VTS II/D/AT TYPE C

CALIBRATION AND TEST PROCEDURE

TEST	MIN	MAX	NOM	ACTUAL	UNIT
1. Test Equipment Required:					
(a) Programmable current source.					
(b) AC Auxiliary supply.					
(c) Operate time measuring equipment.					
(d) Current transformer - Email L2274.					
2. Insulation Test - 2KV RMS:					
Join terminals 1-8 inclusive together and 9-16 inclusive together. Apply 2KV 50Hz for 1 minute between the two terminal groups.					
3. Calibration Procedure:					
(i) Set the 'ALARM' setting switch to 2 Amps, the "TRIP' setting switch to 10 Amps and the 'OPERATE TIME' setting switch to instantaneous. Connect 240V AC to the appropriate input terminal as shown on on the connection label affixed to the side of the relay. Connect an input current of 1.85 Amps through the primary of the toroidal current transformer. Adjust trimpot R2 until the 'ALARM' relay RL2 picks up. The relay is reset by operating the reset pushbutton after the current has been removed. The relay is now calibrated provided the other switch settings are within the stated tolerance.					
(ii) With the auxiliary supply set to 240V AC, check the pickup of the 'TRIP' circuit (relay RL1) for the five values of 'TRIP' switch settings and check that they are within tolerance as below:					
SETTINGS					
0.5A	.425	.50	.463		A
1.0A	.85	1.0	.925		A
2.0A	1.70	2.0	1.85		A
5.0A	4.25	5.0	4.63		A
10.0A	8.50	10.0	9.25		A

Digitally signed by David Greenwood
cn=David Greenwood, c=AU
Date: 2003.05.12 10:44:43 +11'00'
Reason: Document is released

CALIBRATION AND TEST PROCEDURE

TEST	MIN	MAX	NOM	ACTUAL	UNIT
(ii) *cont'd/*					
If any are out of tolerance, record them but do not adjust R2 yet. After RL1 has picked up, the relay can be reset by operating the reset pushbutton. This will reset the flag from ORANGE (picked up) to BLACK (reset).					
(iii) Check that the 'TRIP' circuit changeover contacts are operating correctly.					
(iv) Check the calibration of the 'TRIP' circuit at 204V (85%) auxiliary supply, and also check that the 'TEST' pushbutton causes a trip output at each setting. Note that the calibration current must be zero when the TEST' function is checked.					
0.50A	.425	.50	.463		A
trip test					
1.0A	.85	1.0	.925		A
trip test					
2.0A	1.70	2.0	1.85		A
trip test					
5.0A	4.25	5.0	4.63		A
trip test					
10.0A	8.50	10.0	9.25		A
trip test					
(v) With the auxiliary supply set to 240V AC, check the pickup of the 'ALARM' circuit (RL2) by the same procedure as (ii) ('TRIP' current setting 10A):					
ALARM SETTINGS					
0.5A	.425	.50	.463		A
1.0A	.85	1.0	.925		A
2.0A	1.70	2.0	1.85		A
5.0A	4.25	5.0	4.63		A
(vi) Check that the 'ALARM' circuit changeover contacts are operating correctly.					
(vii) Check that the remote reset is operating correctly by shorting terminals 3 and 4.					

CALIBRATION AND TEST PROCEDURE

TEST		MIN	MAX	NOM	ACTUAL	UNIT
(viii) Check the calibration of the 'ALARM' circuit at 204V (85%) auxiliary supply:						
	0.5A	.425	.50	.353		A
	1.0A	.85	1.0	.925		A
	2.0A	1.70	2.0	1.85		A
	5.0A	4.25	5.0	4.63		A
(ix) Having now estbalished that any or all of the settings are outside the acceptable range, the trimpot R2 may be readjusted to bring them back to acceptable limits. Whenever R2 is adjusted, all settings must be checked.						
Note: Whenever an 'ALARM' setting is checked, the setting on the 'TRIP' switch must be set at least one range higher than the 'ALARM' setting so that the ALARM' relay operates without the 'TRIP' relay operating.						
(x) Alarm Time Delay						
Set the 'ALARM' switch to 2 Amps, the 'TRIP' switch to 5 Amps and the OPERATE TIME' switch to instantaneous. Adjust input current to 2.2 Amps. Set auxiliary supply to 240V AC. Connect the timer and controller circuitry so that the time delay between input current tripping and actual output relay contact operation can be measured. Check that the relay conforms to the following table for the 'ALARM' circuit:						
		.01	.04	INST		s
		.08	.12	.1		s
		.28	.42	.35		s
		.60	.90	.75		s
		.80	1.20	1.00		s
If any setting is outside the above range, the corresponding timing resistor must be changed. A larger resistor increases the time while a smaller resistor decreases the time. The capacitor C8 should not be changed as this will affect all the time settings.						

CALIBRATION AND TEST PROCEDURE

TEST	MIN	MAX	NOM	ACTUAL	UNIT
(xi) Trip Time Delay					
Set the 'TRIP' switch to 2A, the 'ALARM' switch to 5A, and the 'OPERATE TIME' switch to instantaneous.					
Set input current to 10% more than 2.0A (ie, 2.2A), and check that the relay conforms to the following table for the TRIP' circuit:					
	.01	.04	INST		s
	.08	.12	.1		s
	.28	.42	.35		s
	.60	.90	.75		s
	.80	1.20	1.00		s
If any setting is outside the above range, the corresponding timing resistor must be changed. The capacitor C7 should not be changed as this will affect all the time settings.					
(xii) Set the auxiliary supply to 240V (85%). With both 'ALARM' and 'TRIP' circuits reset (unenergised) and the 'OPERATE TIME' switch set to 1 second, press the 'TEST' pushbutton. The 'TRIP' circuit should operate and the flag should change from BLACK to ORANGE. The circuit can be reset by operating the reset pushbutton.					
4. Check that unit is electrically and mechanically robust, as per Standard Inspection and Test Schedule 903-000-026.					