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Please find attached the related material

For your convenience, the below describes the related updates:

For new documentation, please reference 2022-11-30 in the page headings.

E191305-vol1-Index
E191305-20221130-CertificateofCompliance
E191305-20221130-Description
Figure-2-Total
Illustration-3-Total
E191305-20221130-TestRecord

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<u>Model Nos.</u>	<u>Section</u>	<u>Requirements Evaluated to (USR and/or CNR)</u>
KH2203X	1	USR, CNR
KPL Series	2	USR, CNR
*		
<p>Push button switches: Models KBL and KPB Series, followed by 16, followed by S, R or blank, followed by M or AT, maybe followed by L or blank, maybe followed by 1C, 2C or 3C, followed by R, G, Y, O, W or B, followed by 1 or 2.</p> <p>Push lock and turn reset type switch: Models KEBL and KEPB Series, followed by 16 or 160, followed by ER, may be followed by S, may be followed by L, may be followed by 1C, 2C or 3C, may be followed by R, G or Y, followed by 1A, 1B, 2A, 2B or 1A1B.</p> <p>Select switches: Model KSL Series, followed by 16, followed by S, R or Blank, followed by S2, S3, K2 or K3, followed by F, L or Blank, followed by 1C, 2C or 3C, followed by R, G, Y, O, W or B, followed by 1 or 2.</p> <p>Industrial Control Switches, NF22 Series, followed by L, P, B, S or K, followed by M, A, 2, 3, A2, A3, K2, K3, AK3 or Blank, may be followed by 1C, 2C or 3C, may be followed by R, G, Y, W, B or O, may be followed by 1 or 2.</p>	5	USR, CNR

Model Nos.	Section	Requirements Evaluated to (USR and/or CNR)
CAM switches, Models K, followed by C, followed by 30A or 20D, followed by 6, 6S, A, 24D or P, maybe followed by T, maybe followed by R, C, CL, 3M, 6M or 9M, followed by four to seven digits alphanumeric combination, followed by E, T, P, R, H, S or M.	6	USR, CNR
CAM switches, Models KSG, followed by 22, 25 or 30, maybe followed by K, maybe followed by N, maybe followed by R, C, CL, 3M, 6M or 9M, followed by four to seven digits alphanumeric combination, followed by E, T, P, R, H or S. CAM switches, Models KG, followed by 4, 6, 6S, A, 24D or P, maybe followed by T, maybe followed by R, C, CL, 3M, 6M or 9M, followed by four to seven digits alphanumeric combination, followed by E, T, P, R, H, S or M.	7	USR, CNR
Control Switches, Models NS22, followed by L, P, B, S, SL, K or D, followed by M, A, EM, ER, 2, 3, A2, A3 or 3R, followed by Blank or L, followed by 1AL, 2AL, 1A, 12A, 2A, 3A, 24A, 4A, 5A, 1C, 2C, 3C, 1D, 2D, 12D, 3D, 4D or 24D, followed by R, G, Y, B, W, O or BK, maybe followed by alphanumeric characters. Open type, Reset button, Cat. No NS22-PR	8	USR, CNR
Square Lights, Models KH, followed by -5030L or -5040L, followed by -12, -24, DC48, DC110, DC125, DC220, 12T, 22T followed by T, PCK, NCK or Blank, maybe followed by any combination of numeric.	9	USR, CNR
Safety door switches for Use in Industrial Control Equipment, KS2D Series followed by -3B, -2B, -2BA, -AB, -B or -A, followed by -H, -V or -C.	10	USR, CNR

CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-2244092-0
Report Reference E191305-20221130
Date 2-Dec-2022

Issued to: KUN HUNG ELECTRIC CO LTD
183 Hancheon-ro Dongdaemun-gu Seoul 130-836
Republic of Korea

**This is to certify that
representative samples of** NKCR8 - Auxiliary Devices Certified for Canada -
Component
See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the
component requirements in the Standard(s) indicated on
this Certificate. UL Recognized components are incomplete
in certain constructional features or restricted in
performance capabilities and are intended for installation in
complete equipment submitted for investigation to UL LLC.


Standard(s) for Safety: CSA C22.2 NO. 60947-1-13, 2nd Ed., Issue Date: 2013-07-
31, CSA C22.2 NO. 60947-5-1-14, 1st Ed., Issue Date:
2014-03-01

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

This Certificate of Compliance indicates that representative samples of the product described in the certification
report have met the requirements for UL certification. It does not provide authorization to apply the UL
Recognized Component Mark. Only the Authorization Page that references the Follow-Up Services Procedure
for ongoing surveillance provides authorization to apply the UL Mark.

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

Look for the UL Recognized Component Mark on the product.


Deborah Jennings-Conner, VP Regulatory Services

UL LLC



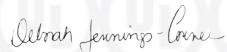
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CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-2244092-0
Report Reference E191305-20221130
Date 2-Dec-2022

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
KS2D, KS2D, , followed by -3B, -2B, -2BA, -AB, -B or -A, followed by -H, -V or -C	Auxiliary Devices


Deborah Jennings-Conner, VP Regulatory Services

UL LLC



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CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2246264-0
Report Reference E191305-20221130
Date 2-Dec-2022

Issued to: KUN HUNG ELECTRIC CO LTD
183 Hancheon-ro Dongdaemun-gu Seoul 130-836
Republic of Korea

**This is to certify that
representative samples of** NKCR2 - Auxiliary Devices - Component
See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.

Standard(s) for Safety: UL 60947-1, 5th Ed., Issue Date: 2013-07-31, Revision Date: 2019-05-06, UL 60947-5-1, 3rd Ed., Issue Date: 2014-03-28

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

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Recognized Component Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

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

Look for the UL Recognized Component Mark on the product.


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UL LLC



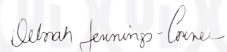
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CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2246264-0
Report Reference E191305-20221130
Date 2-Dec-2022

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
KS2D, KS2D, , followed by -3B, -2B, -2BA, -AB, -B or -A, followed by -H, -V or -C	Auxiliary Devices


Deborah Jennings-Conner, VP Regulatory Services

UL LLC



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File E191305
Project 4790597230

November 30, 2022

REPORT

on

Auxiliary Devices - Component

KUN HUNG ELECTRIC CO LTD
Seoul, Republic of Korea

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DESCRIPTION

USR, CNR - Safety door switches for Use in Industrial Control Equipment, KS2D Series, Models KS2D, followed by -3B, -2B, -2BA, -AB, -B or -A, followed by -H, -V or -C.

GENERAL:

These devices are open-type, Safety door switches and are intended to be used in industrial applications.

RATINGS:

Contact - 250 Vac, 3 A, 50/60 Hz, AC Resistance only

Maximum Surrounding Air Temperature: 40 °C

NOMENCLATURE:

<u>KS2D</u>	-	<u>3B</u>	<u>-H</u>
I		II	III

I - Series Name

KS2D - Safety Lock Switch

II - Contact Type

3B	-	3 NC
2B	-	2 NC
2BA	-	2 NC + 1 NO
AB	-	1 NC + 1 NO
B	-	1 NC
A	-	1 NO

III - Key Type

H	-	Horizontal
V	-	Vertical
C	-	Control

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in or with complete equipment of an Industrial Control Equipment where the acceptability of the combination has been determined by UL LLC.

Conditions of Acceptability - When installed in the end-use equipment, consideration shall be given to the following:

1. A suitable enclosure shall be provided.
2. These devices have been evaluated for use at maximum surrounding air temperature 40 °C.
3. The device has been evaluated for use in pollution degree 3 environment.
4. These devices are suitable for factory wiring only.

CONSTRUCTION DETAILS:

The product shall be constructed in accordance with the following description.

Spacings - Spacing have been evaluated in accordance with standard as noted in the Test Record. Spacings are determined according to an Overvoltage Category III and pollution degree 3.

Tolerances - Unless specified otherwise, all indicated dimensions are nominal.

Corrosion Protection - All parts are of corrosion resistant material or are plated or painted as corrosion protection.

Markings shall be ink-stamped, die-stamped, laser marking, painted or provided on a Recognized (PGDQ2) or (PGJI2) Marking and Labeling System with followings;

- a) The manufacturer's name, trade mark;
- b) The electrical rating;
- c) The catalog number, company's name or equivalent

Summary of Figures and Illustrations - The following figures and illustrations shall be used as supplementary information where specifically noted.

FIG. No.	Description
1	External view of model KS2D-3B
2	Internal view of model KS2D-3B

ILL. No.	Description
1	Dimension of Head
2	Dimension of Body
3	Dimension of Entire

MODEL KS2D-3B - FIG. 1

General - Fig. 1 shows an external view of Model KS2D-3B represent all models.

1. Head Cover - R/C (QMFZ2/8), KOREA ENGINEERING PLASTICS CO LTD (E120354), 2325GV+, min. 0.8 mm thick (rated V-0, RTI = 130 °C) and refer to ILL.1 for details.

Alternate - R/C (QMFZ2/8), KOLON PLASTICS INC (E190675), KN332G30VF(bbbb), min. 0.4 mm thick. (rated V-0, RTI = 65 °C) and refer to ILL.1 for details.

2. Housing - R/C (QMFZ2/8), KOREA ENGINEERING PLASTICS CO LTD (E120354), 2325GV+, min. 0.8 mm thick (rated V-0, RTI = 130 °C) and refer to ILL.3 for details.

Alternate - R/C (QMFZ2/8), KOLON PLASTICS INC (E190675), KN332G30VF(bbbb), min. 0.4 mm thick. (rated V-0, 65 °C) and refer to ILL. 3 for details.

3. Cover - R/C (QMFZ2/8), KOREA ENGINEERING PLASTICS CO LTD (E120354), 2325GV+, min. 0.8 mm thick (rated V-0, RTI = 130 °C) and refer to ILL.3 for details.

Alternate - R/C (QMFZ2/8), KOLON PLASTICS INC (E190675), KN332G30VF(bbbb), min. 0.4 mm thick. (rated V-0, RTI = 65 °C) and refer to ILL.3 for details.

MODEL KS2D-3B - FIG. 2

General - Fig. 2 shows an internal view and Model KS2D-3B represent all models

1. Body & Body Cover - R/C (QMFZ2/8), KOREA ENGINEERING PLASTICS CO LTD (E120354), 2325GV+, min. 0.8 mm thick (rated V-0, RTI = 130 °C) and refer to ILL.2 for details.

Alternate - R/C (QMFZ2/8), KOLON PLASTICS INC (E190675), KN332G30VF(bbbb), min. 0.4 mm thick (rated V-0, RTI = 65 °C) and refer to ILL.2 for details.

2. Push Load - R/C (QMFZ2/8), SAMYANG ENGINEERING PLASTIC (SHANGHAI) CO LTD (E257054), 1500GN-30, min. 0.75 mm thick (rated V-0, RTI = 130 °C) and refer to ILL.2 for details.

Alternate - R/C (QMFZ2/8), KOLON PLASTICS INC (E190675), KP212G30V0(bbbb), min. 0.75 mm thick (rated V-0, RTI = 130 °C) and refer to ILL.2 for details.

3. Spacing Lever - R/C (QMFZ2/8), KOREA ENGINEERING PLASTICS CO LTD (E120354), 2325GV+, min. 0.8 mm thick (rated V-0, RTI = 130 °C) and refer to ILL.2 for details.

Alternate - R/C (QMFZ2/8), KOLON PLASTICS INC (E190675), KN332G30VF(bbbb), min. 0.4 mm thick (rated V-0, RTI = 65 °C) and refer to ILL.2 for details.

4. Moving Contact Assembly - Max. 3 provided. See below table and ILL.2 for details.

Part name	Material
Terminal	Brass, t=0.6 mm
Contact	Agni

5. Fixed Contact Assembly - Max. 6 provided. See below table and ILL.2 for details.

Part name	Material
Terminal	Brass, t=0.8 mm
Contact	Agni

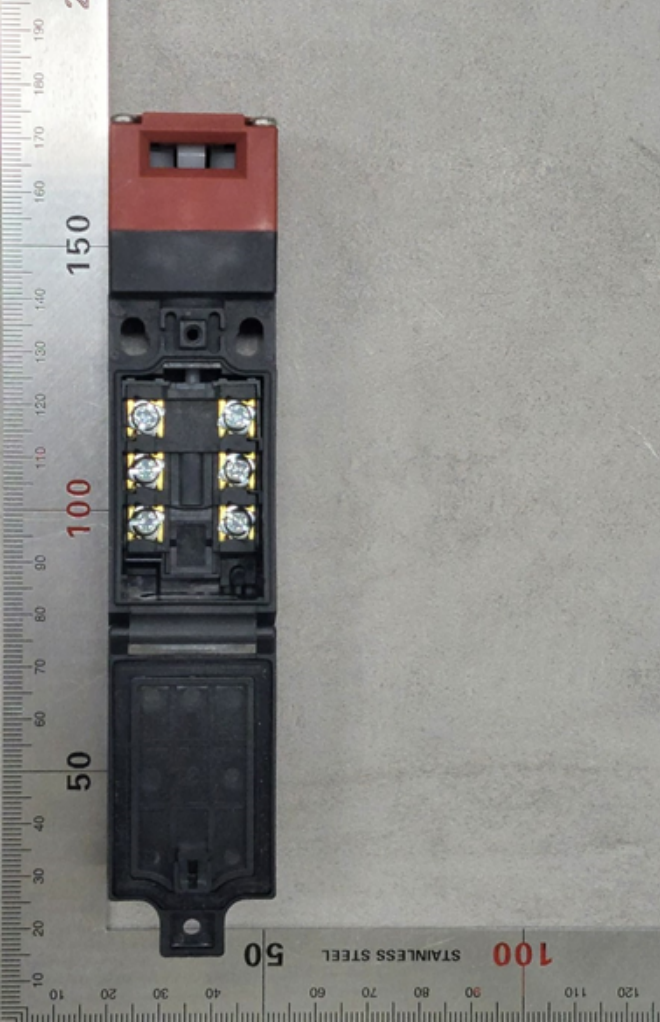
MODEL KS2D-3B - FIG. 2 (CONT'D)

6. Pressure Plate Screw - Max. 6 Provided. Steel, M3 x 5.
7. Push load spring - Steel. Approx. O.D 4.65 mm and 25 mm length and see ILL.2 for details.
8. Push load spring A - Steel. Approx. O.D 3.4 mm and 8.5 mm length and see ILL.2 for details.

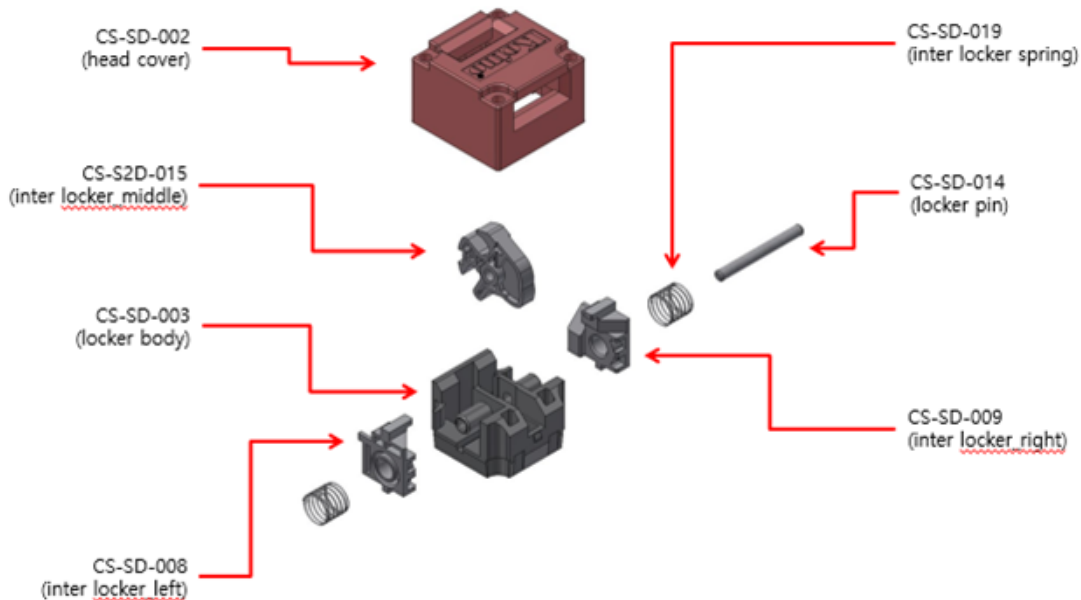
The following Page(s) are related to Figure-1. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



The following Page(s) are related to Figure-2. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



The following Page(s) are related to Illustration-1. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



The following Page(s) are related to Illustration-2. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

CS-S2D-006
(spacing lever)

CS-S2D-003
(body cover)

CS-S2D-012
(push load spring A)

CS-S2D-001
(body)

CS-S2D-011
(push load spring)

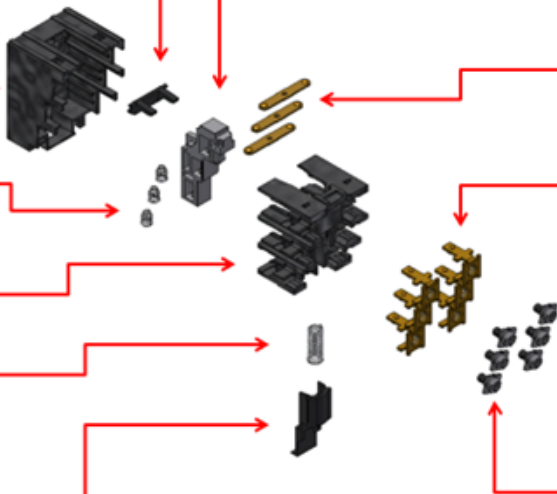
CS-S2D-002
(body-A)

CS-S2D-005
(push load B8B)

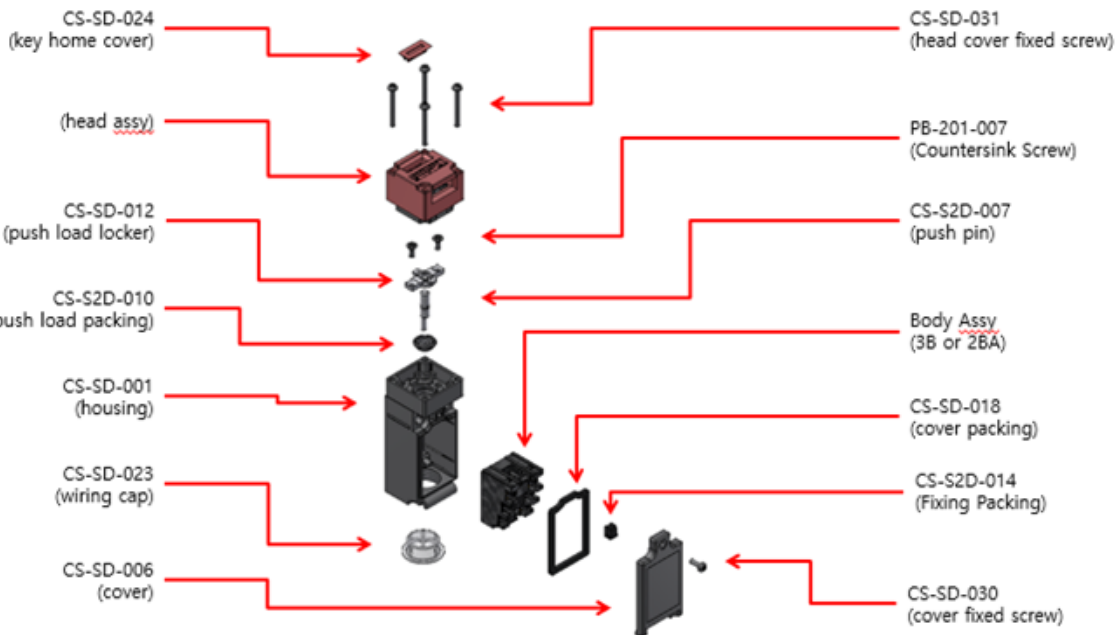
CS-S2D-009
(operating plate)
CS-SD-034
(operating contact)

CS-S2D-008
(terminal)
CS-S2D-014
(fixed contact)

SK-RS-14-010
(Terminal Screw)



The following Page(s) are related to Illustration-3. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



TEST RECORD NO. 1

SAMPLES:

A sample as indicated below and constructed as described herein, was submitted by the manufacturer for examination and test.

Safety door switches for Use in Industrial Control Equipment, KS2D Series followed by -3B, -2B, -2BA, -AB, -B or -A, followed by -H, -V or -C.

The Models KS2D-3B and KS2D-AB were used for investigation purposes and was considered representative of the entire series.

GENERAL:

THE FOLLOWING TESTS WERE CONDUCTED:			
TEST	STANDARD	CODE (See Below)	CLAUSE
TEMPERATURE RISE TEST	UL/CSA 60947-5-1	S	8.3.3.3
DIELECTRIC PROPERTIES TEST	UL/CSA 60947-5-1	S	8.3.3.4
OVERLOAD AND ENDURANCE TESTS	UL/CSA 60947-5-1	S	8.3.3.5.2 DV.3.1 8.3.3.5.2 DV.4.1
DIELECTRIC PROPERTIES TEST	UL/CSA 60947-5-1	S	8.3.3.4
S = Same test. C = Combined test (identified by the test names of two or more similar tests in multiple standards) to represent the worst-case parameters of the similar tests. OS = Testing requirements come from one standard only. MS = One of the two or more standards identified is more severe and the more severe one is indicated by underlining.			

Test results relate only to the items tested.

RESULTS

The results of the above tests are in compliance with UL 60947-5-1, Low-Voltage Switchgear and Controlgear - Part 5-1: Control Circuit Devices and Switching Elements - Electromechanical Control Circuit Devices, 3rd edition, 2014-03-28, CAN/CSA-C22.2 No. 60947-5-1-14, Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices, 1st edition, 2014-03-01, reaffirmed 2019, UL 60947-1, LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR - PART 1: GENERAL RULES, 5th edition, 2019-05-06, CAN/CSA-C22.2 No. 60947-1-13, Low-Voltage Switchgear and Controlgear - Part 1: General Rules, 2nd edition, 2013-07-31, reaffirmed 2018.

Test Record Summary:

The results of this investigation, including construction review and testing, indicate that the products evaluated comply with the applicable requirements in UL 60947-5-1, Low-Voltage Switchgear and Controlgear - Part 5-1: Control Circuit Devices and Switching Elements - Electromechanical Control Circuit Devices, 3rd edition, 2014-03-28, CAN/CSA-C22.2 No. 60947-5-1-14, Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices, 1st edition, 2014-03-01, reaffirmed 2019, UL 60947-1, LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR - PART 1: GENERAL RULES, 5th edition, 2019-05-06, CAN/CSA-C22.2 No. 60947-1-13, Low-Voltage Switchgear and Controlgear - Part 1: General Rules, 2nd edition, 2013-07-31, reaffirmed 2018 and, therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report. Any information and documentation involving UL Mark services are provided on behalf of Underwriters Laboratories Inc. (UL) or any authorized licensee of UL.

CONCLUSION

Samples of the components covered by this Report have been found to comply with the requirements covering the category and the components are found to comply with UL's applicable requirements. The description and test result in this Report are only applicable to the sample(s) investigated by UL and does not signify the product(s) described as being covered under UL's Follow-Up Service Program. When covered under UL's Follow-Up Service Program, the manufacturer is authorized to use the Recognized Marking on such products which comply with UL's Follow-Up Service Procedure and any other applicable requirements of Underwriters Laboratories Inc. The Recognized Component Mark of Underwriters Laboratories Inc. on the product, or the Recognized Marking symbol on the product and the Recognized Component Mark on the smallest unit container in which the product is packaged, is the only method to identify products investigated by UL to published requirements and manufactured under UL's Recognition and Follow-Up Service.

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