Base Load Power Hub (BLPH)

Technical Data Sheet (TDS) for Earthing and Lightning Materials

Document Number: 123A90-DDL-EL-DS-20076

Document Class: 2

01	29/07/2024	Accepted for Construction (AFC)	NLK	FMA/AMA	FPA/DLO
00	26/06/2024	Issue for Review (IFR)	NLK	FMA/AMA	FPA/DLO
Rev.	Date	Description	Prepared	Reviewed	Approved

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Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ACCEPTED FOR CONSTRUCTION (AFC)

HOLDS LIST

No.	Description
1.	
2.	
3.	
4.	

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REFERENCE DOCUMENT AND STANDARD:

1)	Electrical Typical Installation Details Eathing System	Doc. No.123A90-DDL-EL-DD-20090
2)	Earthing & Lightining Layout - Top Deck	Doc. No.123A90-DDL-EL-DL-20132
3)	Earthing & Lightning Layout - Lower Deck	Doc. No.123A90-DDL-EL-DL-20133
4)	Earthing & Lightning Layout - Below Lower deck	Doc. No.123A90-DDL-EL-DL-20134
5)	Earthing & Lightining Layout - HV & MV Switchroom	Doc. No.123A90-DDL-EL-DL-20136
6)	Earthing & Lightning Layout - LV Switchroom	Doc. No.123A90-DDL-EL-DL-20137
7)	Earthing & Lightning Layout - UPSs & Batteries Switchroom	Doc. No.123A90-DDL-EL-DL-20138

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1	General			
2		Required	Manufacturer	Comments
3	Manufacturer	by Vendor		
4	Order Status	for Purchase		
5	General - Electrical Input Data			
6	System Voltage	230 V ac		
7	Voltage Variation (Steady State)	±5 %		
8	Rated Frequency	50Hz		
9	Frequency Variation (Steady State)	±2 %		
10	Number of Phases	3ph + neutral TN-S system		
11	Installation conditions			
12	Ambient Temperature	-8.4°C to +25°C		
13	Relative humidity (%)	Maximum 95 %		
14	Atmosphere	Marine Offshore-fixed		
15	Altitude > 1000 m (m)	not more than 1000 m		

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Row	Data Sheet for Eathing and Lightning Materials					Rev.
1	Y/G Insulating Copper Conductor					
2	Item		Required	Manufacturer Proposal	Comments	
3	Model Number		By Vendor			
4	Serial Number		By Vendor			
5	Material		Electrolitic copper/Tinned Electrolitic copper			
6	Insulation		Protective Earth Single core, 0.45/0.75kV, Stranded copper, insulated with Y/G stripes, FRLS PVC insulation, Unarmoured Cable			
7	Section [mm^2]	Quantity	Code	Remarks		
8	1,5					
9	2,5					
10	4					
11	6	2000m		Earthing Cable quantity taken from Cable Schedule (Note-2)		
12	10	175m		Earthing Cable quantity taken from Cable Schedule (Note-1)		
13	16	1500m		Earthing Cable quantity taken from Cable Schedule (Note-2)		
14	25					
15	35	200m		Earthing Cable quantity taken from Cable Schedule (Note-2)		
16	50					01
17	70					
18	95	325m		Earthing Cable quantity taken from Cable Schedule (Note-2)		01
19	120					
20	150	86m		Earthing Cable quantity taken from Cable Schedule (Note-2)		01
21	185					
22	240					
23	300					
24						
25						
26						
27						



NOTES:

1) 10 Sq.mm Earthing cable quantity given by Rosetti but,10 Sq.mm not used in the Electrical Typical Installation Details - Earthing System-123A90-DDL-EL-DD-20090
2) Earthing Cable quantites given by Rosetti

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Row	Data Sheet for Eathing and Lightning Materials				Rev.
1	Earthing Boss				
2	Item	Required	Manufacturer Proposal	Comments	
3	Model Number	By Vendor			
4	Serial Number	By Vendor			
5	Earthing Boss Material	AISI 316L			
6	Earthing Boss with Threaded hole Size	M10			
7	Stud Bolt with Plane Washer, Grower and Nut Size	M10 X 50			
8	Stud Bolt with Plane Washer, Grower and Nut Material	AISI 316L			

	Earth Boss Size in MM	Quantity	Code	Remarks	
9					
10	50 X 50	41		Quantity as per Earthing & Lightning layout - Top Deck-123A90-DDL-EL-DL-20132	
11	50 X 50	46		Quantity as per Earthing & Lightning layout -Lower Deck-123A90-DDL-EL-DL-20133	01
12	50 X 50	7		Quantity as per Earthing & Lightning layout -Below Lower Deck-123A90-DDL-EL-DL-20134	01
13	50 X 50	4		Quantity as per Earthing & Lightning layout -HV Switchroom-123A90-DDL-EL-DL-20136	
14	50 X 50	4		Quantity as per Earthing & Lightning layout -LV Switchroom-123A90-DDL-EL-DL-20137	
15	50 X 50	4		Quantity as per Earthing & Lightning layout -UPS & Batteries SwitchRoom-123A90-DDL-EL-DL-20138	
16					
17					01
18	Total	106			
19					
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29					

NOTES:

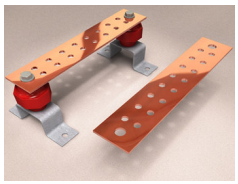


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Row	Data Sheet for Eathing and Lightning Materials				Rev.
1	Earthing Bar				
2	Item	Required	Manufacturer Proposal	Comments	
3	Model Number	By Vendor			
4	Serial Number	By Vendor			
5	Material	Tinned Electrolitic copper			
6	Holes Dia	9mm			
7	Holes Qty.	By Vendor			
8					

9	Bar Size	Quantity	Code	Remarks	
10	285X50X5mm	6		Quantity as per Earthing & Lightning layout - Top Deck-123A90-DDL-EL-DL-20132	
11	285X50X5mm	16		Quantity as per Earthing & Lightning layout -Lower Deck-123A90-DDL-EL-DL-20133	
12	285X50X5mm	3 *		Quantity as per Earthing & Lightning layout -Below Lower Deck-123A90-DDL-EL-DL-20134	01
13	285X50X5mm	2 *		Quantity as per Earthing & Lightning layout -HV Switchroom-123A90-DDL-EL-DL-20136	
14	285X50X5mm	2 *		Quantity as per Earthing & Lightning layout -LV Switchroom-123A90-DDL-EL-DL-20137	
15	285X50X5mm	2 *		Quantity as per Earthing & Lightning layout -UPS & Batteries SwitchRoom-123A90-DDL-EL-DL-20138	
16					
17					
18	Total	31			01
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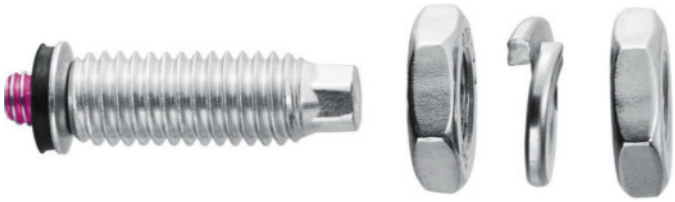
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Row	Data Sheet for Eathing and Lightning Materials				Rev.
1	Hilti				
2	Item	Required	Manufacturer Proposal	Comments	
3	Model Number	By Vendor			
4	Serial Number	By Vendor			
5	Material	AISI 316L			
6	Accessories	Threaded Stud Complete with Grower and Nuts			

	Size	Quantity	Code	Remarks	
8	HILTI S-BT-ER M10/15 SN6	163		Quantity as per Earthing & Lightning layout - Top Deck-123A90-DDL-EL-DL-20132, Earthing & Lightning layout -Lower Deck-123A90-DDL-EL-DL-20133, Earthing & Lightning layout -Below Lower Deck-123A90-DDL-EL-DL-20134, Earthing & Lightning layout -HV Switchroom-123A90-DDL-EL-DL-20136, Earthing & Lightning layout -LV Switchroom-123A90-DDL-EL-DL-20137, Earthing & Lightning layout -UPS & Batteries SwitchRoom-123A90-DDL-EL-DL-20138	01
9	HILTI S-BT-ER M10 HC 120	25			01
10					
11					
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NOTES:



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Row	Data Sheet for Eathing and Lightning Materials				Rev.
1	BLANK SHEET				
2	Item	Required	Manufacturer Proposal	Comments	
3					
4					
5					
6					
7					
8					
9					

10	Cable section	Quantity	Code	Remarks	
11					
12					
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Row	Data Sheet for Eathing and Lightning Materials				Rev.
1	Lightning Air Rod 6m				
2	Item	Required	Manufacturer Proposal	Comments	
3	Model Number	By vendor			
4	Serial Number	By vendor			
5	Quantity	3 (6m total)		Quantity and lenght as per Earthing & Lightning layout - Top Deck-123A90-DDL-EL-DL-20132	
6	Location	Upper Deck			
7	Material	AISI 304/AlMgSi			
8					
9					
10					

11	Quantity	Description
12-15	1	air termination rod h = 2 m made with solid stainless steel round (Aisi 316), rounded at the top and equipped with M16 thread, compliant with CEI EN 62305-3, equipped with an impact point orientation device to allow its inclination
16-19	1	support pole with integrated drop of 4 m made with tube Øe 40 mm with high mechanical resistance. The element is equipped with an upper insert to accommodate the conductor rods, and internally crimped to the conductor used as a drop, protected along the way by a high thickness PE pipe
24-27	2	LIGHTING AIR ROD BRACKET - Standard support bracket (with anchoring base parallel to the pole) made entirely of stainless steel welded in parallel to a second similar element and intermediate plate with tightening screws, coupled with 2 double ring tightening elements; these elements allow you to fix 3 parallel fiberglass reinforcement elements Ø16mm along a Ø40mm pole.
20-23	1	insulating conductor drop with 70mm² in AlMgSi material, from air termination to the bottom of the support with 2m spare.
24-27	1	earth connection to the structure consisting of a galvanized steel threaded bar M12 to be welded 50mm to the metal structure and an aluminum alloy joint necessary for connecting the conductor; the fixing is by crimping



AIR TERMINATION ROD

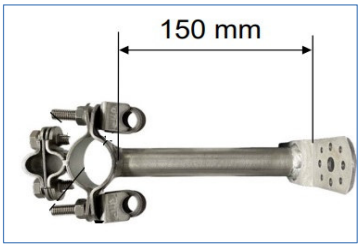
SUPPORT POLE

LIGHTING AIR ROD BRACKET

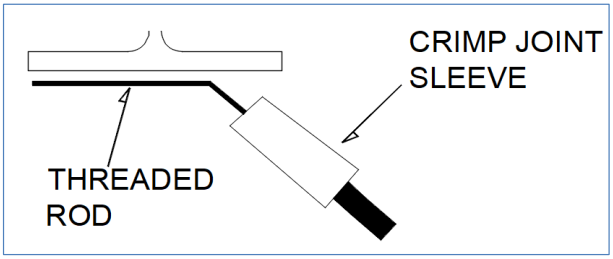
INSULATING CONDUCTOR

EARTH CONNECTION

LIGHTING AIR ROD BRACKET



EARTH CONNECTION



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Row	Data Sheet for Eathing and Lightning Materials				Rev.
1	Lightning Air Rod 8m				
2	Item	Required	Manufacturer Proposal	Comments	
3	Model Number	By vendor			
4	Serial Number	By vendor			
5	Quantity	2 (8m total)		Quantity and lenght as per Earthing & Lightning layout - Top Deck-123A90-DDL-EL-DL-20132	
6	Location	Upper Deck			
7	Material	AISI 304/AlMgSi			
8					
9					
10					

11	Quantity	Description
12-15	1	air termination rod h = 2 m made with solid stainless steel round (Aisi 316), rounded at the top and equipped with M16 thread, compliant with CEI EN 62305-3, equipped with an impact point orientation device to allow its inclination
16-19	1	support pole with integrated drop of 6 m made with tube Øe 40 mm with high mechanical resistance. The element is equipped with an upper insert to accommodate the conductor rods, and internally crimped to the conductor used as a drop, protected along the way by a high thickness PE pipe
24-27	2	LIGHTING AIR ROD BRACKET - Standard support bracket (with anchoring base parallel to the pole) made entirely of stainless steel welded in parallel to a second similar element and intermediate plate with tightening screws, coupled with 2 double ring tightening elements; these elements allow you to fix 3 parallel fiberglass reinforcement elements Ø16mm along a Ø40mm pole.
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AIR TERMINATION ROD

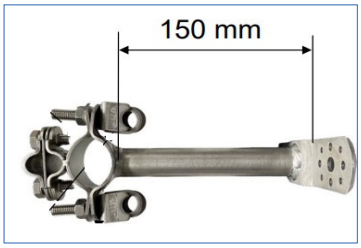
SUPPORT POLE

LIGHTING AIR ROD BRACKET

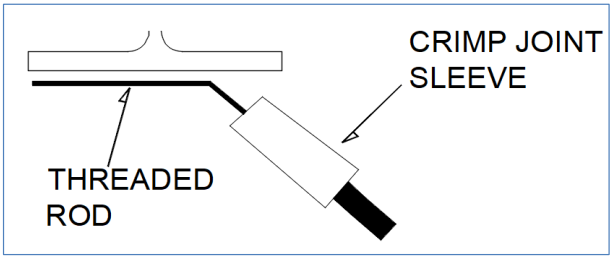
INSULATING CONDUCTOR

EARTH CONNECTION

LIGHTING AIR ROD BRACKET



EARTH CONNECTION



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Row	Data Sheet for Earthing and Lightning Materials	Rev.
1	Tag No. :	
2	Service :	
3	PURCHASE ORDER SPECIFIC REQUIREMENTS	

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