环境温度: 固定敷设-40°C; 非固定敷设-15°C。安装敷设时环境温度: 不低于0°C。
- 4、电缆允许弯曲半径: 非铠装、编织屏蔽电缆不小于电缆外径的6倍; 铜带屏蔽、铠装电缆不小于电缆外径的12倍。

### Performance for Usage

- 1: AC rated voltageU0/U: 300/500V.
- 2: Max temperature of cable conductor for long term working is 70°C for cable with PE insulation, 90°C for cable with XLPE insulation and 70°C for cable with free halogen, low smoke, flame retardant, polyolefin insulation.
- 3: Min. environment temperature is -40°C for fixed laying and -15°C for non-fixed laying. Environment temperature for installing is no less than 0°C.
- 4: Bending radius allowed by cable is no less than 6 times that of cable OD for inarmored braided shielding cable and 12 times that of cable OD for copper tape shielding, armored cable.

### 三、基本型号及名称

### Basic Type and Description

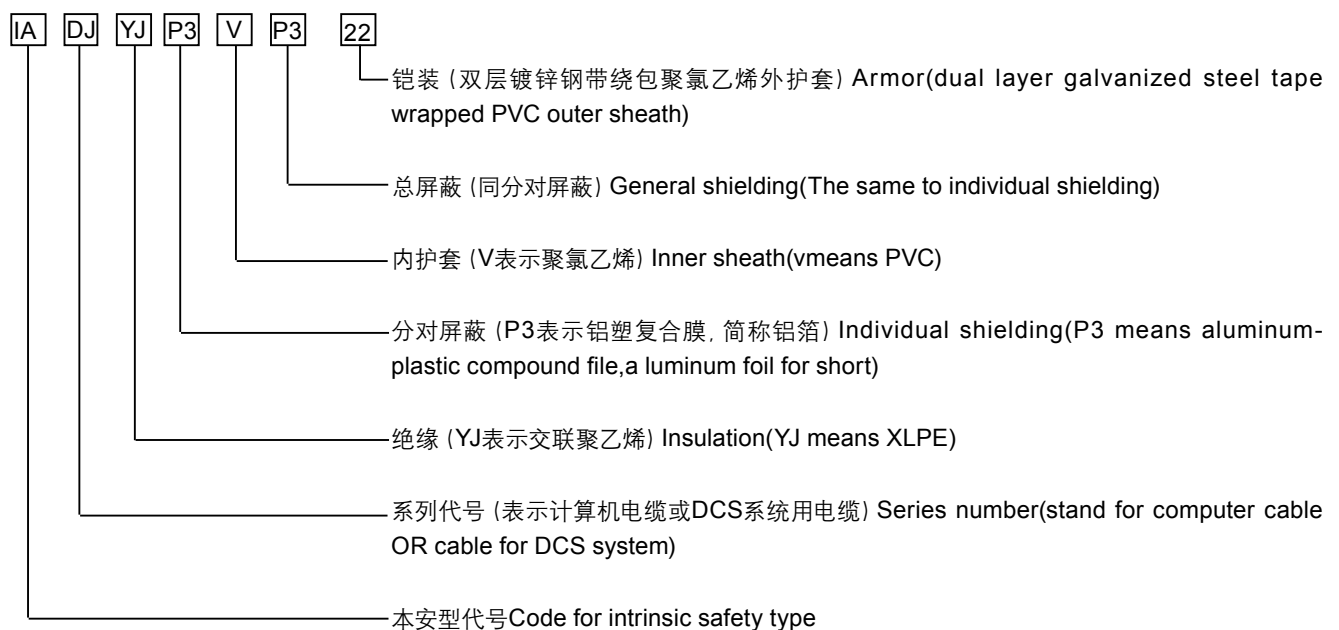
型 号Type	名 称Description
IA-DJYPVP	铜芯聚乙烯绝缘聚氯乙烯护套铜线编织分屏总屏本安型DCS电缆 Intrinsic safety type cable for DCS system with Cu core, PE insulation, PVC sheath, copper wire braided general & individual shielding
IA-DJYPVPR	铜芯聚乙烯绝缘聚氯乙烯护套铜线编织分屏总屏本安型DCS软电缆 Intrinsic safety type soft cable for DCS system with Cu core, PE insulation, PVC sheath, copper wire braided general & individual shielding
IA-DJYP3VP3	铜芯聚乙烯绝缘聚氯乙烯护套铝塑复合带绕包分屏总屏本安型DCS电缆 Intrinsic safety type cable for DCS system with Cu core, PE insulation, PVC sheath, aluminum-plastic compound tape wrapped general & individual shielding
IA-DJYP3VP3R	铜芯聚乙烯绝缘聚氯乙烯护套铝塑复合带绕包分屏总屏本安型DCS软电缆 Intrinsic safety type soft cable for DCS system with Cu core, PE insulation, PVC sheath, aluminum-plastic compound tape wrapped general & individual shielding
IA-DJYP2VP2	铜芯聚乙烯绝缘聚氯乙烯护套铜塑复合带绕包分屏总屏本安型DCS电缆 Intrinsic safety type cable for DCS system with Cu core, PE insulation, PVC sheath, copper-plastics compound tape wrapped general & individual shielding
IA-DJYP2VP2R	铜芯聚乙烯绝缘聚氯乙烯护套铜塑复合带绕包分屏总屏本安型DCS软电缆 Intrinsic safety type soft cable for DCS system with Cu core, PE insulation, PVC sheath, copper-plastic compound tape wrapped general & individual shielding
IA-DJYJPVP	铜芯交联聚乙烯绝缘聚氯乙烯护套铜线编织分屏总屏本安型DCS电缆 Intrinsic safety type cable for DCS system with Cu core, XLPE insulation, PVC sheath, copper wire braided general & individual shielding
IA-DJYJPVPR	铜芯交联聚乙烯绝缘聚氯乙烯护套铜线编织分屏总屏本安型DCS软电缆 Intrinsic safety type soft cable for DCS system with Cu core, XLPE insulation, PVC sheath, copper wire braided general & individual shielding

IA-DJYJP3VP3	铜芯交联聚乙烯绝缘聚氯乙烯护套铝塑复合带绕包分屏总屏本安型DCS电缆 Intrinsic safety type cable for DCS system with Cu core, XLPE insulation, PVC sheath, aluminum-plastic compound tape wrapped general & individual shielding
IA-DJYJP3VP3R	铜芯交联聚乙烯绝缘聚氯乙烯护套铝塑复合带绕包分屏总屏本安型DCS软电缆 Intrinsic safety type soft cable for DCS system with Cu core, XLPE insulation, PVC sheath, aluminum-plastic compound tape wrapped general & individual shielding
IA-DJYJP2VP2	铜芯交联聚乙烯绝缘聚氯乙烯护套铜塑复合带绕包分屏总屏本安型DCS电缆 Intrinsic safety type cable for DCS system with Cu core, XLPE insulation, PVC sheath, copper-plastic compound tape wrapped general & individual shielding
IA-DJYJP2VP2R	铜芯交联聚乙烯绝缘聚氯乙烯护套铜塑复合带绕包分屏总屏本安型DCS软电缆 Intrinsic safety type soft cable for DCS system with Cu core, XLPE insulation, PVC sheath, copper-plastic compound tape wrapped general & individual shielding
WDZ-IA-DJYPYP	铜芯无卤低烟阻燃聚烯烃绝缘及护套铜线编织分屏总屏本安型DCS电缆 Intrinsic safety type cable for DCS system with Cu core, free halogen, low smoke, flame retardant, polyolefin insulation & sheath, copper wire braided general & individual shielding
WDZ-IA-DJYPYPR	铜芯无卤低烟阻燃聚烯烃绝缘及护套铜线编织分屏总屏本安型DCS软电缆 Intrinsic safety type soft cable for DCS system with Cu core, free halogen, low smoke, flame retardant, polyolefin insulation & sheath, copper wire braided general & individual shielding
WDZ-IA-DJYP3YP3	铜芯无卤低烟阻燃聚烯烃绝缘及护套铝塑复合带绕包分屏总屏本安型DCS电缆 Intrinsic safety type cable for DCS system with Cu core, free halogen, low smoke, flame retardant, polyolefin insulation & sheath, aluminum-plastic compound tape wrapped general & individual shielding
WDZ-IA-DJYP3YP3R	铜芯无卤低烟阻燃聚烯烃绝缘及护套铝塑复合带绕包分屏总屏本安型DCS软电缆 Intrinsic safety type soft cable for DCS system with Cu core, free halogen, low smoke, flame retardant, polyolefin insulation & sheath, aluminum-plastic compound tape wrapped general & individual shielding
WDZ-IA-DJYP2YP2	铜芯无卤低烟阻燃聚烯烃绝缘及护套铜塑复合带绕包分屏总屏本安型DCS电缆 Intrinsic safety type cable for DCS system with Cu core, free halogen, low smoke, flame retardant, polyolefin insulation & sheath, copper-plastic compound tape wrapped general & individual shielding
WDZ-IA-DJYP2YP2R	铜芯无卤低烟阻燃聚烯烃绝缘及护套铜塑复合带绕包分屏总屏本安型DCS软电缆 Intrinsic safety type soft cable for DCS system with Cu core, free halogen, low smoke, flame retardant, polyolefin insulation & sheath, copper-plastic compound tape wrapped general & individual shielding

#### 四、型号名称及含义

#### Type, Description and Definition

举例eg:



绝缘或护套材料: Y—聚乙烯或无卤低烟阻燃聚烯烃挤包绝缘、护套;

YJ—交联聚乙烯挤包绝缘

阻燃性能分: ZRA—A类阻燃 (A类阻燃性能最佳)

ZRB—B类阻燃

ZRC—C类阻燃

本安阻燃型电缆在基本型号前分别加“ZRA-”、“ZRB-”、“ZRC-”表示即可。

铠装结构: 22—钢带铠装聚氯乙烯外护套

23—钢带铠装聚乙烯外护套

32—圆形镀锌低碳钢丝缠绕铠装聚氯乙烯外护套

33—圆形镀锌低碳钢丝缠绕铠装聚乙烯外护套

屏蔽材料: P—铜线编织

P1—镀锡铜线编织

P2—铜塑复合带绕包

P3—铝塑复合带绕包

导体种类: A—单根导体 (型号中省略)

B—七根绞合导体 (在规格后面加“B”表示)

R—多根绞合导体

## 五、规格范围

对数: 1~24对。

每对芯数: 二芯(称二线组)或三芯(称三线组)。

导体截面: 0.5mm<sup>2</sup>、0.75mm<sup>2</sup>、1.0mm<sup>2</sup>、1.5mm<sup>2</sup>、2.5mm<sup>2</sup>。

## 六、其他常见型号与本公司型号对照

其他型号 Other type	本厂型号 Type of our company
ia-K <sub>2</sub> YVR, ia-K <sub>3</sub> YVR, IJYPLVP <sub>L</sub> R, IJYPLV <sub>3</sub> R-2	IA-DJYP3VP3R
ia-K <sub>2</sub> YV, ia-K <sub>3</sub> YV, IJYPLVP <sub>L</sub> , IJYPLV <sub>3</sub> V-2 ia-K <sub>2</sub> YV(EX), ia-K <sub>3</sub> YV(EX)	IA-DJYP3VP3
KJYYVPL, IA-KJVVP <sub>L</sub>	IA-DJYP3VP3

Insulation or sheath material:

Y: PE insulation and sheath OR free halogen, low smoke, flame retardant, polyolefin extruded insulation & sheath

YJ: XLPE extruded insulation

Flame retardant performance category:

ZRA: category A (the best)

ZRB: category B

ZRC: category C

Prefix “ZRA-”、“ZRB-”、“ZRC-” should be added to the original type for cable with intrinsic safety type cable

Armor structure:

22 means steel tape armor, PVC outer sheath

23 means steel tape armor, PE outer sheath

32 means round galvanized low carbon steel wire wrapping, armor, PVC outer sheath

33 means round galvanized low carbon steel wire wrapping, armor, PE outer sheath

Shielding material:

P means copper wire braiding

P1 means tinned copper wire braiding

P2 means copper-plastic compound tape wrapping

P3 means aluminum-plastic compound tape wrapping

Conductor category:

A means single conductor (omitted in type)

B means 7 stranded conductor (“B” shall be added after specification)

C means multi-stranded conductor

## Specification Scope

Pair No.: 1~24 pairs

Core No. per pair: 2 cores(equal to 2 wire group ) or 3 cores(equal to 3 wire group)

Cross section area of conductor: 0.5mm<sup>2</sup>、0.75mm<sup>2</sup>、1.0mm<sup>2</sup>、1.5mm<sup>2</sup>、2.5mm<sup>2</sup>

## Comparison between other common type and type of our company

## 七、主要技术参数

## Main Technical Parameter

### 1、20°C导体直流电阻

DC resistance of conductor at 20°C

导体标称 截面mm <sup>2</sup> nominal cross area section	导体根数/单丝直径mm Pieces of conductor/diameter of single piece			20°C时导体直流电阻Ω/km DC resistance of conductor at 20°C	
	A	B	R	A、B	R
0.5	1/0.80	7/0.30	16/0.20	≤36.0	≤39.0
0.75	1/0.97	7/0.37	24/0.20	≤24.5	≤26.0
1.0	1/1.13	7/0.43	32/0.20	≤18.1	≤19.5
1.5	1/1.38	7/0.52	30/0.25	≤12.1	≤13.3
2.5	1/1.78	7/0.68	49/0.25	≤7.41	≤7.98

### 2、20°C绝缘电阻

Insulation resistance at 20°C

性能项目 Performance item	PE类、XLPE绝缘 PE category, XLPE insulation
20°C时绝缘电阻MΩ.km Insulation resistance at 20°C	≥500

3、电缆应经受工频交流电压试验：2000V/1min绝缘不发生击穿，试验温度为环境温度。

Cable shall endure A.C. voltage test of 2000V under power frequency for 1min without puncture of insulation. And testing temperature is environment temperature.

4、工作电容 (1KHZ)：线芯与线芯≤90PF/m。

Working capacitance (1KHZ) : core to core ≤90PF/m

5、分布电感 (1KHZ) ≤0.6 μH/m。

Distributing inductance (1KHZ) ≤0.6 μH/m

6、电磁干扰感应电压(干扰磁场400A/m) ≤5mV。

Inductive voltage of electromagnetic interference(interference magnetic field): ≤5mV

7、静电感应电压(静电电压20kV) <1V。

Inductive voltage of electrostatic(static voltage) <1V

8、辐射场透入强度(干扰场强120dB μV, 干扰场频率200MHZ) ≤66dB μV。

Penetration stress of radiant field(stress of interference field is 120dB μV; frequency of interference field is 200MHZ ) ≤66dB μV

## 八、电缆外径参数

## Parameter of cable OD

请参照计算机用屏蔽电缆的相关内容。

Please refer to relevant contents of computer shielding cable