

RDSO Modification Sheet No.WAG-5/30

Modified earthing arrangement of cable used in
Cable Head Termination System.

1.0 OBJECT

- 1.1** During commissioning of EMUs fitted with Cable Head Termination System, it was observed that current is induced in the earth screen of the cable and this induced current flows in the direction opposite to the power current in the cable. Since, the earth screen is earthed at both ends i.e. at the elbow end as well as at the roof top end and passes through the current transformer (C.T.), the actual current sensed by the CT during fault condition is the difference between power current in the cable and induced current in the earth screen. This sensed current is less than the actual current in the cable and the primary overload relay operated through the CT therefore does not provide the required protection.
- 1.2** In order to nullify the effect of induced current in the earth screen on CT, ICF has carried out a modification in which the earth screen of the cable is disconnected from the earth at the elbow location and a cable connected to this end of the earth screen. The cable is threaded back through the CT to the roof and again earthed. With this modification, the CT senses the actual fault current flowing through the cable and provides the required protection.
- 1.3** It is recommended to extend this modification on all Cable Head Termination system of M/s BSES being provided on all AC electric locomotives/ EMUs.

2.0 WORK TO BE CARRIED OUT

- 2.1** Disconnect the earth screen near the elbow from earth connection. Do not disturb the earthing connection of the earth screen at the other end earthed on the top of the roof.
- 2.2** Connect one end of 50 sq.mm. cable to the earth lug of the disconnected end of the earth screen.
- 2.3** Pass the other end of the cable through CT as shown in SKEL 4452 and terminate it on the inside of the roof with proper earthing arrangement.
- 2.4** Provide necessary clamping for this cable for holding the same in position.

3.0 APPLICATION

All AC Electric Locomotives/ EMUs fitted with cable head termination system of M/s BSES.

4.0 MATERIAL REQUIRED

- 4.1** 50 sq.mm. 750V grade Elastomeric cable of length approx. 4.5 mts.
- 4.2** Crimping socket suitable for 50 sq.mm. cable.
- 4.3** Nuts and bolts as per requirement.

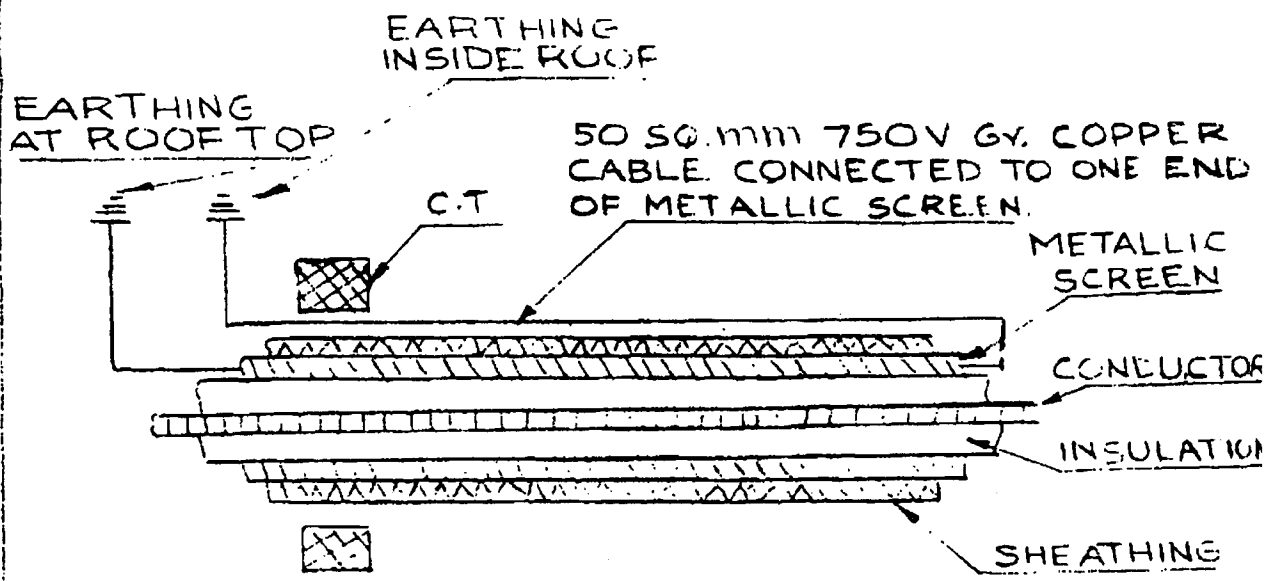
5.0 MATERIAL RENDERED SURPLUS

Nil.

6.0 AGENCY FOR IMPLEMENTATION

All AC Electric Loco sheds/ EMU Car sheds, Workshops & production units.

DA/ As above.



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REF: NIL	SCALE: N.T.S	APPROVED: <i>[Signature]</i> 20-02-06
MODIFIED EARTHING ARRANGEMENT AT ELBOW END OF CABLE HEAD TERMINATION SYSTEM		
RDSO ELEC. DTL.		SKETCH 4-152