

CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-L69654-11-12304102-2
Report Reference E69654-20140321
Date 28-Sep-2020

Issued to: WAGO Kontakttechnik GmbH & Co. KG
Hansastraße 27 Minden
Germany 32423

This is to certify that representative samples of ZMVV - Wire Connectors and Soldering Lugs
See Addendum Page for Product Designation(s).

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

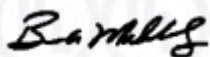
Standard(s) for Safety: UL 486C, 7th Ed., Issue Date: 2018-01-26, Revision Date: 2019-10-04

Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information

This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>

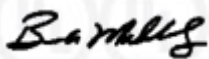


CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-L69654-11-12304102-2
Report Reference E69654-20140321
Date 28-Sep-2020

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description
221-2401	Wire Connectors and Soldering Lugs
221-2411	Wire Connectors and Soldering Lugs
221-412	Splicing wire connectors
221-413	Splicing wire connectors
221-415	Splicing wire connectors
221-482	Splicing wire connectors
221-483	Splicing wire connectors
221-485	Splicing wire connectors
221-612	Splicing wire connectors
221-613	Splicing wire connectors
221-615	Splicing wire connectors
221-682	Wire Connectors and Soldering Lugs
221-683	Wire Connectors and Soldering Lugs
221-685	Wire Connectors and Soldering Lugs



Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-L69654-41-12304102-2
Report Reference E69654-20140321
Date 28-Sep-2020

Issued to: WAGO Kontakttechnik GmbH & Co. KG
Hansastraße 27 Minden
Germany 32423

**This is to certify that
representative samples of**

ZMVV7 - Wire Connectors and Soldering Lugs Certified for
Canada

See Addendum Page for Product Designation(s).

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

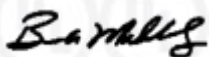
Standard(s) for Safety: CSA C22.2 NO. 188-18, 4th Ed., Issue Date: 2018-01-26,
Revision Date: 2019-10-04

Additional Information: See the UL Online Certifications Directory at
<https://iq.ulprospector.com> for additional information

This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC



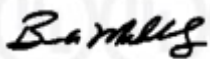
Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>

CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-L69654-41-12304102-2
Report Reference E69654-20140321
Date 28-Sep-2020

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description
221-2401	Wire Connectors and Soldering Lugs
221-2411	Wire Connectors and Soldering Lugs
221-412	Splicing wire connectors
221-413	Splicing wire connectors
221-415	Splicing wire connectors
221-482	Splicing wire connectors
221-483	Splicing wire connectors
221-485	Splicing wire connectors
221-612	Splicing wire connectors
221-613	Splicing wire connectors
221-615	Splicing wire connectors
221-682	Wire Connectors and Soldering Lugs
221-683	Wire Connectors and Soldering Lugs
221-685	Wire Connectors and Soldering Lugs



Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



File E69654
Project 4786182629

March 21, 2014

REPORT

on

WIRE CONNECTORS AND SOLDERING LUGS

WAGO KONTAKTTECHNIK GMBH & CO KG
MINDEN

Copyright © 2014 UL LLC

UL LLC authorizes the above named company to reproduce this Report only for purposes as described in the Conclusion, provided it is reproduced in its entirety.

DESCRIPTION

PRODUCT COVERED:

USL, CNL Listed Splicing Wire Connectors, Cat. No. 221 followed by -41, -48, -61, -68 followed by 2, 3 or 5.

USL, CNL Listed Splicing Wire Connectors, Cat. No. 221 followed by -2401, -2411.

GENERAL CHARACTER AND USE:

The devices described in this Report are of the following type.

Type of Wiring Termination -

Spring action

* The insulating housing/body described in this Report are molded from a Recognized Component plastic (QMFZ2), in two pieces (bend and shaped under temperature process so considered one piece) and provided with Operating Lever.

RATINGS:

Wire Range:

Cat. Nos.	Wire Range, [AWG]	Wire Type [Cu]
221-412, 221-413, 221-415, 221-482, 221-483, 221-485	24-12	SOL/STR
	24-18	STR Prebonded
	12	STR Tinned
	14	STR Topcoated
221-612, 221-613, 221-615, 221-682, 221-683, 221-685	20-10	SOL/STR
	20-18	STR Prebonded
	20-12	STR Tinned
	20-14	STR Topcoated
221-2401	20-12	SOL
	18-12	STR
	24-18	STR Prebonded
	12	STR Tinned
	14	STR Topcoated
221-2411	20-14	SOL
	18-14	STR
	24-18	STR Prebonded
	12	STR Tinned
	14	STR Topcoated

Insulation Temperature - The insulating bodies are molded of polymeric materials, as specified in the following tabulation. The operating temperature of these devices should not exceed the temperature ratings of the insulating materials. These materials may be used interchangeably at a maximum temperature of 105°C.

Series	Part	Material designation and manufacture	Temperature
221	Housing		105°C
			105°C
221-41x 221-61x 221-24xx	Lever		105°C
			105°C
221-48x 221-68x	Lever		105°C

(See "Construction Details" for further information)

*

Flammability - Housing V-2, Lever V-0.

Wire strip length for Cat. Nos. 221-412, 221-413, 221-415: - 11.0 mm.

Wire strip length for Cat. Nos. 221-482, 221-483, 221-485: - 11.0 mm.

Wire strip length for Cat. Nos. 221-612, 221-613, 221-615: - 13.0 mm.

Wire strip length for Cat. Nos. 221-682, 221-683, 221-685: - 13.0 mm.

Wire strip length for Cat. Nos. 221-2401: min 10.0 mm, max 12.0 mm.

Wire strip length for Cat. Nos. 221-2411: min 10.0 mm, max 12.0 mm.

Voltage - 600V maximum, building wire: 1000V maximum, signs and
luminaires.

NOMENCLATURE:

<u>221</u>	<u>-41</u>	<u>3</u>
A	B	C

- A. Basic Type - Series 221
- B. Model Color/Size -
- 41 - Transparent Housing, Orange color lever
 - 61 - Transparent Housing, Orange color lever
 - 48 - Transparent Housing, Gray color lever
 - 68 - Transparent Housing, Gray color lever
- C. Number of Poles
- 2 - Poles
 - 3 - Poles
 - 5 - Poles

<u>221</u>	<u>-24</u>	<u>01</u>
A	B	C

- A. **Basic Type - Series 221**
- B. **Model -**
- 24 - feed-through construction, both wire entry are in line**
- C. **Color/Size**
- 01 - Transparent-White Housing, Orange color lever; one pole entry and one pole exit.**
 - 11 - Transparent Housing, Orange color lever; one pole entry and one pole exit.**

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE USE):

General -

Products designated USL have been investigated using requirements contained in the Standard for Splicing Wire Connectors UL 486C.

Products designated CNL have been investigated using requirements contained in the Standard for Splicing Wire Connectors CSA C22.2 No. 188.

Corrosion Protection - All metal parts are of corrosion resistant material or are suitably plated or painted.

Tolerances - Unless otherwise specified, all dimensions are nominal.

Insulating materials - The following Recognized Component plastic (QMFZ2) materials are used for the Connector specified below.

Series	Part	Material designation and manufacture	Temperature
221	Housing		105°C
			105°C
221-41x 221-61x 221-24xx	Lever		105°C
			105°C
221-48x 221-68x	Lever		105°C

Assembly instructions -

Connection - Stripped conductor is inserted into the connector entry and the Operating Leaver is pressed down.

Disconnection - The Operating Leaver is pull up.

Refer to the following photographs and description for further details of construction.

These devices or their single modules may be combined to the strips designated as part number 0221-xxxx followed by optional suffix /yyyy-zzzz where x, y and z are any customer number or digit (including characters), given for a specific end-use purpose.

Item numbers may be denoted with or without leading zeroes e.g. 0221-0612 or 221-612.