Government of India
Ministry of Railways
Research, Designs & Standards Organisation
Manak Nagar, Lucknow - 226 011

No. EL/3.2.10/8 Dt. 18th Feb1981

MODIFICATION SHEET NO. RDSO/WAM4/110

MODIFICATION TO CUTLER HAMMER RELAY (Q48) FOR MINIMISING MICRO SWITCH FAILURES

1. OBJECT

One of the causes of failures of Q48 Double pole micro switches is likely to be interchange of wires No.B-573/B-993 and D4205 at the relay terminal board. It may be seen from the relay wiring diagram(see SK. EL.-3379)that by inter-changing these incoming/outgoing leads, the normally closed contacts will be at negative potential where as the adjacent normally open contacts will be at positive potential. The contact gaps being very small, there is a possibility of these two circuits getting short circuited inside the micro switch because of the close proximity of positive and negative potentials.

It is indicated on the switch that the wires connected to the micro switch should of the same polarity. the object of this modification is to ensure availability of the same positive polarity on the micro switch terminals and to utilise the spare contact in series with the existing self interlock of the relay.

2.0 Work to be done

2.1 Internal connections:

Remove the relay and rearrange the cable connections conforming to drawing SK. EL. 3379.

2.1.1 Connect the spare contacts in series with the existing self intrlock by using PVC cable with crimped sockets as shown is the sketch. This will minimise the arc severty while contorlling the economy resistance.

2.2 External connections:

Ensure that all the incoming positive supply leads are connected on the right side terminals and out going leads on the left side terminals of the relay terminal board as indicated in the drawing No.SK EL.3379.

2.3 Test the above terminations with a test lamp between earth and each terminals in the top row of the 11D and right side row of the relay terminal board (Read side). Lift QD for getting feed to the right outer terminal (i.e. self interlock) of the DPDT switch.

2.4 Mark symbols '+' at terminal 'B' and '-` at terminal 'A' with white paint.

3. **Application**

All locos fitted with relays Q48 fo M/s Cutler Hammer.

4. **Material required**

(i) PVC cable 1.5 mm 2, 1.1 kV grade of require. lenght to IS: 694 Pt. II

(ii) Crimping sockets, insulated type with metal reinforcement similar to M/s Dowells type No. PIA 7153-A4-2 nos.

5. **Material rendered surplus** **:** **Nil.**

6. **Drawing No.** **:** SK. EL. 3379

7. **Ahency for modofication** **:**

i) Railways- Electric locosheds and POH shops for locos in service.
ii) CLW- For locos under production.

6. **Distribution:**

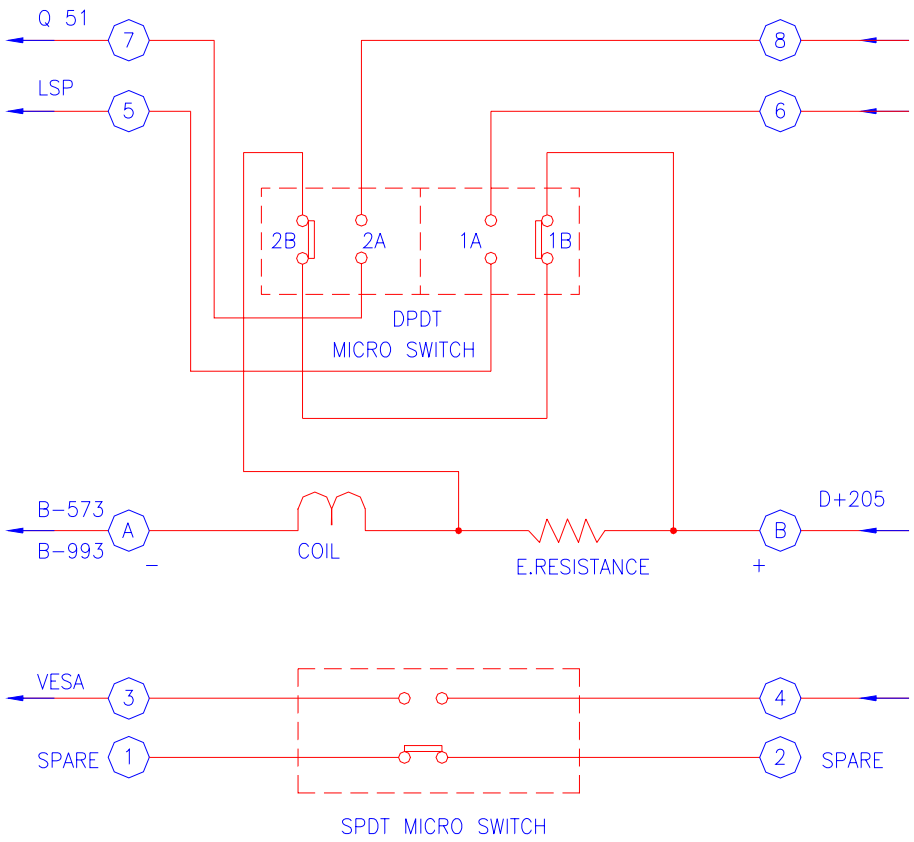
As per mailing list;

J.V.S.sastri

DA: SK EL 3379

(T.V.S. SASTRI)
for Director General (Elct.)

SK.EL-3379



NOTE :-

1. TERMINAL CONFIGURATION IS AS SEEN FROM THE REAR SIDE.
2. MOVING CONTACTS SHOWN WITHIN SWITCH CONFORM TO ACTUAL ARRANGEMENT.
3. INCOMING +VE SUPPLY MUST BE TERMINATED ON RIGHT ROW TERMINALS OF THE RELAY TERMINAL BOARD AND TOP ROW TERMINALS OF THE DPDT SWITCH.
4. CABLE Nos. PERTAIN TO WAM 4 AND IS FOR GUIDANCE ONLY.

REF:- CUTLER HAMMER RELAY: PNDC	SCALE:- NTS	APPROVED BY:- FOR D.G.

REVISED CABLE CONNECTION FOR Q48

RDSO.ELEC.DTE.	SKEL-3379

Dt.	16.2.79
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