Base Load Power Hub (BLPH)

INSTRUMENT CABLES

CABLE DATA SHEETS

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Document Class: 3

ROSETTI MARINO

1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
V. Barratta	07-02-2025

00	30/01/2025	Issue for Information (IFI)	Fumagalli	Cucinotta	Beretta
Rev.	Date	Description	Prepared	Reviewed	Approved

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4	DATA SHEETS	X							

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Revision / Change Log

Rev.	Description
00	Issue for Information (IFI)

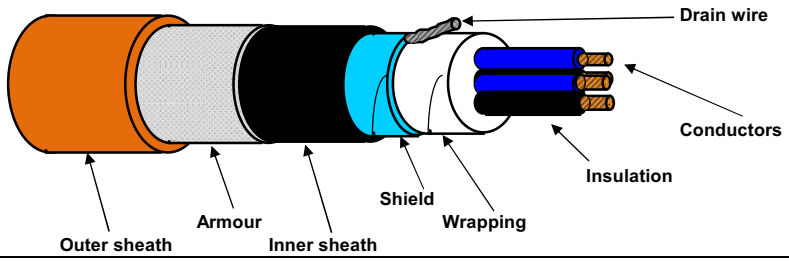
HOLDS LIST

No.	Description
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Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X3X2,5 - INSTRUMENT CABLE - Fire Resistant - Not I.S.



TECHNICAL FEATURES

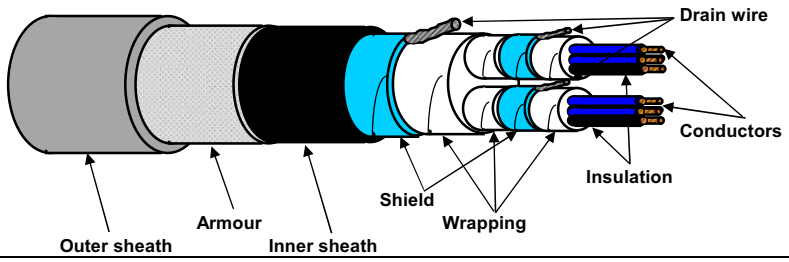
Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	Mica/Glass Tape (MGT) plus XLPE, Nominal Thickness 0,6 mm	
Cores colour code :	**Red - White - Black**	
Triad Assembling :	Not required	
Triad Wrapping:	Not required	
Drain wire :	Not required	
Triad Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	7/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 1,0 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,1 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,3 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - 1X3X2,5 SQMM - MGT/XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60331.21 -**	
(every 1000 mm)	**IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(10,9 ± 10%) mm	
Over armour diameter :	(12,1 ± 10%) mm	
Outer diameter :	(14,7 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 60 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Fire Resistant test :	**IEC 60331.21**	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

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Cu Cl.2/XLPE/IS/OS/LSZH/SWB/LSZH 150/250 V (300 V)

2X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires **IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm
Cores colour code :	**White - Black (each core NUMBERED for PAIR identification)**
Pair Assembling :	13/1mt
Pair Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield
Pair Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Shield Insulation :	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Total Assembling :	7/1mt
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm
Inner sheath color code:	**Black**
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,3 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - 2X2X0,75 SQMM - XLPE/IS/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**
Under armour diameter :	(11,4 ± 10%) mm
Over armour diameter :	(12,6 ± 10%) mm
Outer diameter :	(15,2 ± 10%) mm
Bending radius :	cable outer diameter x 10 (in fixed installation)
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)
Mutual Capacitance :	≤ 150 nF/km
L/R ratio :	≤ 25 µH/Ω
Inductance :	≤ 0,9 mH/km
Applicable Standards	
Design Guidelines :	**IEC 60092.376**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)
Hazardous Areas :	IEC 60079.14 par.9.3.2a
Temperature Range :	
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE	
During Operation :	(-20°C up to +90°C) (in fixed installation)
During installation :	(- 5°C up to +50°C)
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**

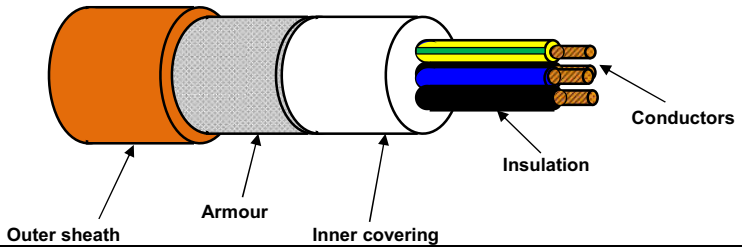
Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

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Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1 KV

4G4_E - L.V. POWER CABLE - Fire Resistant & Flame Retardant - ARMOURED



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires IEC 60228 Class 2
Insulation :	Mica/Glass Tape (MGT) plus EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm
Cores colour code :	**Black - Brown - Blue - Yellow/Green**
Pair Assembling :	Not required
Pair Wrapping:	Not required
Drain wire :	Not required
Pair Shield :	Not required
Shield Insulation :	Not Required
Total Assembling :	Cores layed up with optimal lay length
Overall Wrapping:	Not required
Drain wire :	Not required
Overall Shield:	Not required
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm
Inner covering color code:	**Black or Natural**
Armour :	**Galvanized Steel Wire Braid Armour (coverage ≥ 90%)**
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,4 mm
Outer sheath color code:	**Orange**
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 4G4 SQMM - MGT/EPR/LSZH/GSWB/LSZH - 0,6/1 KV - IEC 60331.21 - IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**
Under Armour diameter :	(14,3 ± 10%) mm
Over Armour diameter :	(15,5 ± 10%) mm
Outer diameter :	(18,3 ± 10%) mm
Bending radius :	cable outer diameter x 10 (in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores - Armour)
Conductors DC Resistance :	IEC 60228 Class 2
Insulation Resistance :	≥ 790 MΩ x Km (@ 20°C)
Applicable Standards	
Design Guidelines :	**IEC 60092.353**
ON COMPLETE CABLE	
Fire Resistant test :	**IEC 60331.21**
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)
Temperature Range :	
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE	
During Operation :	(-20°C up to +90°C) (in fixed installation)
During installation :	(- 5°C up to +50°C)
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner covering together with correct ATEX approved equipment or accessories.**

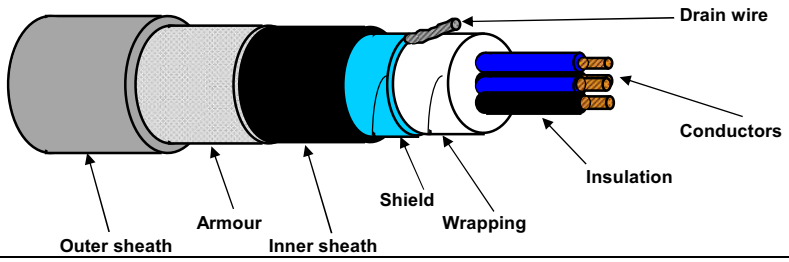
Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	Cucinotta			

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Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

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Drawn by :	04/04/2024	Messa			
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