

# MLB

## Master Line Barrier

### Summary

The iMAC System has been approved as Intrinsically Safe for use in Group I mining applications. The iMAC Master Line Barrier (MLB) facilitates this by limiting the amount of power that can be transmitted into a hazardous area.

The MLB is a passive intrinsic safety barrier. It is used to create an intrinsically safe iMAC fieldbus to which other intrinsically safe iMAC modules may be connected to create a hazardous area distributed I/O monitoring and control networks.

The MLB and iMAC Controller must be installed in a safe area or flame proof enclosure. The output of the barrier provides an intrinsically safe iMAC fieldbus that can extend into hazardous areas.

Only intrinsically safe iMAC modules are permitted to be directly connected to an intrinsically safe iMAC fieldbus. If non-intrinsically safe iMAC modules are required to connect to an intrinsically safe iMAC fieldbus, this can be achieved using an iMAC Slave Line Barrier SLB. The SLB barrier and non-intrinsically safe iMAC modules must however remain in either a safe area or flame proof enclosure. Refer to the iMAC SLB technical datasheet for further information.

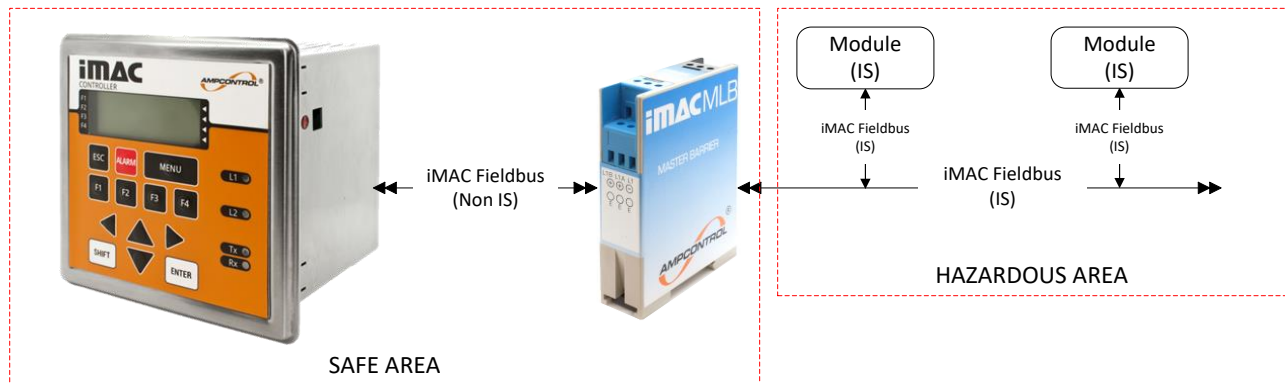
### Data Register(s)

None

### Features

- Intrinsically Safe IECEx [Ex ia] Group I Ma
- Provides an intrinsically safe iMAC fieldbus for use in hazardous areas.
- Compact, fully encapsulated design
- Standard DIN rail mounting

### Minimum System



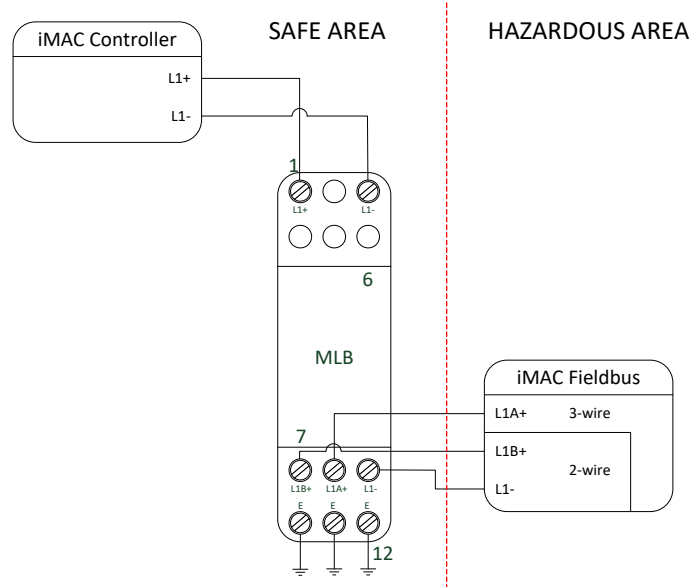
### CAUTION!



The MLB must be installed in a safe area.

To maintain IECEx approval, all three earth terminals (E) must be individually and separately wired to the local I.S. earth using wires with a minimum CSA of 1.5mm<sup>2</sup>.

### Electrical Connections



Note: refer to iMACB094 – iMAC Installation Requirements

Terminal	Label	Type	Description
1	L1+	L1 comms	iMAC Controller (2 wire)
2	Not used		
3	L1-		
4, 5, 6	Not used	-	-
7	LAB+	L1 comms	Intrinsically Safe iMAC Fieldbus (2 wire or 3 wire)
8	L1A+		
9	L1-		
10	E	I.S. Earth	I.S. Earth
11	E		
12	E		

### Cabling and Earthing

To maintain IECEx approval, all three MLB I.S. earth terminals (E) must be individually and separately wired to the local I.S. earth using wires with a minimum CSA of 1.5mm<sup>2</sup>.

If a cable with a continuous screen is used for the iMAC Fieldbus, the screen should be made continuous and earthed at a single point, at the barrier end I.S. earth. There should be no I.S. earth connections made at the iMAC Controller, only the MLB should be earthed. If a screened cable is used between the iMAC Controller and the MLB, it should be earthed at a single point, at the MLB end I.S. earth. This minimises circulating earth currents due to multiple earth points, which can introduce electrical noise into the system. Refer to iMACB094 – iMAC Installation Requirements for further information.

### Certification / Approvals

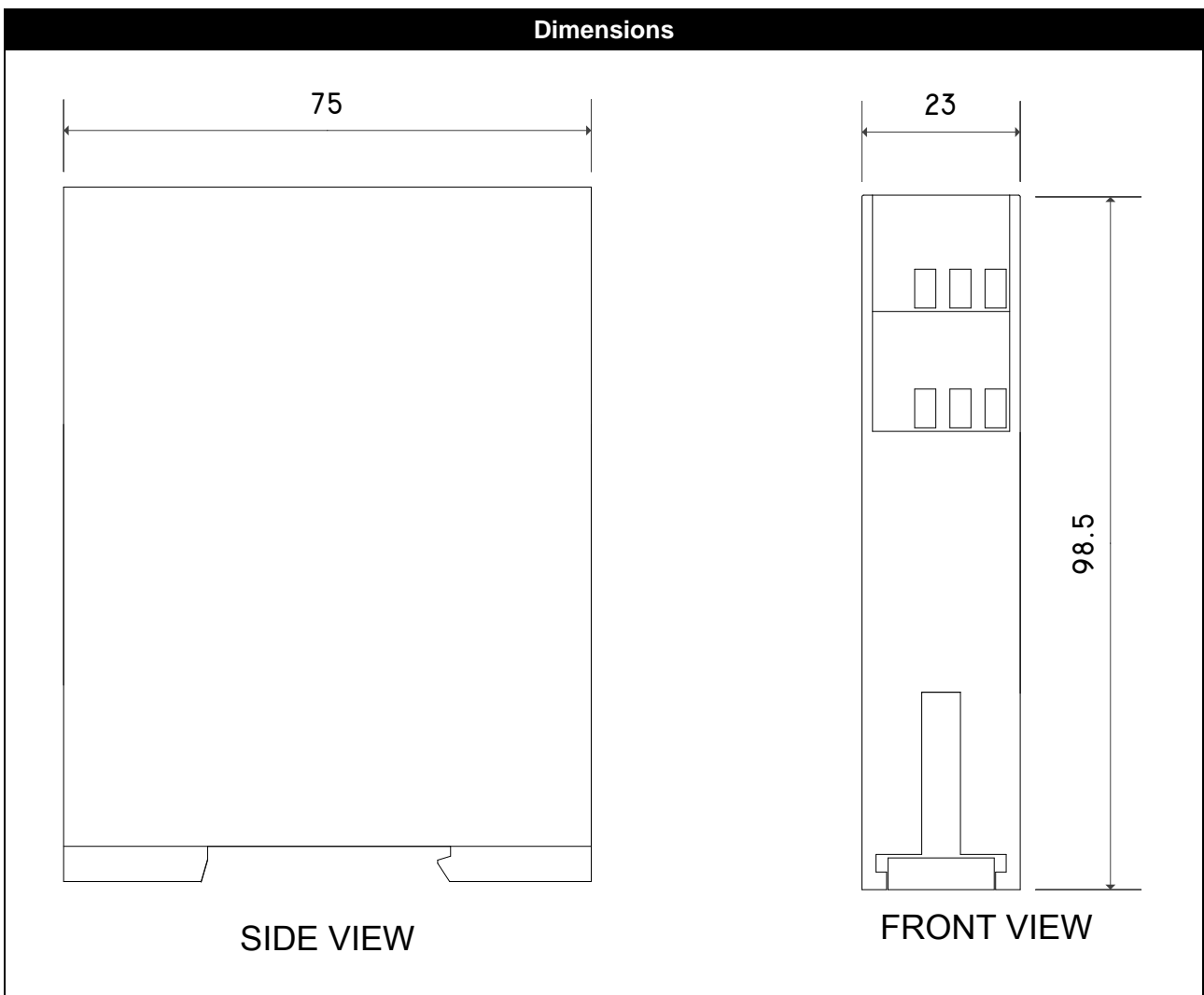
Type	[Ex ia] I Ma (must be installed in a safe area or flame proof enclosure)	
Certificate number	IECEX ITA 07.0017X	
Module type	MLB	
IP rating	Must be installed in an enclosure not less than IP20 (IP54 recommended)	
Other	Must be connected in accordance with iMAC system drawing IMACZ032.	
I/O parameters	Terminals 1 wrt 3, 9, 10, 11, 12 (L1+ wrt L1-, L1-, E, E, E)	Um = 250V
	Terminals 7 & 8 wrt 3, 9, 10, 11, 12 (L1B+ & L1A+ wrt L1-, L1-, E, E, E)  Note: Uo has an inherent source resistance of minimum 44.65Ω	Uo = 21.5V Io = 481.52mA Po = 2.58W Co = 6.1uF Lo = 2mH Lo/Ro = 175 uH/Ω Ci = negligible Li = negligible

IMACB151 MLB TECHNICAL DATASHEET

Version: 1, Date: 19 MAY 2020

Ambient temperature (Ta)	-20°C to +40°C (refer to operating environment specifications)
This table is provided for quick reference purposes only: refer to latest issue of the Certificate of Conformity for all system designs.	

Specifications	
<b>Mechanical</b>	
Dimensions	23mm x 75mm x 98.5mm (See diagram below)
Weight	190g
IP Rating	IP20
Mounting	Standard 35mm DIN rail (Top Hat Rail – EN50022)
Electrical Connections	ERNI screw terminals (maximum wire size of 4mm <sup>2</sup> , maximum torque or 0.4 Nm)
<b>Environmental</b>	
Operating Temperature	0°C to +50°C
<b>Find Out More</b>	
For more information on this product, contact Ampcontrol Customer Service on +61 1300 267 373 or <a href="mailto:customerservice@ampcontrolgroup.com">customerservice@ampcontrolgroup.com</a> or visit the Ampcontrol website: <a href="http://www.ampcontrolgroup.com">www.ampcontrolgroup.com</a>	



Equipment List	
Part Number	Description
121923	MODULE IMAC MLB IECEX

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