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File E42460  
Project 78ME8263, 92ME11142

Issued: October 19, 1978  
Revised: April 8, 1992

REPORT

on

COMPONENT - SWITCHES, SPECIAL USE

Saia, AG  
Murten, Switzerland

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Lib/E42460-PC

An independent,  
not-for-profit organization  
testing for public safety

File E42460

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Issued: 4-2-76  
Revised: 9-4-91

R E P L A C E M E N T P A G E

The above referenced report has been superseded by report dated 10-19-78.

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D.G.

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D E S C R I P T I O NPRODUCT COVERED:

Special-Use Switches, Component

(USR) denotes investigation to UL Standard UL 1054.

(CNR) denotes investigation to Canadian Standard, C22.2 No. 55-M1986.

Cat. No.	Electrical Rating	Temp(°C)	POL/THR	PP	ENDUR	SPCOA
(USR)(CNR)XCF-ab *ag, ah	10.1 A, 250 V ac 1/4 hp, 125-250 V ac	90(130 for suff V, 150 for suff W)	1/1, 2	-	6 K	-
(USR)(CNR)XCF-ab *ag, ah, ak	1/10 hp, 125 V ac	90 (130 for suff V, 150 for suff W)	1/1, 2	-	100 K	-
(USR)(CNR)XC,XCG *XCK ab ag ah	5 A, 250 V ac	90(130 for suff V, 150 for suff W)	1/1, 2	-	6 K	-
(USR)(CNR)XCC ab *ag ah	2 A, 250 V ac	90(130 for suff V, 150 for suff W)	1/1, 2	-	6 K	-
(USR)(CNR)XCH ab *ag ah	1 A, 250 V ac	90(130 for suff V, 150 for suff W)	1/1, 2	-	6 K	-
(USR)(CNR)XCH ab *ag ai aj	0.1 A, 30 V ac	90(130 for suff V, 150 for suff W)	1/1, 2	-	6 K	-
(USR)(CNR)XC,XCC *XCF, XCK, XCG ab ag ai	0.1 A, 125 V ac	90(130 for suff V, 150 for suff W)	1/1, 2	-	6 K	-

ab = w/wo 4, 5

ag = f/b 3-5, 8- 15 w/wo V or W

ah = w/wo -83, -84,-85 w/wo suffix

ai = f/b -81 w/wo suffix

aj = f/b Z141, w/wo Z

ak = f/b Z173

CAT NO: f/b = followed by      w/wo = with or without

ELECTRICAL RATING: "R" = Resistive    "L" = AC Tungsten    "T"=AC and DC  
Tungsten

POL/THR: No. of Poles/No. 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-pole, single- and double- throw special-use switches.

The first group of letters indicates type designation and basic construction. The first group of suffixes denotes contact configuration (4 = NC, 5 = NO). Without the first suffix number, the first group of numbers denotes the change-over contact. The second group of suffix numbers denotes terminal variations and switch function as shown in Ills. 1 and 2.

Suffix Numbers -81, -83, -84 or -85 denote contact material as follows:

- 81 indicates contacts 0.010 mm gold plating (Crossbar).
- 83 indicates contacts 0.0002 mm gold plating.
- 84 indicates contacts made of full gold.
- 85 indicates contacts made of silver/nickel 90/10.

Switches without Suffixes -81, -83, -84, or -85 employ pure silver contacts.

Suffix Z141 denotes a 0.1 A, 30 V ac rating.

\*

The added suffixes indicate variations in type of external actuators and numbers and letters for commercial reasons not affecting the description of this report unless a particular construction is specifically described.

\* Cat. No. XCG, XCC, XCH and XCK are similar to Cat. No. XCF except for operating force and rating.

\* The suffix V denotes that the actuator material is RC Plastic (QMFZ2) Crastin S650FR manufactured by Dupont.

\* The suffix W denotes that the actuator material is RC Plastic (QMFZ2) Fortron 6165 A4 manufactured by Ticona.

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.

## 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.

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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.

#### CONSTRUCTION DETAILS:

Corrosion Protection - All ferrous metal parts are protected against corrosion by plating, painting, galvanizing or equivalent.

Spacings - Spacings between uninsulated live-metal parts of opposite polarity and also those parts and dead-metal parts, including openings for mounting screws, are not less than 3/64 in (1.2 mm) through air or over surface for switches rated 250 V or less and not less than 1/8 in (3.2 mm) for switches rated 251 V or greater, unless noted.

Marking - Recognized Company name or trademark and electrical rating.

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