



REM/ARM/CQM TEST MODULE



CQM-2000

USER MANUAL

**BC BIOMEDICAL
CQM-2000
TABLE OF CONTENTS**

WARNINGS, CAUTIONS, NOTICES	2
OVERVIEW	5
MANUAL REVISIONS	6
WARRANTY	6
SPECIFICATIONS	7
NOTES.....	8

WARNING - USERS

The CQM-2000 Test Modules are for use by skilled technical personnel only.

WARNING - USE

The CQM-2000 Test Modules are intended for testing only and they should never be used in diagnostics, treatment or any other capacity where they would come in contact with a patient.

WARNING - MODIFICATIONS

The CQM-2000 Test Modules are intended for use within the published specifications. Any application beyond these specifications or any unauthorized user modifications may result in hazards or improper operation.

WARNING - CONNECTIONS

All connections to patients must be removed before connecting the Device Under Test (DUT) to the Module. A serious hazard may occur if the patient is connected when testing with the Module.

Do not connect any leads from the patient directly to the Module or DUT.

WARNING - LIQUIDS

Do not submerge or spill liquids on the Module. Do not operate the Module if internal components not intended for use with fluids may have been exposed to fluid, as the internal leakage may have caused corrosion and be a potential hazard.

CAUTION - SERVICE

The CQM-2000 Test Modules are intended to be serviced only by authorized service personnel. Troubleshooting and service procedures should only be performed by qualified technical personnel.

CAUTION - CLEANING

Do not immerse. The Module should be cleaned by wiping gently with a damp, lint-free cloth. A mild detergent can be used if desired.

CAUTION - INSPECTION

The CQM-2000 Test Modules should be inspected before each use for wear and the Module should be serviced if any parts are in question.

NOTICE – DISCLAIMER

USER ASSUMES FULL RESPONSIBILITY FOR UNAUTHORIZED EQUIPMENT MODIFICATIONS OR APPLICATION OF EQUIPMENT OUTSIDE OF THE PUBLISHED INTENDED USE AND SPECIFICATIONS. SUCH MODIFICATIONS OR APPLICATIONS MAY RESULT IN EQUIPMENT DAMAGE OR PERSONAL INJURY.

NOTICE – DISCLAIMER

BC GROUP INTERNATIONAL, INC. RESERVES THE RIGHT TO MAKE CHANGES TO ITS PRODUCTS OR SPECIFICATIONS AT ANY TIME, WITHOUT NOTICE, IN ORDER TO IMPROVE THE DESIGN OR PERFORMANCE AND TO SUPPLY THE BEST POSSIBLE PRODUCT. THE INFORMATION IN THIS MANUAL HAS BEEN CAREFULLY CHECKED AND IS BELIEVED TO BE ACCURATE. HOWEVER, NO RESPONSIBILITY IS ASSUMED FOR INACCURACIES.

NOTICE – CONTACT INFORMATION

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**BC GROUP
CQM-2000
REM/ARM/CQM TEST MODULE**

OVERVIEW

The CQM-2000 is used to test the Return Electrode Quality monitor of an Electrosurgical Unit. The CQM-2000 provides an adjustable resistance from 0 to 210 ohms in 1ohm increments. The internal switches are 'make-before-break' type to ensure that the CQM circuit in the DUT does not see a momentary open condition.

To Operate the Unit:

- Connect the ESU Return electrodes to the CQM-2000 Test Jacks.
- Set the Resistance using the knobs on the CQM-2000 Front Panel.

Most ESU's measure a baseline resistance as the CQM connector is plugged in.

The DUT should alarm based on the following conditions:

- If the resistance is too low, a CQM alarm should occur.
- If the Resistance is too high, a CQM alarm should occur.
- If the resistance rises some percentage above the baseline resistance, an alarm should occur.

If the CQM resistance decreases, it becomes the new baseline resistance. An alarm should occur if the CQM resistance rises some percentage above the new baseline resistance.

Baseline Resistance limits and percent resistance rise limits vary based on ESU manufacturer. Consult ESU manual for these paraModules.

MANUAL REVISIONS

<u>Revision #</u>	<u>Engineering #</u>	<u>Revisions Made</u>
Rev 01	73762	Quick Start Guide
Rev 02	73762	Updated Format
Rev 03	73762	Updated to Manual Format

LIMITED WARRANTY

WARRANTY: BC GROUP INTERNATIONAL, INC. WARRANTS ITS NEW PRODUCTS TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP UNDER THE SERVICE FOR WHICH THEY ARE INTENDED. THIS WARRANTY IS EFFECTIVE FOR TWELVE MONTHS FROM THE DATE OF SHIPMENT.

EXCLUSIONS: THIS WARRANTY IS **IN LIEU OF** ANY OTHER WARRANTY EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF **MERCHANTABILITY** OR FITNESS FOR A PARTICULAR PURPOSE.

BC GROUP INTERNATIONAL, INC. IS NOT LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

NO PERSON OTHER THAN AN OFFICER IS AUTHORIZED TO GIVE ANY OTHER WARRANTY OR ASSUME ANY LIABILITY.

REMEDIES: THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY SHALL BE: (1) THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS OR PRODUCTS, WITHOUT CHARGE. (2) AT THE OPTION OF **BC GROUP INTERNATIONAL, INC.**, THE REFUND OF THE PURCHASE PRICE.

SPECIFICATIONS

RESISTANCE	0 to 210 Ohms, +/- 0.5% + 0.5 Ohm (NOTE: Accuracy after subtraction of zero resistance.)
CONNECTIONS	Safety Jack, 2.1 mm
OPERATING RANGE	15 to 40 Degrees C
STORAGE RANGE	-20 to 65 Degrees C
CONSTRUCTION	Enclosure – ABS Plastic, Face – Lexan Printed
SIZE	5.12 x 2.56 x 0.97 inches, 130 x 65 x 25 mm (HxWxD)
WEIGHT	≤ 0.4 lbs. (0.18 kg)

NOTES

