



Order Number

Serial Number

Number in Batch

PRODUCT/TEST MANUAL

2HS512K10

110V DC SELF RESET MULTI-TRIP RELAY

Issue Level	Date	Summary of changes
A	19/08/2004	Initial issue.
B	30/09/2004	Change operate time to <11.1ms at 30V DC including bounce.
C	03/03/2005	TfA Issue I
D	01/09/2005	Added kV grouping table
E	07/08/2006	TfA 62216 Issue K
F	26/05/2008	TfA 62216 Issue L
G	06/06/2008	Added check for overtravel of N/C contacts
H	12/09/2008	Added 2kV across open contact
I	04/08/2010	Added insulation resistance testing of all units

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ERL	DG	DG	

1. ASSOCIATED DRAWINGS

This Product Test Manual is used in conjunction with TfA 62216 Issue L 18/04/08.

2. INSULATION RESISTANCE CHECK

Check the insulation resistance at 500VDC for the following cases in Table 1. Note that the resistance shall be **no less than 100MΩ**.

Table 1

Terminals A	Terminals B
+1,-1,S1-S4	S5 – S8 & Earth
+1,-1, S1,S3,S5,S7	S2,S4,S6,S8 & Earth
+1,-1,S1,S2,S5,S6	S3,S4,S7,S8 & Earth
+1,-1	All & Earth
All	Earth
Across each open contact (note: S1-S6 are N/O and S7-S8 are N/C)	

3. HIGH VOLTAGE TESTING

Apply 2kV RMS 50Hz between terminals as in Table 2 below for 1 minute.

Apply three 5kV 1/50us pulses of each polarity between terminals as in Table 1 below.

Table 2

Terminals A	Terminals B
+1,-1,S1-S4	S5 – S8 & Earth
+1,-1,S2,S4,S6,S8	S1,S3,S5,S7 & Earth
+1,-1,S1,S2,S5,S6	S3,S4,S7,S8 & Earth
+1,-1,S7	S2 & Earth
All	Earth
Across each open contact	

4. TEST PROCEDURE

- a) Check that the coil resistance is 98 +/- 10% ohms
- b) Check that the shunt resistance is 1,500 ohms (20W) +/- 10%
- c) Wire all N/O contacts in series. Apply 110VDC and measure the operate time of the output contacts using the Matrix High Speed Relay Jig. Operate time is to be less than 11.1ms including bounce. Ensure flag operates correctly with cover in place.
- d) Check operation of each normally closed contact, and check for sufficient overtravel.
- e) Check that the economy contact (RL2-1) opens in greater than 20ms and less than 45ms at 110VDC.
- f) Check that the relay operates satisfactorily at 138V and 65V DC and that the armature is fully home. Ensure that no arcing occurs at the economy contact (RL2-1) at 138V DC.
- g) Check that the quiescent current drain is less than 75mA at 110V and 90mA at 138V.



5. GENERAL & FUNCTIONAL

- a. Check external connections to Energy Australia's drawing 169212
- b. Check the internal terminations at the base of the relay for tightness.
- c. Check adjustment of flag and flag reset mechanism
- d. Check that the relay has 1 spring washer, 3 nuts and two flat washers per stud.
- e. Check that the relay is electrically sound and mechanically robust as per Standard Inspection & Test Schedule 903-000-026.

PASS

TESTED BY: _____ DATE: _____