

Honeywell MU-TAIH02
High Input Analog / STI Input Terminal Assembly

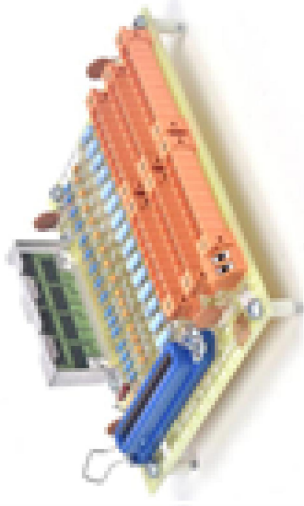
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High-Performance Process Manager Planning

HP02-500

Section 2 – HPM Description

2.1 Overview

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HPM major assemblies The High-Performance Process Manager subsystem (HPM) consists of major assemblies described in the following subsections. The major High-Performance Process Manager assemblies are

- High-Performance Process Manager Module (HPMM) card file
- Input/Output Processor (IOP) card file
- Input/Output Processor (IOP) card
- I/O Link Extender
- Field Termination Assembly (FTA)
- Power System

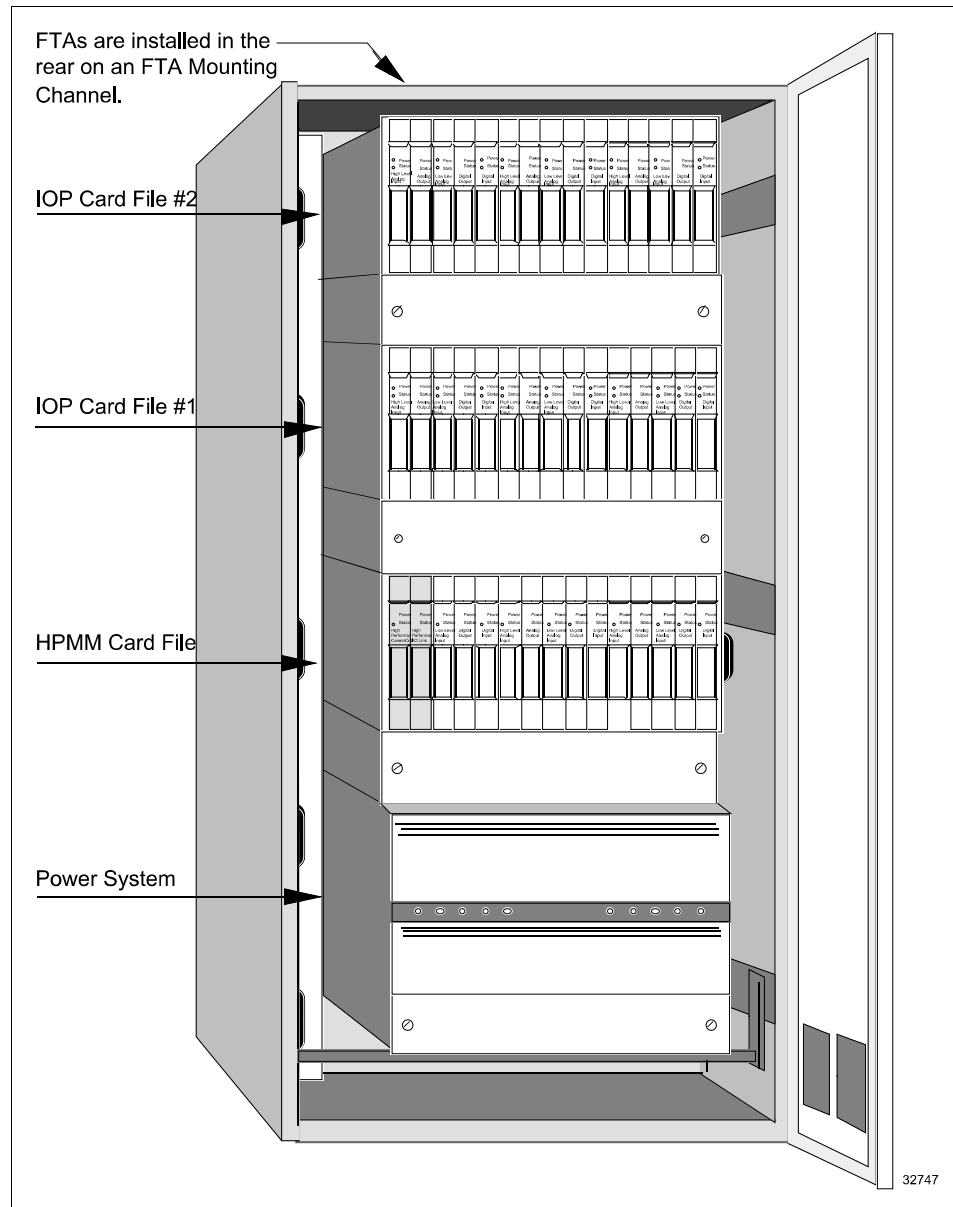
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2.1 Overview, Continued

Nonredundant HPM cabinet layout

Figure 2-1 is an illustration of a single High-Performance Process Manager cabinet containing a nonredundant High-Performance Process Manager Module (HPMM) with supporting assemblies. The HPMM cards (2) and the IOPs cards are installed in 15-Slot HPMM card files. IOP cards occupy the IOP card files.

Figure 2-1 Nonredundant HPMM Cabinet Layout



2.2 Card Files

Introduction

There are nine card file models. Three models are not CE Compliant and six models are CE Compliant. Table 2-1 lists the nine card file models. All models are also available with conformal coating (a model number with a prefix of MC, rather than MU).

Table 2-1 Card File Models

Card File Description	CE Compliant	Non-CE Compliant
Left 7-Slot HPMM or IOP	N/A	MU-HPFH01
Right 7-Slot HPMM or IOP	N/A	MU-HPFH11
15-Slot HPMM or IOP	N/A	MU-HPFX02
Left 7-Slot HPMM	MU-HPFH03	N/A
Right 7-Slot HPMM	MU-HPFH13	N/A
15-Slot HPMM	MU-HPFX03	N/A
Left 7-Slot IOP	MU-HPFI03	N/A
Right 7-Slot IOP	MU-HPFI13	N/A
15-Slot IOP	MU-HPFI23	N/A

Non-CE Compliant card file models

The non-CE Compliant card file models can be designated as an HPMM card file or an IOP card file by either installing an HPMM card set in the two left-most card slots or installing IOP cards.

CE Compliant card file models

Unlike the non-CE Compliant card file models, the CE Compliant card file models are designated either an HPMM card file or an IOP card file because even though there is no electrical difference in the backpanel, they differ mechanically. The addition of a ground plate and filtered IOP connectors in the two left-most slots prohibits the installation of an HPMM card set.

The card file is designated an IOP card file when the ground plate and filtered connectors are present.

The card file is designated an HPMM card file when the ground plate and filtered connectors are absent.

Conversion kit

A CE Compliant HPMM card file can be converted to an IOP card file with a model MU-ZPFI03 upgrade kit. The kit adds 2 filtered IOP adapter connectors to the two left-most card slots and a ground plate extension.

2.2.1 HPMM Card Files

Three types of HPM card files

There are three types of HPMM card files. The two left-most slots of each type are populated by the three assemblies that comprise the HPMM. The remaining slots accommodate IOPs.

If the card file is a non-CE Compliant card file, the two left-most slots of each type can also accommodate IOPs with no alterations. The card file is then designated an IOP card file.

HPMM description

The High-Performance Process Manager Module (HPMM) is composed of two card assemblies that install in the two left-most slots in a 7-Slot or 15-Slot card file, and a UCN interface module that mounts and connects to the 50-pin connector that is directly below the left-most card.

The three HPMM assemblies are identified as follows:

- High-Performance Communications/Control (High-Performance Comm/Control) card
- High-Performance I/O Link Interface (High-Performance I/O Link) card
- High-Performance UCN Interface (HPM UCN Interface) module

The HPM UCN Interface module connects to the 50-pin connector below the High-Performance Comm/Control card.

Left 7-Slot HPMM card file description

The Left 7-Slot card file accepts the two HPMM cards and the HPM UCN Interface module that comprise the HPMM, and accommodates up to five IOP cards. The card slots are numbered 1 through 7, starting at the left-most position.

The High-Performance Comm/Control and High-Performance I/O Link cards occupy slots 1 and 2, while the HPM UCN Interface module mounts below slot 1 and connects to its 50-pin connector.

Slots 3 through 7 can accommodate IOP cards. The IOP card slots assume numerical I/O Link Interface addresses of 3 through 7 and binary I/O Link Interface addresses of 2 through 6.

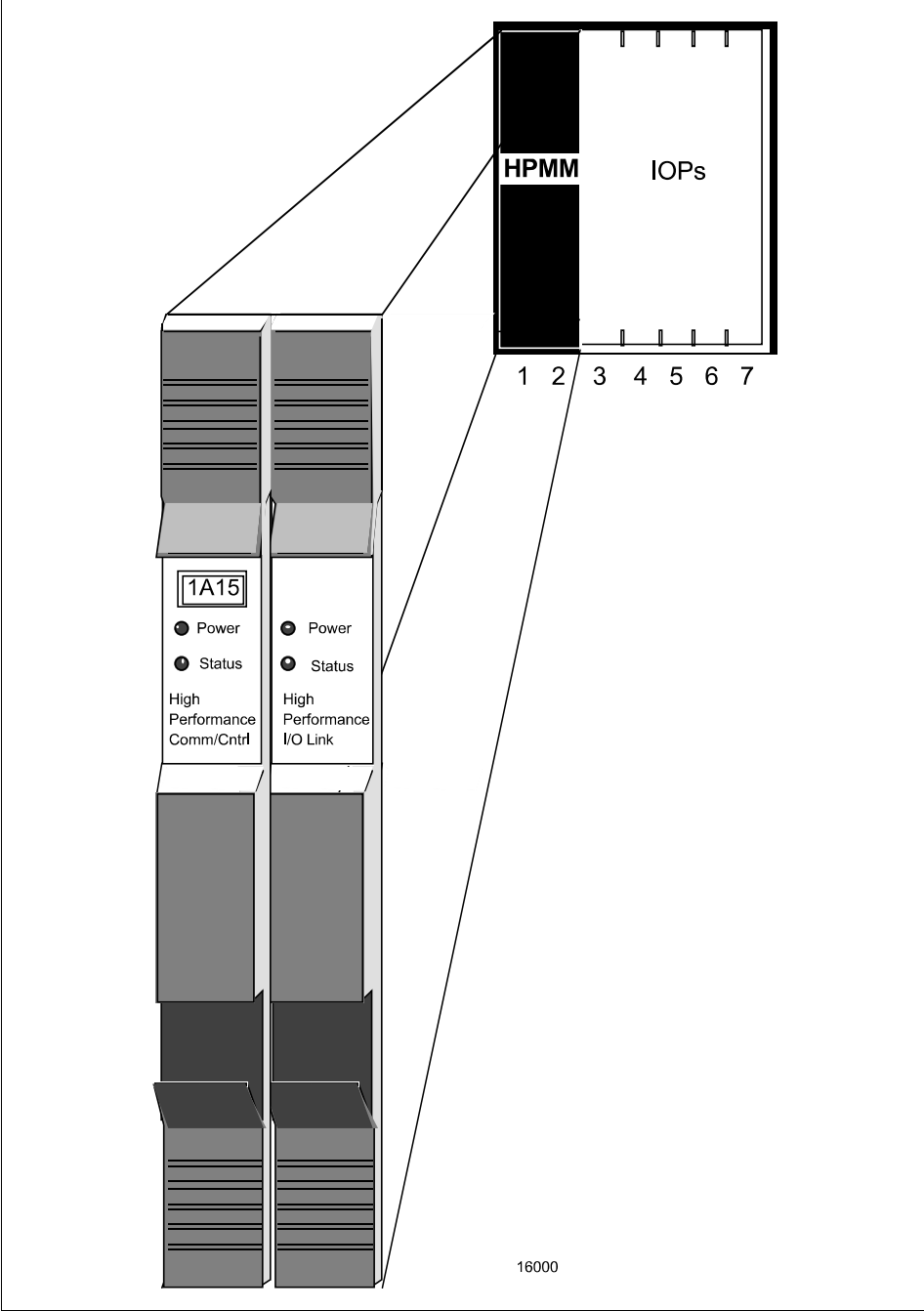
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2.2.1 HPMM Card Files, Continued

Left 7-Slot HPMM card file illustration

Figure 2-2 is an illustration of a Left 7-Slot HPMM card file and the two HPMM cards that occupy slots 1 and 2.

Figure 2-2 Left 7-Slot HPMM Card File



Continued on next page

3.4.1 Typical 24 Vdc Power Draw Calculations, Continued

Assembly 24 Vdc power usage

Table 3-1 is a list of the power usage for High-Performance Process Manager assemblies.

Table 3-1 HPM Assembly 24 Vdc Power Usage

Description	Model Number	Channels	Assembly Current (Milliamps)
Left 7-Slot Card File—Slots 1-7, non-CE Compliant	MU-HPFH01	N/A	0
Left 7-Slot HPMM Card File—Slots 1-7, CE Compliant	MU-HPFH03	N/A	0
Right 7-Slot Card File—Slots 9-15, non-CE Compliant	MU-HPFH11	N/A	0
Right 7-Slot HPMM Card File—Slots 9-15, CE Compliant	MU-HPFH13	N/A	0
15-Slot Card File—Slots 1-15, non-CE Compliant	MU-HPFX02	N/A	0
15-Slot HPMM Card File—Slots 1-15, CE Compliant	MU-HPFX03	N/A	0
Left 7-Slot IOP Card File—Slots 1-7, CE Compliant	MU-HPFI03	N/A	0
Right 7-Slot IOP Card File—Slots 9-15, CE Compliant	MU-HPFI13	N/A	0
15-Slot IOP Card File—Slots 1-15, CE Compliant	MU-HPFI23	N/A	0
IOP Card File	MU-IOFX02	N/A	0
Nonredundant HPMM Card Set	MU-HPMS01	N/A	1375
Redundant HPMM Card Set	MU-HPMR01	N/A	2700
LLAI IOP Card	MU-PAIL02	8	58
LLMux IOP Card	MU-PLAM02	16	70
RHMUX IOP Card (requires an IS or NI Power Adapter)	MU-PRHM01	32	100
HLAI IOP Card	MU-PAIH02	16	183
HLAI IOP Card	MU-PAIH03	16	155
STI IOP Card	MU-PSTX02	16	100
STIM IOP Card	MU-PSTX03	16	100
AO IOP Card	MU-PAOX02	8	100
AO IOP Card	MU-PAOX03	8	100
AO IOP Card	MU-PAOY22	16	112
DI IOP Card	MU-PDIX02	32	90
DI IOP Card	MU-PDIY22	32	89
DISOE IOP Card	MU-PDIS11	32	210
DISOE IOP Card	MU-PDIS12	32	210
DO IOP Card	MU-PDOX02	16	64
DO IOP Card	MU-PDOY22	32	98

Continued on next page

5.3 Mounting and Operating the HPM in a Division 2 Location,

Continued

Approved Division 2 area equipment

Table 5-2 lists the High-Performance Process Manager equipment that is approved for operation in Division 2 areas.

Table 5-2 HPM Equipment Approved for Use in a Division 2 Area

Model Number	Description
IOPs	
MU-PAIH03	High Level Analog Input (HLAI)
MU-PAIL02	Low level Analog Input (LLAI)
MU-PAOX03	Analog Output (AO)
MU-PAOY22	Analog Output (AO)
MU-PDIS12	Digital Input Sequence of Events (DI)
MU-PDIX02	Digital Input (DI)
MU-PDIY22	Digital Input (DI)
MU-PDOX02	Digital Output (DO)
MU-PDOY22	Digital Output (DO)
MU-PLAM02	Low Level Multiplexer (LLMux)
MU-PRHM01	Remote Hardened Low Level Multiplexer (RHMUX)
MU-PPIX02	Pulse Input (PI)
MU-PSDX02	Serial Device Interface (SDI)
MU-PSIM11	Serial Interface (SI)
MU-PSTX03	Smart Transmitter Interface (STIM)

Continued on next page

7.4 IOPs, Continued

Nonconformally coated IOPs Table 7-2 lists the model numbers of the CE Compliant and non-CE Compliant IOP cards that are not conformally coated. Model numbers and part numbers identify the assemblies.

Table 7-2 IOPs—Nonconformally Coated

IOP Type	Model Number	Non-CE Compliant Part Number	CE Compliant Part Number
LLAI	MU-PAIL02	N/A	51304481-100
LLMux	MU-PLAM02	N/A	51304362-100
RHMUX	MU-PRHM01	N/A	51404109-125
HLAI	MU-PAIH03	N/A	51304754-100
STIM	MU-PSTX03	N/A	51304516-200
AO	MU-PAOX03	51304672-100	51309152-125
AO	MU-PAOY22	N/A	80363969-100
DI	MU-PDIX02	N/A	51304485-100
DI	MU-PDIY22	N/A	80363972-100
DISOE	MU-PDIS12	51402625-125	N/A
DO	MU-PDOX02	N/A	51304487-100
DO	MU-PDOY22	N/A	80363975-100
PI	MU-PPIX02	N/A	51304386-100
SDI	MU-PSDX02	N/A	51304362-200
SI	MU-PSIM11	N/A	51304362-300

Continued on next page

12.2 LLMux Version

12.2.1 LLMux Configurations

CE Compliance

All models of the Low Level Analog Input Multiplexer (LLMux) Field Termination Assemblies (FTAs), the Power Adapter, and its IOP can be used in a CE Compliant application. However, they must be used with the model MU-KFTSxx IOP to FTA cable and the IOP must be installed in a CE Compliant card file. Table 12-1 lists FTA, Power Adapter, and IOP model and part numbers.

Table 12-1 LLMux Assemblies

Model Number	Description	Part Number
MU-TAMR03	LLMux RTD FTA	51309218-125
MC-TAMR03	LLMux RTD FTA – Conformally Coated	51309218-175
MU-TAMT03	LLMux TC FTA	51309223-125
MC-TAMT03	LLMux TC FTA – Conformally Coated	51309223-175
MU-TAMT13	LLMux TC FTA with Remote CJR	51309213-125
MC-TAMT13	LLMux TC FTA with Remote CJR – Conformally Coated	51309213-175
MU-TLPA02	Power Adapter	51309204-125
MC-TLPA02	Power Adapter – Conformally Coated	51309204-175
MU-PLAM02	LLMux IOP	51304362-100
MC-PLAM02	LLMux IOP – Conformally Coated	51304362-150

Compatibility

The LLMux assemblies are compatible only with each other. The assemblies are not compatible with the RHMUX assemblies that are discussed in subsection 12.3.

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12.2.1 LLMux Configurations, Continued

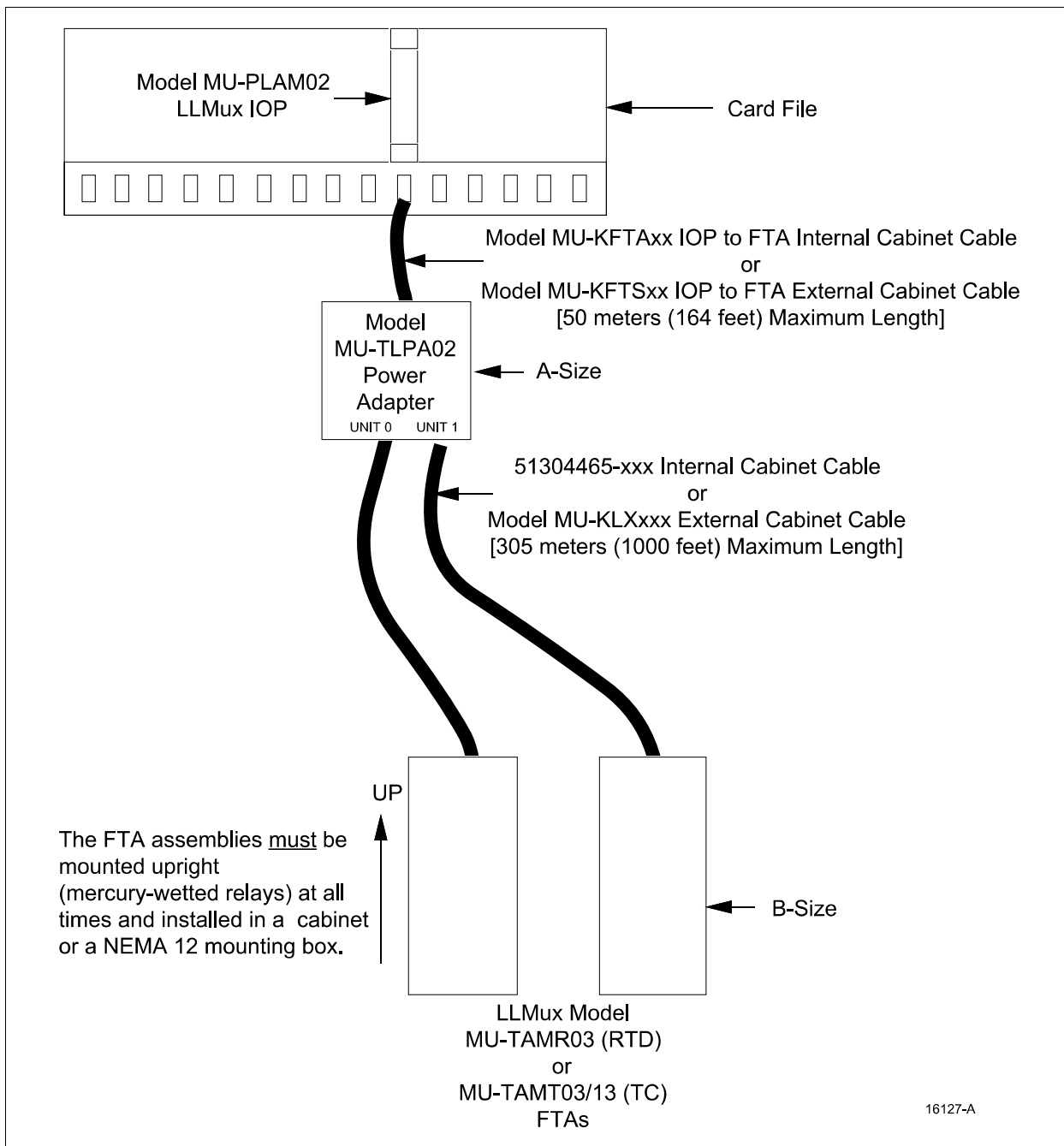
Non-CE Compliance	The FTAs and the Power Adapter can also be used for a non-CE Compliant applications.
Conformal coating	The LLMux FTA, Power Adapter, and IOP assemblies are available with conformal coating. See Table 12-1.
Power Adapter	A CE Compliant version of the model MU-TLPA02 Power Adapter (part number 51309204-125 or 51309204-175) must be used with the LLMux FTA models for CE Compliant applications.
Description	<p>Figure 12-1 illustrates a Low Level Analog Input Multiplexer (LLMux) configuration.</p> <p>In Figure 12-1, the LLMux FTA, model MU-TAMR03 or MU-TAMT03/13, communicates with a model MU-PLAM02 LLMux IOP through the model MU-TLPA02 Power Adapter. This can be a non-CE Compliant or CE-Compliant application depending upon the model of the card file that is used.</p>
Two types of LLMux FTAs	<p>The LLMux FTAs that connect to the Power Adapter can be either of two types of FTAs; the model MU-TAMT03/13 Thermocouple (TC) FTA or the model MU-TAMR03 Resistive Temperature Device (RTD) FTA. The combination of the FTA mother board and the daughter board determines the type of FTA.</p> <p>The two LLMux FTAs that connect to the Power Adapter can be the same type, or different types.</p>
Two thermocouple LLMux FTAs	There are two versions of the Thermocouple LLMux FTA. The model MU-TAMT03 FTA has a single local Cold Junction Reference (CJR) interface, while the model MU-TAMT13 FTA has a remote CJR interface. This allows the CJR to be located up to 50 meters (164 feet) from the FTA with the use of appropriate cabling.
16 LLMux FTA channels	Each type of LLMux FTA has 16 channels that accept low level analog inputs. Two LLMux FTAs connected to a Power Adapter provide 32 channel inputs to the LLMux IOP. This concept causes the LLMux to be known also as the 32 point LLMux.

Continued on next page

12.2.1 LLMux Configurations, Continued

CE Compliant LLMux configuration

Figure 12-1 LLMux Configuration Interconnections – CE Compliant



16127-A

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