




<b>SPECIFICATION</b>	<b>SPECIFICATION FOR SMART SWITCH BOARD CABINET FOR LHB EOG/HOG TYPE AC COACHES</b>	<b>MEDTS-0004, Rev-1</b> Page 1 of 15 Date: 14.11.2018
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me	Designation	Signature	Date	Level
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**1.0 FORWARD**

At present, RDSO specification no. RDSO/PE/SPEC/AC/0184-2015(Rev-0) is being followed for manufacture, testing and supply of Switch Board Cabinet consisting of all the power/control switchgear for coach lighting, air conditioning, pantry, pump control, sanitary system and public address system etc. of LHB type AC EOG Coach suitable for 3 phases, 750 volts AC 50 Hz train lighting system.

With the advent of technology, latest technical concept/features need to be incorporated in the switch board cabinet to optimize the size, to enable GPS based remote monitoring and to improve the user interface of the switch board cabinet; the existing switch board cabinet is intended to be redesigned as microprocessor based Smart Switch Board Cabinet (SSBC). The smart switch board cabinet (SSBC) shall house of all the power/control switchgear and microprocessor based modules for smooth functioning of coach lighting, air conditioning, pantry, pump control, sanitary system and public address system etc as applicable as per existing RDSO specification with additional equipment for having smart features and functions.

In this regards discussions & meetings were held with approved venders at MCF for preparation & finalization of MCF's specification for smart switch board cabinet. Accordingly, MCF has issued specification no. MEDTS-0004 for smart Switch Board cabinet for LHB EOG/HOG type AC coaches.

The MCF's specification MEDTS-0004 has further been revised under Rev-1, in which the additional features incorporated under specification no MEDTS-0004 have been elaborated in details and revised. However, this specification for SBCC is still to be read in conjunction with RDSO specification no. RDSO/PE/SPEC/AC/ 0184-2015 (REV-0) for Switch Board Cabinet for LHB Type AC EOG Coaches. The specification covers microprocessor based smart switch board cabinet for LHB EOG/HOG type AC Coaches, upgrading the existing SBC by incorporating additional features and items. The scope of the supply of new items have been added along with service conditions, governing specification, their basic features & functions in more details, hardware requirements, technical requirements, inspection and testing requirement and other conditions.

**2.0 SCOPE OF SUPPLY**

2.1 The Microprocessor based Smart Switch Board Cabinet (SSBC) for LHB EOG/HOG type AC coaches as per specification no. MEDTS-0004 with Rev-1 shall include the followings:

Sr. No.	Item Description	Qty
1	Switch board cabinet consisting of all the power control switchgears for coach lighting, air conditioning, pantry, pump, sanitary system and public address system etc for 3 phase, 750 volts, 50 Hz system, confirming to RDSO/PE/Spec/AC/0184-2015(Rev.0) along with compact size, existing / modified switchgears, energy parameters metering equipments as applicable and confirming to all functional and safety requirements.	1-Set



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2	Standalone SSBC Controller CPU with Accessories. This unit shall control the functional interface of SSBC with TFT display module and shall have provision for interface with other electronics controllers i.e. RMPU controller, PICCU, Brake controller, Fire controller etc as applicable. It shall also carry out all the function of microprocessor controller pump equipment as per RCF specification no. EDTS 186 (Rev-A) Amendment no. -2, Corr-1.	<u>1-Set</u>
3	GUI TFT Display Module with Accessories (mounted on SBC Right door at suitable location) for display of the Parameters and HMI command to stand alone master controller of SSBC.	<u>1-Set</u>

### 3.0 Basic features and functions:

#### 3.1 Smart switch board cabinet (SBCC) as a whole:

This specification is for design, manufacture, testing and supply of the smart switch board cabinet with standalone microprocessor controller and with LCD touch screen, which shall have

- a) Overall size of the switch board cabinet should be compact and as far as possible within 600x1280x1850 mm and allowable tolerances.
- b) Switch board cabinet consists of all the power control switchgears for coach lighting, air conditioning, pantry, pump, sanitary system and public address system etc for 3 phase, 750 volts, 50 Hz system, confirming to RDSO/PE/Spec/AC/0184-2015(Rev.0) along with compact size, same /modified switchgears, energy parameters metering equipments as applicable and confirming to all functional and safety requirements.
- c) The SSBC microprocessor controller shall have compatibility and communication interface with controller of LHB RMPU as per RDSO's specification no. RDSO/PE/SPEC/AC/0139-2008(Rev-0).
- d) SBC microprocessor controller shall carry out all function of controller for pump equipment as per RCF specification no. EDTS 186 (Rev-A) Amendment no. -2, Corr-1.
- e) The SBC microprocessor controller shall have compatibility & interface communication with passenger information coach computing unit (PICCU), however PICCU is not under scope of supply under this specification. For the purpose of interfacing, the PICCU specifications may be referred as per RDSO carr-SS-07-2017 and as described in MMDTS: 18010, annexure-1. The PICCU has the facility to transmit the data to remote centralized location. The PICCU shall be having Wi-Fi based infotainment system, PAPIS [Passenger announcement/information system as per RDSO specification no. RDSO/PE/SPEC/AC/0087-2008(Rev-1)], CCTV with remote monitoring etc.
- f) It shall have a single touch Industrial grade LCD screen based interface for complete operation & control of the switch board cabinet. However, in case of malfunctioning of the interface, manual override shall be provided.
- g) The software should be capable to be interfaced with all the make of RMPU controller and PICCU. The developer should share the source code and other details of communication protocol of the controller with MCF/RDSO for further development of third party application.
- h) It shall have the facility to transmit the data to remote centralized location through PICCU or otherwise. Summary of trip data shall be downloadable and printable through

  
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