Order Number _____ Serial Number _____

PRODUCTION TEST MANUAL

2P40K16

PHASE FAILURE RELAY

Version Control

Issue	Date	Summary of Changes	Author
A	17/05/2013	Original Issue.	MVL

Author	Checked	PDF File Created	Registered & Released
MVL	SG	SG	dietmarweinkoetz@rmspl.com.au

1. DESCRIPTION OF OPERATION

The 2P40 is designed to provide an alarm if any of the incoming voltage supplies are lost or an under voltage condition exists. The relay will remain in the dropped out condition until the faulted phase returns to normal or the Undervoltage condition is removed.

2. SPECIFICATIONS

Auxiliary Supply	415V AC 50 Hz
Undervoltage	80% of nominal (factory set)
Phase imbalance	5 - 15 % of nominal

3. TEST EQUIPMENT REQUIRED

Three Phase adjustable Supply
Digital Multimeter

4. ASSOCIATED DRAWINGS

162-040-116	Wiring diagram
690-204-202	Circuit diagram
690-204-302	Loading diagram

5. HIGH VOLTAGE TESTING

a) Apply 2.2kV 50Hz test for 3 seconds between terminal Groups A and B.

b) Apply three 5kV 1/50 impulses of each polarity between terminal Groups A and B.

Group A	Group B
6,7,9	14-16, 17-19 , 10-11
14-16	6,7,9, 17-19, 10-11
17-19	6,7,9, 14-16, 17-19
10-11	6,7,9, 17-19, 14-16
All	Frame

6. CALIBRATION & TEST PROCEDURE

a) Connect the DVM between TP6 and TP 1.

b) Adjust 415V 50Hz three phase supply to achieved balanced phase voltages.

c) Switch output ON. The output relay should pick up. Check for ~30VDC at TP2.

d) Remove each phase individually on the three- phase tester (BLUE, YELLOW, and RED) and confirm that the LED is disabled.

e) Adjust Balance trimpot (R3) for a minimum reading between TP6 & TP1

f) Connect the DVM between TP5 and TP1. Decrease yellow phase so that the BLUE-YELLOW line voltage is 95 % (394.5) of the normal line voltage. Adjust trimpot R8 while monitoring TP5, so that TP5 gives a maximum reading.

g) Set the three-phase supply to the nominal line voltage. Decrease all three phases slowly to 332V. Adjust trimpot R14 until the relay just drops out. Slowly increase voltage until the relay picks up. The pick up voltage should be less than 386V return all phases to normal line voltage.

	Nominal	Actual
Drop out	332 V	
Pick up	< 386 V	

h) Set the phase imbalance potentiometer to 15 % (fully anticlockwise). Decrease yellow phase so that the BLUE-YELLOW line voltage is 353 V. Adjust R21 until the relay drops out. Increase voltage and check that the relay picks up < 386 V.

	Nominal	Actual
Drop out	353 V	
Pick up	< 386 V	

i) Set the phase imbalance potentiometer to 5 % (fully clockwise). Decrease yellow phase so that the BLUE-YELLOW line voltage is 394.5 V. Adjust R23 until the relay drops out. Increase voltage and check that the relay picks up less than 406 V.

	Nominal	Actual
Drop out	394.5 V	
Pick up	< 406 V	

7. 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 :_____

8. CONNECTION DIAGRAM