1 DESCRIPTION

The RDB86A are quick trip and lockout relays. They are formed by HLB quick trip and lockout relays and HLG quick relays, and the following models are available:

RDB86A1A: It includes one (1) quick tripping relay (HLG) with 10 normally open contacts and one (1) bistable relay (HLB) with 8 configurable contacts.

The module is supplied with the following contact configuration:
10 n.o. contacts for HLG quick relay
2 n.c. contacts for HLB lockout relay
6 n.o. contacts for HLP lockout relay

1/4 19'' rack case, 4 units high.

RDB86A2A It includes two (2) quick tripping relays (HLG) with 10 normally open contacts each, and (20 n.o. contacts in total), and two (2) bistable relays (HLB) with 8 configurable contacts (16 contacts in total).

The module is supplied with the following contact configuration:
20 n.o. contacts for HLG quick relays
4 n.c. contacts for HLB lockout relays
12 n.o. contacts for HLB lockout relays

1/2 19" rack case, 4 units high.

RDB86A2ARE Similar to model RDB86A2A, but with the following contact configuration:

20 n.o. contacts for HLG quick relays
6 n.c. contacts for HLB lockout relays
10 n.o. contacts for HLB lockout relays

RDB86A3A It includes three (3) quick tripping relays (HLG) with 10 normally open contacts each, and (30 n.o. contacts in total), and four (4) bistable relays (HLB) with 8 configurable contacts (32 contacts in total).

The module is supplied with the following contact configuration:
30 n.o. contacts for HLG quick relays
8 n.c. contacts for HLB lockout relays
24 n.o. contacts for HLB lockout relays

19" rack case, 4 units high.

RDB86A3ARE Similar to model RDB86A3A, but with the following contact configuration:

30 n.o. contacts for HLG quick relays
10 n.c. contacts for HLB lockout relays
22 n.o. contacts for HLB lockout relays

RDB86A4A It includes three (3) quick tripping relays (HLG) with 10 normally open contacts each, and (30 n.o. contacts in total), and five (5) bistable relays (HLB) with 8 configurable contacts (40 contacts in total).

The module is supplied with the following contact configuration:
30 n.o. contacts for HLG quick relays
14 n.c. contacts for HLB lockout relays
26 n.o. contacts for HLB lockout relays

19" rack case, 4 units high.

The supplied cases are for semi-flush mounting. For other optional mountings, please contact our factory.

2 APPLICATION

RDB86A relays are applicable where several functions are to be performed by the same relay.

Typical applications for these relays are: Line breakers tripping, and lockout, lockout of all the line breakers in the same busbar, etc.

One of the most important applications of RDB relays, is the combination with differential relays, where the lockout relay needs to be reset manually for avoiding accidental reclosings, when an internal fault has activated the differential relay.

3 CONSTRUCTION

RDB86A relays are a combination of individual relays, which are plugged directly on double bases (one or more, depending on the model) housed inside the case, so that no case wiring is needed.

HLB type bistable relays with 8 contacts configurable as n.o or n.c., are located at the top.

HLG type quick tripping relays, with up to 10 n.o. contacts, are located at the bottom.

All dielectric materials used in this relay are of non-hygroscope characteristic, fire-proof, and they do not include any chlorine compound that could produce harmful gases for the contacts.

The materials used in the structural parts of the relay are highly stable and rigid, ensuring a long life even in extreme mechanical and ambient conditions.

4 TECHNICAL CHARACTERISTICS

Rated Voltage: *125 VDC*
Please contact the factory for further voltage levels.

Operation Range:
Between 80% and 120% of Rated Voltage

Consumption:

RDB86A1A:	*0.3 A to Rated V.*
RDB86A2A:	*0.6 A to Rated V.*
RDB86A3A:	*0.95A to Rated V.*
RDB86A2A:	*1.01A to Rated V.*

Performance Value:
60% of Rated Voltage.

Operation Time:

Closing of a quick N.O. contact:	*< 8 ms.*
Closing of a lockout N.O. contact:	*< 25 ms.*
Overlapping time between a quick and a lockout contact:	*> 10 ms.*
Time for a quick contact to remain closed:	*> 35 ms.*

Contacts

Quick Relay:
Close and carry for a tripping cycle (according to ANSI c37.90): 30 A.
Opening: 180 VA resistive to 125/250 VDC.
Opening: 60 VA inductive to 125/250 VDC.

Lockout Relay:

Make and Carry:
Continuous: 10 A.
During 1 minute: 20 A.
During 1 second: 50 A.

Closing Capacity:
30 A.

Breaking Capacity:
Opening of 5000 VA resistive to 250 VAC
Opening of 375 VA inductive to 125 VDC
Opening of 250 VA inductive to 250 VDC.

Dielectric Strength:
Between independent circuits: 2500 VAC during 1 second.
Between independent circuits and ground: 25000 VAC during 1 second.
Between terminals of an open contact: 1000 VAC during 1 second.

Mechanical Life:
Over 10 Million operations.

Ambient conditions:
Temperature Range: -20°C to +65°C.
Ambient Humidity: Up to 95% without condensing.

5 OPERATION

RDB86A trip and lockout relays, include XXXXXXXXXXXXXXXXXXXXX

The lockout reset can be performed applying 125 VDC between terminals B9 (+) and B12 (-), or manually removing the transparent cover.

6 RECEPTION TESTS

Upon receipt, it is recommended to carry out an immediate visual check, as well as the tests that are described below, in order to make sure that the relay has not been damaged during transportation, and that the factory calibration has not been altered.

6.1 Visual Inspection

Make sure that the model indicated on the front plate matches the order data.

Unpack the relay and make sure that there are no broken parts and there are no signs that the relay has been damaged during transportation.

6.2 Electrical Tests

Pre-wire the coils, using the indications from the internal connections diagrams (Figures 1 to 6).

Apply 125 VDC between terminals A1 (+) and A4 (-), and check that the contacts corresponding to the quick relay(s) (shown on the diagrams with letters C and D) take less thatn 8 ms to close.

Reset the bistable relay(s) manually and repeat the test checking that the contacts corresponding to the lockout relay(s) (shown on the diagrams with letters A and B) take less than 25 ms to close.

7 CALIBRATION

If the user wishes to change the contact configuration of the HLB lockout relay, it is necessary to adjust the springs.

Remove the HLB cover and unlock the screws regulating the springs strain. Adjust them so that the relay operates with 70 Vdc per coil and block again the adjusting screws.

8 MAINTENTANCE

8.1 Contact Cleaning

Contacts must be cleaned with a flexible steel sheet, without cuts or edges. In no case must a cutting tool be used that can erode the contacts surface.

8.2 Periodical Tests and Maintenance.

Given the important role that protection relays have in any installation, it is recommended that a periodic test program be followed. Given that the intervals between these tests vary for different types of relays and installations as well as the experience of the user performing the tests, it is recommended that the relay is tested at intervals of 1 to 2 years.