

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

No.EL/3.2.10/Gen/J-6

Dated. 17-07-1987.

**MODIFICATION SHEET NO. RDSO/WAM4/156**

**MODIFICATION FOR BBC MAKE DI TYPE QLM RELAYS**

**1. OBJECT**

**1.1** The trouble shooting instructions followed by the various railways indicate that resetting of QLM relay is allowed for certain number of time so that the Driver could try to resume the traction in case of tripping without apparent cause and transient faults.

**1.2** During one of the meetings of CEE's held for evolving and implementing measures for minimising the incidence of locomotive fire, it was pointed out that drivers keep on closing the DJ for number of times to isolate the faulty circuit and to resume traction, ignoring the maximum number of allowable trippings through QLM relay specified in the trouble shooting manual. This imposes destructive stresses on the faulty circuit which ultimately may result into the fire or severe damages to vital electrical equipments i.e. transformer and tap change fitted in the locomotive.

**1.3** It is therefore, suggested to adopt manual reset type QLM relay to avoid the repeated closing of DJ by the driver in case of only QLM having operated for the maximum number of times as specified in the trouble shooting manuals. In this case, drivers are to be educated to check and reset the QLM relay target, If found impossibility to close DJ after first tripping. Necessary corrections or arndments may also be made in the trouble shooting manuals.

**1.4** One sample relay (tyep DI) with a modified latch having loading arrangement of the armature lever was obtained from M/s BBC Switzerland and fitted on one of the WAM4 loco of GZB shed in Jan. 1987 for extensive service trials. Performance of the sample relay has been found satisfactory so far.

**1.5** The large number of auto reset type QLM relays already in service shall be modified by providing a different type of latching arrangement as per the details given below:

## **2. WORK TO BE DONE**

- 2.1** See BBC Drg. No. HBTA 8659 Relay type DI-Locking of the Armature.
- 2.2** Procure latching arrangement KA 220094 according to BBC Drg. No. HBTA 8659 as per the requirement. Remove the old one and replace with the new arrangement. One sample relay No. HB 547548 with modified latching arrangement is available in GZB Elect. loco shed in which actual fitment of component may be studied if required.
- 2.3** Alternatively sheds may also procure complete QLM relays (Manual Reset type ) and replace with the old relays. The removed QLM relays may be recalibrated for QRSI application and be kept as spare stock for the same.
- 2.4** Copy of the BBC offer BVW-E/7130 and indicating the prices in swiss francs for locking arrangement depending on the quantity ordered is enclosed for your reference. Railway may also explore the possibility of indigenous development of the modified latch mechanism. This arrangement is interchangeable with the present flag mechanism and may be replaced easily by removing old latching and fixing the new one at the same mounting location.

## **3. APPLICATION**

All BBC make DI type QLM relays.

## **4. MATERIAL REQUIRED**

- Locking arrangement for relays type DI QLM-application KA 220094 according to BBC Drg. No. HBTA 8659.
- Quantity will be as per the sheds require.

## **5. MATERIAL RENDERED SURPLUS**

- Complete flag mechanism (old.)

## **6. MODIFICATION DRAWING:**

- BBC Drg. No. HBTA 8659.

## **7. AGENCY FOR IMPLEMENTATION**

CLW: CLW should ensure the procurement of only modified relays for all the current and future requirements. M/s BBC agreed vide letter No. BVW-E/HK/Kir reg 15 B dt.26.3.86 to supply without any surcharge the modified relays with an additional locking of the armature as per the BBC Drg. No. HBTA 8659. The two models are interchangeable

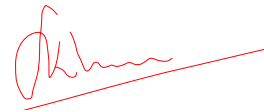
Sheds: Electric loco sheds and POH shops for locos in service.

**NOTE:** In case of multiple operation of locomotives the modification may cause certain problems if the relay of the rear locomotive has tripped necessitating the train to be brought to a stop for trouble shooting in such cases the Railways may use their discretion in implementing this modification depending on the operation conditions.

**8. DISTRIBUTION**

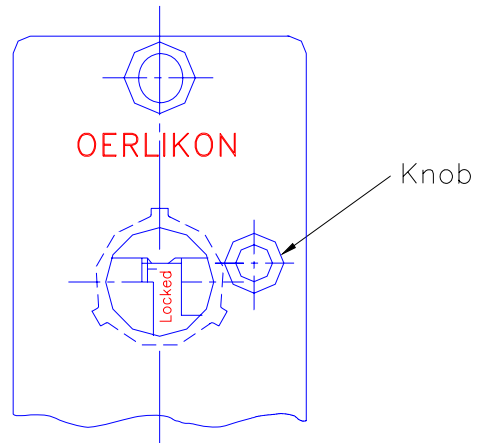
As per the mailing list enclosed.

Encl: (i) Drg. No. HBTA 8659  
(ii) Offer No.BVW-E-7130.

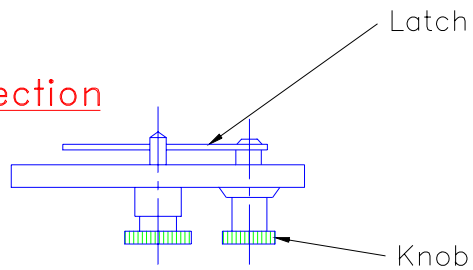


(S. S. KHURANA)  
for Director General/Elect.

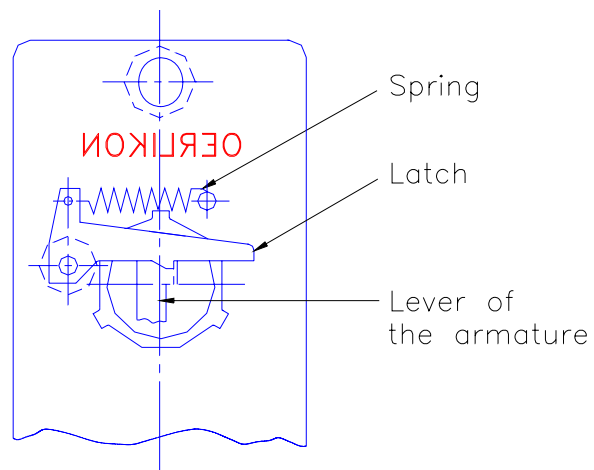
## 1. Front view




## 2. Horizontal projection



### 3. Principle



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BBC	From	Relay type DI – Locking of the armature			HBTA 8659				

**OFFER NO: BVW-E 7130**

R.D.S.O., Research, Design and standard organisation,  
Lucknow-Ref.EL/3.2.10/Gen./J-6 dt.87.03.09 and 87.05.15

Sl. No.	Qty	Description	Unit price sfr.	Total price sfr.
1a	10 (min)	Locking Arrangement for Relay Type DI, QLM-application KA 22094 Acc. to Drwg. No. HBTA 8659	252.-----	2,520.-----
1b	50	do.	225.	-----
1c	100	do.  <u>Total FORM PRICE</u> for seaworthy packed material delivered FOB European seaport, insured upto FOB.  <u>Validity:</u> 1987-12-31  <u>Delivery Time:</u> 10 months after the order is given free for manufacturing by us.  Zurich, 87-06-12 BVW-E/HK/sz	198.---	-----