

UL International Germany GmbH

Frankfurter Strasse 229
D-63263 Neu-Isenburg
Germany
Tel: +49 6102 3690
Fax: +49 6102 369280



File E41791
Project 03CA23724

2003-08-20

REPORT

on

COMPONENT - SPECIAL-USE SWITCH

Marquardt GmbH
Weilheim, Fed. Rep. of Germany

Copyright © 2003 Underwriters Laboratories Inc.

This material is sent on behalf of Underwriters Laboratories Inc. pursuant to the Corporate Service Agreement between UL International Germany and UL.

Underwriters Laboratories Inc. authorizes the above-named company to reproduce this Report provided it is reproduced in its entirety.

Underwriters Laboratories Inc. authorizes the above-named company to reproduce that portion of this Report consisting of this Cover Page through Page 3.

DESCRIPTION

PRODUCT COVERED:

USR, CNR - Component, Special-Use Switches

Cat. No	Electrical Rating	Temp. °C	POL/THR	PP	ENDUR	SPCOA
193 w/wo 2 w/wo suff .0000 thru .9999 w/wo code R11 wo illumination	16 A 125-250 V ac 1/3 hp 125 V ac 1 hp 250 V ac	65	1,2/1	PP	6000	-
193 w/wo 4 w/wo suff .0000 thru .9999 w/wo code R213 w/wo illumination	14 A 125-250 V ac 1/3 hp 125 V ac 1 hp 250 V ac	65	1,2/2	PP	6000	-
193 w/wo 5 w/wo suff .0000 thru .9999 w/wo code R11 w/ illumination	16 A 125-250 V ac 1/3 hp 125 V ac 1 hp 250 V ac	65	1,2/1	PP	6000	2, A1
193 w/wo 9 w/wo suff .0000 thru .9999 w/wo code R218	4A 125 V dc 8A 18 V dc	65	1,2/2	PP	6000	-

CAT NO: Suffix numbers or letters be added, indicating contact arrangement, type or actuator and mechanical details.

w/wo - with or without

w/ - with

w/o - with out

POL/THR: # of Poles/# of Throws. "M" indicates "Multi"
(e.g. 2/M indicates 2 pole, Multi-throw)

PP: Per Pole, "PP" in this column indicates each pole may carry the rated current

(for 2 or more pole switches), with opposite polarity between adjacent poles.

ENDUR: Endurance rating

SPCOA: Applicable Special Conditions of Acceptability are indicated here in numeric form. Refer to the following pages for corresponding Special Conditions of Acceptability.

GENERAL:

These devices are single- and double- pole, single-**and double-** throw special-use switches. All switches covered by this report may be with momentary or continuous contact.

ENGINEERING CONSIDERATIONS (NOT FOR UL REPRESENTATIVE USE):

Use - The switches covered by this Report are for use only in complete equipment where the suitability of the combination is determined by Underwriters Laboratories Inc.

The switches were evaluated to the Standard for Special Use Switches, UL 1054.

Products designated USR have been investigated using requirements contained in Underwriters Laboratories Standard for Special Use Switches, UL 1054, **6th Edition.**

Products designated CNR have been investigated using requirements contained in Canadian Standard C22.2 No. 55-M1986.

STANDARD CONDITIONS OF ACCEPTABILITY

General - The following five Conditions of Acceptability apply to all switches covered by this Report.

1. The switch terminals have been investigated for use only with copper wire or copper alloy quick-connect terminals.
2. A standard sized quick-connect tab (per Table 7.1 of UL 1054) is to be mated with the appropriate standard size quick-connect connector. The tab is provided with a detent that shall be properly matched to the connector.
3. The spacing between any terminals and a flat mounting surface has been judged in accordance with the Standard for Special-Use Switches (UL 1054). However, the spacing requirements between the connection when installed on the terminal and the mounting surface shall comply with the end-use Standard spacings.
4. For switches with integral leads, the temperature rating of the leads is 60°C minimum unless the leads are surface marked with a higher rating.
5. The switch has been subjected to a minimum 6000 Cycle Endurance Test.

SPECIAL CONDITIONS OF ACCEPTABILITY

General - One or more of the following Conditions of Acceptability apply as indicated in the Product Covered table beginning on Page 1 of this Report under the SPCOA (Special COA's) column.

1. The nonstandard quick-connect tabs (i.e. other than noted in Table 7.1 of UL 1054) have been investigated with a specific nonstandard connector attached to wires of a specified size.
2. These are lighted switches employing a lamp. The lamp life should be evaluated when required by the end-use product Standard.
3. The switch has openings in the housing adjacent to arcing parts. The end-use application may involve environments (such as excessive dust or adjacent combustible material) that would exclude an opening in the switch housing.
4. These are diaphragm activated water level switches. Samples of the diaphragm have been subjected to aging tests for use at a specific temperature (shown within parenthesis in °C) and have also been examined for tensile strength and elongation after exposure to detergent. However, if the switch is mounted below the level of water which indirectly actuates it and the switch has an integral metal case, the metal case is to be considered a live part.
5. These are speed control switches. The investigation was limited to the switching function of the switch. In the final application it should be determined that the speed control circuit can be used with a particular appliance without resulting in a hazardous condition such as overheating of a motor or the switch in other than the full speed position. Open and shorted components of the speed control circuit shall be evaluated for compliance with the end-use Standard.
6. The switch employs screw-type pressure wire connectors or push-in terminals. These have been evaluated for use with solid and/or solder-dipped stranded conductors of a specified size (shown within parenthesis in AWG).
7. These switches employ an integral potentiometer. The investigation was limited to the switching function of the switch. The insulating materials and the spacings of the integral potentiometer should be investigated for compliance with the end-use product Standard.
8. The switch employs auxiliary contacts located externally to the main switch contact chamber. The auxiliary contacts were not tested as part of this investigation. The suitability of the auxiliary contacts must be determined in accordance with the end-use Product Standard.
- A1. The supply source of the bulb circuit was not evaluated during the investigation of the switch. The suitability of this feature shall be determined in the end-use application.