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

No. EL/3.1.3. Dt. 22-06-1998

MODIFICATION SHEET NO. RDSO/WAM4/153 (REV.1)

PROVISION OF QLA RELAY FOR PROTECTION OF AUXILIARY CIRCUIT IN THE EVENT OF PHASE FAULT / OVER CURRENT

This supersedes modification No. RDSO/WAM4/153 dt. 12.06.1986.

1.0 OBJECT

1.1 RDSO had issued instructions for provision of QLA Relay for protection of auxiliary circuit in the 25KV AC electric locomotives against phase fault/over current vied modification sheet No. WAM4/153 dt. 12.6.86. Recently in MSG meeting and other forums, some railways reported that with the implementation of the above modification, cases of spurious tripping through QLA relay were noticed.

1.2 In order to minimise the cases of spurious trappings and at the same time to keep the effectiveness of protection of QLA relay as long as possible, Western Railway carried out a modification by providing two N/O interlock of existing Q45 in parallel.

1.3 This modification sheet lays down the revised scheme as proposed by Western Railway.

2.0 WORK TO BE CARRIED OUT

2.1 Mount a current trans former (CT) of 2000/5 Amps. ratio at suitable place (capable to withstand intermittent short circuit) on the out going cables of either a0 or a1 bushing.

2.2 Mount the DI type QLA relay preferably in the panel where Q45 relay is mounted. Alternatively, this can also be mounted nearest to Q45 relay at a suitable location.

2.3 Connect the secondary of CT to the operating coil of QLA relay with 3.0 sq. mm control cable.

2.4 Connect 2 Nos. normally open contacts of existing Q45 relay in parallel. In order to avoid tripping at the time of starting of Arno, by pass the QLA relay operating coil through these parallely connected open contacts of Q45 relay. While making this connection, use thicker cross-section (preferably 10 sq. mm) of control cable to minimise the resistance offered by this path.

2.5 Provide N/C contact of QLA relay in the MTDJ circuit. This will ensure tripping of DJ through this contact in case of picking up of QLA relay due to fault in the auxiliary circuit.

2.6 Set the QLA relay to trip at 1400 Amps.

3.0 REFERENCE CIRCUIT

For circuit details, refer RDSO drg. No. SKEL-3890 (Rev. 1).

4.0 **APPLICATION**

All 25 KV AC electric locomotives.

5.0 **MATERIAL REQUIRED**

5.1 Current transformer (CT) - One No.

Ratio - 2000/5 Amps.

VA - 30

Class - 1.0

Line voltage - 660

Conforming to IS2705-1981 or the latest version.

5.2
- QLA relay - One No.
- DI type similar to QRSI relay being used on 25KV AC locomotives.
- Suitable for CT ratio 2000/5 Amps.
- Interlocks = 2 normally closed.

5.3 Control cable of 750 V grade as per requirement.

6.0 **MATERIAL RENDERED SURPLUS**

Nil.

7.0 **REFERENCE**

7.1 Report on prevention of fire in AC electric locos.

7.2 Performance of QLA relay modification from N. Rly Electric Loco Shed, Kanpur.

8.0 **AGENCY FOR IMPLEMENTATION**

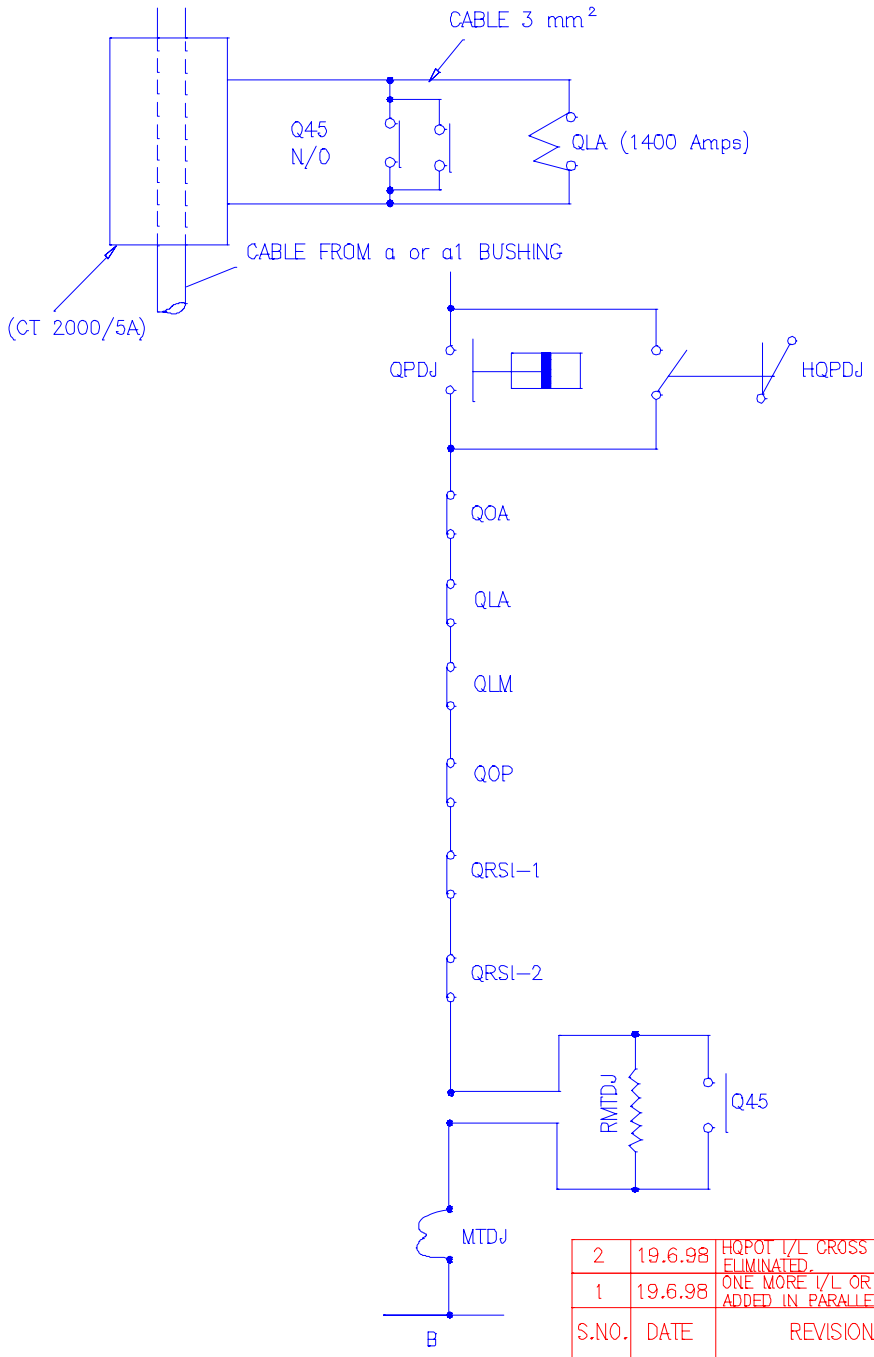
All AC electric Loco sheds and POH shops.

9.0 **DISTRIBUTION**

CEE CLW and all electrified railways for advising electric loco sheds and POH shops.

Encl: Drg. SKEL-3890 (Rev.I)

(Arun Srivastava)
for Director General(Elect.)



S.NO.	DATE	REVISION
2	19.6.98	HQPOT I/L CROSS RMTDJ ELIMINATED.
1	19.6.98	ONE MORE I/L OR Q45 ADDED IN PARALLEL

REF.	SCALE NTS	APPD. BY –sd– (FOR DG.)

QLA RELAY ARRANGEMENT FOR PROTECTION OF AUXILIARY CIRCUIT

RDSO ELEC DTE	SKEL–3890 (REV–1)

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