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Date: 2013/10/23
 Subscriber: 100026568
 PartySite: 819663
 File No: E362334
 Project No: 13CA26483
 PD No: 13049212
 Type: R
 PO Number: PATRICK LUSSE

Subject: **Procedure And/Or Report Material**

The following material resulting from the investigation under the above numbers is enclosed.

Issue

<u>Date</u>	<u>Vol</u>	<u>Sec</u>	<u>Pages</u>	<u>Revised Date</u>
2013/10/17	1	1	Cart of Compliance	
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Section - 4 has been withdrawn from Vol. 1 File - E304888.

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Please file revised pages and illustrations in place of material of like identity. New material should be filed in its proper numerical order.

NOTE: Follow-Up Service Procedure revisions DO NOT include Cover Pages, Test Records and Conclusion Pages. Report revisions DO NOT include Authorization Pages, Indices, Section General Pages and Appendixes.

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ARN File

UL INSPECTION CENTER 522

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<u>Product</u>	<u>Issued date</u>	<u>Section</u>	<u>Approvals</u>
Industrial Control Switches, Open Type, Cat. Nos. X60, XA60 and X100	2013-10-17	1	A

Approval Abbreviation:

- A - Evaluated to United States Standards Only - Recognized
- B - Evaluated to United States and Canadian National Standards - Recognized
- C - Evaluated to Canadian National Standards Only - Recognized

DESCRIPTION

PRODUCT COVERED:

USR - Component - Industrial Control Switches, Open Type (panel mounting), Cat. Nos. X, may be followed by 60., may be followed by 10, 12, 16, 25 or 30, followed by B, D, P or R, may be followed by L, followed by U, may be followed by S, may be followed by 1,2,3,4,6 or 8, may be followed by C,D,O,R,S,W, may be followed by 2,3 or 4, may be followed by E,F,G,H,L,M,N,T or U, followed by -, followed by a letter or a letter in brackets, may be followed by 00 to 99, may be followed by E,F,G,H,L,M,N,T,U,V or Z, may be followed by -00 to -60, may be followed by .00 to .25, may be followed by .2 or .3, may be followed by -000001 to ZZZZZZ.

USR - Component - Industrial Control Switches, Open Type (panel mounting), Cat. Nos. XA, may be followed by 60., may be followed by 10, 12, 16 or 25, followed by B, D, P or R, may be followed by L, followed by U, may be followed by S, may be followed by 1,2,3,4,6,8,10 or 12, may be followed by C,D,O,R,S,W, may be followed by 2,3 or 4, may be followed by E,F,G,H,L,M,N,T or U, followed by -, followed by a letter or a letter in brackets, may be followed by 00 to 99, may be followed by E,F,G,H,L,M,N,T,U,V or Z, may be followed by -00 to -60, may be followed by .00 to .25, may be followed by .2 or .3, may be followed by -000001 to ZZZZZZ.

USR - Component - Industrial Control Switches, Open Type (panel mounting), Cat. Nos. X, may be followed by 100., may be followed by 10, 12, 16, 25, 30 or 36, followed by B, D, P or R, may be followed by L, may be followed by C, followed by U, may be followed by S, may be followed by 1,2,3,4 or 6, may be followed by C,D,O,R,S,W, may be followed by 2,3 or 4, may be followed by E,F,G,H,L,M,N,T or U, followed by -, followed by a letter or a letter in brackets, may be followed by 00 to 99, may be followed by E,F,G,H,L,M,N,T,U,V or Z, may be followed by -00 to -60, may be followed by .00 to .25, may be followed by .2 or .3, may be followed by -000001 to ZZZZZZ.

GENERAL:

These devices are open type, panel mounted, Photovoltaic disconnect switches intended for use in or with complete equipment, where the acceptability of the combination has been determined by UL LLC.

The devices have additionally been evaluated to function as an inverter disconnect or switch for use in photovoltaic array circuits with a maximum system voltage up to 600Vdc for the X60 and XA60 series and a maximum system voltage up to 1000Vdc for the X100 series, when used in accordance with the below conditions.

These devices are suitable as a single or double pole Photovoltaic disconnect switch.

Additionally the switch can be provided with AC General Purpose Contacts and AC Auxiliary Contacts. All switches can be provided with a total of maximum 12 contacts. These contacts can be a combination of DC, Auxiliary and AC contacts. This combination should also be in compliance with the amount of poles indicated in the Nomenclature Breakdown:

As an example, a Double Pole switch with 4 double pole sets (consisting of 8 contacts), four contacts are still available to use as an Auxiliary Contact.

The devices are suitable for Panel Mounting, Panel Mounting with reversed contacts, DIN-rail / Bottom Mounting or Double Mounting (the combination of Panel- and DIN-rail / Bottom mounting).

The terminal portion of the stationary contact arms of these devices are provided with a terminal screw for connection of cables (up to AWG 10) or cable lugs.

The terminals of the devices are suitable for factory wiring only.

RATINGS:

X60.30:

Double and Single Pole DC Contacts: 30 A, 600 Vdc Maximum System Voltage,

XA60.25:

Double and Single Pole DC Contacts: 25 A, 600 Vdc Maximum System Voltage,

X100.36:

Double and Single Pole DC Contacts: 36 A, 1000 Vdc Maximum System Voltage,

Short Circuit rating for the 600 Vdc X series switches:

Suitable for use on a circuit capable of delivering not more than 5,000 Amperes on a 600 Vdc system when protected by fuses.

Short Circuit rating for the 600 Vdc XA series switches:

Suitable for use on a circuit capable of delivering not more than 5,000 Amperes on a 600 Vdc system when protected by RK1 fuses.

Short Circuit rating for the 1000 Vdc switches:

Suitable for use on a circuit capable of delivering not more than 5,000 Amperes on a 1000 Vdc system when protected by fuses.

AC Contacts: 600 Vac 3-ph, 25 A General Purpose

Auxiliary contacts: A300 Same Polarity

Auxiliary contacts: A150 Opposite Polarity

Switch - Open Type

Maximum Ambient Temperature: 70°C.

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

USR indicates United States Recognized component evaluated to Subject 508i, Outline for Manual Disconnect Switches Intended for Use in Photovoltaic Systems.

CONDITIONS OF ACCEPTABILITY-

For use only in (or with) complete equipment where the acceptability of the combination is determined by UL LLC.

1. These open type devices should be mounted in enclosures having adequate strength and thickness in the intended manner and with acceptable spacings being provided.
2. The terminals are suitable for factory wiring only and the suitability of the connection shall be determined in the end application. Poles rated between 30 A and 36 A shall be provided with the following wiring- R/C (AVLV2) Style 10269, rated 1000 V, 105°C, AWG 8 (or 10 mm²).
3. These switches are suitable for use in single or double pole disconnect or switch applications in the ungrounded conductor of a photovoltaic source circuit when used with the over current protection specified in this Report and within the rating and constraints of this report.