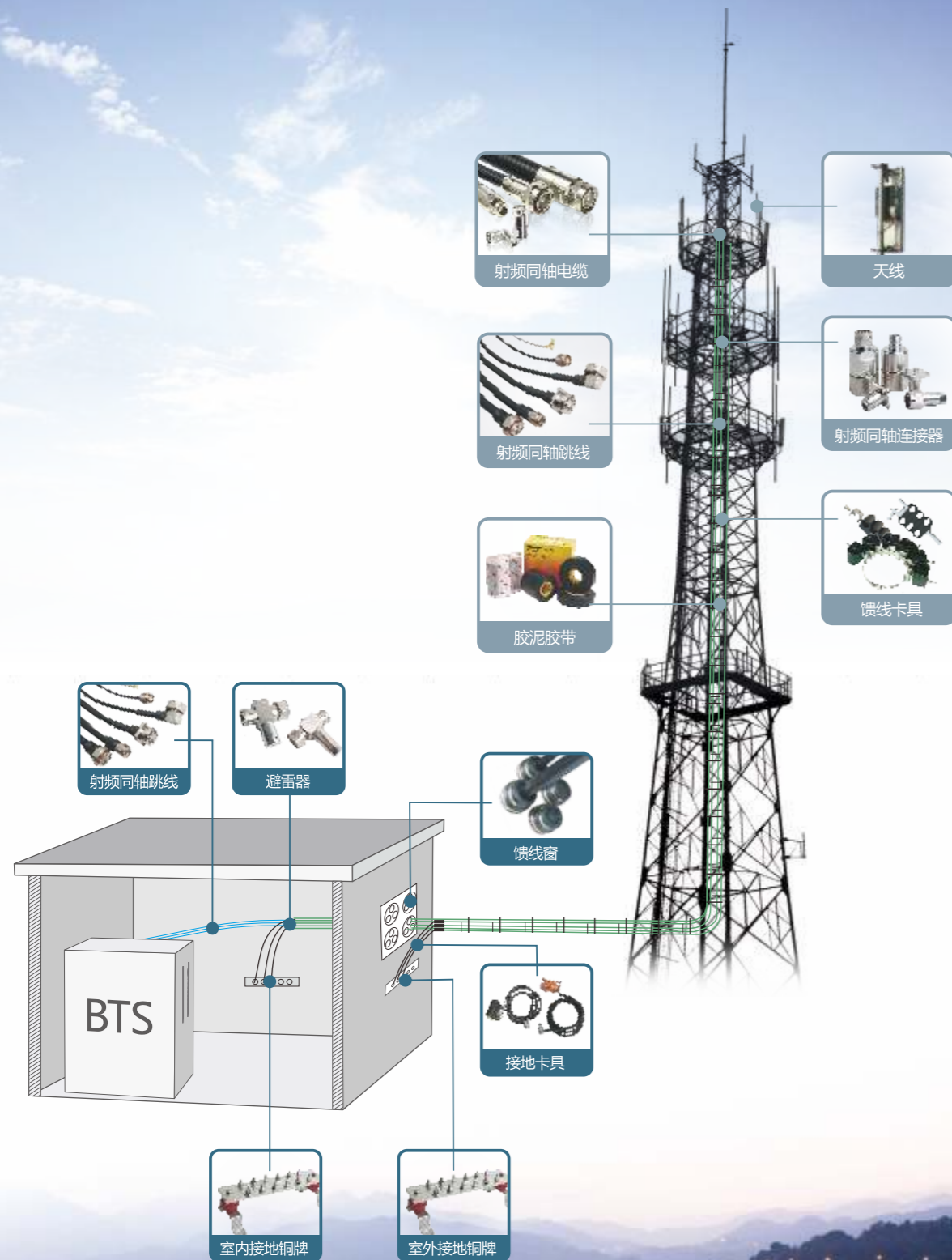


Attachment 附件



天馈附件产品主要包括接头保护盒、馈线卡、接地卡、接地铜排、馈线窗、避雷器支架、标识牌、扎带、胶泥、胶带等，主要用于通信基站、直放站、室内覆盖系统，以及无线寻呼、微波通信系统中，室内以及地铁和隧道通信中。

Antenna feeder accessory products include joint protection box, feeder clamp, grounding kit, ground copper bar, feeder window, arrester bracket, signboard, cable ties, clay, tape, etc., mainly for communication base stations, RPT, indoor coverage system and wireless paging, microwave communications systems(indoor as well as subway and tunnel communications).

D. Attachment 附件

D.1	99	Feeder Window	馈线窗
D.2	101	Feeder Card	馈线卡
D.3	105	Feeder Grounding	馈线接地卡
D.4	109	Ground Copper Bar	接地铜排
D.5	110	Arrester Bracket	避雷器支架

馈线窗

馈线卡

馈线接地卡

接地铜排

避雷器支架

Feeder Window

馈线窗

用于各类线缆及光缆穿墙入室前的密封处理，具有密封性好，体积小，重量轻，强度高，防火、防尘，安装方便等特性。产品选用304、201、铝镁合金及防老化橡胶为主要材料，质量可靠。

It is used for all kinds of cable and fiber optic cables' sealing before going through walls, features good sealing, small size, light weight, high strength, fireproofing, dustproof, easy installation. The product selects 304, 201, magnesium alloy and anti-aging rubber as the main material, with reliable quality.

技术参数

Technical Data

可用标准	Applicable Standards	
温度范围	Temperature Range	-55°C - +85°C
电气性能	Electrical Data	
抗老化	Defend Aging	300 H
防尘防水	Dustproof Waterproof	IP56级
材料	Materials	
安装板	Fixing plate	Stainless steel
固定座	Fixing seat	Rubber
穿孔板	Hole plate	Rubber
密封塞	Airproof stopper	Rubber
喉箍	Hoop	Stainless steel

Material Type	Material Name
物料规格	物料名称
WTC1-200*400-2-L	200*400固定板式馈线窗2孔(2-7/8**3)(铝合金)
WTC1-400*400-4-G	400*400固定板式馈线窗4孔(4-7/8**3)
WTC1-400*500-6-G	400*500固定板式馈线窗6孔(6-7/8**3)
WTC1-500*500-9-G	500*500固定板式馈线窗9孔(9-7/8**3)



D.1-1 喉箍型馈线窗

Material Type	Material Name
物料规格	物料名称
WTC3-400*400-4-G	400*400固定板式馈线窗4孔(4-7/8**3)
WTC3-400*500-6-G	400*500固定板式馈线窗6孔(6-7/8**3)
WTC3-500*500-9-G	500*500固定板式馈线窗9孔(9-7/8**3)



D.1-2 螺旋型馈线窗

Material Type	Material Name
物料规格	物料名称
WTC4-333*250	333*250夹板式馈线窗18孔



D.1-3 夹板型馈线窗

Material Type	Material Name
物料规格	物料名称
WTC2-310*350-30-G	310*350可变径馈线窗30孔(18-7/8",12-1/2")



D.1-4 可变径式馈线窗

Material Type	Material Name
物料规格	物料名称
WTC1-400*400-4-G	400*400固定板式馈线窗4孔(4-7/8**3)



D.1-5 橡胶筒型馈线窗

馈线窗

馈线卡

Feeder Card

馈线卡

馈线卡具适用于微波及移动通信缆线固定之用。卡箍采用改性聚丙烯或ABS料一次性注塑成型，304材料表面钝化处理；Q235和201材料表面达克罗处理，产品质量达到国际同类产品先进水平。

Feeder clamp is suitable for fixation of microwave and mobile communications cables. Clamps are made of modified polypropylene or ABS material with one-time injection molding, 304 material surface undergoes passivating treatment; Q235 and 201 material surface undergoes Dacromet treatment, and the product quality has reached international advanced level.

技术参数

Technical Data

抱箍型

名称	Name	材料	Material
U型件	U-piece	不锈钢	Stainless steel/Dacrotized
紧固件	Fastening	不锈钢	Stainless steel/Dacrotized
抱箍	Embrace hoop	不锈钢	Stainless steel/Dacrotized
橡胶固定座	Rubber Fix Seat	橡胶	Rubber

泄露型

名称	Name	材料	Material
线卡	Line card	增强尼龙66	Strengthen Nylon 66
卡座	Card seat	增强尼龙66	Strengthen Nylon 66
螺栓	Bolt	不锈钢或Q235碳钢	Stainless Steel/Q235Dacrotized
螺管	Spiral tube	不锈钢或Q235碳钢	Stainless Steel/Q235Dacrotized
膨胀螺栓组件	Expansion bolt assembly	不锈钢或Q235碳钢	Stainless Steel/Q235Dacrotized

穿芯型

名称	Name	材料	Material
U型组件	U-piece	不锈钢或Q235碳钢	Stainless Steel/Q235Dacrotized
紧固件	Fastening	不锈钢或Q235碳钢	Stainless Steel/Q235Dacrotized
塑料片	Plastic patch	改性聚丙烯/ABS工程塑料	Modified polypropylene or ABS-Modified Plastic

Material Type	Material Name	Material Type	Material Name
物料规格	物料名称	物料规格	物料名称
WTKJ-1/2"S-1-B01	1/2"S单联	WTKJ-7/8"-2-A01	7/8双联
WTKJ-1/2"S-2-B01	1/2S双联	WTKJ-7/8"-2-B01	7/8双联
WTKJ-1/2"S-2-C01	1/2S双联	WTKJ-7/8"-2-C01	7/8双联
WTKJ-1/2"S-3-B01	1/2S三联	WTKJ-7/8"-3-A01	7/8三联
WTKJ-1/2"-1-A01	1/2单联	WTKJ-7/8"-3-B01	7/8三联
WTKJ-1/2"-1-B01	1/2单联	WTKJ-7/8"-3-C01	7/8三联
WTKJ-1/2"-1-C01	1/2单联	WTKJ-1.1/4"-1-A01	5/4单联
WTKJ-1/2"-2-A01	1/2双联	WTKJ-1.1/4"-1-B01	5/4单联
WTKJ-1/2"-2-B01	1/2双联	WTKJ-1.1/4"-1-C01	5/4单联
WTKJ-1/2"-2-C01	1/2双联	WTKJ-1.1/4"-2-A01	5/4双联
WTKJ-1/2"-3-A01	1/2三联	WTKJ-1.1/4"-2-B01	5/4双联
WTKJ-1/2"-3-B01	1/2三联	WTKJ-1.1/4"-2-C01	5/4双联
WTKJ-1/2"-3-C01	1/2三联	WTKJ-1.1/4"-3-A01	5/4三联
WTKJ-1/4"-1-B01	1/4单联	WTKJ-1.1/4"-3-B01	5/4三联
WTKJ-1/4"-2-B01	1/4双联	WTKJ-1.1/4"-3-C01	5/4三联
WTKJ-1/4"-3-B01	1/4三联	WTKJ-1.5/8"-1-A01	13/8单联
WTKJ-3/8"-1-A01	3/8单联	WTKJ-1.5/8"-1-B01	13/8单联
WTKJ-3/8"-1-B01	3/8单联	WTKJ-1.5/8"-1-C01	13/8单联
WTKJ-3/8"-2-B01	3/8双联	WTKJ-1.5/8"-2-A01	13/8双联
WTKJ-3/8"-2-C01	3/8双联	WTKJ-1.5/8"-2-B01	13/8双联
WTKJ-3/8"-3-B01	3/8三联	WTKJ-1.5/8"-2-C01	13/8双联
WTKJ-7/8"-1-A01	7/8单联	WTKJ-1.5/8"-3-A01	13/8三联
WTKJ-7/8"-1-B01	7/8单联	WTKJ-1.5/8"-3-B01	13/8三联
WTKJ-7/8"-1-C01	7/8单联	WTKJ-1.5/8"-3-C01	13/8三联



D.2-1 穿芯型馈线卡具

馈线窗

馈线卡

Feeder Card

馈线卡

馈线接地卡

接地铜排

避雷器支架

Material Type 物料规格	Material Name 物料名称
WTKQ-1/2"-1-A01	1/2单联
WTKQ-1/2"-1-B01	1/2单联
WTKQ-1/2"-1-C01	1/2单联
WTKQ-1/2"-2-A01	1/2双联
WTKQ-1/2"-2-B01	1/2双联
WTKQ-1/2"-2-C01	1/2双联
WTKQ-1/2"-3-A01	1/2三联
WTKQ-1/2"-3-B01	1/2三联
WTKQ-1/2"-3-C01	1/2三联
WTKQ-1/4"-1-B01	1/4单联
WTKQ-1/4"-2-B01	1/4双联
WTKQ-1/4"-3-B01	1/4三联
WTKQ-3/8"-1-A01	3/8单联
WTKQ-3/8"-1-B01	3/8单联
WTKQ-3/8"-1-C01	3/8单联
WTKQ-3/8"-2-A01	3/8双联
WTKQ-3/8"-2-B01	3/8双联
WTKQ-3/8"-2-C01	3/8双联
WTKQ-3/8"-3-A01	3/8三联
WTKQ-3/8"-3-B01	3/8三联
WTKQ-3/8"-3-C01	3/8三联
WTKQ-7/8"-1-A01	7/8单联
WTKQ-7/8"-1-B01	7/8单联
WTKQ-7/8"-1-C01	7/8单联

Material Type 物料规格	Material Name 物料名称
WTKQ-7/8"-2-A01	7/8双联
WTKQ-7/8"-2-B01	7/8双联
WTKQ-7/8"-2-C01	7/8双联
WTKQ-7/8"-3-A01	7/8三联
WTKQ-7/8"-3-B01	7/8三联
WTKQ-7/8"-3-C01	7/8三联
WTKQ-1.1/4"-1-A01	5/4单联
WTKQ-1.1/4"-1-B01	5/4单联
WTKQ-1.1/4"-1-C01	5/4单联
WTKQ-1.1/4"-2-A01	5/4双联
WTKQ-1.1/4"-2-B01	5/4双联
WTKQ-1.1/4"-2-C01	5/4双联
WTKQ-1.1/4"-3-A01	5/4三联
WTKQ-1.1/4"-3-B01	5/4三联
WTKQ-1.1/4"-3-C01	5/4三联
WTKQ-1.5/8"-1-A01	13/8单联
WTKQ-1.5/8"-1-B01	13/8单联
WTKQ-1.5/8"-1-C01	13/8单联
WTKQ-1.5/8"-2-A01	13/8双联
WTKQ-1.5/8"-2-B01	13/8双联
WTKQ-1.5/8"-2-C01	13/8双联
WTKQ-1.5/8"-3-A01	13/8三联
WTKQ-1.5/8"-3-B01	13/8三联
WTKQ-1.5/8"-3-C01	13/8三联



D.2-2 沿墙型馈线卡具

Material Type 物料规格	Material Name 物料名称
WTKC-1/2"-1-C01	1/2单联
WTKC-7/8"-1-C01	7/8单联
WTKC-1.1/4"-1-C01	5/4单联
WTKC-1.5/8"-1-C01	13/8单联



D.2-3 泄漏型馈线卡具

Material Type 物料规格	Material Name 物料名称
WTKJ-G-2-00-A01	1/2S双联
WTKJ-1/4"-1-00-B01	1/4单联
WTKJ-3/8"-S-A01	3/8单联双孔
WTKJ-3/8"-2S-A01	3/8双联双孔
WTKJ-3/8"-3S-C01	3/8三联双孔



D.2-4 光纤固定夹

Material Type 物料规格	Material Name 物料名称
WTKG-7/8"-1-B01	7/8单联
WTKG-7/8"-1-C01	7/8单联
WTKG-7/8"-2-A01	7/8双联
WTKG-7/8"-2-B01	7/8双联
WTKG-7/8"-2-C01	7/8双联
WTKG-7/8"-3-B01	7/8三联
WTKG-7/8"-3-C01	7/8三联



D.2-5 挂钩型馈线卡具

馈线窗

馈线卡

Feeder Grounding

馈线接地卡

馈线接地卡用于保护天馈线和机房设备防止雷击引起的设备破坏，可用于馈线的常规接地，其主要材质是不锈钢、紫铜，铜壳及铜鼻子表面经镀银或镀锡处理，电接触性能极佳，接触电阻、接地电阻等均符合有关要求。

Feeder grounding kit is used for the protection of the antenna feeder and machine room equipment to prevent equipment damage caused by lightning. It can be used for conventional grounding of feeders, and its main material is stainless steel and copper. Copper shell and copper nose surface are treated with silver or tin, with good electrical contact properties, excellent contact resistance, grounding resistance.

馈线接地卡

接地铜排

避雷器支架

技术参数

Technical Data

可用标准	Applicable Standards	
温度范围	Temperature Range	-55°C - +85°C
电气性能	Electrical Data	
耐冲击电流	Impact Resistance Current	≥ 70 KA
绝缘电阻	Insulation Resistance	≥ 5 GΩ
接触电阻	Contact Resistance	≤ 5 mΩ
线缆拉脱力	Pull to take off dint	≥ 600 N

免胶式接地卡

名称	Name	材料	Material
橡胶组件	Rubber discreteness	三元乙丙橡胶	EPDM
骨架	Framework	不锈钢	Stainless Steel
紧固件	Fastening	不锈钢	Stainless Stee/Passivationl
胶泥	Gum Mire	3M2166	3M2166
导电带	Contact Net	铜丝编织网	Brass Wires Weave Net/Tin
线鼻子	Line Beezer	T2紫铜管	T2 Red Copper Canal/Tin
接地电缆	Earth Cable	16-35mm ² 铜芯	Cuprum Core
热缩管	Pyrocondensation Canal	聚烯烃+热熔胶	Polyolefin Plastics

铜舌式接地卡

名称	Name	材料	Material
铜舌	Copper Tongue	T2紫铜皮	T2 Red Copper Skin/Passivation
紧固件	Fastening	不锈钢	Stainless Stee/Passivationl
线鼻子	Line Beezer	T2紫铜管	T2 Red Copper Canal/Tin
接地电缆	Earth Cable	16-35mm ² 铜芯	Cuprum Core
热缩管	Pyrocondensation Canal	聚烯烃+热熔胶	Polyolefin Plastics

环扣式接地卡

名称	Name	材料	Material
铜卡	Copper Block	T2紫铜皮	T2 Red Copper Skin/Passivation
钢丝	Steel Wire	不锈钢	Stainless Steel/Passivation
紧固件	Fastening	不锈钢	Stainless Steel/Passivation
线鼻子	Line Beezer	T2紫铜管	T2 Red Copper Canal/Tin
接地电缆	Earth Cable	16-35mm ² 铜芯	Cuprum Core
热缩管	Pyrocondensation Canal	聚烯烃+热熔胶	Polyolefin Plastics

室内接地卡

名称	Name	材料	Material
支架	Bracket	不锈钢	Stainless Steel/Passivation
钢带	Metal strip	不锈钢	Stainless Steel/Passivation
紧固件	Fastening	不锈钢	Stainless Steel/Passivation
C型铜鼻子	C- copper beezer	T2紫铜管	T2 Red Copper Canal/Passivation
接地电缆	Earth Cable	16-35mm ² 铜芯	Cuprum Core
防尘盒	Dustproof Box	ABS塑料	ABS Plastic

馈线窗

馈线卡

馈线接地卡

接地铜排

避雷器支架

Feeder Grounding

馈线接地卡

Material Type	Material Name
物料规格	物料名称
WTJDM-1/2"-A01	1/2"免胶式接地卡(16普,1米)
WTJDM-3/8"-A01	3/8"免胶式接地卡(16普,1米)
WTJDM-7/8"-A01	7/8"免胶式接地卡(16普,1米)
WTJDM-1.1/4"-A01	1.1/4"免胶式接地卡(16普,1米)
WTJDM-1.5/8"-A01	1.5/8"免胶式接地卡(16普,1米)



D.3-1 免胶式接地卡

Material Type	Material Name
物料规格	物料名称
WTJDS-1/2"-A01	1/2"铜舌式接地卡(16普,1米)
WTJDS-3/8"-A01	3/8"铜舌式接地卡(16普,1米)
WTJDS-7/8"-A01	7/8"铜舌式接地卡(16普,1米)
WTJDS-1.1/4"-A01	1.1/4"铜舌式接地卡(16普,1米)
WTJDS-1.5/8"-A01	1.5/8"铜舌式接地卡(16普,1米)



D.3-2 铜舌式接地卡

Material Type	Material Name
物料规格	物料名称
WTJDK-1/2"-A01	1/2"环扣式接地卡(16普,1米)
WTJDK-3/8"-A01	3/8"环扣式接地卡(16普,1米)
WTJDK-7/8"-A01	7/8"环扣式接地卡(16普,1米)
WTJDK-1.1/4"-A01	1.1/4"环扣式接地卡(16普,1米)
WTJDK-1.5/8"-A01	1.5/8"环扣式接地卡(16普,1米)



D.3-3 环扣式接地卡

Material Type	Material Name
物料规格	物料名称
WTJDT-C3-16-A01	C3钢带式通用室内接地卡(16软,1米)



D.3-4 室内接地卡

Material Type	Material Name
物料规格	物料名称
WTJDX-16-A01	接地线16(普)1米(M8+M6)
WTJDX-25-A01	接地线25(软)1米(M8*2)
WTJDX-35-A01	接地线35(软)1米(M8*2)



D.3-5 接地线

Ground Copper Bar

接地铜排

接地铜排为设备、机架以及其它需接地的物体提供一个公共接地节点，为接地导体与连接系统中的各个金属部件建立一个等电位系统，这个等电位系统的电压几乎为零，可在发生过电流或故障时保护人员和设备的安全，横截面积足够大，保证瞬态高电流快速汇走，接地排、边角采用圆弧处理，防止尖锐的边角产生电磁辐射，它可以安装在铁塔、基站室内室外和其他任何要求接地的地方。

The grounding copper bar provides a common grounding node for equipment, machine frame and other objects required for grounding, and sets up an equipotential system for all metal parts of the grounding conductor and the connecting system, the voltage of the equipotential system is almost zero, thus it can protect the personnel and equipment in the event of overcurrent or failure, the cross-sectional area is large enough, so as to ensure the transient high current fast go away, the grounding bar, corners are made circular arc, to prevent the sharp corner from producing electromagnetic radiation, so it can be installed in the iron tower, inside or outside of the base station and any other places needing grounding.

技术参数

Technical Data

可用标准	Applicable Standards		
温度范围	Temperature Range	-55°C - +85°C	
电气性能	Electrical Data		
耐冲击电流	Impact Resistance Current	≥ 70 KA	
绝缘电阻	Insulation Resistance	≥ 5 GΩ	
接触电阻	Contact Resistance	≤ 5 mΩ	
名称	Name	材料	Material
铜板	Copper Line	T2紫铜板	T2-Purple Copper/Tin
支架	Bracket	不锈钢	Stainless Steel/Passivation
绝缘子	Insulated Body	环氧树脂	Epoxy

Material Type	Material Name
物料规格	物料名称
WTP1-250*100*8-16-D01	16孔接地铜排
WTP1-300*60*6-11-D01	11孔接地铜排
WTP1-300*80*10-16-D01	16孔接地铜排
WTP1-400*80*8-13-D01	13孔接地铜排
WTP1-400*100*10-25-D01	25孔接地铜排
WTP1-500*100*10-22-D01	22孔接地铜排



D.4-1

Arrester Bracket

避雷器支架

避雷器支架是严格按照IEC有关标准制作的产品，适用于各种类型避雷器的安装，铜排与铜导线通过浇注或螺旋连接，导电性好，接入电阻≤0.336mΩ，保证了可靠的导电性。该产品整体设计合理，用标准绝缘子配套，并装有不锈钢固定架，最后用螺栓固定于所需位置处。

避雷器支架用T2电解纯紫铜铜排，材质电阻率小，导电性好。生产中，铜排与铜导线的连接头是通过浇注工艺或螺栓连接成型，连接可靠，导电电阻小。绝缘子聚酯树脂原料，绝缘性好，强度高，所有配件都经过处理，永不生锈。

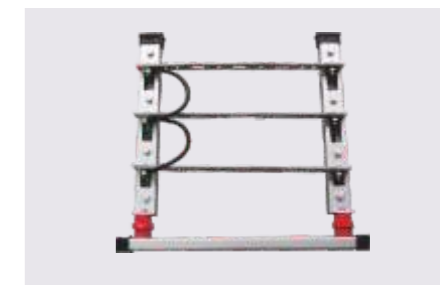
Arrester bracket is produced in strict accordance with the relevant IEC standard, used for all types of arrester installation, copper conductor and copper bar are connected by casting or screw connection, with good conductivity, access resistance ≤ 0.336 mΩ, to ensure reliable electrical conductivity. The overall design of the product is reasonable, matched with standard insulator and equipped with stainless steel bracket, and is bolted to a desired position at last. Arrester bracket adopts T2 electrolytic pure copper bar, the resistivity of the material is small, with good conductivity. During production, the connectors of copper bar and copper conductor are made by bolts or by molding or casting process, with reliable connection, small conductive resistance. Insulators are made of polyester plastic resin, with good insulation, high strength, and all the accessories have been treated, never rust.

技术参数

Technical Data

可用标准	Applicable Standards		
温度范围	Temperature Range	-40°C - +85°C	
电气性能	Electrical Data		
大气压	Pressure	70 - 106KPa	
耐冲击电流	Impact Resistance Current	≥ 70 KA	
耐工频高压	Pressure	≥ 2 KV/min	
绝缘电阻	Insulation Resistance	≥ 5 GΩ	
接触电阻	Contact Resistance	≤ 5 mΩ	
名称	Name	材料	Material
支架	Bracket	冷轧钢板	Cold Armor Plate/Dacrotized
绝缘子	Insulated Body	环氧树脂	Epoxy
紧固件	Fastening	不锈钢	Stainless Steel/Dacrotized
接地汇流排	Earth Accordant Junction Line	T2紫铜板或铝板	T2 Purple Copperplate Or Aluminium/Tin
接地电缆	Earth Cable	16mm² 铜芯	Cuprum Core

Material Type	Material Name
物料规格	物料名称
WTBTJ-T2*3-400D01	6单元避雷器托架
WTBTJ-L3*2-400-E01	6单元避雷器托架
WTBTJ-T3*3-400-D01	9单元避雷器托架
WTBTJ-L3*3-400-E01	9单元避雷器托架
WTBTJ-T3*4-400-D01	12单元避雷器托架
WTBTJ-L3*4-400-C01	12单元避雷器托架
WTBTJ-T3*6-400-D01	18单元避雷器托架
WTBTJ-L3*6-400-E01	18单元避雷器托架



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