



LLM – A00971

**Live Line Monitor
&
Remote Display**

Operation Manual

LLM – Live Line Monitor & Remote Display Manual

Part number: A00971 – 660-1100VAC

Version: 1.2

Date: June 2010

Copyrights

All rights reserved. This document may not, in whole or part, be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine readable form without the express written permission of Bramco Electronics.

Disclaimer

Bramco Electronics has made every attempt to ensure that the information contained in this document is accurate and complete. Bramco Electronics makes no representation or warranties of merchantability or fitness for any particular purpose. Bramco Electronics reserves the right to make changes to the system and/or document at any time without notice.

Bramco Electronics

2 Callistemon Close,
Warabrook NSW 2304
Australia
www.bramco.com.au

Ph: +61 2 4014 4444

Fax: +61 2 4967 4100

Email: sales@bramco.com.au

Index

OVERVIEW	4
1. OPERATION	4
2. INSTALLATION	4
2.1. GENERAL RECOMMENDATIONS	4
2.2. TERMINAL CONNECTIONS	5
2.3. PHYSICAL LAYOUT	6
3. SPECIFICATIONS	7
4. TYPICAL CONNECTION DIAGRAM	8

Overview

The LLM module is a compact, panel mounted, low power, three phase monitoring device which provides indication of the presence of Voltage on any or all phases of a 3 phase electrical system.

For remote indication, part number A00739 must be installed.

The three (3) line/load phases and earth are connected directly to the LLM module.

1. Operation

The LLM is a safety monitoring device which is continuously rated to be connected across the line or load terminals of an electrical system and will provide LED indication of the presence of voltage on each phase.

In operation the LLM will detect the presence of a voltage above 240volts on any or all of the phases. The LEDS on the Remote Display will illuminate for each of the phases that are energised.

Two LEDs for each phase are provided. Should one of the LEDs fail to illuminate the unit should be replaced. The faulty unit should be returned to the supplier for repair and testing. The remote indicator, if installed, is totally encapsulated. If a failure of an LED occurs the unit should be replaced and the faulty unit discarded.

2. Installation

2.1. General Recommendations

Mount the module as close as is practical to the point of connection. Connect the 3 phases and Earth to the terminals of the module as shown on the connection diagram. The connecting leads should be as short as is practical and consistent with good wiring practice. When installing a remote Indicator, ensure a gap of 50mm is maintained between the mains cables and the remote indicator leads at all times.

The Earth connection IS REQUIRED.

2.2 Terminal Connections

Terminal Number	Description
1	No Connection
2	No Connection
3	No Connection
4	No Connection
5	Earth to Remote Indicator
6	C1 Phase to Remote indicator
7	B1 Phase to Remote Indicator
8	A1 Phase to Remote Indicator
9	Earth
10	No Connection
11	No Connection
12	C Phase Input
13	No Connection
14	B Phase Input
15	No Connection
16	A Phase Input.

Terminals 9 – 16 Connected to Phase Voltage

2.3 Physical Layout



3. Specifications

The LLM module is designed to couple directly across any 3 phase electrical system that is rated within the voltage as specified below. All components in the barrier network are rated at 2.5 times the maximum network voltage impressed on them relative to the maximum system voltage. The barrier components are impulse voltage rated to 7 times the maximum network voltages applied.

The LED network is engineered to operate at the lowest practical power level to ensure maximum LED life.

The module case is rated DIN VDE 0110, 600V between terminals.

System Voltage	- 660 – 1100V AC 50/60Hz
Phase Voltage	- Nominal 240 – 255 VAC 50/60Hz
Test Voltage	- AC 1000 Volts for a maximum of 1 minute (Ph to Earth) - DC 2000 Volts for a maximum of 1 minute (Ph to Earth)
Phase Loadings	- AC 100K Ohms - DC 20M Ohms
Remote Display	- 24 Volt AC maximum touch potential Note Earth must be connected
LLM Module	- Dimensions 55W x 75H x 110D - Material High impact resistant polycarbonate enclosure - Mounting Din Rail and 2 x screw mounting - Terminals Cage screw slotted terminals - Weight 350gms
Remote Display	- Panel cut out 22.5mm diameter - Bezel 30mm diameter x 20mm projection - Depth 50mm excluding cable - Weight 10gms - Connection to LLM module 2m x 4 core cable - Totally encapsulated IP67 - High Intensity LEDs
Operating temperature	- -°C
Ordering	- LLM Module 660 – 1100vAC Part Number A00971 - Remote Display Part Number A00739

4. Typical Connection Diagram

