## SPECIFICATION NO. EDTS-257, REV-K

## SPECIFICATION FOR 'HARNESS OF UNDERFRAME AND ROOF ARRANGEMENT' FOR LHB POWER CAR.

**1.0** This specification covers manufacturing, assembly and supply of ready made `**CABLE HARNESSES'** for **UNDERFRAME AND ROOF ARRANGEMENT'** FOR POWER CAR. These harnesses shall comprise of electron beam irradiated cables duly cut to specified lengths and ferruled for cable identification. The free ends of the cables shall be stripped & taped with FRLT cotton insulation tapes of approved makes.

**1.1** The harness manufacturer shall quote separately for supply & commissioning of the harness as under :

a). Budgetary quote of the harness without commissioning.

b). Budgetary quote of the harness with commissioning in the coach at RCF.

1.2 The firm shall maintain date wise in-house quality control system and in-house quality control records etc. for in-stage process inspection & testing at harness manufacturer premises and the same shall be made available to the inspecting official during type testing.

### 2.0 SCOPE of supply:

**(i)** Procurement of the items specified in the BOM of the specification shall be from RDSO/RCF/ICF approved vendors mentioned in latest version of the vendor directory issued by RCF/ICF/RDSO respectively.

**(ii)** Items should be procured from RCF/ICF/RDSO approved sources only.

### 2.1 : BILL OF MATERIAL:-

**A) THIN WALLED FLEXIBLE ELASTOMERIC CABLES WITH COPPER CONDUCTORS & ACCESSORIES:-**

Bunching of cable harnesses shall be as per Annexure-'A' and Annexure-'B' & bill of material shall be as under:

| S.NO. | DESCRIPTION | CABLE SIZE IN mm² | DETAIL DRG/SPEC | OPC/ COACH | REMARKS/ LOCATION |
|---|---|---|---|---|---|
| 1. | Thin walled flexible elastomeric cables with copper conductors color **'Red'** above 750 V to 1.8/3.0 KV. | **150** | ELRS/SPEC/ELC/0019 Rev.3 . | 100 Mt | Inside coach |
| 2. | Thin walled flexible elastomeric cables with copper conductors color **'Yellow'** above 750 V to 1.8/3.0 KV. | **150** | ELRS/SPEC/ELC/0019 Rev.3 . | 100 Mt | Inside coach |
| 3. | Thin walled flexible elastomeric cables with copper conductors color **'Blue'** above 750 V to 1.8/3.0 KV. | **150** | ELRS/SPEC/ELC/0019 Rev.3 . | 100 Mt | Inside coach |
| 4. | Thin walled flexible elastomeric cables with copper conductors color **'Black'** above 750 V to 1.8/3.0 KV. | **120** | ELRS/SPEC/ELC/0019 Rev.3 . | 38Mt | Inside coach |
| 5. | Thin walled flexible elastomeric cables with copper conductors color **'Black'** above 750 V to 1.8/3.0 KV. | **95** | ELRS/SPEC/ELC/0019 Rev.3 . | 70 Mt | Inside coach |

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| **6.** | Thin walled flexible elastomeric cables with copper conductors color **'GNYE'** above 750 V to 1.8/3.0 KV. | **70** | ELRS/SPEC/ELC/0019 Rev.3 . | 21 Mt. | Inside coach |
| **7.** | Thin walled flexible elastomeric cables with copper conductors color **'Red'** above 750 V to 1.8/3.0 KV. | **50** | ELRS/SPEC/ELC/0019 Rev.3 . | 11 Mt. | Inside coach |
| **8.** | Thin walled flexible elastomeric cables with copper conductors color **'Yellow'** above 750 V to 1.8/3.0 KV. | **50** | ELRS/SPEC/ELC/0019 Rev.3 . | 11 Mt. | Inside coach |
| **9.** | Thin walled flexible elastomeric cables with copper conductors color **'Blue'** above 750 V to 1.8/3.0 KV. | **50** | ELRS/SPEC/ELC/0019 Rev.3 . | 11 Mt. | Inside coach |
| **10.** | Thin walled flexible elastomeric cables with copper conductors color **'Black'** above 750 V to 1.8/3.0 KV. | **50** | ELRS/SPEC/ELC/0019 Rev.3 . | 11 Mt. | Inside coach |

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| **11.** | Thin walled flexible elastomeric cables with copper conductors color **'Red'** above 750 V to 1.8/3.0 KV. | **25** | ELRS/SPEC/ELC/0019 Rev.3 . | 40 mt. | Inside coach |
| **12.** | Thin walled flexible elastomeric cables with copper conductors color **'Yellow'** above 750 V to 1.8/3.0 KV. | **25** | ELRS/SPEC/ELC/0019 Rev.3 . | 40 mt. | Inside coach |
| **13.** | Thin walled flexible elastomeric cables with copper conductors color **'Blue'** above 750 V to 1.8/3.0 KV. | **25** | ELRS/SPEC/ELC/0019 Rev.3 . | 40 mt. | Inside coach |
| **14.** | Thin walled flexible elastomeric cables with copper conductors color **'Black'** above 750 V to 1.8/3.0 KV. | **25** | ELRS/SPEC/ELC/0019 Rev.3 . | 40 mt. | Inside coach |
| **15.** | Thin walled flexible elastomeric cables with copper conductors color **'White'** upto 750 V | **120** | ELRS/SPEC/ELC/0019 Rev.3 . | 10 Mt | Inside coach |

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| **16.** | Thin walled flexible elastomeric cables with copper conductors color **'Chocolate'** upto 750 V | **120** | ELRS/SPEC/ELC/0019 Rev.3 . | 10 Mt | Inside coach |
| **17.** | Thin walled flexible elastomeric cables with copper conductors color **'Red'** upto 750 V | **50** | ELRS/SPEC/ELC/0019 Rev.3 . | 41.5 Mt. | Inside coach |
| **18.** | Thin walled flexible elastomeric cables with copper conductors color **'Yellow'** upto 750 V | **50** | ELRS/SPEC/ELC/0019 Rev.3 . | 41.5 Mt. | Inside coach |
| **19.** | Thin walled flexible elastomeric cables with copper conductors color **'Blue'** upto 750 V | **50** | ELRS/SPEC/ELC/0019 Rev.3 . | 41.5 Mt. | Inside coach |
| **20.** | Thin walled flexible elastomeric cables with copper conductors color **'Black'** upto 750 V | **50** | ELRS/SPEC/ELC/0019 Rev.3 . | 41.5 Mt. | Inside coach |
| **21.** | Thin walled flexible elastomeric cables with copper conductors color **'White'** upto 750 V | **50** | ELRS/SPEC/ELC/0019 Rev.3 . | 1.5 Mt. | Inside coach |

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| **22.** | Thin walled flexible elastomeric cables with copper conductors color **'Chocolate'** upto 750 V | **50** | ELRS/SPEC/ELC/0019 Rev.3 . | 1.5 Mt. | Inside coach |
| **23.** | Thin walled flexible elastomeric cables with copper conductors color **'Red'** upto 750 V | **25** | ELRS/SPEC/ELC/0019 Rev.3 . | 60 Mt. | Inside coach |
| **24.** | Thin walled flexible elastomeric cables with copper conductors color **'Yellow'** upto 750 V | **25** | ELRS/SPEC/ELC/0019 Rev.3 . | 60 Mt. | Inside coach |
| **25.** | Thin walled flexible elastomeric cables with copper conductors color **'Blue'** upto 750 V | **25** | ELRS/SPEC/ELC/0019 Rev.3 . | 60 Mt. | Inside coach |
| **26.** | Thin walled flexible elastomeric cables with copper conductors color **'Black'** upto 750 V | **25** | ELRS/SPEC/ELC/0019 Rev.3 . | 60 Mt. | Inside coach |
| **27.** | Thin walled flexible elastomeric cables with copper conductors color **'White'** upto 750 V | **25** | ELRS/SPEC/ELC/0019 Rev.3 . | 15 Mt. | Inside coach |

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| **28.** | Thin walled flexible elastomeric cables with copper conductors color **'Chocolate'** upto 750 V | **25** | ELRS/SPEC/ELC/0019 Rev.3 . | 17 Mt. | Inside coach |
| **29.** | Thin walled flexible elastomeric cables with copper conductors color **'Red'** upto 750 V | **16** | ELRS/SPEC/ELC/0019 Rev.3 . | 51 Mt. | Inside coach |
| **30.** | Thin walled flexible elastomeric cables with copper conductors color **'Yellow'** upto 750 V | **16** | ELRS/SPEC/ELC/0019 Rev.3 . | 51 Mt. | Inside coach |
| **31.** | Thin walled flexible elastomeric cables with copper conductors color **'Blue'** upto 750 V | **16** | ELRS/SPEC/ELC/0019 Rev.3 . | 51 Mt. | Inside coach |
| **32.** | Thin walled flexible elastomeric cables with copper conductors color **'GNYE'** upto 750 V | **16** | ELRS/SPEC/ELC/0019 Rev.3 . | 25.5 Mt. | Inside coach |
| **33.** | Thin walled flexible elastomeric cables with copper conductors color **'White'** upto 750 V | **16** | ELRS/SPEC/ELC/0019 Rev.3 . | 38 Mt. | Inside coach |

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| **34.** | Thin walled flexible elastomeric cables with copper conductors color **'Chocolate'** upto 750 V | **16** | ELRS/SPEC/ELC/0019 Rev.3 . | 38 Mt. | Inside coach |
| **35.** | Thin walled flexible elastomeric cables with copper conductors color **'Chocolate'** upto 750 V | **10** | ELRS/SPEC/ELC/0019 Rev.3 . | 34 Mt. | Inside coach |
| **36.** | Thin walled flexible elastomeric cables with copper conductors color **'Red'** upto 750 V | **10** | ELRS/SPEC/ELC/0019 Rev.3 . | 21 Mt. | Inside coach |
| **37.** | Thin walled flexible elastomeric cables with copper conductors color **'Yellow'** upto 750 V | **10** | ELRS/SPEC/ELC/0019 Rev.3 . | 21 Mt. | Inside coach |
| **38.** | Thin walled flexible elastomeric cables with copper conductors color **'Blue'** upto 750 V | **10** | ELRS/SPEC/ELC/0019 Rev.3 . | 21 Mt. | Inside coach |
| **39.** | Thin walled flexible elastomeric cables with copper conductors color **'Black'** upto 750 V | **6** | ELRS/SPEC/ELC/0019 Rev.3 . | 64 Mt. | Inside coach |

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| **40.** | Thin walled flexible elastomeric cables with copper conductors color **'White'** upto 750 V | **6** | ELRS/SPEC/ELC/0019 Rev.3 . | 32 Mt. | Inside coach |
| **41.** | Thin walled flexible elastomeric cables with copper conductors color **'Chocolate'** upto 750 V | **6** | ELRS/SPEC/ELC/0019 Rev.3 . | 32 Mt. | Inside coach |
| **42.** | Thin walled flexible elastomeric cables with copper conductors color **'Red'** upto 750 V | **4** | ELRS/SPEC/ELC/0019 Rev.3 . | 40 Mt. | Inside coach |
| **43.** | Thin walled flexible elastomeric cables with copper conductors color **'Yellow'** upto 750 V | **4** | ELRS/SPEC/ELC/0019 Rev.3 . | 36 Mt. | Inside coach |
| **44.** | Thin walled flexible elastomeric cables with copper conductors color **'Blue'** upto 750 V | **4** | ELRS/SPEC/ELC/0019 Rev.3 . | 36 Mt. | Inside coach |
| **45.** | Thin walled flexible elastomeric cables with copper conductors color **'Black'** upto 750 V | **4** | ELRS/SPEC/ELC/0019 Rev.3 . | 4 Mt. | Inside coach |

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| **46.** | Thin walled flexible elastomeric cables with copper conductors color **'White'** upto 750 V | **4** | ELRS/SPEC/ELC/0019 Rev.3 . | 70 Mt. | Inside coach |
| **47.** | Thin walled flexible elastomeric cables with copper conductors color **'Chocolate'** upto 750 V | **4** | ELRS/SPEC/ELC/0019 Rev.3 . | 70 Mt. | Inside coach |
| **48.** | Thin walled flexible elastomeric cables with copper conductors color **'Red'** upto 750 V | **2.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 84 Mt. | Inside coach |
| **49.** | Thin walled flexible elastomeric cables with copper conductors color **'Yellow'** upto 750 V | **2.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 84 Mt. | Inside coach |
| **50.** | Thin walled flexible elastomeric cables with copper conductors color **'Blue'** upto 750 V | **2.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 84 Mt. | Inside coach |
| **51.** | Thin walled flexible elastomeric cables with copper conductors color **'Black'** upto 750 V | **2.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 64 Mt. | Inside coach |

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| **52.** | Thin walled flexible elastomeric cables with copper conductors color **'Grey'** upto 750 V | **2.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 64 Mt. | Inside coach |
| **53.** | Thin walled flexible elastomeric cables with copper conductors color **'White'** upto 750 V | **2.5** | ELRS/SPEC/ELC/0019 Rev.3. | 161 Mt. | Inside coach |
| **54.** | Thin walled flexible elastomeric cables with copper conductors color **'Chocolate'** upto 750 V | **2.5** | ELRS/SPEC/ELC/0019 Rev.3. | 756 Mt. | Inside coach |
| **55.** | Thin walled flexible elastomeric cables with copper conductors color **'Red'** upto 750 V | **1.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 185 Mt. | Inside coach |
| **56.** | Thin walled flexible elastomeric cables with copper conductors color **'Yellow'** upto 750 V | **1.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 187 Mt. | Inside coach |

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| **57.** | Thin walled flexible elastomeric cables with copper conductors color **'Blue'** upto 750 V | **1.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 54 Mt. | Inside coach |
| **58.** | Thin walled flexible elastomeric cables with copper conductors color **'Black'** upto 750 V | **1.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 272 Mt. | Inside coach |
| **59.** | Thin walled flexible elastomeric cables with copper conductors color **'GNYE'** upto 750 V | **1.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 251 Mt. | Inside coach |
| **60.** | Thin walled flexible elastomeric cables with copper conductors color **'Grey'** upto 750 V | **1.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 83 Mt. | Inside coach |
| **61.** | Thin walled flexible elastomeric cables with copper conductors color **'White'** upto 750 V | **1.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 383 Mt. | Inside coach |

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| **62.** | Thin walled flexible elastomeric cables with copper conductors color **'Chocolate'** upto 750 V | **1.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 440 Mt. | Inside coach |
| **63.** | 4x1.5 sqmm multicore cable E-beam cable 750 V colour **Wh,Br,Blk,GNYE** | **4x1.5** | EDTS 132, Rev ' C ' AM-4 | 50 mt. | **DS-4** |
| **64.** | 2x1.0 sqmm multicore cables 750 V colour **Br,Wh** | **2x1.0** | EDTS 132, Rev ' C ' AM-4 | 22 mt. | **DS-4** |
| **65.** | 2x1.5 sqmm multicore cables 750 V colour **Br,Wh** | **2x1.5** | EDTS 132, Rev ' C ' AM-4 | 76 mt. | **DS-4** |
| **66.** | (4X4X1)C+2x0.75 (18 CORE) multi-core | - | EDTS 132, Rev ' C ' AM-4 | 26 Mt. | **DS-5** |
| **67.** | 18X1.5 MULTI-CORE CABLE | - | EDTS 132, Rev ' C ' AM-4 | 12 Mt. | **DS-5** |
| **68.** | 25X1.5 MULTI-CORE CABLE | - | EDTS 132, Rev-' C ' AM-4 | 10 Mt. | **DS-5** |
| **69.** | Cable marking system | Heat shrinkable sleeves of M/S TYCO/ Phoenix/ Panduit make | EDML-60 (Latest revision) | 1no. | **Col-VI** |

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| **70.** | Copper crimping socket for 70 sq.mm cable | - | EDTS200 (Latest revision) | 12 no. | **ITEM-7** |
| **71.** | Copper crimping socket for 50 sq.mm cable | - | EDTS200 (Latest revision) | 20 no. | **ITEM-10** |
| **72.** | Copper crimping socket for 50 sq.mm cable | - | EDTS200 (Latest revision) | 22no. | **ITEM-11** |
| **73.** | Copper crimping socket for 35 sq.mm cable | - | EDTS200 (Latest revision) | 10 no. | **ITEM-12** |
| **74.** | Copper crimping socket for 25 sq.mm cable | - | EDTS200 (Latest revision) | 28 no. | **ITEM-13** |
| **75.** | Copper crimping socket for 16 sq.mm cable | - | EDTS200 (Latest revision) | 6 no. | **ITEM-15** |
| **76.** | Cable jacket system( IN MTRS) | - | EDTS138, Corr-1 | 75 | **ITEM-5** |
| **77.** | Cable jacket system( IN MTRS) | - | EDTS138, Corr-1 | 50 | **ITEM-8** |
| **78.** | Cable jacket system( IN MTRS) | - | EDTS138, Corr-1 | 15 | **ITEM-11** |
| **79.** | FRLT cotton insulation tape ,RED | - | ICF/ELEC/921, REV-0 | 3 ROLL | - |
| **80.** | FRLT cotton insulation tape ,YELLOW | - | ICF/ELEC/921, REV-0 | 3 ROLL | - |
| **81.** | FRLT cotton insulation tape ,BLUE | - | ICF/ELEC/921, REV-0 | 3 ROLL | - |
| **82.** | FRLT cotton insulation tape ,BLACK | - | ICF/ELEC/921, REV-0 | 3 ROLL | - |
| **83.** | FRLT cotton insulation tape ,GREEN | - | ICF/ELEC/921, REV-0 | 3 ROLL | - |

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| **84.** | CABLE BINDER | - | CC76129 Item-2 | 300 NOS. | M/S EVEREST ,NOVAFLEX. Panduit & M V Electro-systems |
| **85.** | CABLE BINDER | - | CC76129 Item-4 | 300 NOS. | M/S EVEREST ,NOVAFLEX. Panduit & M V Electro-systems |
| **86.** | PVC RIGID Conduit Dia 20mm | - | IS:9537-83,P3,CL 5.1 | 12 mtrs | Inside coach |
| **87.** | PVC RIGID Conduit Dia 25mm | - | IS:9537-83,P3,CL 5.1 | 16 mtrs | Inside coach |
| **88.** | PVC RIGID Conduit Dia 40mm | - | IS:9537-83,P3,CL 5.1 | 8 mtrs | Inside coach |
| **89.** | Cable duct A25(H)X25(W) 1M,STANARD SLOT GREY | - | CAT NO. CDA2525SG | 02 mt | M/S L&T/ Phoenix/ Panduit make |
| **90.** | Cable duct cover A25,STANARD SLOT GREY | | CAT NO. CDA25SG | 02 mt | M/S L&T/ Phoenix/ Panduit make |
| **91.** | Cable duct A45(H)45(W) 1M,STANARD SLOT GREY | - | CAT NO. CDA4545SG | 02 mt | M/S L&T/ Phoenix/ Panduit make |
| **92.** | Cable duct cover A45,STANARD SLOT GREY | | CAT NO. CDA45SG | 02 mt | M/S L&T/ Phoenix/ Panduit make |
| **93.** | Clamps (for single conduit) 20 mm | | LP76001 alt 'b'. Table-1,Item-2 | 15 nos. | - |
| **94.** | Clamps (for double conduit) 25 mm | | LP76001 alt 'b'. Table-2,Item-10 | 14 nos. | - |
| **95.** | Clamps (for single conduit) 40 mm | | LP76001 alt 'b'. Table-1,Item-5 | 10 nos. | - |
| **96.** | Clamps (for triple conduit) 40 mm | | LP76001 alt 'b'. Table-3,Item-19 | 16 nos. | - |

**Earthing Cables:**

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| **97.** | Thin walled flexible elastomeric cables with copper conductors color **'GNYE'** upto 750 V | **95** | ELRS/SPEC/ELC/0019 Rev.3 . | 9 Mt. | Inside coach |
| **98.** | Thin walled flexible elastomeric cables with copper conductors color **'GNYE'** upto 750 V | **70** | ELRS/SPEC/ELC/0019 Rev.3 . | 8.5 Mt. | Inside coach |
| **99.** | Thin walled flexible elastomeric cables with copper conductors color **'GNYE'** upto 750 V | **50** | ELRS/SPEC/ELC/0019 Rev.3 . | 2.5 Mt. | Inside coach |
| **100.** | Thin walled flexible elastomeric cables with copper conductors color **'GNYE'** upto 750 V | **35** | ELRS/SPEC/ELC/0019 Rev.3 . | 5 Mt. | Inside coach |
| **101.** | Thin walled flexible elastomeric cables with copper conductors color **'GNYE'** upto 750 V | **16** | ELRS/SPEC/ELC/0019 Rev.3 . | 35 Mt. | Inside coach |
| **102.** | Thin walled flexible elastomeric cables with copper conductors color **'GNYE'** upto 750 V | **10** | ELRS/SPEC/ELC/0019 Rev.3 . | 3 Mt. | Inside coach |

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| **103.** | Thin walled flexible elastomeric cables with copper conductors color **'GNYE'** upto 750 V | **6** | ELRS/SPEC/ELC/0019 Rev.3 . | 4.5 Mt. 4.05 | Inside coach |
| **104.** | Thin walled flexible elastomeric cables with copper conductors color **'GNYE'** upto 750 V | **2.5** | ELRS/SPEC/ELC/0019 Rev.3 . | 2.5 Mt. 2.5 | Inside coach |

**Note: Earthing cables from Harness no. 97 to Harness no. 104 indicated above , as per details mentioned in the last 3 pages of Annexure-B of the specification bearing GNYE color; shall be supplied loose in single length of the total ordered quantity supplied by the vendor.**

## B) CONDUIT SYSTEM FOR CABLE MANAGEMENT & ACCESSORIES (UNDER FRAME)

Firms supplying these items shall get these tested as per RDSO specification no. RDSO/PE/SPEC/AC/0138-2009 (Latest revision).

| S.NO. | DESCRIPTION | SPEC NO. | TABLE | ITEM | QPC |
|---|---|---|---|---|---|
| **1.** | Polyamide flexible corrugated conduit, Pg11 | RDSO/PE/SPEC/AC/ 0138-2009, Rev-1(Annex-A) | A-1 | 2 | 14 mt |
| **2.** | Polyamide flexible corrugated conduit, Pg16 | | A-1 | 3 | 123 mt. |
| **3.** | Polyamide flexible corrugated conduit, PG21 | | A-1 | 4 | 103 mt. |
| **4.** | Polyamide flexible corrugated conduit, Pg29 | | A-1 | 5 | 115 mt. |

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| **5.** | Polyamide flexible corrugated conduit, Pg36 | | A-1 | 6 | | 65 mt. |
| **6.** | Straight PG Metal Thread End fitting PG-11 | RDSO/PE/SPEC/AC/ 0138-2009, Rev-1(Annex-A) | A-2 | 2 | | 4 no. |
| **7.** | Straight PG Metal Thread End fitting PG-16 | | A-2 | 3 | | 22 no. |
| **8.** | Straight PG Metal Thread End fitting PG-21 | | A-2 | 5 | | 17 no. |
| **9.** | Straight PG Metal Thread End fitting PG-29 | | A-2 | 6 | | 6 no. |
| **10.** | Straight PG Metal Thread End fitting PG-36 | | A-2 | 7 | | 10 no. |
| **11.** | Hex. lock nut with PG thread brass | RDSO/PE/SPEC/AC/ 0138-2009, Rev-1(Annex-A) | A-10 | 2 | | 4 no. |
| **12.** | Hex.lock nut with PG thread brass | | A-10 | 4 | | 22 no. |
| **13.** | Hex.lock nut with PG thread brass | | A-10 | 5 | | 17 no. |
| **14.** | Hex. lock nut with PG thread brass | | A-10 | 6 | | 6 no. |
| **15.** | Hex. lock nut with PG thread brass | | A-10 | 7 | | 10 no. |
| **16.** | Tube clamp NW-12 | RDSO/PE/SPEC/AC/ 0138-2009, Rev-1(Annex-A) | A-8 | 2 | | 8 no. |
| **17.** | Tube clamp,NW-17 | | A-8 | 3 | | 36 no. |
| **18.** | Tube clamp, NW-21 | | A-8 | 4 | | 24 no. |
| **19.** | Tube clamp,NW-29 | | A-8 | 6 | | 30 no. |
| **20.** | Tube clamp,NW-36 | | A-8 | 7 | | 4 no. |
| **21.** | Tube clamp,NW-48 | | A-8 | 8 | | 4 no. |
| **22.** | PG Thread Plug screw PG-16 | RDSO/PE/SPEC/AC/ 0138-2009, Rev-1(Annex-A) | A-18 | 4 | | 14 no. |
| **23.** | PG Thread Plug screw PG-21 | | A-18 | 5 | | 4 no. |

**Notes:**

1. Multi-core cables shall be as per specification no. EDTS-132, Rev 'C', AM-4 to respective data sheets.

2. Reference for Bill of Material for Wiring on under frame & Roof shall be taken as per clause no. 2.1 (A) & 2.1(B) respectively. Bunching for under frame shall be done as per Annexure-A & B duly ferruled, legibly marked and laid in polyamide flexible conduits as per requirements in the coaches.

3. All the raw material required as per specification/drawing shall be purchased from RCF/RDSO approved Part-I vendors, wherever exist.

4. Wiring for Roof and under frame shall be done with color multi-coloring scheme only as specified. In case of non availability of any specific color cable, grey color cable may be used after having prior approval from the office of The CEE/RCF and identification shall be made with colored, zero halogen fire retardant heat shrinkable sleeves of M/S TYCO/Panduit/Phoenix make.

5. The marking ferrules for the feeder cable shall be heat shrinked at the time of supply by the harness manufacturer, however to be suitably provided at 750mm for both ends of the cables such that these ferrules shall not disengage from the cables during laying in the feeder pipes. After laying of the harness in the coach these ferrules shall be heat shrinked in place according to the shop requirements.

6. For HOG compliant coaches, 150sq. mm cables, the length of the feeder cable shall be 22m (in place of 24.5m as specified) and it would be required in 2 pieces. It would be advised to the firm on which PO has been placed, separately, the no. of harness required for HOG compliant power car coaches. The balance length (2m approx.) per feeder will be supplied separately in running metre in single piece.

**3.0** i) Harness shall be bunched and legibly marked as per details specified in drawings specified at **clause no. 9.0**.

ii) Packing per coach set shall be done as per packing conditions specified at clause 8.0 of the specification. The packing shall be legibly marked for the type of coach applicable for.

## 4.0 TECHNICAL REQUIREMENTS:

While manufacturing of cable harnesses essential safety requirements for voltage grade segregation, crimping etc shall be strictly followed as per instructions laid down in under given documents:

a). General requirements shall be as per RDSO Spec. no. EL/TL/56-92 (Code of practice for Train Lighting maintenance on Prevention of Fires on 110V DC).

b). Instructions laid down in Code of practice for wiring End On Generation Train Lighting system working at 750VAC,ELPS/ SPEC/EOG-01(MARCH-94) shall be followed.

c). Work instructions for preparation of Harness to RCF document no. EDW0003 Ver.-02 or Latest version.

d). Work instructions for crimping of cable ends and cable terminations to RCF document no. EDW0006 Ver.-01 or Latest version.

e) Schedule of Technical Requirements (**STR ) no. RCF/EL/0015-2011 (Rev. `A')** shall be strictly followed for preparation of ready made harness.

f) The complete harness shall be made according to the wiring diagram of Power car issued by LHB to drawing no. (3)11.0792.101 duly incorporated the modifications done by RCF.

4.1 Stripping of the cables at the ends shall be done where crimping sockets are not provided for ease of wiring.

4.2 The complete wiring harness (Roof & Under frame) shall be made according to the Annexure 'A & B".

4.3 **Technical Staff**:

a). The staff with minimum qualification `ITI' with **02** years experience or minimum **05** to **06** years experience for non ITI's in manufacturing harness of power-wiring/ control wiring in panels or other similar works having intricate design.

b). The Supervisor staff for the skilled worker should be minimum graduate in electrical with 02 years experience in the same field or should be diploma holder in electrical discipline with at least five years experience in manufacturing of harness of power wiring control wiring in panels or other similar works. The firm shall deploy supervisors/staff in adequate nos. so as to match the delivery schedules as accepted by them against the contract".

c). Firm shall ensure that technical staff as stipulated above shall be available in actual working conditions at shop floor. Representative of RCF may check any time the availability of these staff with qualifications. In case of non-compliance, Railway shall be free to terminate the contract in case of violation.

4.4 Proper cutting / crimping tools for various sizes of cables shall be provided to the staff for ease of crimping & cutting of cables (to be provided by the contractor).

4.5 Marking ferrules shall be of computer generated type for easy identification of the cables with the help of shrinking sleeves (self extinguishing) of suitable size horizontally printed cable markers of Tyco/Phoenix/Panduit make only.

4.6 Test for thin walled flexible elastomeric cables with copper conductors for its basic properties may be conducted on any sample picked up from the supply. The cost for the testing will be born by the firm. The specific tests to be done are covered in clause 5.9.

4.7 The harness manufacturer shall quote separately for commissioning of the harness as under :

a). Budgetary quote of the harness without commissioning.

b). Budgetary quote of the harness with commissioning in the coach at RCF.

4.8 The firm shall take prompt action or act promptly with in a reasonable time upon a short notice to rectify the defects/deficiency/deficiency noticed/reported by RCF in the cable harness supplied by the firm. Failure to do the needful up to the satisfaction of the RCF, Firm's contract may be rescinded immediately or terminated without any further notice or may be levied penalty corresponding to the delay caused in the coach turn out for which the decision of the nominated **`Competent Authority' shall be Final and Binding on the firm".**

4.9 The firm's premises may be inspected by representative of CEE/RCF on any day on a short notice to ensure compliance to the various stipulations of the specifications, laid down standards including work instructions for the cable harness manufacturing practices. If any thing is not laid or specified therein this specification, the work shall be completed as per the best-established Engineering Practices/Procedures being followed in the Industry. "The firm shall extend all the necessary help to allow to visit all the infrastructure facilities, M&P, Tools, Testing facilities, examination of related quality records/documents etc. during his visit"

4.10 In case of commissioning work by supplier, firm shall be fully responsible for complete coach wiring & connections i.e. laying of cables in conduits, crimping at equipments, clamping of flexible conduits on roof area & Lavatory area , end wall & side walls etc. and others miscellaneous work (i.e. of Stage-III) to improve the coach wiring quality. Firm shall hand over the coach after testing as per clause 5.9(b) of the specification and complete in all respect.

4.11 All the rigid conduits, Flexible Conduits, end fittings shall be in firm scope of supply. However clamps & its hardware's etc. will be in RCF scope of supply, cables, Cable Protection System, crimping sockets, insulation tapes etc. should be purchased from the approved sources of RCF/ICF/RDSO and documentary proof to this effect should be submitted by the firm.

4.12 Only those firms shall be considered which have adequate infrastructure to make similar nature wiring/ harness at its manufacturing unit and conforming to STR.

4.13 Firm shall fill-up proforma for guaranteed performance as per **Annexure-`A'** and furnish details along with tender. It is perquisite without which offer shall be considered technically disqualified.

4.14 The firm will furnish the credentials in their support for having completed similar or identical works of its working in any Central/State government or Central/State Govt. under taking, reputed/established private organization such, as Railways, Defence, L&T, Siemens, etc. The firm to submit requisite proofs like completion certificates, contract details including contract value, Latest Income Tax clearance certificate, balance sheet duly vetted by the CA for the last three years, registration with the government organization, copies of permission from regulatory authorities like environmental & pollution control boards etc. "The firm should have completed successfully at least a similar cable harness work of one third or more value of the tendered cost value against an earlier contract."

4.15 The cable & conduit manufacturer shall submit a certificate along with each lot of supply that the same raw material has been used in manufacturing of the present supply as was used on which the type tests were conducted.

4.16 Every letter from the firm shall have name and designation of the official signing the letter with the signature.

**5.0 TESTS:**

**5.1** Inspecting agency /RITES shall carry out the tests in harness manufacturer's premises as per acceptance and routine tests specified in the tender specification. Check list performa consisting of testing details, observations/measurements and acceptability of the measurements should be prepared and testing to be done as per Proforma jointly with the firm's engineer. This should be submitted along with the inspection certificate to RCF.

**5.2** Cables prescribed in RDSO/RCF specification of cables received by the harness manufacturer shall be inspected by RITES for acceptance and routine tests at cable manufacturer premises and certificate to this effect should be submitted by cable harness manufacturer to RCF.

**5.3** Cable management system prescribed in RDSO specification RDSO/PE/SPEC/AC/0138-2009 (latest version) shall be inspected by RITES (RA Berlin- in case of imported manufacturer) for acceptance and routine tests and certificate to this effect should be submitted by cable harness manufacturer to RCF.

**5.4** The format for inspection based upon the tests stipulated in specification shall be as per clause no.5.9.

**5.5** Firm's internal testing to be done by qualified person as per clause 4.3 of this specification and submitted to RCF.

**5.6 TYPE TEST:**

All the type tests mentioned in Clause 5.9 shall be carried out on a prototype unit. The firm manufacturing for the first time shall get the prototype approved from CEE/RCF.

**5.7 ROUTINE TEST:**

Routine tests mentioned in clause 5.9(a) shall be carried out on each unit by the manufacturer at his works to ensure compliance with the specification and the drawings.

**5.8 ACCEPTANCE TEST:**

**a)** Acceptance tests for cables will be done at cable manufacturer's premises as per RDSO specification no. ELRS/SPEC/ELC/0019 Rev-2.

**b)** Acceptance tests for conduits etc. for cable management system will be done as per RDSO specification no. RDSO/PE/SPEC/AC/0138-2009 (Latest revision). For supply for Non-RDSO approved sources but RCF approved sources, clause 7.0 is to be followed.

**c)** Acceptance test mentioned in clause 5.9(a) cable harness manufacturer to be witnessed by inspecting agency nominated by the purchaser at the works of the cable harness manufacturer, on the samples picked up by the inspecting authority. All the acceptance tests shall be carried out at firm's premises at the manufacturer's cost. Inspecting officer will witness the tests.
A copy of the internal tests conducted by the firm shall be supplied to inspecting/purchasing authority. Inspecting agency shall maintain record of all the tests conducted for future reference and will check the authenticity and the originality of the bill of material for each item by seeing the invoices invariably to avoid spurious material being safety involved.

## 5.9 TABLE FOR TESTS:-

**Tests for harnesses at firm`s premises:**

| S.No | Tests | Type Test | Routine Test | Acceptance Test |
|---|---|---|---|---|
| 1 | Visual inspection, including inspection of wiring and electrical operational test. (Visual inspection for proper assembly, compatibility of sub-components & wiring etc.) | YES | YES | YES |
| 2 | Checking of electrical continuity | YES | YES | YES |
| 3 | Checking of cable routing & alignment as per requirements | YES | YES | YES |
| 4 | Test for verification of dielectric properties. (shall withstand ( 2.0 KV for 1 minute) | YES | YES | - |
| 5 | Test for verification of insulation resistance. (>100 MΩ with 500 V Megger). | YES | YES | - |
| 6 | Compliance to safety related codes of practice as per para 4.0 of this specification. | YES | YES | YES |
| 7 | Originality of the bill of the material with proof of the invoices | YES | YES | YES |
| 8 | Check of crimping joints<br>a) mV drop Test.<br>b) Pull out Test. | YES | YES | - |

| | | | | |
|---|---|---|---|---|
| 9. | Test for thin walled flexible elastomeric cables with copper conductors | YES | YES | YES |
| 10. | Test for rigid PVC conduits to IS:9537 ( Part-3) | YES | YES | YES |
| 11. | Test for cable protection system | YES | YES | YES |
| 12. | Test for marking ferrules | YES | YES | YES |
| 13. | Test for copper crimping sockets | YES | YES | YES |
| 14. | Test for FRLT tape | YES | YES | YES |
| 15. | Test for cable alley/ duct | YES | YES | YES |

**5.9 (a): Details of testing:**

| Sr. No. | Details of testing | Remarks of Rites Inspecting official |
|---|---|---|
| **1** | **Tests for thin walled flexible elastomeric cables with copper conductors** | |
| | Testing for basic properties of cable picked up from supply (clause 4.8). Minimum one sample shall be tested for each 50 sets ( at the manufacturer's cost ) to RDSO specification no ELRS/SPEC/ELC/0019 ( REV-2) | |
| a | Test for thickness of insulation and sheath as per clause 7.4.1(b) of RDSO spec (5% of each cable size to be checked.) | |
| b | High voltage test ( water immersion test ) as per clause 7.4.1(c) of RDSO spec. ( on two cable size of cable used) | |
| c | Insulation resistance test as per clause 7.4.1(d) of RDSO spec. ( on one cable size different from HV test) | |
| d | Tracking resistance as per clause 7.4.1(f) of RDSO spec.( on two size not covered in HV test & IR test) | |
| e | Strippability as per clause 7.4.2 of RDSO spec. | |

| | | | |
|---|---|---|---|
| | ( 10 samples in prototype testing and five samples in acceptance/routine test of different size 1mm to 6mm) | | |
| f | Wind ability of the finished cable as per clause 7.4.3 of RDSO spec. ( One sample 1-6 sq. mm & one sample more than 6 sq. mm) | | |
| g | Slippage test as per clause 7.4.5 of the RDSO spec. ( two samples for size less than 25mm dia. and two samples for dia. more than 25mm) | | |
| **2** | **Acceptance Test for PVC conduit to IS:9537** | | |
| a | Checking of dimensions as clause 7 of IS | | |
| b | Bending test ( at room temperature) as per clause 9.2 of IS spec | | |
| c | Compression test as per cl. 9.3 of IS spec ( 5 samples in prototype and 2 samples in acceptance/routine) | | |
| d | Collapse test as per cl. 9.5 of IS spec (one sample) | | |
| e | Resistance to burning as per cl. 11 of IS spec. ( 2 samples) | | |
| f | Electrical Characteristics as per cl. 12 of IS spec | | |
| **3** | **Cable Protection System- Testing as per RDSO Spec. No. RDSO/PE/SPEC/AC/0138** | | |
| a | Make | | |
| b | Type / Series used for | | |
| i | Conduit | | |
| | Checking of dimensions | | |
| | Compression test (two sample of each size) | | |
| | Impact test ( one sample of each sizes) | | |

| | | |
|---|---|---|
| | Flexing test (2 samples of each type of fitting.) | |
| | di-electric strength ( one sample of each size) | |
| ii | End fitting – Tensile test ( of different five sizes) | |
| iii | Tube clamps – Dimensional check as per – two sample of each size | |
| iv | Lock nuts – Dimensional check as per – two sample of each size. | |
| **4** | **Marking ferrules** | |
| | Computer generated<br>( verification of make/brand) | Tyco / Phoenix / Panduit<br>/____ |
| **5** | **Copper crimping sockets** | |
| | Visual inspection and checking of dimensions as per cl. 5.6 of EDTS200<br>(five sample of each) | |
| | Crimping test as per cl. 5.7 of EDTS200<br>(Two sample of size less than 6mm² and two sample of 6mm²) | |
| | Flattening test as per cl. 5.8 of EDTS200 | |
| **6** | **FRLT tape** | |
| | ISI marked<br>Resistance to flame propagation as per clause 6.0 of IS:7809 for 2 samples | |
| | Electrical strength as per clause 7.1 of IS:7809 for 5 samples<br>IR value | |
| **7** | **Cable alley / duct** | |
| | Make/catalogue number used verify make of _____ test certificates. | |

**5.9 (b): Tests after commissioning of the coach at RCF:**

| S.No | Tests | Type Test | Routine Test | Acceptance Test | Clause of IS:8623(P-I)-93 |
|---|---|---|---|---|---|
| 1 | Verification of insulation resistance | YES | YES | YES | 8.3.4 |
| 2 | Checking of electrical continuity of all the circuits. | YES | YES | YES | 8.3.3 |
| 3. | Verification of die electric properties | YES | YES | YES | 8.2.2 |

The accuracy of measuring instruments used for both type and routine tests shall be of class 1.5.

## 6.0 APPROVALS:

6.1 Before making regular supplies, **firm shall take prior clearance from DY.CEE/P** regarding minor changes in size of cut length of wire under same, overall bill of material. If the minor changes in the length of cables, as advised by DY.CEE/P/RCF result in variation in the overall quantity of bill of material for particular type of coaches then the excess quantity should be supplied separately by the supplier and if quantity falls short then the same shall be supplied by RCF at RCF as per direction of DY.CEE/P. It is essential in order to ensure proper usage of cable harness in other coaches with minor modifications to avoid hold of coaches and to avoid the cable harness being surplus for a particular type of coach.

6.2 Firms manufacturing for the first time, Prototype Inspection shall be done by office of the CEE / RCF.

6.3 Firm shall be fully responsible for commissioning of harness system in prototype coach at RCF to avoid any teething troubles or modification required if any, before commencement of bulk supply and commissioning at RCF. Firm shall supply one coach harness set only for validation on coach and after its trial conducted/ prototype approval, the bulk supply shall be dispatched and commissioned on the coaches at RCF.

## 7.0 SPECIAL CONDITIONS FOR RCF SPECIFICATION:

7.1 These conditions shall apply to the conduit system for cable management items like Polyamide conduits and End fittings etc. These conditions would apply to the material which would be supplied from a Non RDSO approved but RCF approved source of conduit management items like polyamide conduits , end fittings etc. The firm will clearly mention the make of conduit system like conduits, end fittings etc. to be supplied.

7.2 The complete data sheet of product number/catalogue number/part number etc. of the approved company make shall be submitted along with the offer which should be confirming to the technical requirements of RDSO specification. The product data sheet not meeting with all the stipulated requirements of the specifications would not be considered acceptable and the complete offer of the tenderer shall be considered unsuitable. Acceptance tests shall be carried as per para 5.8.

7.3 The order shall be placed on the firm supplying conduit system for cable management system by cable harness manufacturers specifying specification, product/part/catalogue number etc. as approved in 7.2 and 7.3 above.

7.4 The documentation shall be submitted regarding supply/receipt of material after import mentioning the product number/part number/catalogue number etc. on the bill/purchase invoices/purchase voucher etc.

**8.0: PACKING AND TRACEABILITY:**

i). Packing of harnesses shall be done as per Packing Instructions PI005 to RCF document no. PLM0010E, Version-8.0. Harnesses shall be bunched together and shall be supplied as single unit per coach. Each harness shall be duly bunched individually and legibly marked as per details specified in the specification on it for under frame and Roof arrangement.

ii). Packing per coach set shall be done as per packing conditions. However either card board packing in single unit or plastic containers (returnable basis) shall be used for supplying the material. The packing shall be legibly marked for the type of coach applicable for.

iii). All the loose wiring for lavatory area & other locations shall be segregated and bunched separately before packing.

iv). Performa invoice of all the major items like cable, crimping sockets etc. shall be supplied along with each supply of material.

v). Every unit of supply item shall be numbered / marked for identification, traceability and analysis. The following details shall be imprinted on the number plate of each unit

a) Serial Number
b) Year and month of manufacture
c) Name of the item

## 9.0 ENCLOSURES for wiring arrangement:

| Sr.No | Drawing no | Alt | Description |
|---|---|---|---|
| 1. | LP70001 | b | Elect. General installation for LHB type generator car |
| 2. | LP70003 | - | Schematic diagram of smoke detector unit for LHB type generator car |
| 3. | LP71001 | b | Device in under frame for LHB type generator car |
| 4. | LP71002 | b | Cable pipe laying arrangement we2 middle for LHB type generator car |
| 5. | LP71003 | b | Cable pipe laying arrangement we2 for LHB type generator car |
| 6. | LP71004 | b | Cable pipe laying arrangement we1 middle |
| 7. | LP71005 | b | Cable pipe laying arrangement we1 for LHB type generator car |
| 8. | LP76003 | b | Wiring arrangement of crew/guard room for LHB type generator car |
| 9. | LP76004 | b | Wiring arrangement of generator room for LHB type generator car |
| 10. | LP76005 | b | Wiring arrangement of luggage for LHB type generator car |

## 9.1 ENCLOSURES:

| S.No | Drawing/Spec. no. | Description |
|---|---|---|
| 1. | RDSO Spec. no. EL/TL/56-92 | Code of practice for Train Lighting maintenance on Prevention of Fires on 110V D.C |
| 2. | RDSO Spec. no. EL/TL/001 | Code of practice for End On Generation for Train Lighting system working at 750VAC |
| 3. | RDSO Spec no ELPS/SPEC/EOG/02 | Specification for broad gauge high capacity power car for 750v end-on-generation system |
| 4. | RCF/EL/0015-2011 (Rev. `A') | Schedule of technical requirements (STR) for ready made harness. |
| 5. | EDW0003 Ver. – 02. | Work instructions for preparation of Harness |
| 6. | EDW0006 Ver. – 01 | Work instructions for crimping of cable ends and cable terminations |
| 7. | Annexure-A | Bunching of Harness for LHB Type Power Car |
| 8. | Annexure-B | Bunching of Earthing cables for LHB Type Power Car |

| | | |
|---|---|---|
| 9. | Annexure-C | Performa for Performance Guaranty |
| 10. | Annexure-D | Break up of end fittings for reference at shop floor |
| 11. | Annexure-E | Wiring details for HOG compliant Power Car |
| 12. | (1) 11.0792.401 | Cable interior scheme |
| 13. | (2) 11.0792.401 | Cable under frame scheme |
| 14. | 1 11012.0.76.100.002 | Cable laying mounting crew/ guard room |
| 15. | 1 11012.0.76.100.003 | Cable laying mounting generator room |
| 16. | 1 11012.0.76.100.004 | Cable laying mounting luggage room |
| 17. | 1 11012.0.76.110.010 | Cable channel mounting |
| 18. | 1 11012.0.76.100.007 | Cable lead through mounting |

## ANNEXURE `C' TO SPEC. NO. EDTS257, Rev-K

## PERFORMA FOR PERFORMANCE GUARANTEE

| S.NO. | ITEMS DESCRIPTION | COMPLIANCE (YES/NO) |
|---|---|---|
| 1. | Compliance of **STR**<br>(if Yes, enclose clause by clause comments) | |
| 2. | Compliance of qualified technical staff<br>(if Yes, enclose the details) | |
| 3. | Compliance of adequate space and condition for manufacturing, assembly<br>(if yes, enclose the details) | |
| 4. | Compliance of in-house testing facilities<br>(if Yes, enclose the details) | |
| 5. | Compliance of other details to improve the quality<br>(if Yes, enclose the details) | |

| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 1015 | | | **Feeder-1 cables** | | | | | | | |
| 1 | Connection box with socket-1 (A17) | connection box for plug-1 (A18) | ELRS/SPEC/ELC/ 0019 Rev.3 **above 750V to 1.8/3.0 KV** | 95 | 120104.14 | Black | 24.5 | Mp | Mp | - |
| | | | | 150 | 120309.04 | Red | 24.5 | L1 | L1 | 10 |
| | | | | 150 | 120310.04 | Yellow | 24.5 | L2 | L2 | 10 |
| 1025 | | | | 150 | 120311.04 | Blue | 24.5 | L3 | L3 | 10 |
| 2 | A17 | A18 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 2.5 | 460101.01 | White | 28 | 1 | 1 | 256,VK12,014 |
| 1020 | | | | 2.5 | 210415.04 | Choc | 28 | 2 | 3 | 014,VK12,256 |
| 3 | SBC S2 | Connection box with socket-1 (A17) | ELRS/SPEC/ELC/ 0019 Rev.3 **above 750V to 1.8/3.0 KV** | 95 | 120104.15 | Black | 11 | N1.2 | Mp | - |
| | | | | 70 | 1202PE.02 | GNYE | 11 | PE | SL | 013 |
| | | | | 150 | 120309.05 | Red | 11 | L1.2 | L1 | 013 |
| | | | | 150 | 120310.05 | Yellow | 11 | L2.2 | L2 | 013 |
| 1450 | | | | 150 | 120311.05 | Blue | 11 | L3.2 | L3 | 013 |
| 4 | Connection box (A17) | SBC S2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 2.5 | 210414.02 | Choc | 15 | 2 | 07 | - |
| | | | | 2.5 | 210415.02 | Choc | 15 | 3 | 08 | 015 |
| | | | | | | | | | | 015 |
| 1030 | | | **Feeder-2 cables** | | | | | | | |
| 5 | connection box for plug-2 (A16) | Connection box with socket-2 (A19) | ELRS/SPEC/ELC/ 0019 Rev.3 **above 750V to 1.8/3.0 KV** | 95 | 120104.35 | Black | 24.5 | Mp | Mp | - |
| | | | | 150 | 120709.05 | Red | 24.5 | L1 | L1 | 021 |
| | | | | 150 | 120710.05 | Yellow | 24.5 | L2 | L2 | 021 |
| 040, 1465 | | | | 150 | 120711.05 | Blue | 24.5 | L3 | L3 | 021 |
| 6 | A16 | A19 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 2.5 | 460102.01 | White | 28 | 1 | 1 | - |
| 1035 | | | | 2.5 | 210515.04 | Choc | 28 | 2 | 3 | 257,VK12,025 |
| 7 | SBC S2 | connection box for plug-2 (A16) | ELRS/SPEC/ELC/ 0019 Rev.3 **above 750V to 1.8/3.0 KV** | 95 | 120104.34 | Black | 10 | N2.2 | Mp | 025,VK12,257 |
| | | | | 70 | 1206PE.02 | GNYE | 10 | PE | SL | - |
| | | | | 150 | 120709.04 | Red | 10 | L1.2 | L1 | 023 |
| | | | | 150 | 120710.04 | Yellow | 10 | L2.2 | L2 | 023 |
| 1460 | | | | 150 | 120711.04 | Blue | 10 | L3.2 | L3 | 023 |
| 8 | connection box for plug-2 | SBC S2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 2.5 | 210514.02 | Choc | 12 | 2 | 09 | 023 |
| | | | | 2.5 | 210515.02 | Choc | 12 | 3 | 10 | - |
| | | | | | | | | | | 024 |
| 1090 | | | **External Supply Socket Wiring** | | | | | | | 024 |
| | | | | | | | | | | - |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | External Power Supply-1 | SBC S1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 25 | 330104.02 | Black | 14 | 4 | 229 | 045 |
| | | | | 25 | 330106.01 | Red | 14 | 1 | 1 | 045 |
| | | | | 25 | 330107.01 | Yellow | 14 | 2 | 3 | 045 |
| | | | | 25 | 330108.01 | Blue | 14 | 3 | 5 | 045 |
| 1095 | | | | | | | | | | - |
| 10 | External Power Supply-2 | SBC S1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 25 | 330101.01 | Red | 25 | 1 | 2 | 254,VK12,046 |
| | | | | 25 | 330102.01 | Yellow | 25 | 2 | 4 | 254,VK12,046 |
| | | | | 25 | 330103.01 | Blue | 25 | 3 | 6 | 254,VK12,046 |
| | | | | 25 | 330104.01 | Black | 25 | 4 | 230 | 254,VK12,046 |
| **Switch Board Cabinet S1 to Switch Board Cabinet S2** | | | | | | | | | | |
| 2185 | | | | | | | | | | - |
| ~~11~~ | ~~SBC S1~~ | ~~SBC S2~~ | ~~ELRS/SPEC/ELC/0019 Rev.3 upto 750V~~ | ~~2.5~~ | ~~210301.37~~ | ~~Choc~~ | ~~9~~ | ~~193~~ | ~~26~~ | - |
| | | | | ~~1.5~~ | ~~420504.02~~ | ~~Choc~~ | ~~9~~ | ~~194~~ | ~~18~~ | - |
| | | | | ~~1.5~~ | ~~420505.02~~ | ~~Choc~~ | ~~9~~ | ~~195~~ | ~~19~~ | - |
| | | | | ~~1.5~~ | ~~320405.26~~ | ~~Choc~~ | ~~9~~ | ~~273~~ | ~~47~~ | |
| | | | | ~~1.5~~ | ~~420304.02~~ | ~~White~~ | ~~9~~ | ~~274~~ | ~~48~~ | |
| | | | | ~~1.5~~ | ~~930107.01~~ | ~~Black~~ | ~~9~~ | ~~2~~ | ~~42~~ | |
| | | | | ~~1.5~~ | ~~930108.01~~ | ~~Red~~ | ~~9~~ | ~~2~~ | ~~41~~ | |
| | | | | ~~1.5~~ | ~~930109.01~~ | ~~Red~~ | ~~9~~ | ~~2~~ | ~~43~~ | |
| | | | | ~~1.5~~ | ~~930110.01~~ | ~~Black~~ | ~~9~~ | ~~2~~ | ~~44~~ | |
| 2195 | | | | | | | | | | - |
| 12 | SBC S1 | SBC S2 | ELRS/SPEC/ELC/ 0019 Rev.3 **above 750V to 1.8/3.0 KV** | 50 | 120104.13 | Black | 6 | N1.1 | 7 | -- |
| | | | | 50 | 120404.02 | Red | 6 | 2 | 1 | -- |
| | | | | 50 | 120405.02 | Yellow | 6 | 4 | 3 | -- |
| | | | | 50 | 120406.02 | Blue | 6 | 6 | 5 | -- |
| 2200 | | | | | | | | | | - |
| 13 | SBC S1 | SBC S2 | ELRS/SPEC/ELC/ 0019 Rev.3 above 750V to 1.8/3.0 KV | 50 | 120104.33 | Black | 5 | N2.1 | 15 | -- |
| | | | | 50 | 120804.02 | Red | 5 | 2 | 9 | -- |
| | | | | 50 | 120805.02 | Yellow | 5 | 4 | 11 | -- |
| | | | | 50 | 120806.02 | Blue | 5 | 6 | 13 | -- |
| **60 KVA transformer wiring** | | | | | | | | | | |
| 1050 | | | | | | | | | | - |
| 14 | SBC S2 | Main Transformer-1 | ELRS/SPEC/ELC/ 0019 Rev.3 **above 750V to 1.8/3.0 KV** | 25 | 120904.01 | Black | 11 | | MP | 032 ( Through 63A out put fuse) |
| | | | | 25 | 120915.01 | Red | 11 | | W | |
| | | | | 25 | 120916.01 | Yellow | 11 | | V | |
| | | | | 25 | 120917.01 | Blue | 11 | | U | |
| 1045 | | | | | | | | | | - |
| 15 | Main Transformer-1 | SBC S2 | ELRS/SPEC/ELC/0019 Rev.3 upto | 50 | 121005.01 | Red | 10.5 | u | 1 | 033 ( Through 63A out put fuse) |
| | | | | 50 | 121006.01 | Yellow | 10.5 | v | 1 | |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| | [illegible] | [illegible] | 750V | 50 | 121007.01 | Blue | 10.5 | w | 1 | [illegible] |
| 1470 | | | | 50 | 121008.01 | Black | 10.5 | mp | 7 | |
| | | | | | | | | | | - |
| 16 | SBC S2 | Main Transformer-2 | ELRS/SPEC/ELC/ 0019 Rev.3 **above 750V to 1.8/3.0 KV** | 25 | 120908.01 | Black | 9 | 16 | Mp | 030 ( Through 63A out put fuse) |
| | | | | 25 | 120918.01 | Red | 9 | 5 | W | |
| | | | | 25 | 120919.01 | Yellow | 9 | 3 | V | |
| 1480 | | | | 25 | 120920.01 | Blue | 9 | 1 | U | |
| | | | | | | | | | | - |
| 17 | Main Transformer-2 | SBC S2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 50 | 121105.01 | Red | 9.5 | u | 1 | 031 ( Through 63A out put fuse) |
| | | | | 50 | 121106.01 | Yellow | 9.5 | v | 1 | |
| | | | | 50 | 121107.01 | Blue | 9.5 | w | 1 | |
| 3675 | | | | 50 | 121108.01 | Black | 9.5 | mp | 7 | |
| | | | | | | | | | | |
| 18 | SBC S1 | on board transformer | ELRS/SPEC/ELC/ 0019 Rev.3 **above 750V to 1.8/3.0 KV** | 25 | 120221.01 | Black | 20 | | | |
| | | | | 25 | 120218.01 | Red | 20 | | | |
| | | | | 25 | 120219.01 | Yellow | 20 | | | |
| 3680 | | | | 25 | 120220.01 | Blue | 20 | | | |
| | | | | | | | | | | |
| 19 | on board transformer | SBC S1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 50 | 121005.01 | Red | 21.5 | | | |
| | | | | 50 | 121006.01 | Yellow | 21.5 | | | |
| | | | | 50 | 121007.01 | Blue | 21.5 | | | |
| | | | | 50 | 121008.01 | Black | 21.5 | | | |
| | | | | 2.5X2 | - | Grey | 15 | | | |
| | | | | 2.5X2 | - | Grey | 17 | | | |
| | | | **Engine power and control Wiring** | | | | | | | |
| 2425 | | | | | | | | | | - |
| 20 | Alternator-1 | SBC S2 (ACB-1) | ELRS/SPEC/ELC/ 0019 Rev.3 **above 750V to 1.8/3.0 KV** | 150 | 120101.01 | Red | 15 | L1 | L1 | 301,D,+S2A1-1T,Spule A |
| | | | | 150 | 120102.01 | Yellow | 15 | L2 | L2 | 301,D,+S2A1-1T,Spule A |
| | | | | 150 | 120103.01 | Blue | 15 | L3 | L3 | 301,D,+S2A1-1T,Spule A |
| | | | | 120 | 120104.01 | Black | 15 | N | N1.0 | 301,D,+S2A1-1T,Spule A |
| 2445 | | | | 120 | N.Reactor | Black | 4 | NR-2 | N1.0 | 301,D,+S2A1-1T,Spule A |
| | | | | | | | | | | - |
| 21 | Alternator-2 | SBC S2 (ACB-2) | ELRS/SPEC/ELC/ 0019 Rev.3 **above 750V to 1.8/3.0 KV** | 120 | 120104.21 | Black | 15 | N | N2.0 | 303,B,+S2A1-2T,Spule B |
| | | | | 150 | 120501.01 | Red | 15 | L1 | L1 | 303,B,+S2A1-2T,Spule B |
| | | | | 150 | 120502.01 | Yellow | 15 | L2 | L2 | 303,B,+S2A1-2T,Spule B |
| | | | | 150 | 120503.01 | Blue | 15 | L3 | L3 | 303,B,+S2A1-2T,Spule B |
| 2650 | | | | 120 | N.Reactor | Black | 4 | NR-2 | L3 | 303,B,+S2A1-2T,Spule B |
| | | | | | | | | | | - |
| | | | | 2.5 | 210801.01 | Choc | 17 | 36 | 1 | 308,C |
| | | | | 2.5 | 210802.01 | Choc | 17 | 37 | 2 | 308,C |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SBC S2 | Engine-1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 2.5 | 210803.01 | Choc | 17 | 05 | 3 | 308,C |
| | | | | 6 | 210805.01 | Black | 17 | 39 | 5 | 308,C |
| | | | | 2.5 | 210806.01 | Choc | 17 | 40 | 6 | 308,C |
| | | | | 2.5 | 210807.01 | Choc | 17 | 41 | 7 | 308,C |
| | | | | 6 | 210811.01 | Black | 17 | 45 | 14 | 308,C |
| | | | | 2.5 | 210812.01 | Choc | 17 | 42 | 15 | 308,C |
| | | | | 2.5 | 210813.01 | Choc | 17 | 43 | 17 | 308,C |
| | | | | 2.5 | 210814.01 | White | 17 | 44 | 18 | 308,C |
| | | | | 2.5 | Res. A1 | Choc | 17 | nc | nc | 308,C |
| | | | | 2.5 | Res. A2 | Choc | 17 | nc | nc | 308,C |
| | | | | 2.5 | Res. A3 | Choc | 17 | nc | nc | 308,C |
| | | | | 2.5 | Res. A4 | Choc | 17 | nc | nc | 308,C |
| | | | | 2.5 | Res. A5 | Choc | 17 | nc | nc | 308,C |
| | | | | 2.5 | Res. A6 | Choc | 17 | nc | nc | 308,C |
| | | | | 2.5 | Res. A6 | Choc | 17 | nc | nc | 308,C |
| | | | | 2.5 | Res. A6 | Choc | 17 | nc | nc | 308,C |
| | | | | 2.5 | Res. A6 | Choc | 17 | nc | nc | 308,C |
| | | | | 2.5 | Res. A6 | Choc | 17 | nc | nc | 308,C |
| | | | | 2.5 | Res. A6 | Choc | 17 | nc | nc | 308,C |
| | | | | 2.5 | Res. A6 | White | 17 | nc | nc | 308,C |
| 2620 | | | | | | | | | | |
| 23 | SBC S2 | Engine-2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 2.5 | 210901.01 | Choc | 15 | 36 | 1 | 307,A |
| | | | | 2.5 | 210902.01 | Choc | 15 | 37 | 2 | 307,A |
| | | | | 2.5 | 210903.01 | Choc | 15 | 05 | 3 | 307,A |
| | | | | 6 | 210905.01 | Black | 15 | 39 | 5 | 307,A |
| | | | | 2.5 | 210906.01 | Choc | 15 | 40 | 6 | 307,A |
| | | | | 2.5 | 210907.01 | Choc | 15 | 41 | 7 | 307,A |
| | | | | 6 | 210911.01 | Black | 15 | 45 | 14 | 307,A |
| | | | | 2.5 | 210912.01 | Choc | 15 | 42 | 15 | 307,A |
| | | | | 2.5 | 210913.01 | Choc | 15 | 43 | 17 | 307,A |
| | | | | 2.5 | 210914.01 | White | 15 | 44 | 18 | 307,A |
| | | | | 2.5 | Res.B1 | Choc | 15 | nc | nc | 307,A |
| | | | | 2.5 | Res.B2 | Choc | 15 | nc | nc | 307,A |
| | | | | 2.5 | Res.B3 | Choc | 15 | nc | nc | 307,A |
| | | | | 2.5 | Res.B4 | Choc | 15 | nc | nc | 307,A |
| | | | | 2.5 | Res.B5 | Choc | 15 | nc | nc | 307,A |
| | | | | 2.5 | Res.B6 | Choc | 15 | nc | nc | 307,A |
| | | | | 2.5 | Res.B6 | Choc | 15 | nc | nc | 307,A |
| | | | | 2.5 | Res.B6 | Choc | 15 | nc | nc | 307,A |
| | | | | 2.5 | Res.B6 | Choc | 15 | nc | nc | 307,A |

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|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2.5 | Res.B6 | Choc | 15 | nc | nc | 307,A |
| | | | | 2.5 | Res.B6 | Choc | 15 | nc | nc | 307,A |
| | | | | 2.5 | Res.B6 | Choc | 15 | nc | nc | 307,A |
| **Engine 24 VDC wiring** | | | | | | | | | | |
| 2450 | | | | | | | | | | - |
| 24 | Starter Battery-2 | Engine-2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 120 | 210303.26 | White | 5 | - | - | 309 |
| 2465 | | | | 120 | 210607.01 | Choc | 5 | + | +M1 | 309 |
| 25 | Starter Battery-1 | Engine-1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 120 | 210303.21 | White | 5 | - | - | 317 |
| 2475 | | | | 120 | 210605.01 | Choc | 5 | + | +M1 | 317 |
| 26 | St Batt.-2 | Control & Fuse Box | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 16 | 210303.29 | White | 10 | - | 06 | 313,A |
| 2480 | | | | 16 | 210607.03 | Choc | 10 | + | 3 | 313,A |
| 27 | St.Batt.-1 | Control & Fuse Box | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 16 | 210303.24 | White | 10 | - | 5 | 314,C |
| 2485 | | | | 16 | 210605.03 | Choc | 10 | + | 1 | 314,C |
| 28 | Control & Fuse Box for St. Batt. | SBC S2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 6 | 210303.23 | Choc | 14 | 05 | 31 | 315,A |
| | | | | 6 | 210303.28 | Choc | 14 | 07 | 31 | 315,A |
| | | | | 6 | 210605.05 | White | 14 | 01 | 01 | 315,A |
| 2490 | | | | 6 | 210607.05 | White | 14 | 03 | 01 | 315,A |
| 29 | Control & Fuse Box for St. Batt. | SBC S2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 2.5 | 210303.12 | White | 14 | 08 | 21 | 315,A |
| | | | | 2.5 | 210603.03 | Choc | 14 | 02 | 11 | 315,A |
| | | | | 2.5 | 210702.02 | White | 14 | 09 | 12 | 315,A |
| | | | | 2.5 | 210704.02 | White | 14 | 10 | 14 | 315,A |
| | | | | 2.5 | Res. 10 | Choc | 14 | nc | nc | 315,A |
| 2495 | | | | 2.5 | Res. 11 | White | 14 | nc | nc | 315,A |
| 30 | SBC S2 | St. Batt. Charger | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 16 | 210303.25 | White | 18 | 07 | -24V | 315,A,715 |
| 2625 | | | | 16 | 210602.03 | Choc | 18 | 04 | +24V | 315,A,715 |
| 31 | SBC S2 | St. Batt. Charger | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 2.5 | 210301.34 | Choc | 9 | 26 | 3 | 715 |
| | | | | 2.5 | 330503.01 | Choc | 9 | 30 | 1 | 715 |
| 2640 | | | | 2.5 | 330504.01 | Choc | 9 | 31 | 2 | 715 |
| 32 | SBC S1 | St. Battery Charger | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 330501.01 | Black | 12 | 271 | N | 712 |
| | | | | 1.5 | 330502.01 | Red | 12 | 270 | L1 | 712 |
| | | | | 2.5 | 330506.01 | GNYE | 12 | PE | PE | 712 |
| **Radiator & Ventilator fan wiring** | | | | | | | | | | |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 2605 | | | | | | | | | | - |
| 33 | SBC S2 | Ventilator fan control Panel-1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 25 | 121008.02 | Black | 9.5 | 7 | 7 | 706,2.2 |
| | | | | 25 | 330901.01 | Red | 9.5 | 2 | 1 | 706,2.2 |
| | | | | 25 | 330902.01 | Yellow | 9.5 | 2 | 3 | 706,2.2 |
| | | | | 25 | 330903.01 | Blue | 9.5 | 2 | 5 | 706,2.2 |
| | | | | 10 | Res. 01 | Red | 9.5 | nc | nc | 706,2.2 |
| | | | | 10 | Res. 02 | Yellow | 9.5 | nc | nc | 706,2.2 |
| | | | | 10 | Res. 03 | Blue | 9.5 | nc | nc | 706,2.2 |
| 2570 | | | | | | | | | | - |
| 34 | Ventilator fan control Panel-1 | Ventilator fan -1.1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 2.5 | 1202PE.10 | GNYE | 7 | 7 | PE | 2.2,4.2,5.2,701 |
| | | | | 2.5 | 330904.02 | Red | 7 | 1 | U1 | 2.2,4.2,5.2,701 |
| | | | | 2.5 | 330905.02 | Yellow | 7 | 2 | V1 | 2.2,4.2,5.2,701 |
| | | | | 2.5 | 330906.02 | Blue | 7 | 3 | W1 | 2.2,4.2,5.2,701 |
| | | | | 2.5 | 330914.02 | Red | 7 | 4 | U2 | 2.2,4.2,5.2,701 |
| | | | | 2.5 | 330915.02 | Yellow | 7 | 5 | V2 | 2.2,4.2,5.2,701 |
| | | | | 2.5 | 330916.02 | Blue | 7 | 6 | W2 | 2.2,4.2,5.2,701 |
| 2565 | | | | | | | | | | - |
| 35 | Ventilator fan control Panel-1 | Ventilator fan-1.2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 2.5 | 1202PE.13 | GNYE | 8.5 | 14 | PE | 2.2,4.2,5.2,700 |
| | | | | 2.5 | 331004.02 | Red | 8.5 | 8 | U1 | 2.2,4.2,5.2,700 |
| | | | | 2.5 | 331005.02 | Yellow | 8.5 | 9 | V1 | 2.2,4.2,5.2,700 |
| | | | | 2.5 | 331006.02 | Blue | 8.5 | 10 | W1 | 2.2,4.2,5.2,700 |
| | | | | 2.5 | 331014.02 | Red | 8.5 | 11 | U2 | 2.2,4.2,5.2,700 |
| | | | | 2.5 | 331015.02 | Yellow | 8.5 | 12 | V2 | 2.2,4.2,5.2,700 |
| | | | | 2.5 | 331016.02 | Blue | 8.5 | 13 | W2 | 2.2,4.2,5.2,700 |
| 2600 | | | | | | | | | | - |
| ~~36~~ | ~~SBC S2~~ | ~~Radiator control Panel-1~~ | ~~ELRS/SPEC/ELC/0019 Rev.2 upto 750V~~ | ~~25~~ | ~~330901.06~~ | ~~Red~~ | ~~3~~ | ~~2~~ | ~~MG2 1L1~~ | ~~2.2~~ |
| | | | | ~~25~~ | ~~330902.06~~ | ~~Yellow~~ | ~~3~~ | ~~4~~ | ~~MG2 3L2~~ | ~~2.2~~ |
| | | | | ~~25~~ | ~~330903.06~~ | ~~Blue~~ | ~~3~~ | ~~6~~ | ~~MG2 5L3~~ | ~~2.2~~ |
| | | | | ~~25~~ | ~~121008.10~~ | ~~Black~~ | ~~3~~ | | | ~~2.2~~ |
| 2595 | | | | | | | | | | - |
| 37 | Radiator control Panel-1 | Radiator-1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 16 | 330701.01 | Red | 9.5 | C1-2T1 | U | 2.2,4.2,7.2,10.2,709 |
| | | | | 16 | 330702.01 | Yellow | 9.5 | C1-4T2 | V | 2.2,4.2,7.2,10.2,709 |
| | | | | 16 | 330703.01 | Blue | 9.5 | C1-6T3 | W | 2.2,4.2,7.2,10.2,709 |
| | | | | 16 | 330705.01 | Red | 9.5 | C2-2T1 | Y | 2.2,4.2,7.2,10.2,709 |
| | | | | 16 | 330706.01 | Yellow | 9.5 | C2-6T3 | X | 2.2,4.2,7.2,10.2,709 |
| | | | | 16 | 330707.01 | Blue | 9.5 | C2-4T2 | Z | 2.2,4.2,7.2,10.2,709 |
| | | | | 16 | PE | GNYE | 9.5 | C2-4T2 | Z | 2.2,4.2,7.2,10.2,709 |
| 2630 | | | | | | | | | | - |
| | | | | 25 | 121108.02 | Black | 11.5 | 7 | 7 | 708,2.2,4.2,5.2,6.2,9.2,11.2 |
| | | | | 25 | 331101.01 | Red | 11.5 | 2 | 1 | 708,2.2,4.2,5.2,6.2,9.2,11.2 |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 38 | SBC S2 | Ventilator fan control Panel-2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 25 | 331102.01 | Yellow | 11.5 | 2 | 3 | 708,2.2,4.2,5.2,6.2,9.2,11.2 |
| | | | | 25 | 331103.01 | Blue | 11.5 | 2 | 5 | 708,2.2,4.2,5.2,6.2,9.2,11.2 |
| | | | | 10 | Res. 04 | Red | 11.5 | nc | nc | 708,2.2,4.2,5.2,6.2,9.2,11.2 |
| | | | | 10 | Res. 05 | Yellow | 11.5 | nc | nc | 708,2.2,4.2,5.2,6.2,9.2,11.2 |
| | | | | 10 | Res. 05 | Blue | 11.5 | nc | nc | 708,2.2,4.2,5.2,6.2,9.2,11.2 |
| 2575 | | | | | | | | | | - |
| 39 | Ventilator fan control Panel-2 | Ventilator fan -2.1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 2.5 | 1206PE.10 | GNYE | 12.5 | 7 | PE | 11.2,9.2,8.2,702 |
| | | | | 2.5 | 331104.02 | Red | 12.5 | 1 | U1 | 11.2,9.2,8.2,702 |
| | | | | 2.5 | 331105.02 | Yellow | 12.5 | 2 | V1 | 11.2,9.2,8.2,702 |
| | | | | 2.5 | 331106.02 | Blue | 12.5 | 3 | W1 | 11.2,9.2,8.2,702 |
| | | | | 2.5 | 331114.02 | Red | 12.5 | 4 | U2 | 11.2,9.2,8.2,702 |
| | | | | 2.5 | 331115.02 | Yellow | 12.5 | 5 | V2 | 11.2,9.2,8.2,702 |
| | | | | 2.5 | 331116.02 | Blue | 12.5 | 6 | W2 | 11.2,9.2,8.2,702 |
| 2580 | | | | | | | | | | - |
| 40 | Ventilator fan control Panel-2 | Ventilator fan -2.2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 2.5 | 1206PE.13 | GNYE | 14 | 14 | PE | 11.2,9.2,8.2,703 |
| | | | | 2.5 | 331204.02 | Red | 14 | 8 | U1 | 11.2,9.2,8.2,703 |
| | | | | 2.5 | 331205.02 | Yellow | 14 | 9 | V1 | 11.2,9.2,8.2,703 |
| | | | | 2.5 | 331206.02 | Blue | 14 | 10 | W1 | 11.2,9.2,8.2,703 |
| | | | | 2.5 | 331214.02 | Red | 14 | 11 | U2 | 11.2,9.2,8.2,703 |
| | | | | 2.5 | 331215.02 | Yellow | 14 | 12 | V2 | 11.2,9.2,8.2,703 |
| | | | | 2.5 | 331216.02 | Blue | 14 | 13 | W2 | 11.2,9.2,8.2,703 |
| 2590 | | | | | | | | | | - |
| ~~41~~ | ~~SBC S2~~ | ~~Radiator control Panel-2~~ | ~~ELRS/SPEC/ELC/0019 Rev.2 upto 750V~~ | ~~25~~ | ~~331101.06~~ | ~~Red~~ | ~~6~~ | ~~2~~ | ~~MG2 1L1~~ | ~~11.2~~ |
| | | | | ~~25~~ | ~~331102.06~~ | ~~Yellow~~ | ~~6~~ | ~~4~~ | ~~MG2 3L2~~ | ~~11.2~~ |
| | | | | ~~25~~ | ~~331103.06~~ | ~~Blue~~ | ~~6~~ | ~~6~~ | ~~MG2 5L3~~ | ~~11.2~~ |
| | | | | ~~25~~ | ~~121108.10~~ | ~~Black~~ | ~~6~~ | | | ~~11.2~~ |
| 2585 | | | | | | | | | | - |
| 42 | Radiator control Panel-2 | Radiator-2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 16 | 330709.01 | Red | 16 | C1-2T1 | U | 11.2,9.2,6.2,3.2,710 |
| | | | | 16 | 330710.01 | Yellow | 16 | C1-4T2 | V | 11.2,9.2,6.2,3.2,710 |
| | | | | 16 | 330711.01 | Blue | 16 | C1-6T3 | W | 11.2,9.2,6.2,3.2,710 |
| | | | | 16 | 330713.01 | Red | 16 | C2-2T1 | Y | 11.2,9.2,6.2,3.2,710 |
| | | | | 16 | 330714.01 | Yellow | 16 | C2-6T3 | X | 11.2,9.2,6.2,3.2,710 |
| | | | | 16 | 330715.01 | Blue | 16 | C2-4T2 | Z | 11.2,9.2,6.2,3.2,710 |
| | | | | 16 | PE | GNYE | 16 | C2-4T2 | Z | 11.2,9.2,6.2,3.2,710 |
| **110 VDC Battery Wiring** | | | | | | | | | | |
| 1055 | | | | | | | | | | - |
| 43 | Batt. Fuse Box +ve | SBC S1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 25 | 320110.01 | Choc | 17 | 01 | 04 | 036,VK12,252 |
| 1060 | | | | 10 | 320205 | Choc | 18 | 10 | 1 | 036,VK12,252 |
| | | | | | | | | | | - |
| | | | | 1.5 | 320104.01 | Choc | 21 | 09 | 06 | 037,VK12,253 |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 44 | SBC S1 | Batt. Fuse Box +ve | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 320105.01 | Choc | 21 | 08 | 07 | 037,VK12,253 |
| | | | | 1.5 | 320106.01 | Choc | 21 | 06 | 03 | 037,VK12,253 |
| | | | | 1.5 | 320201.01 | Choc | 21 | 203 | 05 | 037,VK12,253 |
| | | | | 1.5 | 320203.01 | Choc | 21 | 205 | 04 | 037,VK12,253 |
| 1065 | | | | | | | | | | - |
| 45 | Battery | Batt. Fuse Box +ve | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 50 | 320109.00 | Choc | 1.5 | + | 02 | 038 |
| 1070 | | | | | | | | | | - |
| 46 | Battery | Fuse Box -ve | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 50 | 320108.00 | White | 1.5 | - | 02 | 039 |
| 1075 | | | | | | | | | | - |
| 47 | SBC S1 | Batt. Fuse Box -ve | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 25 | 320111.01 | White | 15 | 05 | 01 | 040 |
| | | | | 10 | 320206 | Choc | 16 | 1 | 06 | 040 |
| 1080 | | | | | | | | | | - |
| 48 | Batt. Fuse Box +ve | battery | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 320104.02 | Choc | 2.5 | 06 | 01 | 35 |
| | | | | 1.5 | 320105.02 | Choc | 2.5 | 07 | 02 | 35 |
| 1085 | | | | | | | | | | - |
| 49 | SBC S1 | Batt. Fuse Box -ve | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 320107.01 | White | 18 | 07 | 03 | 042 |
| | | | | 1.5 | 320202.01 | White | 18 | 204 | 05 | 042 |
| | | | | 1.5 | 320204.01 | White | 18 | 206 | 04 | 042 |
| **AC Package Unit Wiring** | | | | | | | | | | |
| 2150 | | | | | | | | | | - |
| 50 | SBC S1 | AC Package connector-1 (U1X1) | EDTS132, Rev-C AMDT-4 Data Sheet-7 | 18x1.5 | 330307.01 | | 12 | 234 | PE | 1.3,212 |
| | | | | | 330315.02 | | | 231 | 1 | 1.3,212 |
| | | | | | 330316.02 | | | 232 | 2 | 1.3,212 |
| | | | | | 330317.02 | | | 233 | 3 | 1.3,212 |
| | | | | | 330408.02 | | | 250 | 10 | 1.3,212 |
| | | | | | 330409.01 | | | 251 | 12 | 1.3,212 |
| | | | | | 330416.02 | | | 252 | 11 | 1.3,212 |
| | | | | | 330418.02 | | | 253 | 4 | 1.3,212 |
| | | | | | 330420.02 | | | 254 | 5 | 1.3,212 |
| | | | | | 330422.02 | | | 255 | 6 | 1.3,212 |
| | | | | | 330424.02 | | | 256 | 7 | 1.3,212 |
| | | | | | 330426.02 | | | 257 | 8 | 1.3,212 |
| | | | | | 330428.02 | | | 258 | 9 | 1.3,212 |
| | | | | | Res 8 | | | nc | nc | 1.3,212 |
| | | | | | Res 9 | | | nc | nc | 1.3,212 |
| | | | | | Res 10 | | | nc | nc | 1.3,212 |
| 3425 | | | | | | | | | | - |
| | | | | 4 | 330402.02 | Red | 12 | 239 | 14 | 1.3,213 |
| | | | | 4 | 330404.02 | Yellow | 12 | 240 | 3 | 1.3,213 |
| | | | | 4 | 330406.02 | Blue | 12 | 241 | 16 | 1.3,213 |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 51 | SBC S1 | AC Package connector-2 (U1X2) | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 4 | 330407 | GNYE | 12 | 242 | PE | 1.3,213 |
| | | | | 4 | 330411.02 | Red | 12 | 243 | 5 | 1.3,213 |
| | | | | 4 | 330413.02 | Yellow | 12 | 244 | 18 | 1.3,213 |
| | | | | 4 | 330415.02 | Blue | 12 | 245 | 7 | 1.3,213 |
| | | | | 4 | 330429.02 | Red | 12 | 247 | 20 | 1.3,213 |
| | | | | 4 | 330432.02 | Yellow | 12 | 248 | 9 | 1.3,213 |
| | | | | 4 | 330434.02 | Blue | 12 | 249 | 22 | 1.3,213 |
| 2105 | | | | | | | | | | - |
| 52 | SBC S1 | AC Package connector-4 (U1X4) | EDTS132, Rev-C AMDT-4 Data Sheet-4 | 6X (2x1.5) | 610112.01 | | 10 | 132 | 01 | 1.2,613 |
| | | | | | 610113.01 | | | 133 | 02 | 1.2,613 |
| | | | | | 610114.01 | | | 134 | 03 | 1.2,613 |
| | | | | | 610117.01 | | | 135 | 4 | 1.2,613 |
| | | | | | 610301.01 | | | 213 | 05 | 1.2,613 |
| | | | | | 610302.01 | | | 214 | 07 | 1.2,613 |
| | | | | | 610305.01 | | | 217 | 09 | 1.2,613 |
| | | | | | 610306.01 | | | 218 | 11 | 1.2,613 |
| 2110 | | | | | | | | | | - |
| 53 | SBC S1 | AC Package connector-3 (U1X3) | EDTS132, Rev-C AMDT-4 Data Sheet-7 | 25x1.5 | 610101.12 | | 10 | 162 | 05 | 1.2,612 |
| | | | | | 610102.19 | | | 179 | 06 | 1.2,612 |
| | | | | | 610201.05 | | | 212 | 01 | 1.2,612 |
| | | | | | 610202.02 | | | 150 | 4 | 1.2,612 |
| | | | | | 610203.01 | | | 151 | 03 | 1.2,612 |
| | | | | | 610204.02 | | | 152 | 02 | 1.2,612 |
| | | | | | 610403.03 | | | 311 | 15 | 1.2,612 |
| | | | | | 610404.01 | | | 164 | 16 | 1.2,612 |
| | | | | | 610407.01 | | | 156 | 07 | 1.2,612 |
| | | | | | 610409.01 | | | 157 | 08 | 1.2,612 |
| | | | | | 610410.01 | | | 158 | 09 | 1.2,612 |
| | | | | | 610412.01 | | | 159 | 10 | 1.2,612 |
| | | | | | 610414.01 | | | 160 | 11 | 1.2,612 |
| | | | | | 610415.01 | | | 161 | 14 | 1.2,612 |
| | | | | | 610503.02 | | | 178 | 17 | 1.2,612 |
| | | | | | 610504.01 | | | 181 | 18 | 1.2,612 |
| | | | | | 610505.02 | | | 180 | 20 | 1.2,612 |
| | | | | | 610506.02 | | | 182 | 12 | 1.2,612 |
| | | | | | 610507.01 | | | 184 | 19 | 1.2,612 |
| | | | | | 610508.02 | | | 183 | 21 | 1.2,612 |
| | | | | | 610509.02 | | | 185 | 13 | 1.2,612 |
| | | | | | Res 5 | | | nc | nc | 1.2,612 |
| | | | | | Res 6 | | | nc | nc | 1.2,612 |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Res 7 | | | nc | nc | 1.2,612 |
| | | | **Temperature sensor wiring** | | | | | | | |
| 3380 | | | | | | | | | | - |
| 54 | SBC S1 | Temperature sensor-1 | EDTS132, Rev-C AMDT-4 Data Sheet-4 | 2x1.5 sq.mm | 610105.01 | 1 | 9 | 128 | 01 | 1.2,216 |
| 2050 | | | | | 610106.01 | 2 | | 129 | 02 | 1.2,216 |
| | | | | | | | | | | - |
| 55 | SBC S1 | Hygrostat for AC | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 610103.02 | Choc | 8 | 314 | 13 | 1.2,215 |
| 2180 | | | | 1.5 | 610104.01 | White | 8 | 316 | 14 | 1.2,215 |
| | | | | | | | | | | - |
| 56 | SBC S1 | temperature sensor-2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 2x1.5 sq.mm | 610108.01 | 1 | 7 | 130 | 01 | 1.2,215 |
| | | | | | 610109.01 | 2 | | 131 | 02 | 1.2,215 |
| | | | **Lighting Wiring** | | | | | | | |
| 2330 | | | | | | | | | | - |
| 57 | SBC S1 | Lighting TB B4X1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520317.01 | Choc | 6 | 106 | 3 | 1.2,609 |
| | | | | 1.5 | 520318.01 | White | 6 | 107 | 4 | 1.2,609 |
| | | | | 1.5 | 520319.01 | GNYE | 6 | 110 | PE | 1.2,609 |
| | | | | 1.5 | 520401.02 | Yellow | 6 | 112 | 5 | 1.2,609 |
| | | | | 1.5 | 520402.02 | Black | 6 | 113 | 7 | 1.2,609 |
| | | | | 1.5 | 520403.01 | GNYE | 6 | 111 | PE | 1.2,609 |
| | | | | 1.5 | 520101.04 | Red | 6 | 108 | 1 | 1.2,609 |
| | | | | 1.5 | 520102.04 | Black | 6 | 109 | 2 | 1.2,609 |
| | | | | 1.5 | 520103.04 | GNYE | 6 | 110 | PE | 1.2,609 |
| 2410 | | | | | | | | | | - |
| 58 | Lighting TB B4X1 | Lighting TB B1X1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520401.04 | Yellow | 18 | 5 | 3 | 609,1.2,610,5.3,611 |
| | | | | 1.5 | 520402.04 | Black | 18 | 7 | 4 | 609,1.2,610,5.3,611 |
| | | | | 1.5 | 520403.04 | GNYE | 18 | PE | PE | 609,1.2,610,5.3,611 |
| | | | | 1.5 | 520101.14 | Yellow | 18 | 1 | 1 | 609,1.2,610,5.3,611 |
| | | | | 1.5 | 520102.14 | Black | 18 | 2 | 2 | 609,1.2,610,5.3,611 |
| | | | | 1.5 | 520103.14 | GNYE | 18 | PE | PE | 609,1.2,610,5.3,611 |
| 2345 | | | | | | | | | | - |
| 59 | UHF/VHF Charging socket | TB B1X1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 320409.02 | White | 30 | 115 | 06 | 216,1.2,610,5.3,611 |
| | | | | 1.5 | 510102.04 | White | 30 | 2 | 05 | 216,1.2,610,5.3,611 |
| | | | | 1.5 | 510102.04 | Choc | 30 | 2 | 05 | 216,1.2,610,5.3,611 |
| 2555 | | | | | | | | | | - |
| 60 | Lighting TB B1X1 | Light-B1 | ELRS/SPEC/ELC/0019 Rev.2 upto 750V | 1.5 | 520401.07 | Red | 4 | 3 | 1 | 617 |
| | | | | 1.5 | 520402.07 | Black | 4 | 4 | 2 | 617 |
| | | | | 1.5 | 520403.07 | GNYE | 4 | PE | PE | 617 |
| 2550 | | | | | | | | | | - |
| | | | ELRS/SPEC/ELC/0019 Rev.3 upto | 1.5 | 520101.15 | Red | 2 | 1 | 1 | 617,618 |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 61 | Lighting TB B1X1 | Light-B2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520102.15 | Black | 2 | 2 | 2 | 617,618 |
| | | | | 1.5 | 520103.15 | GNYE | 2 | PE | PE | 617,618 |
| 2540 | | | | | | | | | | - |
| 62 | Lighting TB B1X1 | Light-B3 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520101.16 | Red | 4 | 1 | 1 | 617,618,615 |
| | | | | 1.5 | 520102.16 | Black | 4 | 2 | 2 | 617,618,615 |
| | | | | 1.5 | 520103.16 | GNYE | 4 | PE | PE | 617,618,615 |
| 2545 | | | | | | | | | | - |
| 63 | Lighting TB B1X1 | Light-B4 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520401.08 | Red | 6 | 3 | 1 | 617,618,615,616 |
| | | | | 1.5 | 520402.08 | Black | 6 | 4 | 2 | 617,618,615,616 |
| | | | | 1.5 | 520403.08 | GNYE | 6 | PE | PE | 617,618,615,616 |
| 2560 | | | | | | | | | | - |
| 64 | Lighting TB B1X1 | Back light | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 510102.01 | Red | 8 | 05 | 1 | 619 |
| | | | | 1.5 | 320409.04 | Black | 8 | 06 | 2 | 619 |
| | | | | 1.5 | 520403.20 | GNYE | 8 | PE | PE | 619 |
| 2395 | | | | | | | | | | - |
| 65 | Lighting TB B4X1 | Lighting TB B2X1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520401.14 | Yellow | 8 | 6 | 3 | 609,1.2,610,5.3,607 |
| | | | | 1.5 | 520402.14 | Black | 8 | 8 | 4 | 609,1.2,610,5.3,607 |
| | | | | 1.5 | 520403.14 | GNYE | 8 | PE | PE | 609,1.2,610,5.3,607 |
| | | | | 1.5 | 520101.17 | Red | 8 | 1 | 1 | 609,1.2,610,5.3,607 |
| | | | | 1.5 | 520102.17 | Black | 8 | 2 | 2 | 609,1.2,610,5.3,607 |
| | | | | 1.5 | 520103.17 | GNYE | 8 | PE | PE | 609,1.2,610,5.3,607 |
| 2525 | | | | | | | | | | - |
| 66 | Lighting TB B2X1 | Light-B5 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520401.15 | Red | 6 | 3 | 1 | 607,5.3 |
| | | | | 1.5 | 520402.15 | Black | 6 | 4 | 2 | 607,5.3 |
| | | | | 1.5 | 520403.15 | GNYE | 6 | PE | PE | 607,5.3 |
| 2520 | | | | | | | | | | - |
| 67 | Lighting TB B2X1 | Light-B6 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520101.12 | Red | 4 | 1 | 1 | 607,5.3 |
| | | | | 1.5 | 520102.12 | Black | 4 | 2 | 2 | 607,5.3 |
| | | | | 1.5 | 520103.12 | GNYE | 4 | PE | PE | 607,5.3 |
| 2040 | | | | | | | | | | - |
| 68 | Lighting TB B2X1 | Light-B7 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520401.16 | Red | 1 | 3 | 1 | -- |
| | | | | 1.5 | 520402.16 | Black | 1 | 4 | 2 | -- |
| | | | | 1.5 | 520403.16 | GNYE | 1 | PE | PE | -- |
| 2530 | | | | | | | | | | - |
| 69 | Lighting TB B2X1 | Light-B8 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520401.17 | Red | 4 | 3 | 1 | 607,5.3 |
| | | | | 1.5 | 520402.17 | Black | 4 | 4 | 2 | 607,5.3 |
| | | | | 1.5 | 520403.17 | GNYE | 4 | PE | PE | 607,5.3 |
| 2535 | | | | | | | | | | - |
| 70 | Lighting TB B2X1 | Light-B9 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520101.13 | Red | 6 | 1 | 1 | 607,5.3 |
| | | | | 1.5 | 520102.13 | Black | 6 | 2 | 2 | 607,5.3 |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| 2435 | | | | 1.5 | 520103.13 | GNYE | 6 | PE | PE | 607,5.3 |
| | | | | | | | | | | - |
| 71 | Lighting TB B4X1 | Lighting TB B3X1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520317.03 | Choc | 9.5 | 3 | 1 | 609,1.2,610,5.3,7.3,8.3,603 |
| | | | | 1.5 | 520318.03 | White | 9.5 | 4 | 2 | 609,1.2,610,5.3,7.3,8.3,603 |
| | | | | 1.5 | 520319.03 | GNYE | 9.5 | PE | PE | 609,1.2,610,5.3,7.3,8.3,603 |
| | | | | 1.5 | 520401.10 | Choc | 9.5 | 6 | 3 | 609,1.2,610,5.3,7.3,8.3,603 |
| | | | | 1.5 | 520402.10 | White | 9.5 | 8 | 4 | 609,1.2,610,5.3,7.3,8.3,603 |
| 2505 | | | | 1.5 | 520403.10 | GNYE | 9.5 | PE | PE | 609,1.2,610,5.3,7.3,8.3,603 |
| | | | | | | | | | | - |
| 72 | Lighting TB B3X1 | Light-B10 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520317.04 | Yellow | 6 | 1 | 1 | 603,8.3 |
| | | | | 1.5 | 520318.04 | Black | 6 | 2 | 2 | 603,8.3 |
| 2500 | | | | 1.5 | 520319.04 | GNYE | 6 | PE | PE | 603,8.3 |
| | | | | | | | | | | - |
| 73 | Lighting TB B3X1 | Light-B11 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520401.11 | Yellow | 4 | 3 | 1 | 603,8.3 |
| | | | | 1.5 | 520402.11 | Black | 4 | 4 | 2 | 603,8.3 |
| 2055 | | | | 1.5 | 520403.11 | GNYE | 4 | PE | PE | 603,8.3 |
| | | | | | | | | | | - |
| 74 | Lighting TB B3X1 | Light-B12 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520401.12 | Yellow | 1 | 3 | 1 | -- |
| | | | | 1.5 | 520402.12 | Black | 1 | 4 | 2 | -- |
| 2510 | | | | 1.5 | 520403.12 | GNYE | 1 | PE | PE | -- |
| | | | | | | | | | | - |
| 75 | Lighting TB B3X1 | Light-B13 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520317.05 | Yellow | 4 | 1 | 1 | 603,8.3 |
| | | | | 1.5 | 520318.05 | Black | 4 | 2 | 2 | 603,8.3 |
| 2515 | | | | 1.5 | 520319.05 | GNYE | 4 | PE | PE | 603,8.3 |
| | | | | | | | | | | - |
| 76 | Lighting TB B3X1 | Light-B14 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520401.13 | Yellow | 6 | 3 | 1 | 603,8.3 |
| | | | | 1.5 | 520402.13 | Black | 6 | 4 | 2 | 603,8.3 |
| 2320 | | | | 1.5 | 520403.13 | GNYE | 6 | PE | PE | 603,8.3 |
| | | | | | | | | | | - |
| 77 | Lighting TB B4X1 | Lighting TB B5X1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520401.03 | Yellow | 7 | 5 | 5 | 1.2,609 |
| | | | | 1.5 | 520402.03 | Black | 7 | 7 | 6 | 1.2,609 |
| | | | | 1.5 | 520403.03 | GNYE | 7 | PE | PE | 1.2,609 |
| | | | | 1.5 | 520101.06 | Red | 7 | 1 | 1 | 1.2,609 |
| | | | | 1.5 | 520102.06 | Black | 7 | 2 | 3 | 1.2,609 |
| 2355 | | | | 1.5 | 520103.06 | GNYE | 7 | PE | PE | 1.2,609 |
| | | | | | | | | | | - |
| 78 | Lighting TB B5X1 | Light-B15 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520401.05 | Yellow | 5 | 5 | 1 | 1.2,513 |
| | | | | 1.5 | 520402.05 | Black | 5 | 6 | 2 | 1.2,513 |
| 2385 | | | | 1.5 | 520403.05 | GNYE | 5 | PE | PE | 1.2,513 |
| | | | | | | | | | | - |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 79 | Lighting TB B5X1 | Light-B16 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520101.10 | Yellow | 5 | 2 | 1 | 1,2,516 |
| | | | | 1.5 | 520102.10 | Black | 5 | 4 | 2 | 1,2,516 |
| | | | | 1.5 | 520103.10 | GNYE | 5 | PE | PE | 1,2,516 |
| 2350 | | | | | | | | | | - |
| 80 | Lighting TB B5X1 | Light-B17 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520101.11 | Yellow | 2.5 | 2 | 1 | 1,2,514 |
| | | | | 1.5 | 520102.11 | Black | 2.5 | 4 | 2 | 1,2,514 |
| | | | | 1.5 | 520103.11 | GNYE | 2.5 | PE | PE | 1,2,514 |
| 2375 | | | | | | | | | | - |
| 81 | Lighting TB B5X1 | Light-B18 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520401.06 | Yellow | 5 | 5 | 1 | 1,2,517 |
| | | | | 1.5 | 520402.06 | Black | 5 | 6 | 2 | 1,2,517 |
| | | | | 1.5 | 520403.06 | GNYE | 5 | PE | PE | 1,2,517 |
| 2375 | | | | | | | | | | - |
| 82 | Lighting TB B5X1 | UHF/VHF Charging socket | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520401.06 | Yellow | 8 | - | P | 1,2,517 |
| | | | | 1.5 | 32.00 | Black | 8 | - | P | 1,2,517 |
| | | | | 1.5 | 33.00 | GNYE | 8 | - | P | 1,2,517 |
| | | | | | | | | | | - |
| 83 | Lighting TB B5X1 | Light-B19 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 32.01 | Yellow | 8 | - | 1 | 1,2,515 |
| | | | | 1.5 | 520102.07 | Black | 8 | 3 | 2 | 1,2,515 |
| | | | | 1.5 | 520103.07 | GNYE | 8 | PE | PE | 1,2,515 |
| 2390 | | | | | | | | | | - |
| 84 | Lighting TB B5X1 | Light-B20 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 33.01 | Yellow | 8 | - | 1 | 1,2,518 |
| | | | | 1.5 | 520102.08 | Black | 8 | 3 | 2 | 1,2,518 |
| | | | | 1.5 | 520103.08 | GNYE | 8 | PE | PE | 1,2,518 |
| 2230 | | | | | | | | | | - |
| 85 | SBC S1 | Exhaust fan (WC, S1 & S2) | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 330609.02 | Red | 6 | 279 | 3 | -- |
| | | | | 1.5 | 330610.02 | Yellow | 6 | 280 | 7 | -- |
| | | | | 1.5 | 330611.02 | Blue | 6 | 281 | 9 | -- |
| | | | | 1.5 | 330612.02 | GNYE | 6 | 282 | PE | -- |

**Indication Lamp Emergency Brake (PACIL)**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 2310 | | | | | | | | | | - |
| 86 | SBC S1 | PACIL-1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 320406.16 | Choc | 8 | 101 | 2 | 1,2,590 |
| | | | | 1.5 | 430102.03 | White | 8 | 099 | 1 | 1,2,590 |
| | | | | 1.5 | 4301PE.04 | GNYE | 8 | PE | PE | 1,2,590 |
| 2315 | | | | | | | | | | - |
| 87 | SBC S1 | PACIL-2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 320406.17 | Choc | 10 | 101 | 2 | 1,2,501 |
| | | | | 1.5 | 430102.07 | White | 10 | 099 | 1 | 1,2,501 |
| | | | | 1.5 | 4301PE.05 | GNYE | 10 | PE | PE | 1,2,501 |

**Indication Lamp Emergency Brake (PACIL)**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 3690 | | | | | | | | | | |
| | | | | 1.5 | 1 | Choc | 12 | 241 | | |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 88 | SBC S1 | UHF/VHF Charging socket | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 2 | White | 12 | 243 | | |
| | | | | 1.5 | 3 | Choc | 12 | 245 | | |
| | | | | 1.5 | 4 | White | 12 | 247 | | |
| | | | | 1.5 | 5 | Choc | 12 | 249 | | |
| | | | | 1.5 | 6 | White | 12 | 251 | | |
| 3695 | | | | | | | | | | |
| 89 | SBC S1 | UHF/VHF Charging socket | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 3 | Red | 12 | 270 | | |
| | | | | 1.5 | 4 | Black | 12 | 271 | | |
| | | | | 1.5 | 5 | Red | 12 | 227 | | |
| | | | | 1.5 | 6 | Black | 12 | 228 | | |
| 3700 | | | | | | | | | | |
| 90 | UHF/VHF Charging socket | Side Lamp | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 12 | Black | 10 | | | |
| | | | | 1.5 | 14 | Red | 10 | | | |
| | | | | 1.5 | 11 | Black | 5 | | | |
| | | | | 1.5 | 13 | Red | 5 | | | |
| **Fan for additional transformer** | | | | | | | | | | |
| 3685 | | | | | | | | | | |
| 91 | SBC S1 | Fan for transformer | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | cf+ | Choc | 25 | 227 | | |
| | | | | 1.5 | cf- | White | 25 | 228 | | |
| | | | | 1.5 | cf- | Grey | 25 | 229 | | |
| **Speed sensor cables** | | | | | | | | | | |
| ~~1205~~ | | | | | | | | | | - |
| ~~92~~ | ~~SBC S1~~ | ~~Anti Skid Connection Box VK-1~~ | ~~EDTS132, Rev-C AMDT-3 Data Sheet-4~~ | ~~3x1 sq.mm shielded~~ | ~~230301.02~~ | | ~~11~~ | ~~065~~ | ~~1~~ | ~~089,VK6, 076~~ |
| | | | | | ~~230302.02~~ | | | ~~066~~ | ~~2~~ | ~~089,VK6, 076~~ |
| | | | | | ~~230303.02~~ | ~~shield~~ | | ~~067~~ | ~~3~~ | ~~089,VK6, 076~~ |
| ~~1200~~ | | | | | | | | | | - |
| ~~93~~ | ~~SBC S1~~ | ~~Anti Skid Connection Box VK-2~~ | ~~EDTS132, Rev-C AMDT-3 Data Sheet-4~~ | ~~3x1 sq.mm shielded~~ | ~~230304.02~~ | | ~~12~~ | ~~068~~ | ~~1~~ | ~~089,VK6, 075~~ |
| | | | | | ~~230305.02~~ | | | ~~069~~ | ~~2~~ | ~~089,VK6, 075~~ |
| | | | | | ~~230306.02~~ | ~~shield~~ | | ~~70~~ | ~~3~~ | ~~089,VK6, 075~~ |
| ~~1145~~ | | | | | | | | | | - |
| ~~94~~ | ~~SBC S1~~ | ~~Anti Skid Connection Box VK-3~~ | ~~EDTS132, Rev-C AMDT-3 Data Sheet-4~~ | ~~3x1 sq.mm shielded~~ | ~~230307.02~~ | | ~~23~~ | ~~071~~ | ~~1~~ | ~~251,VK12,085,VK10,082~~ |
| | | | | | ~~230308.02~~ | | | ~~072~~ | ~~2~~ | ~~251,VK12,085,VK10,082~~ |
| | | | | | ~~230309.02~~ | ~~shield~~ | | ~~073~~ | ~~3~~ | ~~251,VK12,085,VK10,082~~ |
| ~~1140~~ | | | | | | | | | | - |
| ~~95~~ | ~~SBC S1~~ | ~~Anti Skid Connection Box VK-4~~ | ~~EDTS132, Rev-C AMDT-3 Data Sheet-4~~ | ~~3x1 sq.mm shielded~~ | ~~230310.02~~ | | ~~28~~ | ~~074~~ | ~~1~~ | ~~81,VK10,85,VK12,251~~ |
| | | | | | ~~230311.02~~ | | | ~~075~~ | ~~2~~ | ~~81,VK10,85,VK12,251~~ |
| | | | | | ~~230312.02~~ | ~~shield~~ | | ~~076~~ | ~~3~~ | ~~81,VK10,85,VK12,251~~ |
| **Disc Brake cables** | | | | | | | | | | |
| ~~1170~~ | | | | | | | | | | - |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| ~~96~~ | ~~SBC S1~~ | ~~Anti Skid Dump Valve-1~~ | ~~EDTS132, Rev-C AMDT-3 Data Sheet-4~~ | ~~3x1 sq.mm shielded~~ | ~~230203.01~~ | | ~~11~~ | ~~047~~ | ~~3~~ | ~~086,VK5, 095~~ |
| | | | | | ~~230204.01~~ | | | ~~048~~ | ~~4~~ | ~~086,VK5, 095~~ |
| ~~1175~~ | | | | | ~~230205.05~~ | ~~shield~~ | | ~~049~~ | ~~n.c.~~ | ~~086,VK5, 095~~ |
| | | | | | | | | | | - |
| ~~97~~ | ~~SBC S1~~ | ~~Anti Skid Dump Valve-2~~ | ~~EDTS132, Rev-C AMDT-3 Data Sheet-4~~ | ~~3x1 sq.mm shielded~~ | ~~230205.07~~ | ~~shield~~ | ~~11~~ | ~~50~~ | ~~n.c.~~ | ~~086,VK5, 097~~ |
| | | | | | ~~230208.01~~ | | | ~~055~~ | ~~3~~ | ~~086,VK5, 097~~ |
| ~~1190~~ | | | | | ~~230209.01~~ | | | ~~056~~ | ~~4~~ | ~~086,VK5, 097~~ |
| | | | | | | | | | | - |
| ~~98~~ | ~~SBC S1~~ | ~~Anti Skid Dump Valve-3~~ | ~~EDTS132, Rev-C AMDT-3 Data Sheet-4~~ | ~~3x1 sq.mm shielded~~ | ~~230205.09~~ | ~~shield~~ | ~~10~~ | ~~051~~ | ~~n.c.~~ | ~~250,VK12,087,VK7,098~~ |
| | | | | | ~~230212.01~~ | | | ~~059~~ | ~~3~~ | ~~250,VK12,087,VK7,098~~ |
| ~~1195~~ | | | | | ~~230213.01~~ | | | ~~060~~ | ~~4~~ | ~~250,VK12,087,VK7,098~~ |
| | | | | | | | | | | - |
| ~~99~~ | ~~SBC S1~~ | ~~Anti Skid Dump Valve-4~~ | ~~EDTS132, Rev-C AMDT-3 Data Sheet-4~~ | ~~3x1 sq.mm shielded~~ | ~~230205.11~~ | ~~shield~~ | ~~10~~ | ~~052~~ | ~~n.c.~~ | ~~250,VK12,087,VK7,099~~ |
| | | | | | ~~230216.01~~ | | | ~~063~~ | ~~3~~ | ~~250,VK12,087,VK7,099~~ |
| | | | | | ~~230217.01~~ | | | ~~064~~ | ~~4~~ | ~~250,VK12,087,VK7,099~~ |
| | | | | | | | | | | |
| 1100 | | | | | | | | | | - |
| 100 | SBC S1 | Pump Connection Box | EDTS132, Rev-C AMDT-4 Data Sheet-4 | 4x1.5 sq.mm multicore | 330802.02 | | 11 | 298 | 01 | 50 |
| | | | | | 330804.02 | | | 299 | 02 | 50 |
| | | | | | 330806.02 | | | 300 | 03 | 50 |
| 2020 | | | | | 330807.01 | | | 301 | 04 | 50 |
| | | | | | | | | | | - |
| 101 | SBC S1 | Pump Connection Box | EDTS132, Rev-C AMDT-4 Data Sheet-4 | 4x1.5 sq.mm multicore | 330813.02 | | 11 | 302 | 05 | 50 |
| | | | | | 330815.02 | | | 303 | 06 | 50 |
| | | | | | 330817.02 | | | 304 | 07 | 50 |
| 2020 | | | | | 330818.01 | | | 305 | 08 | 50 |
| | | | | | | | | | | - |
| 102 | SBC S1 | Pump Connection Box | EDTS132, Rev-C AMDT-4 Data Sheet-4 | 2x1 sq.mm | 330819.01 | | 11 | 029 | 09 | 50 |
| 2020 | | | | | 330820.01 | | | 030 | 10 | 50 |
| | | | | | | | | | | - |
| 103 | SBC S1 | Pump Connection Box | EDTS132, Rev-C AMDT-4 Data Sheet-4 | 2x1 sq.mm | 330810.01 | | 11 | 034 | 11 | 50 |
| | | | | | 330811.01 | | | 35 | 12 | 50 |
| | | | | UIC wiring | | | | | | |
| 3440 | | | | | | | | | | - |
| | | | | 4 | 230407.12 | Choc | 26 | 19 | 19 | 580,8.1 |
| | | | | 4 | 230408.12 | Choc | 26 | 21 | 21 | 580,8.1 |
| | | | | 4 | 230409.12 | White | 26 | 20 | 20 | 580,8.1 |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 104 | UIC connector L30 | UIC connector L31 | (4x4x1)c+2x.75 (18 core) EDTS132, Rev-C AMDT-4 Data Sheet-5 | 4 | 230410.12 | White | 26 | 22 | 22 | 580,8.1 |
| | | | | 0.75 | 320701.12 | | | 10 | 10 | 580,8.1 |
| | | | | 0.75 | 320702.12 | | | 12 | 12 | 580,8.1 |
| | | | | 0.75 | 320703.12 | | | 11 | 11 | 580,8.1 |
| | | | | 0.75 | 450101.12 | outside shi | | 13 | 13 | 580,8.1 |
| | | | | 0.75 | 450102.12 | | | 08 | 08 | 580,8.1 |
| | | | | 0.75 | 450103.12 | | | 07 | 07 | 580,8.1 |
| | | | | 0.75 | 450104.12 | | | 06 | 06 | 580,8.1 |
| | | | | 0.75 | 450105.12 | | | 05 | 05 | 580,8.1 |
| | | | | 0.75 | 450106.12 | | | 04 | 04 | 580,8.1 |
| | | | | 0.75 | 450107.12 | | 26 | 03 | 03 | 580,8.1 |
| | | | | 0.75 | 450108.12 | | | 02 | 02 | 580,8.1 |
| | | | | 0.75 | 450109.12 | | | 01 | 01 | 580,8.1 |
| | | | | 0.75 | 450113.12 | | | 09 | 09 | 580,8.1 |
| | | | | 0.75 | 450114.12 | | | 14 | 14 | 580,8.1 |
| | | | | 0.75 | 450115.12 | | | 15 | 15 | 580,8.1 |
| | | | | 0.75 | 450116.12 | | | 16 | 16 | 580,8.1 |
| | | | | 0.75 | 450117.12 | | | 17 | 17 | 580,8.1 |
| 2655 | | | | 0.75 | 450118.12 | | | 18 | 18 | 580,8.1 |
| | | | | | | | | | | - |
| 105 | SBC S1 | UIC connector L31 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 320701.04 | Choc | 10 | 10 | 10 | 1.2,584 |
| | | | | 1.5 | 320702.06 | White | 10 | 012 | 12 | 1.2,584 |
| 2305 | | | | 1.5 | 320703.04 | Choc | 10 | 011 | 11 | 1.2,584 |
| | | | | | | | | | | |
| 106 | SBC S1 | UIC connector L31 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 4 | 230407.02 | Choc. | 9 | 019 | 19 | 1.1,584 |
| | | | | 4 | 230408.02 | White | 9 | 020 | 21 | 1.1,584 |
| | | | | 4 | 230409.02 | Choc | 9 | 021 | 20 | 1.1,584 |
| | | | | 4 | 230410.02 | White | 9 | 022 | 22 | 1.1,584 |
| | | | | 1.5 | 450101.01 | Choc | 9 | 013 | 13 | 1.1,584 |
| | | | | 1.5 | 450102.01 | White | 9 | 008 | 08 | 1.1,584 |
| | | | | 1.5 | 450103.01 | Choc | 9 | 007 | 07 | 1.1,584 |
| | | | | 1.5 | 450104.01 | White | 9 | 006 | 06 | 1.1,584 |
| | | | | 1.5 | 450105.01 | Choc | 9 | 005 | 05 | 1.1,584 |
| | | | | 1.5 | 450106.01 | White | 9 | 004 | 04 | 1.1,584 |
| | | | | 1.5 | 450107.01 | Choc | 9 | 003 | 03 | 1.1,584 |
| | | | | 1.5 | 450108.01 | White | 9 | 002 | 02 | 1.1,584 |
| | | | | 1.5 | 450109.01 | Choc | 9 | 001 | 01 | 1.1,584 |
| | | | | | | | | | | - |
| 107 | UIC connector L30 | 19 Pin Socket-1 | 2 X (4 X 1.5 SQMM)EDTS132, Rev-C AMDT-4 Data Sheet-4 | 4 X 1.5 | 1 | | 7 | - | - | |
| | | | | 4 X 1.5 | 2 | | 7 | - | - | |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | - |
| 108 | UIC connector L30 | 19 Pin Socket-1 | 2 X (4 X 1.5 SQMM)EDTS132, Rev-C AMDT-4 Data Sheet-4 | 4 X 1.5 | A | | 7 | - | - | |
| | | | | 4 X 1.5 | B | | 7 | - | - | |
| | | | | | | | | | | - |
| 109 | UIC connector L31 | 14 PIN Coupler | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 5 | Grey | 3 | 14 | 5 | |
| | | | | 1.5 | 6 | Grey | 3 | 15 | 6 | |
| | | | | 1.5 | 7 | Grey | 3 | 16 | 7 | |
| | | | | 1.5 | 8 | Grey | 3 | 17 | 8 | |
| | | | | 1.5 | 11 | Grey | 3 | 18 | 11 | |
| | | | | 1.5 | 12 | Grey | 3 | 19 | 12 | |
| | | | | 1.5 | 15 | Grey | 3 | 20 | 15 | |
| | | | | 1.5 | 16 | Grey | 3 | 21 | 16 | |
| | | | **Speaker wiring** | | | | | | | |
| 2025 | | | | | | | | | | - |
| 110 | SBC S1 | Speaker -1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 450112.02 | Grey | 8 | 036 | 01 | 1.1,800 |
| | | | | 1.5 | 450202.04 | Grey | 8 | 039 | 02 | 1.1,800 |
| 2270 | | | | | | | | | | - |
| 113 | Speaker -1 | Speaker -2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 450112.04 | Choc | 5 | 01 | 01 | 800 |
| | | | | 1.5 | 450202.02 | White | 5 | 28 | 02 | 1.1,800 |
| | | | **WC wiring** | | | | | | | |
| 2020 | | | | | | | | | | - |
| 111 | SBC S1 | Terminal block WC S16 X1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 320507.04 | Choc | 9 | 25 | 04 | 1.1,401 |
| | | | | 1.5 | 320508.04 | White | 9 | 026 | 08 | 1.1,401 |
| | | | | 1.5 | 720104.01 | Choc | 9 | 210 | 11 | 1.1,401 |
| | | | | 1.5 | 720105.01 | White | 9 | 211 | 12 | 1.1,401 |
| | | | | 1.5 | 720106.03 | Choc | 9 | 207 | 13 | 1.1,401 |
| | | | | 1.5 | 720107.03 | White | 9 | 208 | 14 | 1.1,401 |
| | | | | 1.5 | 320301.20 | Choc | 9 | nc | nc | 1.1,401 |
| | | | | 1.5 | 320302.20 | White | 9 | nc | nc | 1.1,401 |
| | | | | 1.5 | Res 3 | Choc | 9 | nc | nc | 1.1,401 |
| | | | | 1.5 | Res 4 | White | 9 | nc | nc | 1.1,401 |
| 2130 | | | | | | | | | | |
| 112 | SBC S1 | Terminal block WC S16 X1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 320405.23 | Grey | 9 | 95 | 01 | |
| | | | | 1.5 | 430102.05 | Grey | 9 | 099 | 02 | |
| 2080 | | | | | | | | | | - |
| 113 | SBC S1 | Terminal block WC S16 X1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 330607.02 | Red | 9 | 227 | 23 | 1.2,402 |
| | | | | 1.5 | 330608.02 | Black | 9 | 228 | 24 | 1.2,402 |
| | | | | 1.5 | 520101.03 | Yellow | 9 | 108 | 25 | 1.2,402 |
| | | | | 1.5 | 520102.03 | Black | 9 | 109 | 27 | 1.2,402 |
| | | | | 1.5 | 520103.03 | GNYE | 9 | 110 | 26 | 1.2,402 |
| 2240 | | | | | | | | | | - |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| ~~114~~ | ~~Terminal block WC S16 X1~~ | ~~Semco Controller~~ | ~~ELRS/SPEC/ELC/0019 Rev.2 upto 750V~~ | ~~1.5~~ | ~~320507.23~~ | ~~Choc~~ | ~~1~~ | ~~04~~ | ~~01~~ | ~~710,705~~ |
| | | | | ~~1.5~~ | ~~320508.35~~ | ~~White~~ | ~~1~~ | ~~08~~ | ~~02~~ | ~~710,705~~ |
| | | | | ~~1.5~~ | ~~720102.02~~ | ~~Choc~~ | ~~1~~ | ~~09~~ | ~~04~~ | ~~710,705~~ |
| | | | | ~~1.5~~ | ~~720103.02~~ | ~~White~~ | ~~1~~ | ~~10~~ | ~~03~~ | ~~710,705~~ |
| | | | | ~~1.5~~ | ~~720104.05~~ | ~~Choc~~ | ~~1~~ | ~~11~~ | ~~03~~ | ~~710,705~~ |
| | | | | ~~1.5~~ | ~~720105.05~~ | ~~White~~ | ~~1~~ | ~~12~~ | ~~07~~ | ~~710,705~~ |
| | | | | ~~1.5~~ | ~~720106.06~~ | ~~Choc~~ | ~~1~~ | ~~13~~ | ~~18~~ | ~~710,705~~ |
| | | | | ~~1.5~~ | ~~720107.06~~ | ~~White~~ | ~~1~~ | ~~14~~ | ~~19~~ | ~~710,705~~ |
| | | | | ~~1.5~~ | ~~320301.21~~ | ~~Choc~~ | ~~1~~ | ~~13~~ | ~~18~~ | ~~710,705~~ |
| | | | | ~~1.5~~ | ~~320302.21~~ | ~~White~~ | ~~1~~ | ~~14~~ | ~~19~~ | ~~710,705~~ |
| 3490 | | | | | | | | | | - |
| 115 | Terminal block WC S16 X1 | Emergency brake handle (WC) | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 320405.24 | White | 3 | 01 | 01 | 710,735 |
| | | | | 1.5 | 430102.06 | Choc | 3 | 02 | 02 | 710,735 |
| | | | | 1.5 | 4301PE.01 | GNYE | 3 | PE | PE | 710,735 |
| 3495 | | | | | | | | | | - |
| 116 | Connector X1 | Rasor socket WC | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 330607.06 | Red | 5 | 23 | 01 | 710,720,721 |
| | | | | 1.5 | 330608.04 | Black | 5 | 24 | 2 | 710,720 |
| 3505 | | | | | | | | | | - |
| 117 | Terminal block WC S16 X1 | Light WC | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 520101.05 | Yellow | 4 | 25 | 1 | 710,725 |
| | | | | 1.5 | 520102.05 | Black | 4 | 27 | 2 | 710,725 |
| | | | | 1.5 | 520103.05 | GNYE | 4 | 26 | PE | 710,725 |
| 1120 | | | | | | | | | | - |
| ~~118~~ | ~~SBC S1~~ | ~~connection box brake container~~ | ~~ELRS/SPEC/ELC/0019 Rev.2 upto 750V~~ | ~~1.5~~ | ~~230403.02~~ | ~~Choc~~ | ~~21~~ | ~~077~~ | ~~1~~ | ~~255,VK12,065~~ |
| | | | | ~~1.5~~ | ~~230404.02~~ | ~~White~~ | ~~21~~ | ~~078~~ | ~~2~~ | ~~255,VK12,065~~ |
| | | | | ~~1.5~~ | ~~230405.02~~ | ~~White~~ | ~~21~~ | ~~079~~ | ~~3~~ | ~~255,VK12,065~~ |
| | | | | ~~1.5~~ | ~~230406.02~~ | ~~Choc~~ | ~~21~~ | ~~080~~ | ~~4~~ | ~~255,VK12,065~~ |
| | | | | ~~1.5~~ | ~~230411.01~~ | ~~GNYE~~ | ~~21~~ | ~~040~~ | ~~PE~~ | ~~255,VK12,065~~ |
| 1010 | | | | | | | | | | - |
| 119 | SBC S1 | connection box brake container | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 230101.02 | Choc | 21 | 041 | 5 | 255,VK12,065 |
| | | | | 1.5 | 230103.01 | White | 21 | 042 | 6 | |
| 1365 | | | | | | | | | | - |
| ~~120~~ | ~~connection box brake container~~ | ~~Brake cotainer~~ | ~~ELRS/SPEC/ELC/0019 Rev.2 upto 750V~~ | ~~1.5~~ | ~~230101.04~~ | ~~Choc~~ | ~~2~~ | ~~5~~ | ~~5~~ | ~~067~~ |
| | | | | ~~1.5~~ | ~~230103.03~~ | ~~Choc~~ | ~~2~~ | ~~6~~ | ~~4~~ | ~~067~~ |
| | | | | | | | | | | |

**S50 wiring**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 3650 | | | | | | | | | | |
| ~~121~~ | ~~Fire Contactor Box S50~~ | ~~Pressure Switch Fire Ex. 2~~ | ~~ELRS/SPEC/ELC/0019 Rev.2 upto 750V~~ | ~~1.5~~ | ~~320507.18~~ | ~~Choc~~ | ~~4~~ | ~~01~~ | ~~01~~ | |
| | | | | ~~1.5~~ | ~~440110.01~~ | ~~Choc~~ | ~~4~~ | ~~03~~ | ~~02~~ | |

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| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 3655 | | | | | | | | | | |
| 122 | Fire Contactor Box S50 | Pressure Switch Fire Ex.-3 | ELRS/SPEC/ELC/0019 Rev.2 upto 750V | 1.5 | 320507.17 | Choc | 4 | 01 | 01 | |
| | | | | 1.5 | 440111.02 | Choc | 4 | 04 | 02 | |
| 3660 | | | | | | | | | | |
| 123 | Fire Contactor Box S50 | Emergency Switch | ELRS/SPEC/ELC/0019 Rev.2 upto 750V | 1.5 | 320507.16 | Choc | 4 | 01 | 01 | |
| | | | | 1.5 | 440111.01 | Choc | 4 | 04 | 02 | |
| 3670 | | | | | | | | | | |
| 124 | Fire Contactor Box S50 | Heater | ELRS/SPEC/ELC/0019 Rev.2 upto 750V | 1.5 | 320508.18 | Choc | 1 | 02 | 02 | |
| | | | | 1.5 | 440110.02 | Choc | 1 | 03 | 01 | |
| 3585 | | | | | | | | | | |
| 125 | SBC S2 | Fire Contactor Box S50 | ELRS/SPEC/ELC/0019 Rev.2 upto 750V | 2.5 | 210804.01 | Choc | 15 | 38 | 05 | 1.1,801,650 |
| | | | | 2.5 | 210904.01 | Choc | 15 | 38 | 11 | 1.1,801,650 |
| 3590 | | | | | | | | | | |
| 126 | Fire Contactor Box S50 | Engine1 & 2 terminal | ELRS/SPEC/ELC/0019 Rev.2 upto 750V | 2.5 | 210808.01 | Choc | 20 | 06 | 4 | 650,801,1.1,308,C |
| | | | | 2.5 | 210908.01 | Choc | 20 | 12 | 4 | 650,801,1.1,307,A |
| 3600 | | | | | | | | | | |
| 127 | Fire Contactor Box S50 | Control Panel for Radiator-1 | ELRS/SPEC/ELC/0019 Rev.2 upto 750V | 2.5 | 330719.01 | Choc | 7 | 15 | 4 | 650,5,4,2 |
| | | | | 2.5 | 330720.01 | Choc | 7 | 16 | 5 | 650,5,4,2 |
| 3605 | | | | | | | | | | |
| 128 | Fire Contactor Box S50 | Control Panel for Radiator-2 | ELRS/SPEC/ELC/0019 Rev.2 upto 750V | 2.5 | 330721.01 | Choc | 20 | 21 | 4 | 650,5,4,2 |
| | | | | 2.5 | 330722.01 | Choc | 20 | 22 | 5 | 650,5,4,2 |
| 3615 | | | | | | | | | | |
| 129 | Fire Contactor Box S50 | Control Panel for Ventilaor-1 | ELRS/SPEC/ELC/0019 Rev.2 upto 750V | 2.5 | 330907.01 | Choc | 7 | 05 | 2 | 650,5.2,4.2,2.2 |
| | | | | 2.5 | 330913.01 | Choc | 7 | 06 | 15 | 650,5.2,4.2,2.2 |
| | | | | 2.5 | 331007.01 | Choc | 7 | 11 | 2 | 650,5.2,4.2,2.2 |
| | | | | 2.5 | 331010.01 | Choc | 7 | 12 | 16 | 650,5.2,4.2,2.2 |
| 3620 | | | | | | | | | | |
| 130 | Fire Contactor Box S50 | Control Panel for Ventilaor-1 | ELRS/SPEC/ELC/0019 Rev.2 upto 750V | 2.5 | 331107.01 | Choc | 20 | 15 | 2 | 650,5.2,6.2,9.2,11.2 |
| | | | | 2.5 | 331113.01 | Choc | 20 | 16 | 15 | 650,5.2,6.2,9.2,11.2 |
| | | | | 2.5 | 331207.01 | Choc | 20 | 21 | 2 | 650,5.2,6.2,9.2,11.2 |
| | | | | 2.5 | 331210.01 | Choc | 20 | 22 | 16 | 650,5.2,6.2,9.2,11.2 |
| 3645 | | | | | | | | | | |
| 131 | SBC S1 | Fire Contactor Box S50 | ELRS/SPEC/ELC/0019 Rev.2 upto 750V | 1.5 | 320507.15 | Choc | 7 | 25 | 01 | 1.1,609 |
| | | | | 1.5 | 320508.15 | White | 7 | 026 | 02 | 1.1,609 |

Fire alarm wiring

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DATE :02.01.2018

| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 2660 | | | | | | | | | | - |
| 132 | SBC S1 | Smoke Sensor-1 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 320507.03 | Choc | 12 | 25 | Extern + | ~~1.1,801,5,803~~ |
| | | | | 1.5 | 440102.02 | Choc | 12 | 219 | + | ~~1.1,801,5,803~~ |
| 2661 | | | | 1.5 | 440103.02 | White | 12 | 220 | - | ~~1.1,801,5,803~~ |
| ~~133~~ | ~~hooter~~ | ~~Smoke Sensor-1~~ | ~~ELRS/SPEC/ELC/0019 Rev.2 upto 750V~~ | | | | | | | - |
| 2665 | | | | ~~1.5~~ | ~~440105.02~~ | ~~Choc~~ | ~~bridge~~ | ~~1~~ | ~~Extern -~~ | |
| 134 | Smoke Sensor-1 | Smoke Sensor-2 | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | | | | | | | - |
| | | | | 1.5 | 440101.04 | Choc | 12.5 | Extern + | Extern + | 1.1,801,5.1,803 |
| | | | | 1.5 | 440105.01 | White | 12.5 | Extern - | Extern - | 1.1,801,5.1,803 |
| | | | | 1.5 | 440106.01 | Choc | 12.5 | + | + | 1.1,801,5.1,803 |
| 2670 | | | | 1.5 | 440107.01 | White | 12.5 | - | - | 1.1,801,5.1,803 |
| ~~135~~ | ~~Hooter~~ | ~~SBC S1~~ | ~~ELRS/SPEC/ELC/0019 Rev.2 upto 750V~~ | | | | | | | - |
| | | | | ~~1.5~~ | ~~320508.03~~ | ~~White~~ | ~~7~~ | ~~2~~ | ~~26~~ | ~~804~~ |
| | | | | ~~2615~~ | | | | | | |
| ~~136~~ | ~~OVR~~ | ~~DG-1~~ | ~~ELRS/SPEC/ELC/0019 Rev.2 upto 750V~~ | ~~2.5~~ | ~~320508.03~~ | ~~Blk~~ | ~~15~~ | ~~2~~ | ~~26~~ | ~~804~~ |
| | | | | ~~2.5~~ | ~~320508.03~~ | ~~Blk~~ | ~~15~~ | ~~2~~ | ~~26~~ | ~~804~~ |
| | | | | ~~2645~~ | | | | | | |
| ~~137~~ | ~~OVR~~ | ~~DG-2~~ | ~~ELRS/SPEC/ELC/0019 Rev.2 upto 750V~~ | ~~2.5~~ | ~~320508.03~~ | ~~Blk~~ | ~~17~~ | ~~2~~ | ~~26~~ | ~~804~~ |
| | | | | ~~2.5~~ | ~~320508.03~~ | ~~Blk~~ | ~~17~~ | ~~2~~ | ~~26~~ | ~~804~~ |
| | | | | ~~LWCL SWITCH~~ | | | | | | |
| ~~138~~ | ~~Radiator-1~~ | ~~Power panel~~ | ~~EDTS132, Rev-C AMDT-3 Data Sheet-4~~ | ~~3X1.0~~ | ~~320508.03~~ | ~~M-core~~ | ~~15~~ | ~~2~~ | ~~26~~ | ~~804~~ |
| | | | | ~~2615~~ | | | | | | |
| ~~139~~ | ~~Radiator-2~~ | ~~Power panel~~ | ~~EDTS132, Rev-C AMDT-3 Data Sheet-4~~ | ~~3X1.0~~ | ~~320508.03~~ | ~~M-core~~ | ~~20~~ | ~~2~~ | ~~26~~ | ~~804~~ |
| | | | | CAPACITOR BANK HARNESS | | | | | | |
| 140 | MCB 2.5A TER-2 | 1KVAR CAP | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 330418.04 | R | 8 | | | |
| | MCB 2.5A TER-4 | | | 1.5 | 330420.04 | Y | 8 | | | |
| | MCB 2.5A TER-6 | | | 1.5 | 330422.04 | B | 8 | | | |
| 141 | MCB 2.5A TER-2 | 1KVAR CAP | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 330424.04 | R | 8 | | | |
| | MCB 2.5A TER-4 | | | 1.5 | 330426.04 | Y | 8 | | | |
| | MCB 2.5A TER-6 | | | 1.5 | 330428.04 | B | 8 | | | |
| 142 | MCB 2.5A TER-2 | 1KVAR CAP | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 330315.04 | R | 8 | | | |
| | MCB 2.5A TER-4 | | | 1.5 | 330316.04 | Y | 8 | | | |
| | MCB 2.5A TER-6 | | | 1.5 | 330317.04 | B | 8 | | | |
| 143 | MCB 2.5A TER-2 | 3KVAR CAP | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 330402.04 | R | 8 | | | |
| | MCB 2.5A TER-4 | | | 1.5 | 330404.04 | Y | 8 | | | |
| | MCB 2.5A TER-6 | | | 1.5 | 330406.04 | B | 8 | | | |
| | MCB 2.5A TER-2 | | ELRS/SPEC/ELC/0019 Rev.3 upto | 1.5 | 330411.04 | R | 8 | | | |

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DATE :02.01.2018

| Har. No | From | To | Cable Spec no | X-section | number | colour | length | connection | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 144 | MCB 2.5A TER-4 | 3KVAR CAP | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 330413.04 | Y | 8 | | | |
| | MCB 2.5A TER-6 | | | 1.5 | 330415.04 | B | 8 | | | |
| 145 | - | SPARE | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | SPARE | R | 8 | | | |
| | - | | | 1.5 | SPARE | Y | 8 | | | |
| | - | | | 1.5 | SPARE | B | 8 | | | |
| 146 | **Harness for Regulated/Emergency Battery Charger** | | | | | | | | | |
| | Wago Strip | RBC | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 6 | DC+VE | White | 2 | 1 | 2 | |
| | | | | 6 | DC+VE | Choc | 2 | 1 | 2 | |
| | | | | 4 | 230P | R | 2 | 1 | 2 | |
| | | | | 4 | 230N | Blk | 2 | 1 | 2 | |
| | DC Fuse | EBC | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 6 | DC+VE | White | 2 | 1 | 2 | |
| | | | | 6 | DC+VE | Choc | 2 | 1 | 2 | |
| | K43 | EBC through interlock contactor | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 4 | 230P | R | 2 | 1 | 2 | |
| | | | | 4 | 230N | Blk | 2 | 1 | 2 | |
| | 1,2 NC K9,K10 | EBC | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 1 | Blk | 2 | 1 | 2 | |
| | | | | 1.5 | 2 | Blk | 2 | 1 | 2 | |
| | 3,4 NO interlocking contactor | EBC | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 3 | Blk | 2 | 1 | 2 | |
| | | | | 1.5 | 4 | Blk | 2 | 1 | 2 | |

~~Note: 1) 1.5 mm² cable Data Sheet 2A, Table-1 ( Grey color) of 80 meter length to be supplied loose for vane relay wiring.~~

~~2) The core color of the multicore cables shall be as per specification no. EDTS132, Rev.C Am-1,2&3 for respective data sheets of the cable.~~

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DATE :02.01.2018

| binding | cross section | | number | colour | length | Equipment | source | item | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 1210 | | | | | | | | | | - |
| 1210 | 35 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 460108 | GNYE | 0.5 | Blind Socket | +A20 | =46-A1 | PE | 101 |
| 1220 | | | | | | | | | | - |
| 1220 | 50 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230507 | GNYE | 0.5 | Wheel Set Earthing-1 | +VKG1S1 | =23-S2 | PE | 105 |
| 1225 | | | | | | | | | | - |
| 1225 | 95 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230506 | GNYE | 0.5 | DG Set-1 | +DG1 | | PE | 106 |
| 1230 | | | | | | | | | | - |
| 1230 | 35 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230509 | GNYE | 0.5 | wheel set earthing-resistance | +VKG2R2 | =23-R3 | PE | 107 |
| 1235 | | | | | | | | | | - |
| 1235 | 35 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 460109 | GNYE | 0.5 | Blind Socket | +A21 | =46-A2 | PE | 111 |
| 1240 | | | | | | | | | | - |
| 1240 | 50 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230502 | GNYE | 0.5 | Wheel Set Earthing-2 | +VKG4S1 | =23-S3 | PE | 115 |
| 1245 | | | | | | | | | | - |
| 1245 | 95 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230501 | GNYE | 0.5 | DG Set-1 | +DG2 | | PE | 116 |
| 1250 | | | | | | | | | | - |
| 1250 | 35 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230505 | GNYE | 0.5 | wheel set earthing-resistance | +VKG3R1 | =23-R4 | PE | 117 |
| 1255 | | | | | | | | | | - |
| 1255 | 50 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 320207 | GNYE | 0.5 | Battery Fuse Box +VE | +S 4 | =32-A3 | PE | 120 |
| 1260 | | | | | | | | | | - |
| 1260 | 50 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 320114 | GNYE | 0.5 | Battery 110V | +S 3 | =32-A2 | PE | 121 |
| 1265 | | | | | | | | | | - |
| 1265 | 50 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 320208 | GNYE | 0.5 | Battery Fuse Box -VE | +S 5 | =32-A4 | PE | 122 |
| 1270 | | | | | | | | | | - |
| 1270 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 121012.01 | GNYE | 0.5 | Main Transformer-1 | +S 7 | =12-T24 | PE | 124 |
| 1271 | | | | | | | | | | - |
| 1271 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 121012.02 | GNYE | 0.5 | Main Transformer-1 | +S 7 | =12-T24 | PE | 155 |
| 1275 | | | | | | | | | | - |
| 1275 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230412 | GNYE | 0.5 | Brake Contalner | +S 6 | =23-A1 | PE | 126 |
| 1280 | | | | | | | | | | - |
| 1280 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330828 | GNYE | 0.5 | water filler | +S22 | =33-A 8 | PE | 123 |
| 1285 | | | | | | | | | | - |
| 1285 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 1202PE.04 | GNYE | 0.5 | IVC A17 | +A17X1 | =12-X 1 | PE | 128 |
| 1286 | | | | | | | | | | - |
| 1286 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 120413 | GNYE | 0.5 | IVC A17 | +A17 | | PE | 152 |
| 1290 | | | | | | | | | | - |
| 1290 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 1206PE.04 | GNYE | 0.5 | IVC A16 | +A16X1 | =12-X 2 | PE | 129 |
| 1291 | | | | | | | | | | - |
| 1291 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 120812 | GNYE | 0.5 | IVC A16 | +A16 | | PE | 153 |
| 1295 | | | | | | | | | | - |
| 1295 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 120411.01 | GNYE | 0.5 | IVC A18 | +A18X1 | =12-X 3 | PE | 130 |
| 1296 | | | | | | | | | | - |
| 1296 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 120412 | GNYE | 0.5 | IVC A18 | +A18 | | PE | 150 |
| 1300 | | | | | | | | | | - |
| 1300 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 120811.01 | GNYE | 0.5 | IVC A19 | +A19X1 | =12-X 4 | PE | 131 |
| 1301 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 120813 | GNYE | 0.5 | IVC A19 | +A19 | | PE | 151 |
| 1305 | 35 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230508 | GNYE | 0.5 | wheel set earthing-resistance | +VKG1R1 | =23-R4 | PE | 132 |
| 1310 | | | | | | | | | | - |
| 1310 | 35 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230510 | GNYE | 0.5 | wheel set earthing-resistance | +VKG2R1 | =23-R1 | PE | 133 |
| 1315 | 35 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230504 | GNYE | 0.5 | wheel set earthing-resistance | +VKG3R2 | =23-R5 | PE | 134 |
| 1320 | 35 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230503 | GNYE | 0.5 | wheel set earthing-resistance | +VKG4R1 | =23-R6 | PE | 135 |
| 1325 | | | | | | | | | | - |
| 1325 | 6 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230219 | GNYE | 0.5 | solenoid valve wsp axle 1 | +VKM1.1 | =23-Y1.1 | PE | 140 |
| 1330 | 6 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230218 | GNYE | 0.5 | solenoid valve wsp axle 1 | +VKM1.2 | =23-Y1.2 | PE | 141 |

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Ferrules check



| binding | cross section | | number | colour | length | Equipment | source | item | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 1335 | 6 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230221 | GNYE | 0.5 | solenoid valve wsp axle 2 | +VKM2.1 | =23-Y2.1 | PE | 142 |
| 1340 | | | | | | | | | | - |
| 1340 | 6 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230220 | GNYE | 0.5 | solenoid valve wsp axle 2 | +VKM2.2 | =23-Y2.2 | PE | 143 |
| 1345 | 6 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230222 | GNYE | 0.5 | solenoid valve wsp axle 3 | +VKM3.1 | =23-Y3.1 | PE | 144 |
| 1350 | 6 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230223 | GNYE | 0.5 | solenoid valve wsp axle 3 | +VKM3.2 | =23-Y3.2 | PE | 145 |
| 1355 | | | | | | | | | | - |
| 1355 | 6 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230224 | GNYE | 0.5 | solenoid valve wsp axle 4 | +VKM4.1 | =23-Y4.1 | PE | 146 |
| 1360 | 6 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230225 | GNYE | 0.5 | solenoid valve wsp axle 4 | +VKM4.2 | =23-Y4.2 | PE | 147 |
| 1375 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330829 | GNYE | 0.5 | Connection box water pump | +VK8 | | PE | 156 |
| 1375 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330829 | GNYE | 0.5 | Connection box water pump | +VK8 | | PE | 156 |
| 1380 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 230511 | GNYE | 0.5 | diesel tank | +S23 | | PE | 148 |
| 1385 | | | | | | | | | | - |
| 1490 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 121112.01 | GNYE | 0.5 | main transformer-2 | +S 8 | =12-T28 | PE | 125 |
| 1491 | | | | | | | | | | - |
| 1491 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 121112.02 | GNYE | 0.5 | main transformer-2 | +S 8 | =12-T28 | PE | 154 |
| 3540 | | | | | | | | | | - |
| 3540 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 2107PE.02 | GNYE | 0.5 | SBC S2 | +S2 | | PE | 368 |
| 3545 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 2107PE.03 | GNYE | 0.5 | SBC S2 | +S2 | | PE | 369 |
| 3550 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 3203PE.01 | GNYE | 0.5 | SBC S1 | +S1 | | PE | 370 |
| 3555 | | | | | | | | | | - |
| 3555 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 3203PE.02 | GNYE | 0.5 | SBC S1 | +S1 | | PE | 371 |
| 3560 | 2.5 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 4301PE.02 | GNYE | 0.5 | Lav. Terminal box | +S16X1 | =72-X1 | PE | 356 |
| 3570 | 35 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 120921.01 | GNYE | 0.5 | diconnecting and earthing device | +S1A2 | =12-A11 | PE | |
| 3575 | | | | | | | | | | |
| 3575 | 35 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 120922.01 | GNYE | 5 | diconnecting and earthing device | +S1A2 | =12-A11 | PE | |
| 3580 | 6 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 320114.01 | GNYE | 0.5 | Battery Charger | +S1A3 | =32-A1 | PE | |
| 3445 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330435 | GNYE | 0.5 | Package Unit | +U1 | | PE | 600 |
| 3445 | 70 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330435 | GNYE | 0.5 | Package Unit | +U1 | | PE | 600 |
| 3450 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330917.01 | GNYE | 0.5 | Ventilator Control panel-1 | +S301 | | PE | 364 |
| 3455 | | | | | | | | | | - |
| 3455 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 331017.01 | GNYE | 0.5 | Ventilator Control panel-1 | +S301 | | PE | 365 |
| 3460 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 331117.01 | GNYE | 5 | Ventilator Control panel-2 | +S311 | | PE | 352 |
| 3465 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 331217.01 | GNYE | 0.5 | Ventilator Control panel-2 | +S311 | | PE | 353 |
| 2275 | | | | | | | | | | - |
| 2275 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330708.01 | GNYE | 0.5 | Radiator Control panel-1 | +S302 | -972 | earth | 366 |
| 2276 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330717 | GNYE | 0.5 | Radiator Control panel-1 | +S302 | -972 | earth | 367 |

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| binding | cross section | | number | colour | length | Equipment | source | item | connection | way |
|---|---|---|---|---|---|---|---|---|---|---|
| 2280<br>2281 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330716.01 | GNYE | 0.5 | Radiator Control panel-2 | +S312 | =33-A11 | earth | 350 |
| 2281 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330718 | GNYE | 0.5 | Radiator Control panel-2 | +S312 | =33-A11 | earth | 351 |
| 2285 | 10 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330704.02 | GNYE | 0.5 | Radiator-1 | +S32M1 | =33-M22 | earth | 354 |
| 2286<br>2290 | 10 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330704.01 | GNYE | 0.5 | Radiator-1 | +S32M1 | =33-M22 | earth | 355 |
| 2290 | 2.5 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 1202PE.11 | GNYE | 0.5 | Ventilator-1.1 | +S33M1 | =33-M20 | earth | 359 |
| 2295 | 2.5 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 1202PE.14 | GNYE | 0.5 | Ventilator-1.2 | +S34M1 | =33-M21 | earth | 360 |
| 2300<br>2301 | 10 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330712.02 | GNYE | 0.5 | Radiator-2 | +S35M1 | #REF! | earth | 361 |
| 2301 | 10 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330712.01 | GNYE | 0.5 | Radiator-2 | +S35M1 | #REF! | earth | 362 |
| 2260 | 2.5 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 1206PE.11 | GNYE | 0.5 | Ventilator-2.1 | +S36M1 | =33-M23 | earth | 357 |
| 2265<br>2325 | 2.5 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 1206PE.14 | GNYE | 0.5 | Ventilator-2.2 | +S37M1 | =33-M24 | earth | 358 |
| 2325 | 10 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330613.01 | GNYE | 0.5 | exhaust fan (toilet 1 ) | +S30M1 | =33-M11 | earth | 374 |
| 2365 | 10 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 330613.01 | GNYE | 0.5 | St. Batt. Control panel | +S40 | | earth | 362 |
| 2426 | 95 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 1201PE.01 | GNYE | 2.5 | Alternator-1 | +AX1 | =12-G1 | PE | 373 |
| 2426 | 95 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 1201PE.03 | GNYE | 1 | Alternator-1 | +AX1 | =12-G1 | PE | 373 |
| 3640 | 95 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 2102PE.03 | GNYE | 0.5 | SBC S2 | +S2X1 | | PE | |
| 3640 | 95 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 2106PE.03 | GNYE | 0.5 | SBC S2 | +S2X2 | | PE | |
| 3610<br>2446 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 2107PE.01 | GNYE | 0.5 | CONTROL PANEL FOR St. Battery | +S40 | | PE | 363 |
| 2446 | 95 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 1205PE.01 | GNYE | 2.5 | Alternator-2 | +BX1 | =12-G2 | PE | 372 |
| 2446<br>2635 | 95 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 1205PE.03 | GNYE | 1 | Alternator-2 | +BX1 | =12-G2 | PE | 372 |
| 2635 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 1206PE.08 | GNYE | 23 | SBC S2 | +S 2X2 | | 8(PE) | .2,4.2,5.2,6.2,9.2 |
| 2610 | 16 | ELRS/SPEC/ELC/0019 Rev.2 upto 750 V | 1202PE.08 | GNYE | 11 | SBC S2 | +S 2X1 | | 8(PE) | 706,2.2 |

NOTE: Earthing cables of GNYE color of size 2.5mm², 6mm², 10mm², 16mm², 35mm², 50mm², 70mm² & 95mm² specified from binding/S.no. 1210 to 2610 shall be supplied loose without cutting in single length.

SSE/CAD SEE/D DY.CEE/D D

ANNEXURE-D
EDTS 257 Rev-K

**Break up of End fittings for reference at shop floor**

| PUMP | | | | | |
|---|---|---|---|---|---|
| **Size** | **Location on item** | **Qty** | **Termination at other location** | **Qty** | **Overall QPC** |
| PG-11 | Pump | 2 | Connection box | 2 | 4 |
| PG-21 | Connection Box for Pump | 1 | Through Box | 1 | 2 |
| **60 KVA TRANSFORMER-1** | | | | | |
| PG-29 | Input Side | 1 | Through Box | 1 | 2 |
| PG-36 | Output Side | 1 | Through Box | 1 | 2 |
| **60 KVA TRANSFORMER-2** | | | | | |
| PG-29 | Input Side | 1 | Through Box | 1 | 2 |
| PG-36 | Output Side | 1 | Through Box | 1 | 2 |
| **60 KVA TRANSFORMER-3** | | | | | |
| PG-29 | Input Side | 1 | Through Box | 1 | 2 |
| PG-36 | Output Side | 1 | Through Box | 1 | 2 |
| **PRE-COOLING SOCKET** | | | | | |
| PG-36 | End wall | 2 | Through Box | 2 | 4 |
| **Capacitor Bank** | | | | | |
| PG-21 | Input & Output Side | 0 | Through Box | 1 | 1 |
| **AIR BRAKE MODULE** | | | | | |
| PG-17 | Pressure Switch | 1 | Through Box | 1 | 2 |
| **WSP ITEMS** | | | | | |
| PG-17 | VK-1 | 1 | VK-6 | 1 | 2 |
| PG-17 | VK-2 | 1 | VK-6 | 1 | 2 |
| PG-21 | **SBC to VK-6** | 1 | VK-6 | 1 | 2 |
| PG-17 | VK-3 | 1 | Through Box | 1 | 2 |
| PG-17 | VK-4 | 1 | | 1 | 2 |
| PG-21 | **SBC to VK-7** | 1 | Through Box | 1 | 2 |
| PG-17 | VK-7 to EVR-1 | 1 | - | 0 | 1 |
| PG-17 | VK-7 to EVR-2 | 1 | - | 0 | 1 |
| PG-17 | VK-7 to EVR-3 | 1 | - | 0 | 1 |
| PG-17 | VK-7 to EVR-4 | 1 | - | 0 | 1 |
| PG-21 | **SBC to VK-5** | 1 | VK-5 | 1 | 2 |
| PG-17 | VK-5 to EVR-1 | 1 | - | | 1 |
| PG-17 | VK-5 to EVR-2 | 1 | - | | 1 |
| PG-17 | VK-5 to EVR-3 | 1 | - | | 1 |
| PG-17 | VK-5 to EVR-4 | 1 | - | | 1 |
| **HOG COMPLIANT** | | | | | |
| PG-21 | 100 VA TRANSFORMER | 3 | Through Box | 0 | 3 |
| **BATTERY AND FUSE BOXES** | | | | | |
| PG-21 | Battery Box | 1 | +ve Fuse Box | 1 | 2 |
| PG-21 | Battery Box | 1 | -ve Fuse Box | 1 | 2 |
| PG-21 | +ve Fuse Box to SBC | 1 | Through Box | 1 | 2 |
| PG-21 | +ve Fuse Box to SBC | 1 | Through Box | 1 | 2 |
| PG-21 | -ve Fuse Box to SBC | 1 | Through Box | 1 | 2 |
| PG-16 | -ve Fuse Box to SBC | 1 | Through Box | 1 | 2 |
| PG-16 | +ve Fuse Box | 1 | Battery Box | 1 | 2 |

**Total End fittings:**

| S.no. | Item | QPC as per drawing |
|---|---|---|
| 1. | End fitting PG-11 , straight | **4** |
| 2 | End fitting PG-16 , straight | **22** |
| 3 | End fitting PG-21 , straight | **20** |
| 4 | End fitting PG-29 , straight | **6** |
| 5 | End fitting PG-36 , straight | **10** |

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ANNEXURE-E

# DETAILS OF WIRING for HOG compliant Power Car

**BILL OF MATERIAL:-**

EDTS 257 REV-K

| S.NO | DESCRIPTION | CABLE SIZE IN $mm^2$ | DETAIL DRG/SPEC | OPC/ COACH | REMARKS/ LOCATION |
|---|---|---|---|---|---|
| 1. | Thin walled flexible elastomeric cables with copper conductors color 'Black' upto 750 V | 1.5 | ELRS/SPEC/ELC/0019 Rev.3. | 744 Mt | HOG Compliant |

Bunching of cable harnesses shall be shall be as under:

| Har. No | From | To | Cable Spec no | X-section | number | colour | Length in mtrs |
|---|---|---|---|---|---|---|---|
| 147 | HOG Panel | ACB | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | X1-1(ACB-A) | Black | 8 |
| | | | | 1.5 | X1-2(ACB-B) | Black | 8 |
| | | | | 1.5 | 1V-A-C1 | Black | 8 |
| | | | | 1.5 | 1V-B-C1 | Black | 8 |
| 148 | HOG Panel | Main Panel | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 1D10 | Black | 8 |
| | | | | 1.5 | 1D10A | Black | 8 |
| | | | | 1.5 | 120211.01 | Black | 8 |
| | | | | 1.5 | ACB-A-UV | Black | 8 |
| | | | | 1.5 | N-1 | Black | 8 |
| | | | | 1.5 | 120104.05 | Black | 8 |
| | | | | 1.5 | X3-7(ACB-A) | Black | 8 |
| | | | | 1.5 | X3-8(K2B2) | Black | 8 |
| | | | | 1.5 | X3-9(ACB-B) | Black | 8 |
| | | | | 1.5 | X3-10( K2A2) | Black | 8 |
| | | | | 1.5 | K2B1 | Black | 8 |
| | | | | 1.5 | K2A1 | Black | 8 |
| | | | | 1.5 | 2D10 | Black | 8 |
| | | | | 1.5 | 2D10A | Black | 8 |
| | | | | 1.5 | 120611.01 | Black | 8 |
| | | | | 1.5 | ACB-B-UV | Black | 8 |
| | | | | 1.5 | N-2 | Black | 8 |
| | | | | 1.5 | 120104.25 | Black | 8 |
| 149 | PT (HOG) Input | Main Panel | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 120303.04 | Black | 8 |
| | | | | 1.5 | 120302.01 | Black | 8 |
| | | | | 1.5 | 120703.04 | Black | 8 |
| | | | | 1.5 | 120702.01 | Black | 8 |
| | | | | 1.5 | 120302.06 | Black | 8 |
| | | | | 1.5 | 120303.05 | Black | 8 |
| | | | | 1.5 | 120310.03 | Black | 8 |
| | | | | 1.5 | 120311.01 | Black | 8 |
| | | | | 1.5 | 120702.06 | Black | 8 |
| | | | | 1.5 | 120703.05 | Black | 8 |
| | | | | 1.5 | 120710.03 | Black | 8 |
| | | | | 1.5 | 120711.01 | Black | 8 |
| 150 | PT (HOG) output | Main Panel | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | K1-A1 1 | Black | 8 |
| | | | | 1.5 | K1-A2 2 | Black | 8 |
| | | | | 1.5 | K3-A1 3 | Black | 8 |
| | | | | 1.5 | K3-A2 4 | Black | 8 |
| | | | | 1.5 | K4-A1 5 | Black | 8 |
| | | | | 1.5 | K4-A2 6 | Black | 8 |
| | | | | 1.5 | K5-A1 7 | Black | 8 |
| | | | | 1.5 | K5-A2 8 | Black | 8 |
| | | | | 1.5 | K6-A1 9 | Black | 8 |
| | | | | 1.5 | K6-A2 10 | Black | 8 |
| | | | | 1.5 | K7-A1 11 | Black | 8 |
| | | | | 1.5 | K7-A2 12 | Black | 8 |
| 151 | Main Panel | HOG Panel | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 120302.01 | Black | 8 |
| | | | | 1.5 | 120303.01 | Black | 8 |
| | | | | 1.5 | 120702.01 | Black | 8 |
| | | | | 1.5 | 120703.01 | Black | 8 |

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|---|---|---|---|---|---|---|---|
| 152 | Main Panel | Main Panel | | 1.5 | 120409.03 | Black | 8 |
| | | | | 1.5 | 120410.03 | Black | 8 |
| | | | | 1.5 | 210308.03 | Black | 8 |
| | | | | 1.5 | 210308.03A | Black | 8 |
| | | | | 1.5 | 210314.03 | Black | 8 |
| 152A | Main Panel | Main Panel | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 120809.03 | Black | 8 |
| | | | | 1.5 | 120810.03 | Black | 8 |
| | | | | 1.5 | 210309.03 | Black | 8 |
| | | | | 1.5 | 210309.03a | Black | 8 |
| | | | | 1.5 | 210315.03 | Black | 8 |
| 153 | Main Panel | Main Panel | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 120203.01 | Black | 8 |
| | | | | 1.5 | 120204.01 | Black | 8 |
| | | | | 1.5 | 120205.01 | Black | 8 |
| | | | | 1.5 | CT-S2-A | Black | 8 |
| 153A | Main Panel | Main Panel | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | 120603.01 | Black | 8 |
| | | | | 1.5 | 120604.01 | Black | 8 |
| | | | | 1.5 | 120605.01 | Black | 8 |
| | | | | 1.5 | CT-S2-B | Black | 8 |
| 154 | Main Panel | Main Panel | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | DG-A-L1 | Black | 8 |
| | | | | 1.5 | DG-A-L2 | Black | 8 |
| | | | | 1.5 | DG-A-L3 | Black | 8 |
| | | | | 1.5 | HOG-A-L1 | Black | 8 |
| | | | | 1.5 | HOG-A-L2 | Black | 8 |
| | | | | 1.5 | HOG-A-L3 | Black | 8 |
| | | | | 1.5 | PT-A-L1 | Black | 8 |
| | | | | 1.5 | PT-A-L2 | Black | 8 |
| | | | | 1.5 | PT-A-L3 | Black | 8 |
| 154A | Main Panel | Main Panel | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | DG-B-L1 | Black | 8 |
| | | | | 1.5 | DG-B-L2 | Black | 8 |
| | | | | 1.5 | DG-B-L3 | Black | 8 |
| | | | | 1.5 | HOG-B-L1 | Black | 8 |
| | | | | 1.5 | HOG-B-L2 | Black | 8 |
| | | | | 1.5 | HOG-B-L3 | Black | 8 |
| | | | | 1.5 | PT-B-L1 | Black | 8 |
| | | | | 1.5 | PT-B-L2 | Black | 8 |
| | | | | 1.5 | PT-B-L3 | Black | 8 |
| 155 | Main Panel | HOG Panel | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | +24V | Black | 8 |
| | | | | 1.5 | -24V | Black | 8 |
| 156 | - | - | ELRS/SPEC/ELC/0019 Rev.3 upto 750V | 1.5 | SPARE | Black | 8 |
| | | | | 1.5 | SPARE | Black | 8 |
| | | | | 1.5 | SPARE | Black | 8 |
| | | | | 1.5 | SPARE | Black | 8 |
| | | | | 1.5 | SPARE | Black | 8 |

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## Corrigendum -1 to specification no EDTS 257 Rev K

This corrigendum is issued to specification no EDTS 257 Rev. 'K' for ' Harness of Under frame and Roof arrangement for LHB EOG AC Power Car coaches' to change the scope of supply as follows:

**Clause 2.0 (i) shall be read as:**

2.0 Scope of supply:

(i) Procurement of the item specified in BOM of the specification shall be from RDSO/RCF/ICF approved vendors mentioned in the latest version of the vendor directory issued by RCF/ICF/RDSO respectively, however The procurement of cables shall be done from RDSO 'approved vendors' for minimum 80% quantity of NPQ and balance 20% quantity from 'developmental vendors' as mentioned in latest version of the vendor directory issued by RDSO.

Based on the procurement of various sizes of cables from either approved or developmental sources, the cable harness shall be categorized as under:

- Category-A Cable Harness with approved sources of cables (80% min.)
- Category-B Cable Harness with developmental sources of cables (up to 20%)

Category-B type of cable harnesses may be supplied with cables procured from developmental sources however in no case category-A type shall be supplied with cables procured from developmental sources.

Firm shall maintain a record according to the above classification and offer to RITES/inspecting official for inspection in format EDF 0001 annexed with the specification.

| | | | | | | |
|---|---|---|---|---|---|---|
| EDTS-257 Rev. K | 1 | 19.07.18 | | | | 1 of 1 |
| Spec. No | Corr. | Date | SSE/CAD | SEE/D | Dy.CEE/D&D | Page |

*Corrigendum - 2*

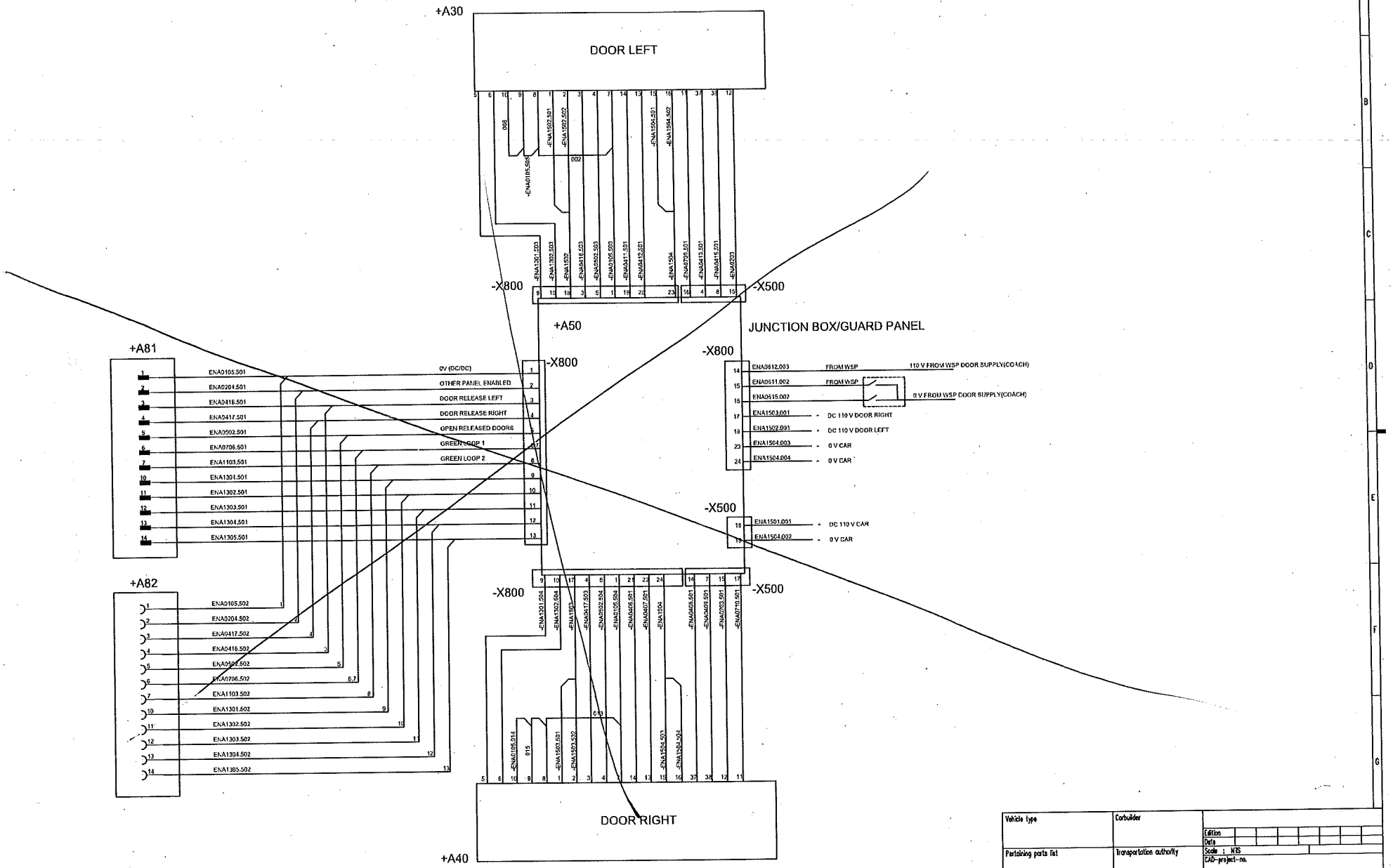
**Corrigendum -2 to specification no EDTS 257 Rev K, Corr.1**

This corrigendum is issued to specification no EDTS 257 Rev. 'K' Corr.1 for ' Harness of Under frame and Roof arrangement for LHB EOG AC Power Car coaches' and the details are as follows:

The specification no. EDTS 132 Rev C, AM-4 may be read as EDTS 132 Rev C, AM-3, Corr.1.

| | | | | | | |
|---|---|---|---|---|---|---|
| EDTS-257 Rev. K ,Corr.1 | 2 | 06.11.18 | | | | 1 of 1 |
| Spec. No | Corr. | Date | SSE/CAD | SEE/D | Dy.CEE/D&D | Page |

RCF




Note : For reference purpose only

| | | | |
|---|---|---|---|
| Vehicle type | Carbuilder | | Edition |
| Pertaining parts list | Transportation authority | | Date |
| | | | Scale : NTS |
| | | | CAD-project-no. |
| | Date | Name | INTEGRATION OF WIRING DIAGRAM FOR DOOR SYSTEM (POWER CAR) |
| | Creat. | | |
| | Check. | | |
| | Rel. | | |
| | FAR-RMS | ACAD | |
| | KNORR-BREMSE INDIA PVT. LIMITED PALWAL-121102 | | Sheet 1 |
| Rev. Change | Date Name Origin | Sepera | Supply EN 1 Sh. |

MCF/RBL

## Corrigendum -3 to specification no EDTS 257 Rev K, Corr.2

This corrigendum is issued to specification no EDTS 257 Rev. 'K'Corr.2 for ' Harness of Under frame and Roof arrangement for LHB Power Car coaches' and the details are as follows:

1. **Clause 2.1 (a) : BILL OF MATERIAL**

   S.no. 105 in the clause no. 2.1 (a) A in the BOM added to include the QPC of 121 meters for 3x1.0 mm² (DS-4) multi-core cables 600/1000V colour wh,Br,Blk as follows:

| S.NO. | DESCRIPTION | CABLE SIZE mm² | DETAIL DRG./SPEC | QPC/ COACH | REMARKS/LOCATION |
|---|---|---|---|---|---|
| 105 | 3X1.0 mm² multi-core screened cables 600/1000V grade, color W,Br,Blk | 3X1.0 | EDTS 132 Rev 'C', AM-3,Corr.1 or latest Version | 121 Mt. | Speed Sensor/Disc Brake cables |

2. **Clause 2.1 (b) VII & VIII :**

   Harness nos. in the Annexure-A mentioned from S.no. 92 to S.no. 99 to be supplied as indicated against Speed Sensor/Disc Brake cables.

3. **Clause 5.9 (a): S.no.6:**

   ISI marked indicated in the clause no. 5.9(a) at S.no.6 stands deleted and FRLT tapes shall be procured as per specification no. ICF/ELEC/921 Rev.0 or Latest Version from approved sources mentioned in the vendor directory issued by ICF.

4. Thin walled flexible elastomeric cables with copper conductors to be procured as per latest applicable Version of specification no. ELRS/SPEC/ELC/0019 against which the sources are approved by RDSO.

5. Conduit system for cable management to be procured as per latest applicable Version of the specification no. RDSO/PE/SPEC/AC/0138 against which sources are approved by RDSO.

6. Cable marking system, Cable Jacket system & Cable binders shall be procured as per Latest applicable specification/drawing and from approved sources in the vendor directory issued by RCF.

7. **Clause no. 5.9(a) Details of Testing:**

   S.no. (1) g may be read as **:** Slippage test as per clause 7.4.6 of the RDSO spec. ( two samples for size less than 25mm dia and two samples for dia more than 25mm).

8. **Annexure –A :**

   a) (Harness no.22 &23) : 10nos. 2.5 mm² cables of chocolate colour deleted from harness no. 9 and harness no. 10 each.

   b) Harness no. 34, 35, 39 & 40 deleted.

   c) Length of Harness no. 104 increased from 26 m to 28 m.

   d) Harness no. 33 & 38 modified as:

| S.no. | Harness no. | Form | To | Cable size mm² | Rating of cables | Color | Specified length |
|---|---|---|---|---|---|---|---|
| 33 | 33/2605 | SBC S2 | Radiator control panel-1 | 25 mm² | upto 750V | R | 9.5 m |
| | | | | 25 mm² | upto 750V | Y | 9.5 m |
| | | | | 25 mm² | upto 750V | B | 9.5 m |
| | | | | 25 mm² | upto 750V | Blk | 9.5 m |
| 38 | 38/2630 | SBC S2 | Radiator control panel-2 | 25 mm² | upto 750V | R | 11.5 m |
| | | | | 25 mm² | upto 750V | Y | 11.5 m |
| | | | | 25 mm² | upto 750V | B | 11.5 m |
| | | | | 25 mm² | upto 750V | Blk | 11.5 m |

**9.** The following harness added for additional battery charger:

H.no. 30 A, 31 A & 32 A added as per following details:

| S.no. | Harness no. | Form | To | Cable size mm² | Rating of cables | Color | Specified length |
|---|---|---|---|---|---|---|---|
| 30A | 30/2495 | SBC S2 | St. Battery charger | 16 mm² | upto 750V | W | 19 |
| | | | | 16 mm² | upto 750V | CH | 19 |
| 31A | 31/2625 | SBC S2 | St. Battery charger | 2.5 mm² | upto 750V | CH | 10 |
| | | | | 2.5 mm² | upto 750V | CH | 10 |
| | | | | 2.5 mm² | upto 750V | CH | 10 |
| 32A | 31/2625 | SBC S1 | St. Battery charger | 1.5 mm² | upto 750V | Blk | 12 |
| | | | | 1.5 mm² | upto 750V | Red | 12 |
| | | | | 2.5 mm² | upto 750V | GNYE | 12 |

**10.** The length of the following harness nos. modified and tabulated below:

| S.no. | Harness no. | Form | To | Cable size mm² | Rating of cables | Color | Specified length | Revised length |
|---|---|---|---|---|---|---|---|---|
| 1 | 1/1015 | SBC S2 | A18 | 150 mm² | 1.8/3.0 KV | R | 24.5 m | 22 m |
| | | | | 150 mm² | 1.8/3.0 KV | Y | 24.5 m | 22 m |
| | | | | 150 mm² | 1.8/3.0 KV | B | 24.5 m | 22 m |
| | | | | 95 mm² | 1.8/3.0 KV | Blk | 24.5 m | 22 m |
| 2 | 5/1030 | SBC S2 | A19 | 150 mm² | 1.8/3.0 KV | R | 24.5 m | 21 m |
| | | | | 150 mm² | 1.8/3.0 KV | Y | 24.5 m | 21 m |
| | | | | 150 mm² | 1.8/3.0 KV | B | 24.5 m | 21 m |
| | | | | 95 mm² | 1.8/3.0 KV | Blk | 24.5 m | 21 m |
| 3 | 18/3675 | SBC S1 | On Board Transformer | 25 mm² | 1.8/3.0 KV | R | 20 m | 18 .5 m |
| | | | | 25 mm² | 1.8/3.0 KV | Y | 20 m | 18 .5 m |
| | | | | 25 mm² | 1.8/3.0 KV | B | 20 m | 18 .5 m |
| | | | | 25 mm² | 1.8/3.0 KV | Blk | 20 m | 18 .5 m |
| 4 | 19/3680 | On Board Transformer | SBC S1 | 50 mm² | 1.8/3.0 KV | R | 21.5 m | 20 m |
| | | | | 50 mm² | 1.8/3.0 KV | Y | 21.5 m | 20 m |
| | | | | 50 mm² | 1.8/3.0 KV | B | 21.5 m | 20 m |
| | | | | 50 mm² | 1.8/3.0 KV | Blk | 21.5 m | 20 m |
| 5 | 12/2195 | SBC S1 | SBC S2 | 50 mm² | 1.8/3.0 KV | R | 6 m | 4m |
| | | | | 50 mm² | 1.8/3.0 KV | Y | 6 m | 4m |
| | | | | 50 mm² | 1.8/3.0 KV | B | 6 m | 4m |
| | | | | 50 mm² | 1.8/3.0 KV | Blk | 6 m | 4m |
| 6 | 13/2200 | SBC S1 | SBC S2 | 50 mm² | 1.8/3.0 KV | R | 5 m | 3 m |
| | | | | 50 mm² | 1.8/3.0 KV | Y | 5 m | 3 m |
| | | | | 50 mm² | 1.8/3.0 KV | B | 5 m | 3 m |
| | | | | 50 mm² | 1.8/3.0 KV | Blk | 5 m | 3 m |
| 7 | 9/1090 | Ext. Power Supply-1 | SBC S1 | 25 mm² | upto 750V | R | 14m | 11 m |
| | | | | 25 mm² | upto 750V | Y | 14m | 11 m |
| | | | | 25 mm² | upto 750V | B | 14m | 11 m |
| | | | | 25 mm² | upto 750V | Blk | 14m | 11 m |
| 8 | 10/1095 | Ext. Power Supply-2 | SBC S1 | 25 mm² | upto 750V | R | 25m | 24 m |
| | | | | 25 mm² | upto 750V | Y | 25m | 24 m |
| | | | | 25 mm² | upto 750V | B | 25m | 24 m |
| | | | | 25 mm² | upto 750V | Blk | 25m | 24 m |
| 11 | 92/1205 | Speed Sensor Cables | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 14 m | 12.5 m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 14 m | 12.5 m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 14 m | 12 .5m |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 12 | 93/1200 | Speed Sensor Cables | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 12 m | 10 .5m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 12 m | 10 .5m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 12 m | 10 .5m |
| 13 | 94/1145 | Speed Sensor Cables | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 23 m | 21 .5m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 23 m | 21.5m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 23 m | 21.5 m |
| 14 | 95/1140 | Speed Sensor Cables | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 28 m | 26.5 m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 28 m | 26 .5m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 28 m | 26.5m |
| 15 | 96/1170 | Disc Brake Cables | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 11 m | 9 .5 m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 11 m | 9 .5 m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 11 m | 9 .5 m |
| 16 | 97/1175 | Speed Sensor Cables | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 11 m | 9 .5 m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 11 m | 9 .5 m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 11 m | 9 .5 m |
| 17 | 98/1190 | Speed Sensor Cables | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 19 m | 17.5 m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 19 m | 17.5 m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 19 m | 17.5 m |
| 18 | 99/1195 | Speed Sensor Cables | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 19 m | 17.5 m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 19 m | 17.5 m |
| | | | | 3X1.0 mm² | 600/1000V | W,Br,Blk | 19 m | 17.5 m |
| 19 | 59/2345 | Charging socket | TB B1X1 | 1.5 mm² | upto 750V | W | 30 m | 32 m |
| | | | | 1.5 mm² | upto 750V | W | 30 m | 32 m |
| | | | | 1.5 mm² | upto 750V | CH | 30 m | 32 m |

**Corrigendum -4 to specification no EDTS 257 Rev K, Corr.3**

This corrigendum is issued to specification no EDTS 257 Rev. 'K'Corr.3 for ' Harness of Under frame and Roof arrangement for LHB EOG AC Power Car coaches' and the details are as follows:

1. **Point no.1 & 2 mentioned in the corrigendum no. 3 deleted.**
   QPC of 121 meter 3x1.0 $mm^2$ (DS-4) multi-core cables 600/1000V colour wh,Br,Blk for speed sensor/disc brake cables deleted as these are being supplied by the disc brake suppliers.
1. **Annexure –A :**
   Harness no. 9, 12 & 13 are modified as:

| S.no. | H.no. | Form | To | Cable size $mm^2$ | Rating of cables | Color | Existing Length | Revised Length |
|---|---|---|---|---|---|---|---|---|
| 1 | 9/1090 | Ext. Power supply.1 | SBC-S1 | 25 $mm^2$ | upto 750V | R | 11 m | 14 m |
| | | | | | | Y | 11 m | 14 m |
| | | | | | | B | 11 m | 14 m |
| | | | | | | Blk | 11 m | 14 m |
| 2 | 12/2195 | SBC S1 | SBC S2 | 50 $mm^2$ | 1.8/3.0 KV | R | 4 m | 4.5 m |
| | | | | | | Y | 4 m | 4.5 m |
| | | | | | | B | 4 m | 4.5 m |
| | | | | | | Blk | 4 m | 4.5 m |
| 3 | 13/2200 | SBC S1 | SBC S2 | 50 $mm^2$ | 1.8/3.0 KV | R | 3 m | 4 m |
| | | | | | | Y | 3 m | 4 m |
| | | | | | | B | 3 m | 4 m |
| | | | | | | Blk | 3 m | 4 m |

2. **Clause no. 4.0 c) is reproduced as under :**
   Work instructions for preparation of harness to RCF document no. EDW0003 with latest version to be followed.
3. **Clause no. 4.3 a, b & c i.e. Technical staff :**
   Deleted, as this part has already been mentioned in the STR for manufacture of cable harness.
4. **Clause no. 4.14:** Deleted.

5. **Clause no. 5.3 is reproduced as under:**
   Cable Management system prescribed in RDSO specification RDSO/PE/SPEC/AC/0138-2009(Latest revision) shall be inspected by M/s RITES for acceptance & routine tests at the premises of OEM (i.e. cable management system manufacturer).
6. **Clause no. 5.9 a) S.no.5:**
   The testing parameters for copper crimping sockets i.e. crimping test and flattening tests shall stand deleted as crimping sockets shall be procured as per latest applicable specification/drawing and crimping is to be carried out after laying harness in the coach from approved sources specified in the vendor directory issued by RCF.

## Corrigendum-5 to Specification No. EDTS-257, Rev-K, Corr-1, 2, 3, 4

This corrigendum is issued to specification no. EDTS-257, Rev-K, Corr-1, 2, 3, 4 i.e. 'Ready-made Harness of Roof and Under-frame arrangement for LHB Power Car' in-order to incorporate the following changes:-

**2.1 Bill of Material**

- Data sheet for Pump cables of size 4x1.5mm² (i.e. 22mtrs out of 50mtrs) added at **Sno. 63** (Pg 13 of 31) shall be read as EDTS-132, Rev-C, Am-3, Corr-1 (DS-3) inplace of EDTS-132, Rev-C, Am-3, Corr-1 (DS-4).
- Data sheet for Pump cables of size 4x1.5mm² mentioned in Annexure-A, H.no. **100 & 101** (Pg 15 of 21) shall be read as EDTS-132, Rev-C, Am-3, Corr-1 (DS-3) inplace of EDTS-132, Rev-C, Am-3, Corr-1 (DS-4).

**2.2 A) Thin Walled Flexible Elastomeric Cables with Copper Conductors & Accessories:-**

Item added:

| S N. | Description | Cable Size | Detail Drg./Spec. | QPC | Remarks |
|---|---|---|---|---|---|
| 105 | Flexible Flame-retardant high performance polyolefin heat shrinkable tubing | - | EDML-176, Rev-0 | 1 | Loose Supply |

**2.2 B) Note:-**

**Clause No. 4 shall be read as:-**

In case of non availability of any specific color cable, Grey/Black color cable may be used after having prior approval from office of the PCEE/RCF and identification shall be made with colored, zero halogen fire retardant heat shrinkable sleeves of M/s **TYCO/Phoenix/Panduit/MV or any other approved make** up-to **100 mm** length.

**4.0 Technical Requirements:**

e) STR No. for preparation of Ready-made Harness shall be read as **RCF/EL/0015-2020, Rev-C.**

f) General Requirements shall be as per **RDSO Spec. No. - RDSO/PE/O/0008-2005, Rev-0 (Code of Practice for Prevention of Fire in AC Coaches)** and fire retardant sleeve shall be provided (as per clause no. 5.4 of the specification) at the termination point of the cable.

**5.9 Table for Tests:-**

**Test for Harnesses at firm's premises.**

| S. No. | Tests | Remarks |
|---|---|---|
| 10 | Test for Rigid PVC Conduits to IS:9537 (Part-3) | **Stands Deleted** for Type, Routine & Acceptance test. |

**5.9 a) Details of Testing:-**

S. No.-2 i.e. Acceptance Test for PVC Conduit to IS:9537 **stands Deleted.**

**6.0 Approvals:-**

**6.1** Deleted.

*Corrigendum-5*

**6.3 Revised as under:**

"Firm supplying the Coach Harness for first time shall supply one set of coach harness for validation on coach before bulk supply".

**8.0 Packing and Traceability:-**

**Clause No. (i) shall be read as:-**

Packing of Harnesses shall be done as per Packing Instructions mentioned in the relevant PO's placed on the firm. Harnesses shall be bunched together and shall be supplied as single unit per coach. Each harness shall be duly bunched individually and legibly marked as per details specified in the specification on it for Under-frame and Roof Arrangement.

*Corr.-6*

**Corrigendum – 6 to Specification no. - EDTS 257, Rev-K, Corr-1,2,3,4,5**

This corrigendum is issued to Specification no. EDTS 257, Rev.-'K', Corr-1,2,3,4,5 for 'Harness of Under frame and Roof arrangement for LHB EOG AC Power Car Coaches' to change the Scope of Supply as follows:

**Clause 2.0 (i) shall be read as:**

**2.0 Scope of supply:**

(i) Procurement of the item specified in BOM of the specification shall be from RDSO/RCF/ICF approved vendors mentioned in the latest version of the vendor directory issued by RCF/ICF/RDSO respectively, however the procurement of **e-beam Cables & Cable Management System** shall be done from RDSO 'Approved Vendors' for minimum **80%** quantity of total quantity and balance quantity up-to **20%** from 'Developmental Vendors' as mentioned in latest version of the vendor directory issued by RDSO.

Based on the procurement of various sizes of **e-beam Cables & Cable Management System** from either Approved or Developmental Sources, the cable harness shall be categorized as under:

- **Category-A**: Cable Harness with Approved Source of e-beam Cables & Cable Management System (80% min.)
- **Category-B**: Cables Harness with Developmental source of e-beam Cables & Cable Management System (20% min.)

Category-B type of cable harness may be supplied with e-beam cables & cable management system procured from Developmental Sources, however in no case Category-A type shall be supplied with e-beam cables & cable management system procured from Developmental Sources.

Firm shall maintain a record according to the above classification and offer to RITES/Inspecting Official for inspection in format **EDF 0001, Ver. 2.0 (or Latest)** annexed with the specification.

**Note:-**

The above mentioned criteria is not applicable to Cable Management System of size NW10 & NW70 as the Approved Sources are less than three or only Developmental Sources are there. Therefore, the procurement of size NW10 & NW70 (if applicable) may be done for such sources subject to past performance, capacity, delivery requirements, quality under procurement, nature of item, outstanding order etc. to be treated as Bulk Orders.

| EDTS-257, Rev-K, Corr-1,2,3,4,5 | 6 | 2.7.21 | | | | 1 of 1 |
|---|---|---|---|---|---|---|
| **Spec. No.** | **Corr.** | **Date** | **SSE/CAD** | **SEE/D&D** | **Dy.CEE/D&D** | **Page No.** |

| | RAIL COACH FACTORY, KAPURTHALA INDIAN RAILWAY | Document No. | EDF 0001 |
|---|---|---|---|
| | | Version. | 2.0 |
| | | Issue Date. | 02.07.2021 |
| | | Page No. | 1 of 1 |

**INSPECTION FORMAT FOR SUPPLY OF CABLE HARNESS**

To be maintained by the cables harness manufacturer at his premises and to be signed by the Inspecting official during inspection against each Purchase Order

Name of Firm : .....

P.O. No. : .....

Description : .....

Specification : .....

**e-beam Cables**

| Sr. No. | Date of Inspection | Total ordered quantity | Lot offered | Category-A Qty. (With Cables from Approved sources 80% Min | Category-B Qty. (With Cables from developmental sources (Up to 20%) | Sign of Inspecting Engineer |
|---|---|---|---|---|---|---|
| | | | | | | |
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| | | | | | | |

**Cable Management System**

| Sr. No. | Date of Inspection | Total ordered quantity | Lot offered | Category-A Qty. (With Cables from Approved sources 80% Min | Category-B Qty. (With Cables from developmental sources (Up to 20%) | Sign of Inspecting Engineer |
|---|---|---|---|---|---|---|
| | | | | | | |
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*RAIL COACH FACTORY, KAPURTHALA*
*रेल कोच फैक्टरी, कपूरथला*

*Corrigendum-7 (शुद्धिपत्र सं.-7)*

**Corrigendum-7 to Specification No. EDTS-257, Rev-K, Corr-1,2,3,4,5,6**

This Corrigendum is issued to Specification No. EDTS-257, Rev-K, Corr-1 to 6 for "Harness of Under-frame and Roof Arrangement for LHB Power Car" in order to incorporate following changes:-

1. **Clause No. 2.2 A)** **Thin walled Flexible Elastomeric Cables with Copper Conductors & Accessories:**

**Bill of Material is modified as follows:-**

| SN | Description | Cable Size (in $mm^2$) | Detail Drg./Spec. | Existing QPC | Revised QPC | Remarks |
|---|---|---|---|---|---|---|
| 27 | Thin walled Flexible Elast. Cables with Cu. Conductors color **'White'** upto 750V | 25 | ELRS/SPEC/ELC/0019 (Latest Revision) | 15 mtr. | **38 mtr.** | Inside Coach |
| 28 | Thin walled Flexible Elast. Cables with Cu. Conductors color **'Choc.'** upto 750V | 25 | ELRS/SPEC/ELC/0019 (Latest Revision) | 17 mtr. | **40 mtr.** | Inside Coach |
| 39 | Thin walled Flexible Elast. Cables with Cu. Conductors color **'Black'** upto 750V | 6 | ELRS/SPEC/ELC/0019 (Latest Revision) | 64 mtr. | **87 mtr.** | Inside Coach + RBC |
| 54 | Thin walled Flexible Elast. Cables with Cu. Conductors color **'Choc.'** upto 750V | 2.5 | ELRS/SPEC/ELC/0019 (Latest Revision) | 756 mtr. | **520 mtr.** | Inside Coach |
| 55 | Thin walled Flexible Elast. Cables with Cu. Conductors color **'Red'** upto 750V | 1.5 | ELRS/SPEC/ELC/0019 (Latest Revision) | 185 mtr. | **206 mtr.** | Inside Coach |
| 56 | Thin walled Flexible Elast. Cables with Cu. Conductors color **'Yellow'** upto 750V | 1.5 | ELRS/SPEC/ELC/0019 (Latest Revision) | 187 mtr. | **206 mtr.** | Inside Coach |
| 58 | Thin walled Flexible Elast. Cables with Cu. Conductors color **'Black'** upto 750V | 1.5 | ELRS/SPEC/ELC/0019 (Latest Revision) | 272 mtr. | **290 mtr.** | Inside Coach |
| 59 | Thin walled Flexible | 1.5 | ELRS/SPEC/ELC/0019 | 251 mtr. | **269 mtr.** | Inside |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Elast. Cables with Cu. Conductors color **'GNYE'** upto 750V | | (Latest Revision) | | | Coach |
| 61 | Thin walled Flexible Elast. Cables with Cu. Conductors color **'White'** upto 750V | 1.5 | ELRS/SPEC/ELC/0019 (Latest Revision) | 383 mtr. | **351 mtr.** | Inside Coach |
| 63 | 4x1.5 sq.mm multi-core cable e-beam cable 750V color **Wh, Br, Blk, GNYE** | 4x1.5 | EDTS-132, Rev-C, Am-3, Corr-1 | 50 mtr. | **51 mtr.** | DS-3 |

**New Items added are as follows:-**

| SN | Description | Cable Size | Detail Drg./Spec. | QPC | Remarks |
|---|---|---|---|---|---|
| 106 | Thin walled Flexible Elastomeric Cables with Copper Conductors color **'Red'** upto 750V | 6 | ELRS/SPEC/ELC/0019 (Latest Revision) | 23 mtr. | **RBC** |
| 107 | Thin walled Flexible Elastomeric Cables with Copper Conductors color **'Yellow'** upto 750V | 6 | ELRS/SPEC/ELC/0019 (Latest Revision) | 23 mtr. | **RBC** |
| 108 | Thin walled Flexible Elastomeric Cables with Copper Conductors color **'Blue'** upto 750V | 6 | ELRS/SPEC/ELC/0019 (Latest Revision) | 23 mtr. | **RBC** |
| 109 | Thin walled Flexible Elastomeric Cables with Copper Conductors color **'GNYE'** upto 750V | 6 | ELRS/SPEC/ELC/0019 (Latest Revision) | 23 mtr. | **RBC** |
| 110 | Thin walled Flexible Elast. Cables with Cu. Conductors color **'White'** upto 750V | 25 | ELRS/SPEC/ELC/0019 (Latest Revision) | 23 mtr. | **RBC** |
| 111 | Thin walled Flexible Elast. Cables with Cu. Conductors color **'Choc.'** upto 750V | 25 | ELRS/SPEC/ELC/0019 (Latest Revision) | 23 mtr. | **RBC** |
| 112 | 4x1.5 sq.mm multi-core cable e-beam cable 750V color **Wh, Br, Blk, GNYE** | 4x1.5mm$^2$ | EDTS-132, Rev-C, AM3, Corr-1 | 23 mtr. | **RBC** |
| 113 | Copper Crimping Socket for 120 sq.mm cable | -- | EDTS-200 (Latest Revision) | 16 Nos. | Item-3 (M12) |

Corrigendum-7 (शुद्धिपत्र सं.-7)

**2. Clause No. 5.9 : Table for Tests:**

Test mentioned at SN-10 i.e. Test for Rigid PVC Conduits to IS: 9537 (Part-3) which was deleted in Corr-5 of the specification is hereby added and reproduced as follows:

**Test for Harnesses at firm's premises:**

| SN | Tests | Type Test | Routine Test | Acceptance Test |
|---|---|---|---|---|
| 10 | Test for Rigid PVC Conduits to IS:9537 (Part-3) | YES | YES | YES |

**3. Clause No. 5.10 a) :Details of Testing**

Tests mentioned at SN-2 i.e. Acceptance Tests for **PVC Conduit** to IS: 9537 which was deleted in Corr-5 of the specification is hereby added and reproduced as follows:

| 2) | Acceptance test for PVC conduit to IS:9537 | |
|---|---|---|
| **SN** | **Details of Testing** | **Remarks of Rites Inspecting official** |
| a | Checking of dimensions as clause 7 of IS. | |
| b | Bending test (at room temperature) as per clause 9.2 of IS spec. | |
| c | Compression test as per cl. 9.3 of IS spec (5 sample in prototype and 2 samples in acceptance /routine) | |
| d | Collapse test as per cl. 9.5 of IS spec (One sample) | |
| e | Resistance to burning as per cl. 11 of IS spec. (2 samples) | |
| f | Electrical characteristics as per cl. 12 of IS spec. | |

**4. Clause No. 8.0 : Packing & Traceability**

Reference **Clause 8.0(i)** for Packing Instructions Stands Deleted.

**5. Annexure-E : Stands Deleted**

**Annexure-A**

1. Following Harnesses shall be read as follows:-

| Har. No. | From | To | Cable Size | Cable Grade | Ferrule No. | Color | Specified Length | Revised Length | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 22/ 2650 | SBC S2 | Engine-1 | 2.5 $mm^2$ | Upto 750V | 210801.01 | Choc. | 17 mtr | 17 mtr | 6 Nos. Cables Deleted after 10 Nos. Cables deleted in Cor-3 in each Harness |
| | | | 2.5 $mm^2$ | Upto 750V | 210802.01 | Choc. | 17 mtr | 17 mtr | |
| | | | 2.5 $mm^2$ | Upto 750V | 210803.01 | Choc. | 17 mtr | 17 mtr | |
| | | | 2.5 $mm^2$ | Upto 750V | 210806.01 | Choc. | 17 mtr | 17 mtr | |
| | | | 6 $mm^2$ | Upto 750V | 210805.01 | Black | 17 mtr | 17 mtr | |
| | | | 6 $mm^2$ | Upto 750V | 210811.01 | Black | 17 mtr | 17 mtr | |
| 23/ 2620 | SBC S2 | Engine-2 | 2.5 $mm^2$ | Upto 750V | 210901.01 | Choc. | 15 mtr | 15 mtr | |
| | | | 2.5 $mm^2$ | Upto 750V | 210902.01 | Choc. | 15 mtr | 15 mtr | |
| | | | 2.5 $mm^2$ | Upto 750V | 210903.01 | Choc. | 15 mtr | 15 mtr | |
| | | | 2.5 $mm^2$ | Upto 750V | 210906.01 | Choc. | 15 mtr | 15 mtr | |
| | | | 6 $mm^2$ | Upto 750V | 210905.01 | Black | 15 mtr | 15 mtr | |
| | | | 6 $mm^2$ | Upto 750V | 210911.01 | Black | 15 mtr | 15 mtr | |
| 58/ 2410 | Lighting TB B4X1 | Lighting TB B1X1 | 1.5 $mm^2$ | Upto 750V | 520401.04 | Yellow | 18 mtr. | **17 mtr.** | Length Revised |
| | | | 1.5 $mm^2$ | Upto 750V | 520402.04 | Black | 18 mtr. | **17 mtr.** | |
| | | | 1.5 $mm^2$ | Upto 750V | 520403.04 | GNYE | 18 mtr. | **17 mtr.** | |
| | | | 1.5 $mm^2$ | Upto 750V | 520101.14 | Yellow | 18 mtr. | **17 mtr.** | |
| | | | 1.5 $mm^2$ | Upto 750V | 520102.14 | Black | 18 mtr. | **17 mtr.** | |
| | | | 1.5 $mm^2$ | Upto 750V | 520103.14 | GNYE | 18 mtr. | **17 mtr.** | |
| 77/ 2320 | Lighting TB B4X1 | Lighting TB B5X1 | 1.5 $mm^2$ | Upto 750V | 520401.03 | Yellow | 7 mtr. | **6 mtr.** | Length Revised |
| | | | 1.5 $mm^2$ | Upto 750V | 520402.03 | Black | 7 mtr. | **6 mtr.** | |
| | | | 1.5 $mm^2$ | Upto 750V | 520403.03 | GNYE | 7 mtr. | **6 mtr.** | |
| | | | 1.5 $mm^2$ | Upto 750V | 520101.06 | Red | 7 mtr. | **6 mtr.** | |
| | | | 1.5 $mm^2$ | Upto 750V | 520102.06 | Black | 7 mtr. | **6 mtr.** | |
| | | | 1.5 $mm^2$ | Upto 750V | 520103.06 | GNYE | 7 mtr. | **6 mtr.** | |
| 100/ 1100 | SBC S1 | Pump Connecti on Box | **1.5 $mm^2$** | **Upto 750V** | 330802.02 | **Red** | 11 mtr. | 11 mtr. | 4x1.5 **$mm^2$ multi-core cable is replaced with e-beam cables** |
| | | | **1.5 $mm^2$** | **Upto 750V** | 330804.02 | **Yellow** | 11 mtr | 11 mtr | |
| | | | **1.5 $mm^2$** | **Upto 750V** | 330806.02 | **Blue** | 11 mtr | 11 mtr | |
| | | | **1.5 $mm^2$** | **Upto 750V** | 330807.01 | **GNYE** | 11 mtr | 11 mtr | |
| 101/ 2020 | SBC S1 | Pump Connecti on Box | **1.5 $mm^2$** | **Upto 750V** | 330813.02 | **Red** | 11 mtr | 11 mtr | |
| | | | **1.5 $mm^2$** | **Upto 750V** | 330815.02 | **Yellow** | 11 mtr | 11 mtr | |
| | | | **1.5 $mm^2$** | **Upto 750V** | 330817.02 | **Blue** | 11 mtr | 11 mtr | |
| | | | **1.5 $mm^2$** | **Upto 750V** | 330818.01 | **GNYE** | 11 mtr | 11 mtr | |
| 132/ 2660 | SBC S1 | Smoke Sensor | 1.5 $mm^2$ | Upto 750V | 440102.02 | Choc. | 12 mtr. | **5 mtr** | Length Revised & 1 No. cable Deleted |
| | | | 1.5 $mm^2$ | Upto 750V | 440103.02 | White | 12 mtr. | **5 mtr** | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 147 | SBC S1 | Regulated Battery Charger | 25 $mm^2$ | Upto 750V | 330114.01 | Choc. | -- | 23 mtr | New Harness Added for RBC |
| | | | 25 $mm^2$ | Upto 750V | 330112.01 | White | -- | 23 mtr | |
| | | | 6 $mm^2$ | Upto 750V | 330901.01 | Red | -- | 23 mtr | |
| | | | 6 $mm^2$ | Upto 750V | 331001.01 | Yellow | -- | 23 mtr | |
| | | | 6 $mm^2$ | Upto 750V | 331101.01 | Blue | -- | 23 mtr | |
| | | | 6 $mm^2$ | Upto 750V | 331201.01 | Black | -- | 23 mtr | |
| | | | 6 $mm^2$ | Upto 750V | 331301.01 | GNYE | -- | 23 mtr | |
| | | | * 4x1.5 $mm^2$ | Multicore e-beam cable | 320405.21 420204.03 320405.22 420210.03 | Wh., Br, Blk, GNYE | -- | 23 mtr | |

* Multi-core cable shall be as per spec. no. EDTS-132, Rev-C, AM-3, Corr-1, Data sheet-3

**2.** Harness No. 134/2665 stands deleted.