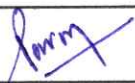



Table 1

**MATERIAL LIST of ELECTRICAL ITEMS FOR 3 PHASE MEMU COACHES – BHEL**



QTY.: BHEL- 146 sets (PO No: 029160577.T1720523 dated 15.01.2018)

| S.No. | Item description   | PL No.   | Quantity per Coach (QPC) |        | Remarks/Specification   |
|-------|--|----------|--------------------------|--------|---|
|       |  |          | DMC                      | TC     |   |
| 1     | Design, Development, Manufacture, Supply, Installation, Testing and Commissioning of 25 KV AC IGBT based Three Phase Electrics (on board mounted)for AC MEMUs (one set comprising electrics for 1DMC+3TC as envisaged in specification and as specified in schedule of requirements. | 45985017 | 01 Set                   |        | RDSO/PE/SPEC/EMU/0163 (Rev.1)-2012 with Addendum/Corrigendum no. 1, 2 & 3 |
| 2     | Battery box as per drg no. EMU/M-7-1-001 alt-q   | 31710025 | 01 no.                   | Nil    |   |
| 3     | VRLA battery set 120AH,110V  | 45170095 | 01 set                   | Nil    |   |
| 4     | Battery fuse box as per drg. no. EM71010 alt a   | 31717020 | 01 no.                   | Nil    |   |
| 5     | Hand Lamp Socket & Plug 10A, 250V AC (Cat NO. AS10 & AP10 of M/s Schneider elect & equiv. make )   | 42984488 | 02 no.                   | 02 no. |   |
| 6     | Bracket for Hand Lamp Socket as per drg. RCF/SK-7-1-272 alt b  | 32989763 | 02 no.                   | 02 no. | Item is drawn by Shell group  |
| 7     | Battery charging socket (Cat no BS30) & Plug (Cat no. BP30, 3-pin, 440V,30A of M/s Schneider)  | 42011504 | 01 no.                   | Nil    |   |
| 8     | Junction box as per drg. no. ICF/MRVC/C/BT7-1-005 Col-I  | 42980793 | 02 no.                   | 01 no. |   |
| 9     | Mobile charging sockets with switch comprising 3pin socket and USB Type-A & C charging sockets.  | ----     | 04 no.                   | 06 no. | (New Item)<br>EDML-242, Rev-0,<br>Table-6                                 |
| 10    | Limit switch 10A, 500V, 1NO + 1NC  | 42027380 | 02 no.                   | 02 no. |   |
| 11    | Plate for Limit Switch   | 30941222 | 02 no.                   | 02 no. |   |
| 12    | Driver's Cab AC unit (2.0 TR)  | 42985043 | 01 no.                   | Nil    | ICF/ELEC/110, CS- 1&2 with RCF Annexure-A.                                |
| 13    | 2.5 mm <sup>2</sup> cable  | 33621081 | 160m                     | 180m   |   |

|           |      |            |   |  |             |
|-----------|------|------------|---|--|-------------|
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| S.No. | Item description  | PL No.   | Quantity per Coach (QPC)                             |         | Remarks/Specification                                      |
|-------|---|----------|--|---------|--|
|       |   |          | DMC  | TC      |  |
| 14    | Condensed Aerosol based Fire suppression system as per EDML 0184, Type-I, Corr-1  | 33651036 | 08 nos.  | 02 nos. |  |
| 15    | Supply, Installation, Testing And Commissioning of Automatic Smoke/Fire Detection with alarm system for non air conditioned MEMU Rake.                                  | 33630136 | 01 set per (8-Car Rake)                              |         | EDML-197, Rev-nil, Cor-1                                   |
| 16    | CCTV surveillance system with network feature including IP dome saloon cameras, Platform view cameras, front view camera with NVR and related accessories and hardware. | 42980914 | 01 set per base unit (01 basic unit = 01 DMC + 3TCs) |         | EDTS-403, Rev.0, Corr-1<br>(#)                             |
| 17    | Name Plate - Instruction for entering HT Room for MEMU DMC as per Drg. No. ICF/SK3-7-2-052 alt nil  | --       | 01 no.   | Nil     |  |
| 18    | End fitting PG21  | 33620374 | 06 no.   | 06 no.  | For Hand Lamp Socket                                       |
| 19    | Lock nut PG21   | 33630021 | 06 no.   | 06 no.  |  |
| 20    | End fitting PG36  | 33620350 | 03 no.   | Nil     | For Battery box  |
| 21    | Lock nut PG36   | 33622838 | 03 no.   | Nil     |  |
| 22    | NW17 Polyamide Conduit  | 33641900 | 25m  | 20m     | For Limit switch   |
| 23    | PG21 Polyamide Conduit  | 33642151 | 15m  | 15m     | For Hand Lamp Socket                                       |
| 24    | Polyamide flexible conduit PG36   | 33641882 | 06 m   | Nil     | For Battery box  |
| 25    | Full length Thread Hex Head Screw M20X69 – SH-8.8 IS:1364 (Part-2)-1992 and IS:1367 (Part-16), IS:9549-1980 for hole  | ----     | 06 no.   | Nil     | Battery box mounting Hardware.<br>(Coating as per MDT5057) |
| 26    | Hex. Nut M20-8, as per IS1364(P3)   | ----     | 06 no.   | Nil     |  |
| 27    | Hex Thin Nut M20 as per IS:1364 (Part 4)-1992, Property class 8 to IS:1367 (Part 6)   | ----     | 06 no.   | Nil     |  |
| 28    | Spring washer M20 as per IS:3063 – 94, Type-B Table-1   | ----     | 06 no.   | Nil     |  |
| 29    | Plain washer Dia 22 as per IS:2016-81, Type-A   | ----     | 06 no.   | Nil     |  |
| 30    | Split pin of size 4X45 as per IS:549-74, T-I  | ----     | 06 no.   | Nil     | HLS & BCS mounting hardware                                |
| 31    | Hex. Nut M4 as per IS:1363-92 Part-3.6  |          | 12 no.   | 08 no.  |  |
| 32    | Ch. Hd. Screw M4X20-4.8 as per IS:1366—82, Tab-1  |          | 12 no.   | 08 no.  |  |
| 33    | Spring washer M4 as per IS:3063-94, Type-B  |          | 12 no.   | 08 no.  |  |

(#) SN-16 for CCTV for year 2025-26 shall be procured as per EDML-241, Rev-Nil.

|           |      |            |   |   |             |
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| S.No. | Item description                                    | PL No. | Quantity per Coach (QPC) |        | Remarks/Specification          |
|-------|---|--------|--------------------------|--------|--------------------------------|
|       |   |        | DMC                      | TC     |                                |
| 34    | Cheese Head screw M5X20-4.6 as per IS:1366-84,T-1&3 | ----   | 14 no.                   | 08 no. | Limit switch mounting hardware |
| 35    | Hex. Nut M8 as per IS:1363-92 Part-3.6              | ----   | 08 no.                   | Nil    | For Battery fuse box mounting  |
| 36    | Hex. Screw M8x50 – 4.6 as per IS:1363(P2)- 92       |        | 04 no.                   | Nil    |                                |
| 37    | Spring washer M8 as per IS:3063-94 Type-B           | ----   | 04 no.                   | Nil    |                                |
| 38    | Plain washer M8 as per IS:2016-67, Tab-2,Ty-B       | ----   | 04 no.                   | Nil    |                                |



|           |      |            |   |   |             |
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Table 2

**MATERIAL LIST of ELECTRICAL ITEMS FOR 3 PHASE MEMU COACHES – Medha & BHEL**

QTY. : Medha - 84 sets (PO No: 02231406101225 dated 28.06.2024)

BHEL- 75 sets (PO No: 02201091100313 dated 01.03.2021)

| S. No. | Item description  | PL No.          | Quantity per Coach (QPC) |        | Remarks/Specification  |
|--------|---|-----------------|--------------------------|--------|--|
|        |   |                 | DMC/<br>NDMC             | TC     |  |
| 1      | Design, Development, Manufacture, Supply, Installation, Testing and Commissioning of 25 KV AC IGBT based Three Phase Electrics (on board mounted) for AC MEMUs (one set comprising electrics for 1DMC+3TC as envisaged in specification and as specified in schedule of requirements. | 45985017        | 01 set                   |        | RDSO/PE/SPEC/EMU/0163 (Rev.1)-2012 with Addendum/ Corrigendum no. 1, 2 & 3 |
| 2      | Battery box as per drg no. EMU/M-7-1-001 alt. q   | 31710025        | 01 no.                   | Nil    |  |
| 3      | VRLA battery set 120AH,110V   | 45170095        | 01 set                   | Nil    |  |
| 4      | Battery fuse box as per drg. no. EM71010 alt a  | 31717020        | 01 no.                   | Nil    |  |
| 5      | Hand Lamp Socket & Plug 10A, 250V AC (Cat NO. AS10 & AP10 of M/s Schneider elect & equiv. make )  | 42984488        | 02 no.                   | 02 no. |  |
| 6      | Bracket for Hand Lamp Socket as per drg. RCF/SK-7-1-272 alt-b   | 32989763        | 02 no.                   | 02 no. | Item is drawn by Shell group   |
| 7      | Battery charging socket (Cat no BS30) & Plug (Cat no. BP30, 3-pin, 440V,30A of M/s Schneider)   | 42011504        | 01 no.                   | Nil    |  |
| 8      | Limit switch 10A, 500V, 1NO + 1NC   | 42027380        | 02 no.                   | 02 no. |  |
| 9      | Plate for Limit Switch  | 30941222        | 02 no.                   | 02 no. |  |
| 10     | 2.5 mm <sup>2</sup> Cable   | 33621081        | 110 m                    | 120 m  |  |
| 11     | Condensed Aerosol based Fire suppression system as per EDML 0184, Type-I, Corr-1  | 33651036<br>(*) | 08 no.                   | 02 no. | Only for BHEL-75 sets PO No: 02201091100313 dated 01.03.2021               |

|           |      |            |   |   |             |
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| S. No. | Item description   | PL No.          | Quantity per Coach (QPC) |        | Remarks/Specification   |
|--------|--|-----------------|--------------------------|--------|---|
|        |  |                 | DMC                      | TC     |   |
| 12     | Name Plate - Instruction for entering HT Room for MEMU DMC as per Drg. No. ICF/SK3-7-2-052 alt nil.                                    | --              | 01 no.                   | Nil    |   |
| 13     | End fitting PG21   | 33620374        | 06 no.                   | 06 no. | For Hand Lamp Socket  |
| 14     | Lock nut PG21  | 33630021        | 06 no.                   | 06 no. |   |
| 15     | End fitting PG36   | 33620350        | 03 no.                   | Nil    | For Battery box   |
| 16     | Lock nut PG36  | 33622838        | 03 no.                   | Nil    |   |
| 17     | NW17 Polyamide Conduit   | 33641900        | 25m                      | 20m    | For Limit switch  |
| 18     | PG21 Polyamide Conduit   | 33642151        | 15m                      | 15m    | For Hand Lamp Socket  |
| 19     | Polyamide flexible conduit PG36  | 33641882        | 06 m                     | Nil    | For Battery box   |
| 20     | Full length Thread Hex Head Screw M20X69 – SH-8.8 IS:1364 (Part-2)-1992 and IS:1367 (Part-16), IS:9549-1980 for hole                   | ----            | 06 no.                   | Nil    | Battery box mounting Hardware,<br>(Coating as per MDT5057)                              |
| 21     | Hex. Nut M20-8, as per IS1364(P3)  | ----            | 06 no.                   | Nil    |   |
| 22     | Hex Thin Nut M20 as per IS:1364 (Part 4)-1992, Property class 8 to IS:1367 (Part 6)  | ----            | 06 no.                   | Nil    |   |
| 23     | Spring washer M20 as per IS:3063 – 94, Type-B Table-1  | ----            | 06 no.                   | Nil    |   |
| 24     | Plain washer Dia 22 as per IS:2016-81, Type-A  | ----            | 06 no.                   | Nil    |   |
| 25     | Split pin of size 4X45 as per IS:549-74, T-I   | ----            | 06 no.                   | Nil    | HLS & BCS mounting hardware   |
| 26     | Hex. Nut M4 as per IS:1363-92 Part-3.6   | ----            | 12 no.                   | 08 no. |   |
| 27     | Ch. Hd. Screw M4X20-4.8 as per IS:1366—82, Tab-1   | ----            | 12 no.                   | 08 no. |   |
| 28     | Spring washer M4 as per IS:3063-94, Type-B   | ----            | 12 no.                   | 08 no. | Limit switch mounting hardware  |
| 29     | Cheese Head screw M5X20-4.6 as per IS:1366-84,T-1&3  | ----            | 14 no.                   | 08 no. |   |
| 30     | Hex. Nut M8 as per IS:1363-92 Part-3.6   | ----            | 08 no.                   | Nil    | For Battery fuse box mounting   |
| 31     | Hex. Screw M8x50 – 4.6 as per IS:1363(P2)-92   | ----            | 04 no.                   | Nil    |   |
| 32     | Spring washer M8 as per IS:3063-94 Type-B  | ----            | 04 no.                   | Nil    |   |
| 33     | Plain washer M8 as per IS:2016-67, Tab-2,Ty-B  | ----            | 04 no.                   | Nil    |   |
| 34     | Supply, Installation, Testing And Commissioning of Automatic Smoke/Fire Detection with alarm system for non air conditioned MEMU Rake. | 33630136<br>(*) | 01 set per (8-Car Rake)  |        | EDML-197, Rev-nil, Cor-1 (Only for BHEL-75 sets PO No: 02201091100313 dated 01.03.2021) |

(\*) Condensed Aerosol Based Fire Extinguishing System and Automatic Smoke/Fire Detection Alarm System at Serial No. 11 & 34 respectively to be procured only for BHEL-75 Set PO No: 02201091100313 dated 01.03.2021.

|           |      |            |                                    |                             |             |
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Table 1

**MATERIAL LIST of ELECTRICAL ITEMS FOR 3 PHASE MEMU COACHES – BHEL**

QTY.: BHEL- 146 sets (PO No: 029160577.T1720523 dated 15.01.2018)

Existing:

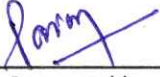
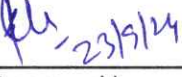
| S. No. | Item description  | PL No.   | Quantity per Coach (QPC)                             |    | Remarks/Specification          |
|--------|---|----------|--|----|--------------------------------|
|        |   |          | DMC  | TC |                                |
| 16     | CCTV surveillance system with network feature including IP dome saloon cameras, Platform view cameras, front view camera with NVR and related accessories and hardware. | 42980914 | 01 set per base unit (01 basic unit = 01 DMC + 3TCs) |    | EDTS-403, Rev.0, Corr-1<br>(#) |

(#) SN-16 for CCTV for year 2025-26 shall be procured as per EDML-241, Rev-Nil.

Revised:

| S. No. | Item description  | PL No. | Quantity per Coach (QPC)                             |    | Remarks/Specification    |
|--------|---|--------|--|----|--------------------------|
|        |   |        | DMC  | TC |                          |
| 16     | CCTV surveillance system with network feature including IP dome saloon cameras, Platform view cameras, front view camera with NVR and related accessories and hardware. | ---    | 01 set per base unit (01 basic unit = 01 DMC + 3TCs) |    | EDML-241, Rev-Nil<br>(*) |

(\*) Procurement of year 2024-25 has been done as per specification no. EDTS-403, Rev.0, Corr-1 and Balance Quantity for year 2024-25 and onward shall be procured as per EDML-241, Rev-Nil

|           |      |             |            |   |   |             |
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| MAT. LIST | REV. | Corrigendum | DATE       | Prepared by<br>(SSE/Elect. Design)  | Approved by<br>(Dy.CEE/D&D)   | PAGE        |