

MODERN COACH FACTORY, RAEBARELI

ELECTRICAL DESIGN



SPECIFICATION	Remote monitoring system for power car	MEDTS-0006, Rev-0 Date: 20.05.2019
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Name	Designation	Signature	Date	Level
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1. SCOPE

Remote monitoring system shall be used for Telemetric as the technology of sending, receiving and storing information via telecommunication device in conjunction with effecting control on remote power car. It will be used for remote monitoring, data logging, location tracking, service events alerts and proactive maintenance using a simple user interface.

This specification is to be read in conjunction with RDSO Specification No. RDSO/PE/SPEC/AC/0084 - (REV-1)2008 for 336 KW DA, EDTS 350 Rev- 0 AM-1 for high capacity power car and RDSO/PE/SPEC/ AC/0103 (Rev-1) for underslung power car in order to upgrade the existing Power Car by incorporating the following features to make it Smart Power. This specification shall apply to items where in improvement or additional features have to be done otherwise existing RDSO SPECIFICATION No. RDSO/PE/SPEC/ AC/0084 (REV-1) 2008 for 336 KW DA, EDTS 350 Rev- 0 AM-1 for high capacity power car and RDSO/PE/SPEC/ AC/0103 (Rev-1) for underslung power car shall generally be followed

Remote monitoring system should monitor the following data

Alternator data

- 1) Line voltage
- 2) Phase voltage
- 3) Current
- 4) Frequency
- 5) Total KVA
- 6) Total KW
- 7) Power factor

Engine Data

- 1) Average Engine speed
- 2) Battery voltage
- 3) Coolant Temperature
- 4) Oil temperature
- 5) Oil Pressure
- 6) Fuel level
- 7) Fuel rate
- 8) Engine Runtime

Annunciator Data

- 1) Supplying Load
- 2) Running

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- 3) Common Alarm
- 4) Not in Auto
- 5) High battery Voltage
- 6) Low Battery Voltage
- 7) Charger AC Failure
- 8) Fail to Start
- 9) Low Coolant Temperature
- 10) Pre High Engine Temperature
- 11) High Engine Temperature
- 12) Pre Low Oil Pressure
- 13) Low Oil Pressure
- 14) Engine Over speed
- 15) Low Coolant Level
- 16) Check Gen-set
- 17) Ground Fault
- 18) High AC Voltage
- 19) Low AC Voltage
- 20) Under Frequency
- 21) Overload
- 22) Over current
- 23) Short Circuit
- 24) Reverse KW
- 25) Reverse KVAR
- 26) Fail to Sync
- 27) Fail to Close
- 28) Load Demand
- 29) Gen-set Circuit Breaker Tripped
- 30) Utility Circuit Breaker Tripped

Remote Monitoring System Specification:-

- 1) Micro controller : 320 bit microcontroller
- 2) Memory : On board 8 MB flash for data storage
- 3) Communication : Quad band GSM850, EGSM900,DCS1800, PCS1900
2G (GSM/GPRS)
- 4) RS485 ports (GPS optional) : 2 No's Isolated, Modbus master and slave
support
- 5) Operating supply voltage : 8V -32 V DC from equipment battery with protection
for overvoltage, over current, ignition spikes, short circuit, reverse polarity.

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- 6) Internal battery backup: 2 Hours internal rechargeable battery backup, Li-Ion battery
- 7) LED indication : Power, GSM/GPRS,RS 485, GPS
- 8) Field interface connector : 20 Pin automotive on board connector
- 9) GSM, GPS antenna : External wired antenna
- 10) SMS message sending: Alert the alternator data, engine data,annunciator data
- 11) E-mail sending : Alert the alternator data, engine data, Annunciator data
- 12) USB Port
- 13) USB Device

