

PROJECT NE1 - 700MW CSP + 250MW PV Hybrid Project					
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Data sheet of IPB(Isolated Phase Bus Duct)

1. Type and Parameters 型式

Types: full connecting, natural cooling, and micro-positive pressure Isolated Phase Bus Duct
全连式、自然冷却、微正压离相封闭母线

2. Basic technical parameters:基本技术参数

Item name:	项目名称	200MWIPB	100MWIPB
Rated working voltage (kV)	额定工作电压(kV)	18	15.75
Maximum service voltage, kV	最高工作电压	27	27
Rated current (A)	额定电流(A)	10000/2700/150	6000/1300/100
Number of phases	相数	3	3
Rated frequency (HZ)	额定频率 (Hz)	50	50
Effective value of rated 1min working frequency withstanding voltage (kV)	额定 1min 工频耐受电压有效值(湿/干)(kV)	60	60
Peak value of rated lightning impulse withstanding voltage (kV)	额定雷电冲击耐受电压峰值(kV)	125	125
Peak value of dynamic stable current (kA)	动稳定电流峰值(kA)	251/500/500	179/400/400
1s heat stable current (kA)	1 秒钟热稳定电流(kA)	97/160/160	58/100/100
Margin before corona effect appears, %		25	25
Single-phase capacitance to earth		$6.992264 \times 10^{-11} / 3.64378 \times 10^{-11}$ (F/m, branch)	$5.758025 \times 10^{-11} / 3.64378 \times 10^{-11}$ (F/m, branch)
Main route conductor loss	主回路导体损耗 (W/M)	224	146
Main route enclosure loss	主回路外壳损耗 (W/M)	175	83
Phase spacing (mm)	相间距离(mm)	1200mm	1200mm
Cooling mode	冷却方式	Self-cooling	Self-cooling
Maximum ambient temperature (°C)	环境温度 (°C)	50(outdoor) 57(indoor)	50(outdoor) 57(indoor)

Temperature at the hottest point of conductors and enclosures at the rated current in continuous service:	OTS requirement		
For conductors, °C	90	90	90
For enclosures, °C	65	65	65
Maximum temperature rise with the rated current in continuous service, considering solar radiation (as necessary):			
For conductors, °C	40 outdoor / 33 indoor	40 outdoor / 33 indoor	40 outdoor / 33 indoor
For enclosures, °C	15 outdoor / 8 indoor	15 outdoor / 8 indoor	15 outdoor / 8 indoor
Outer diameter and thickness of aluminum bus duct (mm)	铝母线外径及厚度(mm)	Φ 400 × 12 outdoor Φ 400 × 15 indoor Φ 150 × 10	Φ 300 × 10 Φ 150 × 10
Outer diameter and thickness of aluminum enclosure (mm)	铝外壳外径及厚度(mm)	Φ 900 × 6 outdoor Φ 900 × 7 indoor Φ 700 × 5	Φ 800 × 6 Φ 700 × 5
Conductor and enclosure material	导体和外壳的材料	aluminum	aluminum
Enclosure supporting parts material	外壳支撑部件材料	hot-dipped galvanized steel	hot-dipped galvanized steel
Bus supporting parts material	导体支撑部件	Insulator(china)	Insulator(china)
Bus duct painting (appearance)	母线涂漆(外表)	BLACK	BLACK
Enclosure painting (inner surface)	外壳涂漆(内表面)	BLACK	BLACK
Enclosure painting (outer surface)	外壳涂漆(外表面)	Grey RAL 7035	Grey RAL 7035
Protection class of enclosure	外壳防护等级	IP65	IP65
Applicable standards	适用标准	IEEE C37.23	IEEE C37.23
Minimum useful lifetime, years	35	35	35
Micro-positive pressure device	微正压装置(含空压机)		
Input air pressure	额定输入空气压力 Pa	300-2500	300-2500
Air pressure in IPB enclosure	母线壳内空气压力 Pa	(5-7) × 10 ⁵	(5-7) × 10 ⁵
Input air volume	额定充气量	45m ³	45m ³