



<p>TEST REPORT IEC 60947-7-2 Low-voltage switchgear and controlgear Part 7: Ancillary equipment Section Two: Protective terminal blocks for copper conductors</p>	
Report Number.....	HELES2311001096-1
Date of issue	2024.01.24
Total number of pages	11
Name of Testing Laboratory preparing the Report	SGS Fimko Ltd.
Applicant's name	Ouneva Oy
Address.....	Teollisuustie 21, 82730 TUUPOVAARA, FINLAND
Test specification:	
Standard	IEC 60947-7-2:2009 (Third Edition) in conjunction with IEC 60947-1 (Fifth Edition) + A1:2012 + A2:2014
Test procedure	Investigation
Non-standard test method	N/A
Test Report Form No.	IEC60947_7_2B
Test Report Form(s) Originator	DEKRA Certification B.V.
Master TRF	Dated 2016-01
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Test item description :	Connector for power cables	
Trade Mark :	OUNEVA	
Manufacturer	Ouneva Oy	
Model/Type reference	VA05-0004, VA05-0005, VA05-0006, VA05-0007	
Ratings	35-50 mm ² , 50-70 mm ² , 95-120 mm ² , 70-95 mm ²	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	SGS Fimko Ltd.
	Testing location/ address :	Takomotie 8 FI-00380 Helsinki Finland
<input type="checkbox"/>	Associated CB Testing Laboratory:	
	Testing location/ address :	
	Tested by (name, function, signature) :	Juhani Raitio Project Manager 
	Approved by (name, function, signature) ... :	Vesa Haapaoja Testing Engineer 
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	N/A
	Testing location/ address :	
	Tested by (name, function, signature) :	
	Approved by (name, function, signature) ... :	
<input type="checkbox"/>	Testing procedure: CTF Stage 2:	N/A
	Testing location/ address :	
	Tested by (name + signature)	
	Witnessed by (name, function, signature) .:	
	Approved by (name, function, signature) ... :	
<input type="checkbox"/>	Testing procedure: CTF Stage 3:	N/A
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	N/A
	Testing location/ address :	
	Tested by (name, function, signature) :	
	Witnessed by (name, function, signature) .:	
	Approved by (name, function, signature) ... :	
	Supervised by (name, function, signature) :	

List of Attachments (including a total number of pages in each attachment):	
-	
Summary of testing:	
Tests performed (name of test and test clause):	Testing location:
All applicable clauses. 3 short circuit tests were done according to EN 60947-7-2.	SGS CBTL (See page 2)
Summary of compliance with National Differences (List of countries addressed):	
-	
<input checked="" type="checkbox"/> The product fulfils the requirements of EN 60947-7-1:2009 and EN 60947-7-2:2009.	



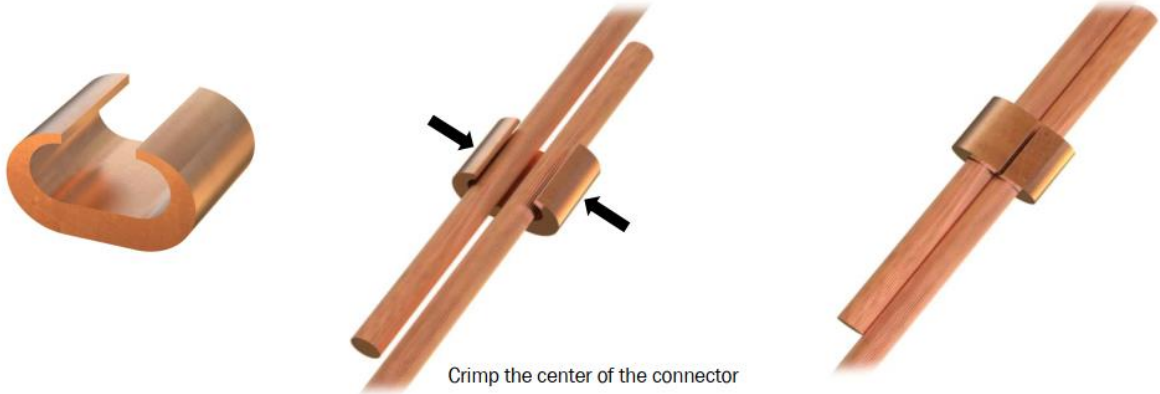
Test item particulars	
Particulars: test item vs. test requirements	
- method of fixing.....	: crimped
- number of poles.....	: 1
- type of clamping unit.....	: see page 6
- ability to receive conductors.....	: 2
- number of terminals on terminal assembly.....	: 1
- rated cross-section (mm ²)	: see page 6
- rated connecting capacity (mm ²).....	: see page 6
Possible test case verdicts:	
- test case does not apply to the test object.....	: N/A
- test object does meet the requirement.....	: P (Pass)
- test object does not meet the requirement.....	: F (Fail)
Testing.....	
Date of receipt of test item	: 2023.12.17
Date (s) of performance of tests	: 2023.12.17 – 2023.01.19
General remarks:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</p> <p><i>This document is issued by the Company under its General Conditions of service accessible at http://www.sgs.com/terms_and_conditions.htm attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.</i></p> <p><i>Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.</i></p> <p><i>Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This document cannot be reproduced except in full, without prior approval of the Company.</i></p>	

General product information:

Description

C-sleeves are designed for connecting, branching and extending of copper lines. Sleeves are manufactured of 99,9% pure copper. C-sleeves are marked with manufacturer symbol, sleeve type and the sizes of compatible wires

Crimping



Product / Crimping information

Product code	Product name	Main conductor	Branch conductor	Eipress	
				Crimping dies	No. of crimps
VA05-0004	C-connector C9	35-50 mm ²	35-50 mm ²	BC8-9	1
VA05-0005	C-connector C11	50-70 mm ²	50-70 mm ²	BC11	1
VA05-0006	C-connector C15	95-120 mm ²	95-120 mm ²	BC15 / 13BC15*	1 / 3*
VA05-0007	C-connector C13	70-95 mm ²	70-95 mm ²	BC13 / 13BC13*	1 / 3*

IEC 60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
8.4.6	Short-time withstand current test		
	- cross-section of the conductor (mm ²)	C9 - 50 mm ² C11 - 70 mm ² C13 - 95 mm ² C15 - 120 mm ²	—
	Test current from clamping unit to clamping unit (1-1)		
	- test current (A)	Tested values: C9 – 8,4 / 8,3 / 8,3 kA C11 – 8,6 / 8,7 / 8,7 kA C13 – 11,5 / 11,5 / 11,7 kA C15 – 14,8 / 14,7 / 14,8 kA Requirements: C9 – 6 kA C11 – 8,4 kA C13 – 11,4 kA C15 – 14,4 kA	—
	- duration of the test current (s)	1 s.	—
	At the end of the test, continuity shall exist on the test sample assembly and the terminal blocks shall not show any cracking, breakage or other critical damage		P
	Voltage drop after short-time withstand current test		P
	- cross-section of the conductor (mm ²)	C9 - 50 mm ² C11 - 70 mm ² C13 - 95 mm ² C15 - 120 mm ²	—

IEC 60947-7-2			
Clause	Requirement – Test	Result - Remark	Verdict
	- test current (A) d.c. :	C9 – 15 A C11 – 19,2 A C13 – 23,2 A C15 – 26,9 A	—
	- voltage drop (mV) before short-time withstand current test not exceeding 3,2 mV :	C9 – 0,19 mV C11 – 0,25 mV C13 – 0,40 mV C15 – 0,24 mV	P
	- voltage drop (mV) after short-time withstand current test not exceeding 3,2 mV :	C9 – 0,20 mV C11 – 0,27 mV C13 – 0,44 mV C15 – 0,26 mV	P
	If the measured value exceeds 3,2 mV, the voltage drop is determined on each individual clamping unit separately, which shall not exceed 1,6 mV		N/A

List of test equipment used:

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
8.4.6	Short-time withstand current	Datalogger, Inv. No 8662	0 – 200 °C	30.1.2023	30.1.2024
	Short-time withstand current	Oscilloscope, Lecroy, Inv. No 11444	GJ	23.3.2023	23.3.2024
	Voltage	Digital Multimeter, Fluke 177, Inv. No 7298	0 - 400 V	26.9.2023	26.9.2024
	Current	Clamp meter, Kyoritsu 2009, Inv. No 4997	0 - 1500 A	24.2.2023	24.2.2024
	Length	Digital Caliper, Inv. No 5103	0 - 150 mm	28.9.2023	28.9.2024





