



Serial Number

Number in Batch

6RAXX-X / 6RM2XX

6R AUXILIARY RELAY

| Issue Level | Date | Summary of changes |
|--------------------|-------------|---------------------------|
| A | 17/11/2010 | Initial release |
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|---------------|---------------------------------|--------------------------|-----------------|
| MVL | DW | DW | |



1. ASSOCIATED DRAWINGS

Refer to Job Card and associated documentation.
 Relay Connection Diagram

2. HIGH VOLTAGE TESTING

Using the standard Matrix High Voltage test fixture, apply:

- a) 2kV RMS 50Hz between terminal Groups 1 and 2 in Table 1 for 1 minute.
- b) 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 |
| All terminals | Frame |

PASS



3. TEST PROCEDURE

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

- a) Plug the relay into the 6R Matrix test module.
- b) 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. Check
- c) Make sure that the contact wiring of the relay corresponds to the connection diagram on the side of the relay. Check
- d) Check operation of relay at specified minimum and maximum DC operating voltage, when the relay is energised (via 27+, 28-), according to the following table. Also check operation of all BREAK contacts. For 2 element versions (6RA2X-X or 6RM2XXAX-X), separately energise (13+, 14-) and repeat test. Also check that the armature is fully home.

| Model | Nominal Voltage | Minimum voltage (75% nom.) | Maximum voltage (120%) |
|-------------------------|-----------------|----------------------------|------------------------|
| 6RAXX-A (6RM2XXXX-A) | 24V | 18 | 29 |
| 6RAXX-B (6RM2XXXX-B) | 32V | 24 | 39 |
| 6RAXX-C (6RM2XXXX-C) | 48V | 36 | 58 |
| 6RAXX-D (6RM2XXXX-D) | 110V | 82 | 132 |
| 6RAXX-E (6RM2XXXX-E) | 125V | 93 | 150 |
| 6RAXX-F (6RM2XXXX-F) | 250V | 187 | 300 |
| 6RAXX-G | 220V | 165 | 264 |
| 6RAXX-H | 240V | 180 | 288 |



Check

- e) Check that the HR flag operates at minimum voltage (75%), when the relay is energised. Also ensure that the flag resets correctly using the flag reset button.

Check

- f) For 6RA13-X (6RM206), 6RA23-X (6RM206) and 6RA15-X (6RM211) models, check operation of front panel hand reset button. All contact must reset correctly.

Check

- g) For 6RA15-X (6RM211) model, check operation of electrical reset at 75% of nominal voltage, by energising terminals 25+ and 26-. All contact must reset correctly.

Check

- h) Check that the operating burden when the relay is operated at nominal voltage is as according to the following table:

| Model | Contact Mechanism | I @ Vnom= 24V | I @ Vnom= 32V | I @ Vnom= 48V | I @ Vnom= 110V | I @ Vnom= 125V | I @ Vnom= 250V | I @ Vnom= 220V | I @ Vnom= 240V |
|----------------|-------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------------|---------------------|---------------------|
| 6RA11 (6RM202) | Self Reset | <83mA | <62mA | <41mA | <18mA | <16mA | <8mA | <9mA | <8mA |
| 6RA21 (6RM202) | Self Reset | <83mA (each element) | <62mA (each element) | <41mA (each element) | <18mA (each element) | <16mA (each element) | <8mA (each element) | <9mA (each element) | <8mA (each element) |
| 6RA13 (6RM206) | Latching | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6RA23 (6RM206) | Latching | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6RA15 (6RM211) | Latching | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Check

- i) Press the "test" button on the matrix test fixture 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. This should be less than 75ms.

- j) Repeat this test for each contact in turn by operating the rotary switch to the position that corresponds to the contact under test.

Check

5. GENERAL & FUNCTIONAL

- a) Check that the label has been labelled correctly as per the wiring diagram.

Check

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

Check

PASS



TESTED BY: _____ DATE: _____