



Serial Number

Number in Batch

6RJ34-X-C / 2HSM517

48VDC BISTABLE CONTROL RELAY

Issue Level	Date	Summary of changes
A	03/08/2010	Initial release

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1. ASSOCIATED DRAWINGS

Auxiliary Voltage: 48V
Refer to Job Card and associated documentation.
Relay Connection Diagram

2. HIGH VOLTAGE TESTING

- a) Apply 2kV RMS 50Hz between terminal Groups 1 and 2 in Table 1 for 1 minute.
- b) Apply three 5kV 1/50us pulses of each polarity between terminal Groups 1 and 2 in Table 1.

TABLE 1

GROUP 1	GROUP 2
Each Coil	All other connections and Frame
Each contact set	All other connections and Frame

PASS

3. TEST PROCEDURE

Check the job card for any special requirements of the relay to be tested.

- a) Plug in the Alpha20 contact test module. Manually operate the relay by pushing the armature towards the pole face of the relay. Ensure that the contacts have sufficient over travel by ensuring that all of the contacts have made before the armature is fully home.

PASS

- b) Plug in the High Speed Matrix test module and attach the coaxial leads to the appropriate inputs of the oscilloscope.
- c) Operate the "CRO/Counter" switch to "CRO"
- d) Press the "test" button and adjust the trigger and vertical sensitivity on the CRO to obtain a waveform which displays the time between the trigger point and the contact closure.
- e) Ensure that this time is less than 50ms (first touch) at nominal voltage.
- f) Repeat this test for each contact in turn by operating the rotary switch to the position that corresponds to the contact under test.

PASS

- g) Reduce the auxiliary voltage input to 80% of nominal volts (38V) and by repeating one operation as in c) above ensure that the relay operates correctly. Also check that the armature is fully home.

PASS

- h) Set the test switch on the Matrix test module to "Electrical". With the relay operated, press the test button and ensure that the contacts reset correctly when applying 80% of nominal (38V) to the electrical reset terminals 25 & 26. Also check that the armature is fully home.

PASS

- i) Check that the pick up and reset operation occurs at 120% of nominal (58V), when applied to the operate coil, and then the reset coil.

PASS

- j) Check that the operated power and reset power is ZERO.

PASS



- k) Check that the operating power is less than 25W (i.e. $< 0.52A$) at nominal voltage, by measuring operating current on CRO.

PASS

- l) Operate the relay and press the reset test button. Check that the reset power is less than 25W ($< 0.52A$).

PASS

4. OPERATE CURRENT

- a) Reduce the auxiliary operate input voltage to zero then bring the voltage slowly back to nominal. Observe the current reading on the power supply meter. Note the current at which the relay operates, this must be greater than 25mA. Ensure the flag drops at the same voltage that the contacts pick up.
- b) Ensure that the operated burden is reduced to zero by the economising element after the relay has operated.
- c) With the relay in the operated position, reduce the auxiliary reset input voltage to zero then bring the voltage slowly back to nominal. Observe the current reading on the power supply meter. Note the current at which the relay resets, this must be greater than 25mA. Ensure the flag resets at the same voltage that the contacts pick up.
- d) Ensure that the reset burden is reduced to zero by the economising element after the relay has operated.

PASS

5. CAPACITOR DISCHARGE TEST

Adjust the operate input auxiliary voltage to 120% of nominal (58V), operate the "Cap Discharge" switch and ensure that the relay does not operate. The criterion is that the flag must not drop or contacts make.

PASS

6. AC IMMUNITY TEST

Check that the relay does not operate or reset when 110VAC is applied to either coil.

PASS

7. FLAG OPERATION

Ensure that the flag operates correctly when power is applied to the operate coil at 80% of nominal (38V). Ensure that the flag resets correctly when power is applied to the reset coil at 80% of nominal (38V).

PASS

8. GENERAL & FUNCTIONAL

Check that the relay is electrically sound and mechanically robust as per Standard Inspection & Test Schedule 903-000-026.

PASS



TESTED BY: _____ DATE: _____