

MLC 9000 BUS-COMPATIBLE PID CONTROL SYSTEM Installation Manual Bus Communications Module (PROFIBUS)

59296-1 (June 2002)
ECN00127



All procedures in this Manual should be performed only by personnel competent and authorised to do so. All local and national regulations pertaining to electrical installations must be rigidly observed.

1 INSTALLATION - MECHANICAL

1.1 SITE PRE-REQUISITES

1.1.1 Enclosure

It is recommended that the MLC 9000 System - comprising a Bus Communications Module (BCM) and up to eight Loop Controller Modules (LCMs) - be installed in an enclosure which is sealed against the ingress of dust and moisture. The enclosure must contain sufficient length of 35mm Top-Hat DIN mounting rail to accommodate the system modules (see below) plus an extra 50mm of rail to permit modules to be

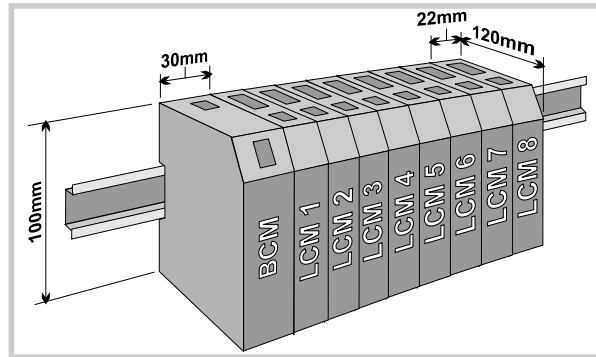


Figure 1 Main Dimensions

separated. Module dimensions are shown in Figure 1.

NOTE: An additional 60mm space is required above and below the Modules to allow ventilation (see below) and to accommodate wiring bend radii to enclosure trunking. During installation, keep the ventilation holes on the Loop Controller Module covered to prevent ingress of dust and moisture.



WARNING: The maximum of eight LCMs per BCM must not be exceeded.

It is recommended that some means of preventing unauthorised access within the enclosure (e.g. lockable doors) is provided.

1.1.2 Ventilation

No forced ventilation or ventilation slots are required in the enclosure but temperatures within the enclosure must be within specification. All modules have ventilation slots in the top and bottom surfaces; these should not be obstructed.

1.2 INSTALLING THE BCM

The modules are installed onto the DIN rail in the following order:

1. Bus Communications Module
2. Interconnect Module(s)
3. First Loop Controller Module
4. Second Loop Controller Module
5. Third Loop Controller Module etc.

See Figure 2



CAUTION: Ensure that power has been removed from all equipment currently in the enclosure before installing the BCM.

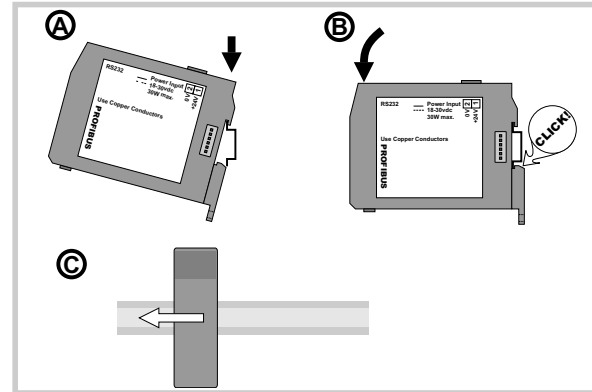


Figure 2 Installing the BCM

1.3 REMOVING THE BCM



CAUTION: Ensure that power has been removed from all equipment currently in the enclosure before removing the BCM.

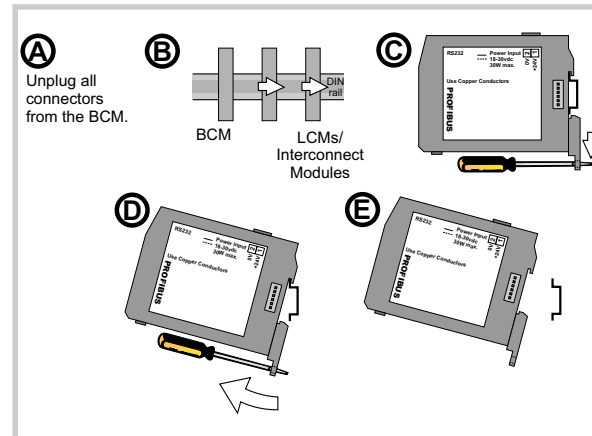


Figure 3 Removing a Bus Communications Module

2 INSTALLATION - ELECTRICAL

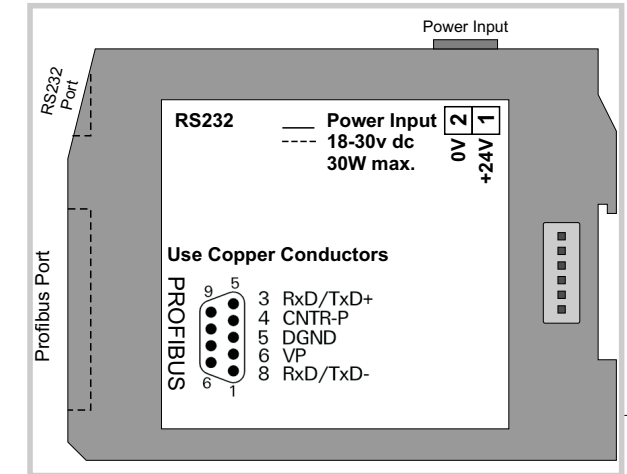


Figure 4 BCM Connectors

2.1 POWER INPUT

The system requires a power input of 18 - 30V DC and has a maximum power consumption of 30W. It is recommended that the power supply is connected via a two-pole isolating switch (preferably situated near the System) and a 2A slow-blow fuse (see Figure 5).

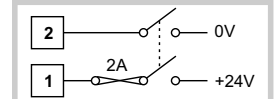


Figure 5 Recommended Mode of Power Connection



CAUTION: The system is designed for installation in an enclosure which provides adequate protection against electric shock. Local regulations regarding electrical installation should be rigidly observed. Consideration should be given to prevention of access to the power terminations by unauthorised personnel.

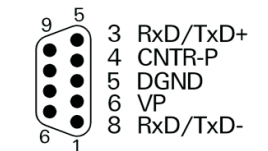
2.2 RS232 PORT

NOTE: A proprietary protocol is employed on this port. This connects the BCM to a local PC (for local configuration and basic operator functions) or HMI (e.g. a remote front panel/operator interface). Pin connections are shown on the right.

Pin No.	Signal/Function
1	Receive Data
2	Transmit Data
3	No connection
4	Signal Ground

2.3 PROFIBUS PORT

This connects the BCM to a PROFIBUS network. Pin connections are shown on the right.



3 SOFTWARE SUPPORT

3.1 PC CONFIGURATOR SUPPORT

Always ensure that you are using the latest version of the MLC9000 device driver to ensure that the PC Configurator supports all modules in your MLC9000 system.

The latest MLC9000 device driver is always available from our website at www.westinstruments.com (Europe) or www.dancon.com (North America).

3.2 UPDATING THE PC CONFIGURATOR DRIVER

Start the PC Configurator.

From the **Contents** page, select the **Manage Device Drivers** option.

Select the MLC9000 driver from the list in the panel and select the **Remove** button. The next screen lets you confirm that the list of devices to be removed is correct. The selected device will now be removed.

Now select **Add**, then navigate to the directory where you saved the updated MLC9000 device driver.

Installation information is held in files with an extension of **.inf**. They contain basic information about the device driver files and information about where these files will be copied to complete the installation.

When the **.inf** file has been selected, you will be shown a screen allowing you to confirm that the selected device is the one you intend to install. Proceed and the selected device driver will be installed.

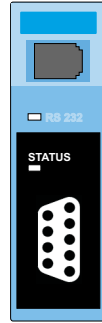
You may now use the PC configurator to configure a MLC9000 system that has a PROFIBUS B240 BCM.

3.3 PROFIBUS SUPPORT

The B240 BCM must be registered on the PROFIBUS network using the **.gsd / .gse** file, supplied on a floppy disk with the BCM.

The current **.gsd / .gse** file is always available from our website (see above).

4 ON-SITE DIAGNOSTICS



RS232 Connector

RS232 Port LED

PROFIBUS Port LED

PROFIBUS Connector

LED DIAGNOSTICS			
RS232 Port LED State	Meaning	PROFIBUS Port LED State	Meaning
OFF	Not powered	OFF	Not powered
Orange, continuous (1 Second)	Powering up	Green, flashing	PROFIBUS interface is initialising
Green, flashing (1 second ON, 1 second OFF)	Communication established with PC (i.e. PC is responding to polls)	Red, continuous	Searching for Baud-rate / Bus fault
Red, continuous	Power ON and Bus Ready alarm present	Red, flashing	Awaiting configuration / Awaiting parameter
Green, continuous	Power ON and OK	Green, continuous	Configured / On-line
Red/Green, flashing (1 second red, 1 second green)	Communications established with PC and Bus Ready alarm		

5 MODULE SPECIFICATION

GENERAL	
RS232 Port	This is a local port for connection to an RS232 port on a PC for local operator configuration and operator displays. It has EIA-232-E (RS232)-compatible inputs and outputs for TxD and RxD and provides facilities via the Application Software to allow an installer to configure or an operator to view the operation of Loop Controller Modules connected to the Bus Communications Module.
PROFIBUS Port	This port is for connection to a PROFIBUS DP network. The PROFIBUS data rate is automatically detected and set by the BCM. The PROFIBUS interface can communicate at the following data rates; 9.6kbps, 19.2kbps, 45.45kbps, 93.75kbps, 187.5kbps, 500kbps, 1.5Mbps, 3Mbps, 6Mbps, 12Mbps. PROFIBUS address and byte order are configurable via the RS232 port. The PROFIBUS address can be set in the range 0 to 126 (126=default).
Input Power	30W maximum

ENVIRONMENTAL	
Operating Conditions	Ambient Temperature: 0°C to 55°C Relative Humidity: 30% to 90% non-condensing Supply Voltage: 18 to 30V DC (including ripple)
Storage Conditions	Ambient Temperature: -20°C to 80°C Relative Humidity: 30% to 90% non-condensing

APPROVALS	
Product Family EMC	EN61326:1998.
Safety	Complies with EN61010-1:1995 and UL 3121-1:1998.

PHYSICAL	
Dimensions	Height - 100mm; Width - 30mm; Depth - 120mm
Mounting	Directly mounted on the DIN rail
Connectors	Power input: 2-way 5.08mm Combicon type RS232 port: 6-way RJ11 Type PROFIBUS port: 9-way D-type
Weight	0.21kg