




Test report no.: <i>Prüfbericht Nr.:</i>	AU24WM30 001	Order No.: <i>Auftrags-Nr.:</i>	252106509	Page 1 of 33 Seite 1 von 33
Client Reference No.: <i>Kunden-Referenz-Nr.:</i>	2569280	Order date: <i>Auftragsdatum:</i>	2024-05-15	
Client: <i>Auftraggeber:</i>	LECO Switchgear Ltd 18/24 Westech Place, 0602 Glen Eden, Auckland, New Zealand			
Test item: <i>Prüfgegenstand:</i>	Main busbars, distribution busbars, neutral busbar and Protective circuit containing Earth bar, all contained in "Quantum Switchboard" ASSEMBLY.			
Identification/ Type No.: <i>Bezeichnung / Typ-Nr.</i>	Drawing no. "00000/QUASB/2", Rev C			
Order content: <i>Auftrags-Inhalt:</i>	Electrical Safety Testing			
Test specification: <i>Prüfgrundlage:</i>	Short-circuit withstand strength testing according to Clause 10.11.5.3.3 and 10.11.5.3.5 & 10.11.5.6 of AS/NZS 61439.1:2016			
Date of sample receipt: <i>Wareneingangsdatum:</i>	2024-05-20			
Test sample No.: <i>Prüfmuster-Nr.:</i>	A003725028-001			
Testing period: <i>Prüfzeitraum:</i>	2024-05-06			
Place of testing: <i>Ort der Prüfung:</i>	TÜV Rheinland Australia Pty. Ltd.			
Testing laboratory: <i>Prüflaboratorium:</i>	TÜV Rheinland Australia Pty. Ltd.			
Test result*: <i>Prüfergebnis*:</i>	Pass			
created by: <i>erstellt von:</i>	Gurpreet Singh 	authorized by: / <i>genehmigt von:</i>	Shuai Shao 	
Date: 2024-07-22 <i>Datum:</i>		Issue Date: 2024-09-06 <i>Ausstellungsdatum:</i>		
Position / Stellung:	Expert	Position / Stellung:	Expert	
Other / <i>Sonstiges:</i>	Rated operational voltage (U_e)	415 V	Rated frequency (f_n)	50 Hz
	Rated withstand short circuit current (I_{cw}) for Main busbars			36 kA, 1s
	Rated withstand short circuit current (I_{cw}) for Distribution busbars			36 kA, 1s
	Rated withstand short circuit current (I_{cw}) for Neutral busbars			24 kA, 1s
	Rated withstand short circuit current (I_{cw}) for Protective circuit containing Earth bar.			24 kA, 0.1s
Refer to page 3 for more details.				
Condition of the test item at delivery: <i>Zustand des Prüfgegenstandes bei Anlieferung:</i>	Test item complete and undamaged			
* Legend: P(ass) = passed a.m. test specification(s) F(all) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet				
<p>This test report only 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 test mark. <i>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.</i></p>				

v05

Test report no.: AU24WM30 001

Page 2 of 33
Seite 2 von 33

Remarks

- | | |
|---|---|
| 1 | The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request. |
| 2 | As contractually agreed, this document has been signed digitally only. TÜV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TÜV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged. |
| 3 | Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.
Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report. |
| 4 | The decision rule for statements of conformity in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report |
| 5 | 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. |

History of revision:

N/A

Test report no.: AU24WM30 001

Page 3 of 33
Seite 3 von 33

Product description

1	Product details:	Refer to the test item description below.
2	Dimensions / Weight:	[W x H x D] (mm): Refer to the drawing
3	Operating elements:	N/A
4	Equipment / Accessories:	The equipment was tested without any optional accessory or ancillary equipment installed. Hence, this report does not cover parameters that are influenced by the installation of optional accessory or ancillary equipment that might affect safety in the meaning of this standard.
5	Used materials:	Refer to the drawing for details.
6	Other:	N/A
7	Test sample obtaining:	<input checked="" type="checkbox"/> Sending by customer <input type="checkbox"/> Sampling by TÜV Rheinland Group <input type="checkbox"/> others:

Description of the test item:

The test sample provided is an ASSEMBLY containing 3 tiers (1 to 3) from left to right. Tier 1 contains an incoming circuit comprising of incoming unit feeding the main busbars on the top segment. Tier 2 consists of several outgoing units connected onto a chassis which is fed via the main busbars located in the top segment. The middle compartment of tier 2 contains another outgoing unit of MCCB. Tier 3 is a cable zone. The assembly has external surface doors and internal polycarbonate shielded cover. The external doors are closed and locked using screws. Refer to the drawing "00000/QUASB/ (1 to 4)", Rev C and photos for more details.

Busbars						
Test	Test item	Busbars dimensions (per phase)	Busbars centres	Busbars supports*	No. of supports	Support centres
Test 1	Main busbars	1 x 42 mm x 12 mm Length: 2 m	85 mm	GRP U-PROFILE -/ Fibrolux -	2	Refer to the drawing
Test 2	Distribution busbars	1 x 42 mm x 12 mm Length: 1.35 m	75 mm	GRP U-PROFILE -/ Fibrolux -	3	415 400
Test 3	Neutral busbar	1 x 42 mm x 12 mm Length: 1.1 m	N/A	Camsco SM-55 INSULATOR M10*55	3	370 400
Test 4	Earth busbar	1 x 40 mm x 6.3 mm	N/A	Camsco SM-55 INSULATOR M10*55	7	Refer to the drawing

*Note: The manufacturer of the supports was not verified by TUV Rheinland.

For more details refer to the drawings.