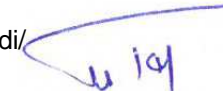



<b>Test Report No.:</b> 50083833 001		Page 1 of 6			
<i>Prüfbericht - Nr.:</i>		<i>Seite 1 von 6</i>			
<b>Client:</b>	Zhejiang Denrom Electric Equipment Co., Ltd				
<i>Auftraggeber:</i>	12 Huifeng Road, Songhu Industry Zone; Zhejiang Province P.R CHINA				
<b>Test item:</b>	RCBO				
<i>Gegenstand der Prüfung:</i>					
<b>Identification:</b>	Brand DL Electric,	<b>Serial No.:</b>	No serial number		
<i>Bezeichnung:</i>	Model DRNL-32	<i>Serien-Nr.:</i>			
<b>Receipt No.:</b>	1113009582	<b>Date of receipt:</b>	2017-05-24		
<i>Wareneingangs-Nr.:</i>		<i>Eingangsdatum:</i>			
<b>Condition of test item at delivery:</b>	New samples				
<i>Zustand des Prüfgegenstandes bei Anlieferung:</i>					
<b>Testing location:</b>	TÜV Rheinland Australia Pty. Ltd.				
<i>Prüfört:</i>	182 Dougharty Road, Heidelberg West, Victoria 3081, Australia				
<b>Test specification:</b>	According to ESV "Additional testing and verification requirements for RCBOs"				
<i>Prüfgrundlage:</i>	Version 2.0 – last updated 6 April 2017				
<b>Test Result.:</b>	See the content of this test report for the test result.				
<b>Testing Laboratory/</b>	TÜV Rheinland Australia Pty. Ltd.				
<i>Prüflaboratorium:</i>	182 Dougharty Road, Heidelberg West, Victoria 3081, Australia				
<b>Compiled by/</b> zusammengestellt:		<b>Reviewed by/</b> kontrolliert:			
2017-05-29	Keivan Mohammadi/ Project Engineer	2017-05-29	Antony Milovac/ Reviewer		
					
<b>Datum</b>	<b>Name/Stellung</b>	<b>Unterschrift</b>	<b>Datum</b>	<b>Name/Stellung</b>	<b>Unterschrift</b>
<i>Date</i>	<i>Name/Position</i>	<i>Signature</i>	<i>Date</i>	<i>Name/Position</i>	<i>Signature</i>
<b>Other Aspects/</b> Sonstiges:					
See page 2 for general remarks					
<b>Abkürzungen:</b>	<i>P(ass)</i> = entspricht Prüfgrundlage	<b>Abbreviations:</b>	<i>P(ass)</i> = passed		
	<i>F(ail)</i> = entspricht nicht Prüfgrundlage		<i>F(ail)</i> = failed		
	<i>N/A</i> = nicht anwendbar		<i>N/A</i> = not applicable		
	<i>N/T</i> = nicht getestet		<i>N/T</i> = not tested		
<p>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</p> <p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</p>					

Revision 5.0

Accredited for compliance  
with ISO/IEC 17025  
Technical Competence



ACCREDITATION No. 1700

**Testing specification according to the instruction by ESV****General remarks:**

1. This report shall not be reproduced, except in full.
2. Details in test data / test plan no. 1113009582
3. Specification applied:
  - Testing instruction by ESV
4. Reporting of results herein is in accordance with NATA recommendations taking into account U of M.
  - (a) For minimum limits – Where measurement is on the limit or above the limit it is deemed to comply. Where measurement is below the limit it is deemed not to comply
  - (b) For maximum limits – Where measurement is on the limit or below the limit it is deemed to comply. Where measurement is above the limit it is deemed not to comply.
5. For reporting of results the estimated uncertainty for measurement taken into account 95% confidence level.
6. This test report is based on assessment and tests applied to the specific test item(s) as submitted by the client. TÜV Rheinland Australia disclaims any and all responsibility or obligation for any other item.
7. Assessment conducted on 2017-05-24

**Description of the test item:**

**RCBO brand DL ELECTRIC model DRNL-32, C16, 30 mA, 16 A, 240 V, a.c., 3 kA.**  
Both Line and neutral are disconnected when RCBO trips.

**Options/accessories/ancillary equipment:**

The equipment was tested without any optional accessory installed. Hence, this report does not cover parameters that are influenced by the installation of optional accessory that might affect safety in the meaning of this standard.

Test instruction by ESV			
Clause	Requirement + Test	Result - Remark	Verdict
1	The RCBO, in the closed position, is to be set up as per the circuit diagram on the following page to have 240 V applied on both L terminals. The variable resistor R of the test circuit is to be set so that a residual current of 40 mA is passed through the neutral terminals of the device. The link between the two L terminals shall be as short as practicable. The residual current is applied for 60 seconds if allowed by the construction of the RCBO.	1.5 mm <sup>2</sup> , 120 mm long copper cable was used for connection between L terminals (line and load side). The sample tripped as soon as 40 mA leakage current applied and leakage current stopped so not possible to apply the leakage current for 60 seconds (Sample 1)	P
2	The RCBO is setup as per test (1), however the variable resistor is disconnected from the circuit. The RCBO is closed and the test button is pressed and held for 10 seconds.	RCBO tripped as soon as the test button was pressed but the test was continued for 10 s. (Sample 2)	P
	After these tests, a verification of the operating characteristics of the RCBOs under residual current conditions is performed by the test of clause 9.9.1.2a of AS/NZS 61009.1:2015.	See appended tables of result	P
<b>Clause 9.9.1.2 of AS/NZS IEC 61009.1:2015</b>			
	a) Verification of the correct operation in case of a steady increase of the residual current		P
	The test switches S1 and S2 and the RCBO being in the closed position, the residual current is steadily increased, starting from a value not higher than 0.2 I <sub>Δn</sub> , trying to attain the value of I <sub>Δn</sub> within 30 s, the tripping current being measured each time.		P
	All five measured values shall be situated between I <sub>Δno</sub> and I <sub>Δn</sub> .	See appended tables of result	P



**Test results****Verification result according to clause 9.9.1.2 (a) of AS/NZS 61009.1:2015** $I_{\Delta n} = 30 \text{ mA}$  /  $0 \text{ mA} < \text{tripping limit} < 30 \text{ mA}$ **Sample No. 1 after test**

Test number	1	2	3	4	5
Tripping current (mA)	22.0	22.2	20.5	21.8	22.1

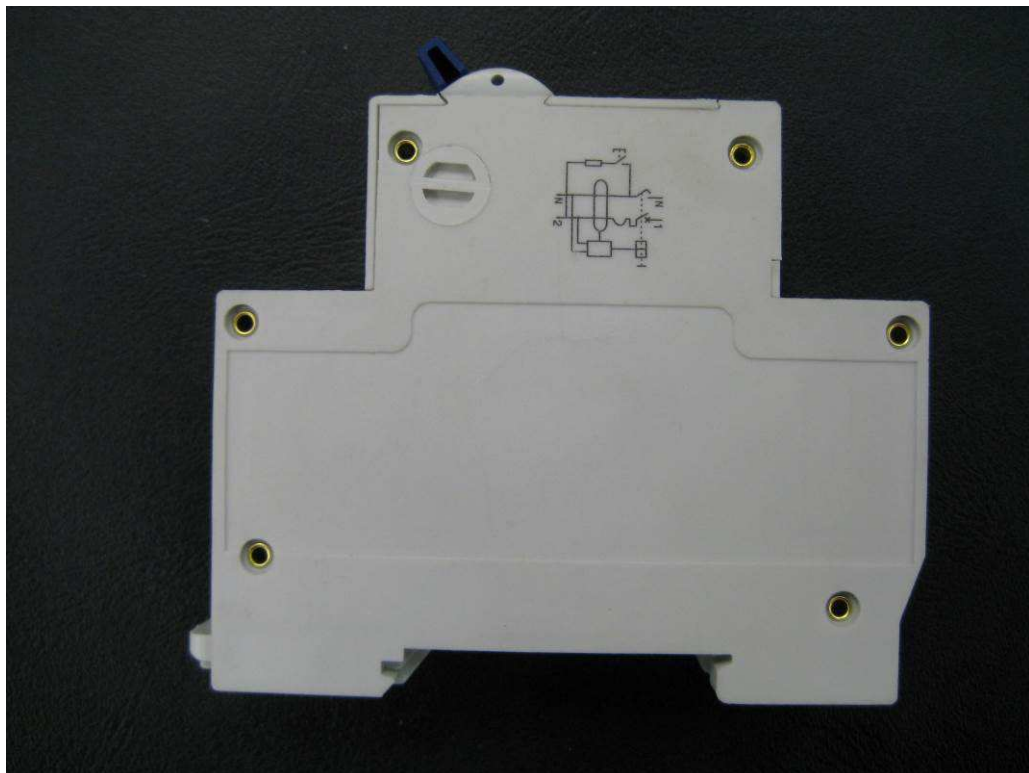
**Sample No. 2 after test**

Test number	1	2	3	4	5
Tripping current (mA)	23.5	22.8	22.0	23.4	22.5

**PHOTO**



Test sample front View



Test sample side View  
End of test report