

File E228700  
Project 02ME11519

07-15-02  
Revised 2005-06-29

REPORT

on

COMPONENT - TRANSFORMERS, CONSTRUCTION ONLY

BSAB-Elektronik / Strulik und Bosch GmbH  
Geldern, Germany

Copyright © 2002 Underwriters Laboratories Inc.

Underwriters Laboratories Inc. authorizes the above named company to reproduce this Report provided it is 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 2.

DESCRIPTION

PRODUCT COVERED:

USR, CNR:    Transformer, Series:

**C-RKT XXX/YYY/BB and C-HRKT XXX/YYY/BB, where XXX is the rated power and can be any number between 0 and 500, YYY is the input and may be several voltages not exceeding 240V and BB is the output and may be several voltages not exceeding 60V.**

General - The device covered by this report is for use in medical electrical equipment.

ELECTRICAL RATING:

Series C-RKT is provided with two 115V primary windings or one primary winding with tabs for 95, 115, 230 and 240 V and one, two or more secondary windings rated 60V, 30V or several voltages not exceeding 60V in total.

Series C-HRKT is provided with two 115V primary windings and one 11.5V secondary winding.

The power value is indicated in the first three numbers of model type.

## MODEL DIFFERENCES:

Series C-HRKT **XXX/YYY/BB** is provided with a potting cup, fuse and fuse holder.

## ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

General - The product covered by this Report is Medical Electrical Equipment, Intended for Use in Health Care Facilities.

In addition to UL 2601-1, 2<sup>nd</sup> Edition, the following standards were utilized during the investigation of the subject product:

CAN/ CSA C22.2 N0. 601.1- M90  
- UL60601-1, 1<sup>st</sup> Edition.

USR - Refers to evaluation per to UL60601-1, 1<sup>st</sup> Edition..

CNR - Refers to evaluation per CAN/ CSA C22.2 N0. 601.1- M90

Use - For use only in (or with) complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

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

1. These devices have been evaluated for construction only in accordance with the requirements of UL 2601-1, Second Edition, Section 57.9. Tests required by the end-use product shall be conducted during the end-use product investigation.
2. A Dielectric Withstand Test was performed on the transformer to evaluate the insulation resistance of the device. Limited performance characteristics have been investigated. All other tests deemed necessary shall be performed in the end-product evaluation.
3. The transformer shall be installed in compliance with the enclosure, mounting, spacing, causality, and segregation requirements of the ultimate application.
4. Fuse value and type has to be approved and defined in end use equipment.

## CONSTRUCTION DETAILS:

## Figure and Illustration Index:

Fig. 1 (G0200828) - Shows samples of series C-RKT **XXX/YYY/BB** in  
Fig. 2 (G0200829) - Shows samples of series C-HRKT **XXX/YYY/BB**  
ILL. 1 (G0240392) - Labels

Except for items specifically addressed in this Section, all Sec. Gen. requirements apply.

Wiring Terminations - All connections are mechanically secured before soldering.

Spacings - Operational and Reinforced, based on Dielectric Withstand Test.

Creepage C-HRKT Series- 8 mm minimum creepage shall be maintained between primary and secondary windings.

Creepage C-RKT Series- 12 mm minimum creepage shall be maintained between primary and secondary windings.

Corrosion Protection - All metal parts are painted, plated, lacquered or varnished unless otherwise specified.

Marking - Marking shall include manufacturer's name, model number and Recognized Component mark, see Ill. 1. The marking shall be ink-stamped, die-stamped, painted, or on printed labels.

Models C-RKT **XXX/YYY/BB**  
C-HRKT **XXX/YYY/BB**

Fig. 1 (G0200828)

Fig. 2 (G0200829)

General - This figure shows an overall view of the transformers.

The transformer is constructed as follows:

1. Core - Laminated steel, constructed in different sizes.
2. Winding Protection - (QMFZ2), Bayer Materialscience AG, Durethan, BKV30H, rated min. 105°C, UL94-HB.  
  
Alternate - QMFZ2, EI Dupont, Zytel, min. thickness 0.71 mm, Type 101, rated min. 105°C, UL94V-2.  
  
Alternate - QMMY2, Weisser Spulenkoerper, rated min. 105°C, UL94-HB.
3. Secondary Wire - (OBMW2), Copper magnet wire, rated min. 105°C.
4. Wire insulation - (UZFT2), Relats, type M8172, rated 155°C, 600V.  
  
Alternate - UZKX2, Wilhelm Hartmann, type GS-PUR, rated 155°C, 300 V.
5. Interwinding insulation - (QMFZ2), Hoechst, Hostaphan, type RN or WN, rated min. 105°C, 1-layer, 2/3 overlapped, min. thickness 0.05mm, 10mm wide.  
  
Alternate - same as above, except TORAY PLASTICS EUROPE S A, type Lumirror 60.01.
6. Fixation Tape - IKS Klebetechnik, type E901, Polyester-Film tape, min 0.025mm thick, rated min. 105°C.  
  
Alternate - OANZ2, Kemica, type 10-B, Polyester film tape, min. 0.025 mm thick, rated min. 105°C.
7. Prim. - Sec. Insulation - (QMFZ2), Hoechst, Hostaphan, type RN or WN, rated min. 105°C, min. 3-layers, 2/3 overlapped, min. thickness 0.05mm, 10mm wide.  
  
Alternate - same as above, except TORAY PLASTICS EUROPE S A, type Lumirror 60.01.
8. Primary Magnet Wire - Same as Secondary Copper Magnet Wire, Item 3.
9. Fixation Tape - same as item 6.
10. Interwinding Insulation - same as item 5.
11. Fixation Tape - same as item 6.
12. Cover Band - same as item 5.

13. Thermo Fuse - XCMQ2, XCMQ8, Therm-O-Disc Inc., types G4A98 or G5A98, rated 98°C, 250V, max. 15A, two used in version C-RKT XXX/YYY/BB, one in each primary winding. One used in version C-RKT XXX/YYY/BB.

Alternate Thermo Fuse - XCMQ2, XCMQ8 same as above except, types E4A98 or E5A98 (ROHS types).

14. Outside wire insulation - (UZFT2), Relats, type M8172, rated 155°C, 600V, min. thickness 0.3mm, have to look out min. 20mm outside the transformer.

Alternate - UZKX2, Wilhelm Hartmann, type GS-PUR, rated 155°C, 600 V min. thickness 0.3mm, have to look out min. 20mm outside the transformer.

15. Lead wires - (AVLV2), PVC insulated wire, style 1007, 1569, rated min. 80°C, 300V.

Following components are used in C-HRKT XXX/YYY/BB series only:

16. Potting material - (QMFZ2), Beck Electrical Insulation, type Rhenatech 425xFR/49x0 (where x denotes a single digit), rated min. 4.5mm, UL94V-0.

Potting compound - QMFZ2, Iso-Elektra Elektrochemische Fabrik, type ISO-CAST A 765, rated min 5.5mm, UL94V-0.

17. Fuseholder - (IZLT2), Wickmann, type 19820, rated 250V, min. 10A.

**Alternate - (IZLT2), Schurter AG, Type FPG-1, rated 250V, min. 10A.**

18. Potting cap - (QMFZ2), Bayer AG, type BG30X, min. thickness 1.5mm, rated UL94HB, 120°C.