
SECTION 1 - INTRODUCTION

OVERVIEW

The IEMMU11, IEMMU12, IEMMU21, and IEMMU22 are module mounting units used to house standard INFI 90 OPEN system modules and the BRC-100 Harmony Bridge Controller module of the Symphony system in system cabinets.

NOTE: IEMMU11, IEMMU12, IEMMU21, and IEMMU22 Module Mounting Units can be used as replacements for IEMMU01 and IEMMU02 Module Mounting Units. They can also be installed along with IEMMU01 and IEMMU02 units; however, transition board assemblies are required for interconnection between IEMMU11, IEMMU12, IEMMU21, or IEMMU22 units and IEMMU01 or IEMMU02 units.

The module mounting unit consists of a sheet metal card chassis and a printed circuit board backplane assembly. The open top and bottom structure allow air to flow over the modules. Mounting flanges are provided for mounting the mounting unit in a standard Eltag Bailey 483-millimeter (19-inch) cabinet.

Modules can be installed and removed quickly and easily. The module is held in position by card guides, the connectors on the backplane, and the module's front panel, captive fastening latches.

The backplane is a multilayer printed circuit board assembly containing electronic components, dipshunt sockets, connectors, and jumpers. In most cases, the mounting unit provides direct I/O cable coupling to the modules. The exception to this is when a BRC-100 Harmony Bridge Controller module is installed in the MMU. Refer to **PROCESSOR BUS ADAPTER BRACKETS INSTALLATION** in Section 3 for further explanation.

IEMMU11 and IEMMU12 Module Mounting Units

The IEMMU11 and IEMMU12 module mounting units provide physical mounting for up to 12 system modules or ten system modules and a maximum of two IEPAS02, IEPDS01/02, IEPAF02, and IEPDF01/02 power modules. They also provide electrical distribution of I/O expander bus, module bus, and Controlway signals; distribution of regulated power supply voltages (+5 volts, +15 volts, -15 volts and 24 volts); and distribution of primary power.

Primary power is the 120/240 VAC or 24/48 VDC that supplies power to power modules (IEPAS02, IEPAF02, IEPDS01, IEPDF01, IEPDS02 and IEPDF02) that can be mounted in the

mounting units. Typically, systems that use IEPMU01/02 do not use distributed primary power to the mounting units. Systems that use Modular Power System II do not allow distributed primary power to the mounting units.

The IEMMU11 module mounting unit is used when the cabinet configuration requires a rear mount chassis with primary power distribution.

The IEMMU12 module mounting unit is used when the cabinet configuration requires a front mount chassis with primary power distribution.

IEMMU21 and IEMMU22 Module Mounting Units

The IEMMU21 and IEMMU22 module mounting units provide physical mounting for up to 12 system modules; provide electrical distribution of I/O expander bus, module bus, and Controlway signals; and distribution of regulated power supply voltages (+5 V, +15 V, and -15 V). The IEMMU21/22 module mounting units are the preferred choice for use with Modular Power System II.

The IEMMU21 module mounting unit is used when the cabinet configuration requires a rear mount chassis with no primary power distribution.

The IEMMU22 mounting unit is used when the cabinet configuration requires a front mount chassis with no primary power distribution.

IEMMU01 AND IEMMU02 REPLACEMENT

The IEMMU11, IEMMU12, IEMMU21, and IEMMU22 units are functional equivalents to existing IEMMU01 and IEMMU02 units. The I/O expander bus interconnect cables are different however. The new module mounting units utilize a grey ribbon cable (refer to Table 5-1 for part number) to connect I/O expander bus between adjacent units. This cable replaces the amber colored interconnect cable used on the IEMMU01 or IEMMU02 unit.

IEMMU01 AND IEMMU02 CONNECTION

A transition board (refer to Table 5-3 for part number) is needed if an IEMMU11, IEMMU12, IEMMU21, or IEMMU22 unit is to be connected to an IEMMU01 or IEMMU02 unit. The amber color interconnect cable connects from the IEMMU01 or IEMMU02 unit to the transition board plugged into the IEMMU11, IEMMU12, IEMMU21, or IEMMU22 unit backplane. Refer to **TRANSITION BOARD INSTALLATION** in Section 3 for details.

INTENDED USER

Personnel installing, operating, or maintaining the mounting units should read this manual before performing any installation, maintenance or replacement procedures. Installation requires an engineer or technician with experience in handling electronic circuitry.

FEATURES

The backplane in these mounting units has several features:

- I/O expander bus interconnect cables based on 2.54-millimeter (0.1-inch) center ribbon cable technology for enhanced robustness. Cables come in choice of two lengths: 38 millimeter (1.5 inches) and 171 millimeter (6.75 inches).
- Ability to segment Controlway or module bus into three segments on the backplane, which provides for increased density and lower costs.
- Available with or without primary power distribution. Module mounting unit with primary power distribution is only needed for AC and DC Modular Power Systems configured for primary power distribution.

INSTRUCTION CONTENT

This instruction contains the following sections:

Introduction	Contains an overview of the mounting unit, a hardware description, and performance and environmental specifications.
Description and Operation	Describes and explains the functional and electronic operation of the module mounting unit.
Installation	Describes mounting procedures and location of the mounting unit in the cabinet. Provides information on I/O, expander bus, and module bus connectors as well as jumper settings for segmenting Controlway or module bus. This section also contains a processor bus adapter bracket installation procedure necessary to mount a processor bus adapter for a Harmony bridge controller module.
Maintenance	Provides a maintenance schedule.
Repair/Replacement Procedures	Details how to replace the mounting unit backplane assembly. It also contains the MMU parts list.
Support Services	Describes the support services (training, documentation, etc.) available from Elsasg Bailey.

HOW TO USE THIS INSTRUCTION

Read this instruction through in sequence. Read the installation section thoroughly. It is important to become familiar with the entire content of this instruction before installing the modules in the mounting unit.

1. Read and perform all steps in the installation section.
2. Refer to the maintenance section for scheduled maintenance requirements.
3. Refer to the repair/replacement procedures section to find instructions on how to replace the backplane printed circuit board assembly or the mounting unit.
4. Refer to the repair/replacement procedures section for a complete list of parts including part numbers and nomenclatures.

GLOSSARY OF TERMS AND ABBREVIATIONS

Table 1-1 lists definitions of abbreviations used in this instruction that are unique to Eltag Bailey or have a definition that is different from standard industry usage.

Table 1-1. Glossary of Terms and Abbreviations

Term	Definition
Controlway	High speed, redundant, peer-to-peer communication link. Used to transfer information between intelligent modules within a process control unit.
MMU	Module mounting unit. A card chassis that provides electrical and communication support for system modules.
Module bus	Peer-to-peer communication link used to transfer information between intelligent modules within a process control unit.

DOCUMENT CONVENTIONS

The ? in a part number identifies any part number positions that are variable positions (e.g., 1949480?1). The ? is a placeholder for the revision letter.

REFERENCE DOCUMENTS

Table 1-2 lists the documents referenced in this instruction or customer support documentation. Refer to this documentation as needed.

Table 1-2. Reference Documents

Number	Document
I-E96-506	AC Modular Power System
I-E96-508	DC Modular Power System
WBPEEU1210502?0	Modular Power System II
WBPEEU1230017?0	Harmony Bridge Controller

NOMENCLATURE

Table 1-3 is a list of mounting unit nomenclature.

Table 1-3. Nomenclature

Nomenclature	Description
IEMMU11	Rear mount chassis module mounting unit with primary power distribution.
IEMMU12	Front mount chassis module mounting unit with primary power distribution.
IEMMU21	Rear mount chassis module mounting unit without primary power distribution.
IEMMU22	Front mount chassis module mounting unit without primary power distribution.

RELATED HARDWARE

Table 1-4 is a list of related hardware.

Table 1-4. Related Hardware

Part Number/ Nomenclature	Description
IEPAF02	AC input field power module
IEPAS02	AC input system power module
IEPDS01	24 VDC input system power module
IEPDS02	48 VDC input system power module
IEPDF01	24 VDC input field power module
IEPDF02	48 VDC input field power module
IEPMU01 IEPMU02	Power mounting unit
1948506?8	System power bus bar
1948516?3	Input power bus bar

SPECIFICATIONS

Table 1-5 lists the specifications for the IEMMU11, IEMMU12, IEMMU21, and IEMMU22 mounting units.

Table 1-5. Specifications

Property	Characteristic/Value
Capacity	12 modules
Mounting	Standard 483-mm (19-in.) cabinet
Ambient temperature (operating)	Temperature rating within the enclosure or cabinet. Internal cabinet rating: 0° to 70°C (32° to 158°F)
Relative humidity (operating)	5% to 95% up to 55°C (131°F), noncondensing 5% to 45%, up to 70°C (158°F), noncondensing
Storage and transport temperature	-40° to 85°C (-40° to 185°F)
Storage and transport relative humidity	0% to 95%, noncondensing
Air quality	Noncorrosive
Primary power	120/240 VAC, 24/48 VDC (IEMMU11/IEMMU12 only)
Regulated DC voltages	+5 VDC, +15 VDC, -15 VDC, +24 VDC, MCOM, I/OCOM
Amperage ratings	Refer to Table 1-6
EMI/RFI	Meets IEC 1000.3, level 3, 80 MHz to 1 GHz with no loss of function or false status information
Fast transient/burst susceptibility	Meets IEC 1000.4, level 3, mains 2 kV at 2.5 kHz, outputs 1 kV at 5.0 kHz with no loss of function or false status information
Transient surge	Meets IEC 1000.5, level 3, 2 kV with no loss of function or false status information
Electrostatic discharge	Meets IEC 1000.2 level 3, with no loss of function or false status information
Emissions	Meets CISPR11 with amendments 92/31/EEC and 93/68/EEC
Vibration	13.2 to 100 Hz, 0.7 Gs 2 to 13.2 Hz, 12 mm (0.47 in.) p-p displacement
Dimensions	483 mm by 178 mm by 304 mm (19 in. by 7 in. by 12.2 in.)
Weight	3.63 kg (8.0 lb.)
Certifications (pending)	CSA certified for use as process control equipment in an ordinary (nonhazardous) location Nonincendive: CSA: Class I, Division 2, Groups A,B,C,D FM: Class I, Division 2, Groups A,B,C,D CE mark: In compliance with EMC Directive 89/336/EEC, EDS, EFT, RFI and CISPR11 with amendments 92/31/EEC and 93/68/EEC
Flammability (UL94)	Materials rated at V0, V1, V2 or V5 wires and cables rated UL VW-1
Installation category (IEC 1010-1)	Category I for outputs, Category II for mains Pollution degree I

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Table 1-6. Amperage Ratings

Voltage	Power Supply Load IEMMU11/12 only (Maximum Amperage)		Module Load (Maximum Amperage)	
	Per Slot	Per MMU	Per Slot	Per MMU
Primary AC power	4	8	N/A	N/A
Primary DC power	6.5	13	N/A	N/A
+5 V	13	20 ¹	5	20 ¹
+15 V	0.8	1.6	0.225	2.7
-15 V	0.8	1.6	0.225	2.7
+24 V	4	8	N/A	N/A

NOTE:

1. The stated current rating applies to current flowing into or out of P45 and P46.

