

# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20131217-E145156  
**Report Reference** E145156-20131012  
**Issue Date** 2013-DECEMBER-17

**Issued to:** ISKRA SISTEMI, D D  
STEGNE 21  
1000 LJUBLJANA SLOVENIA

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

COMPONENT - ACROSS-THE-LINE CAPACITORS,  
ANTENNA-COUPLING COMPONENTS LINE-BYPASS  
COMPONENTS AND FIXED CAPACITORS FOR USE IN  
ELECTRONIC EQUIPMENT



See Addendum Page

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

**Standard(s) for Safety:** See Addendum Page

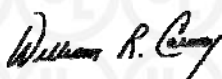
**Additional Information:** See the UL Online Certifications Directory at  
[www.ul.com/database](http://www.ul.com/database) for additional information

Only those products bearing the UL Recognized Component Marks for the U.S. and Canada should be considered as being covered by UL's Recognition and Follow-Up Service and meeting the appropriate U.S. and Canadian requirements.

The UL Recognized Component Mark for the U.S. generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: , may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions. The UL Recognized Component Mark for Canada consists of the UL Recognized Mark for Canada:  and the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Recognized Component Mark on the product.



William R. Carney, Director, North American Certification Programs  
UL LLC

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

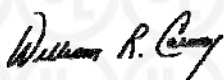
Standard(s) for Safety:- Standard(s) for Safety :-Fixed Capacitors for Use in Electronic Equipment – Part 14 Sectional Specification: Fixed Capacitors for Electromagnetic Interference Suppression and Connection to the Supply Mains :- UL 60384-14# And CSA E60384-14:09 Fixed capacitors for use in electronic equipment –Part 1 : Generic specification - CSA E60384-1:03

# - including National Differences For UL 60384-14 Safety Requirements for Fixed Capacitors for Use in Electronic Equipment - Part 14: Sectional Specification: Fixed Capacitors for Electromagnetic Interference Suppression and Connection to the Supply Mains

USR, CNR - Component – Class X2 Wound Film Type Capacitors, Models KNB1560, KNB1562 and KNB1563 series, standard version, with capacitance from 0.01  $\mu$ F to 2.2  $\mu$ F with tolerance noted as below. See CONSTRUCTION DETAILS for Model designation and rated capacitance.

USR, CNR - Component – Class X2 Wound Film Type Capacitors, Models KNB1560, KNB1562 and KNB1563 series, miniature version, with capacitance from 0.01  $\mu$ F to 0.68  $\mu$ F with tolerance noted as below. See CONSTRUCTION DETAILS for Model designation and rated capacitance.

USR, CNR - Component – Class X2 Wound Film Type Capacitors with Discharge Resistor, Models KNB1560, KNB1562 and KNB1563 series with capacitance from 0.047  $\mu$ F to 0.47  $\mu$ F with tolerance noted as below and resistance from 470 K $\Omega$  to 2.7 M $\Omega$ . See CONSTRUCTION DETAILS for Model designation and rated capacitance..



William R. Carney, Director, North American Certification Programs  
UL LLC

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## DESCRIPTION

## PRODUCT COVERED:

USR, CNR - Component - Class X2 Wound Film Type Capacitors, Models KNB1560, KNB1562 and KNB1563 series, standard version, with capacitance from 0.01  $\mu\text{F}$  to 2.2  $\mu\text{F}$  with tolerance noted as below. See CONSTRUCTION DETAILS for Model designation and rated capacitance.

USR, CNR - Component - Class X2 Wound Film Type Capacitors, Models KNB1560, KNB1562 and KNB1563 series, miniature version, with capacitance from 0.01  $\mu\text{F}$  to 0.68  $\mu\text{F}$  with tolerance noted as below. See CONSTRUCTION DETAILS for Model designation and rated capacitance.

USR, CNR - Component - Class X2 Wound Film Type Capacitors with Discharge Resistor, Models KNB1560, KNB1562 and KNB1563 series with capacitance from 0.047  $\mu\text{F}$  to 0.47  $\mu\text{F}$  with tolerance noted as below and resistance from 470  $\text{k}\Omega$  to 2.7  $\text{M}\Omega$ . See CONSTRUCTION DETAILS for Model designation and rated capacitance.

## RATINGS:

## Standard Version:

Class	Voltage Rating (V ac)	Lower Category Temperature ( $^{\circ}\text{C}$ )	Upper Category Temperature ( $^{\circ}\text{C}$ )	Capacitance Tolerance (%)	Climatic Category	Passive Flammability Category
X2	275	-40	110	$\pm 5\%/\pm 10\%/\pm 20\%$	56	B
X2	300	-40	125	$\pm 10\%/\pm 20\%$	56	B

## Miniature Version:

Class	Voltage Rating (V ac)	Lower Category Temperature ( $^{\circ}\text{C}$ )	Upper Category Temperature ( $^{\circ}\text{C}$ )	Capacitance Tolerance (%)	Climatic Category	Passive Flammability Category
X2	275	-40	110	$\pm 5\%/\pm 10\%/\pm 20\%$	56	B
X2	275	-40	125	$\pm 10\%/\pm 20\%$	56	B

## Capacitors with Discharge Resistor:

Class	Voltage Rating (V ac)	Lower Category Temperature ( $^{\circ}\text{C}$ )	Upper Category Temperature ( $^{\circ}\text{C}$ )	Capacitance Tolerance (%)	Resistor Power Rating (W)	Climatic Category	Passive Flammability Category
X2	275	-40	110	$\pm 5\%/\pm 10\%/\pm 20\%$	0.6	56	B
X2	300	-40	125	$\pm 10\%/\pm 20\%$	0.6	56	B

## ABBREVIATIONS:

USR - Recognized, indicates investigation to UL 60384-14, First Edition, with revisions up to and including March 31, 2010.

CNR - Recognized, indicates investigation to CSA E60384-1-03, Second Edition, February 2003 and CSA E60384-14:09, Second Edition, March 2009.

## TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE USE):

## Conditions of Acceptability -

These components have been investigated and are intended for use in Electronic Equipment for Electromagnetic Interference Suppression and Connection to the Supply Mains where the acceptability of the combination is determined by UL LLC.

1. These components are intended to be installed within a suitable enclosure in the end use application.
2. Electrical spacings between uninsulated live parts of opposite polarity shall comply with the requirements of the end-use product.
3. These components are intended for use in 50/60 Hz circuits up to the nominal voltage. See RATINGS for details.
4. These capacitors have been evaluated for 56 days Damp-Heat Steady State Test in an ambient of  $40\pm 2^{\circ}\text{C}$ ,  $93\pm 3\%$  RH, the acceptability shall be determined in the end use application.