

Experion PKS
Universal Process Cabinet Planning, Installation, and
Service Guide

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1 About this guide

This document describes how to plan, install, and service the Universal Process Cabinet (UPC).

Scope

This document only describes planning, installing, and servicing of the Universal Process Cabinet (UPC). For more information about the installation and configuration of Series C components, see the respective Series C component documents.

Prerequisite skills

This guide is primarily intended for engineers, system administrators, and other technical staff who will be responsible for planning, installing, and administering the Honeywell Universal Process Cabinet (UPC). It is therefore assumed that a reader of this document possesses a high degree of technical knowledge and a familiarity with Series C components and Process Control systems.

Reference documents

Document	Description
<i>Series C Series 8 I/O User's Guide (EPDOC-X126)</i>	Provides information about installing, configuring, and troubleshooting the Universal Input/Output (UIO) module.
<i>Control Hardware Planning Guide (EPDOC-XX23)</i>	Provides information about installing, configuring, and troubleshooting the power supply.
<i>Experion Site Planning Guide (EPDOC-X135)</i>	Provides information about preparing facilities for the installation of your Experion system equipment before its delivery.
<i>Experion Series-C Platform Specification (EP03-520)</i>	Provides technical and specification information for all the supported devices.
<i>HAZLOC Addendum (51154227)</i>	Provides information about all HAZLOC certifications.

Revision history

Revision	Date	Description
A	June 2015	Initial release of document.
B	November 2015	Added reference to the HAZLOC addendum document.
C	March 2016	Updated material to reflect phase 2 and attached HAZLOC addendum in its entirety..
D	April 2016	Further refined and fixed figures and formatting.
E	May 2016	Corrected amperage values in Table 9, Section 4.9. Loading allowance for $+50 \leq T_a \leq +55$ ambient range should be 7 Amps, not 9.

Related topics

“Terms and acronyms” on page 6

1.1 Terms and acronyms

The following table lists the various acronyms used in this document.

AI	Analog Input
AO	Analog Output
CAM	Computer-Aided Manufacturing
DI	Digital Input
DO	Digital Output
FOE SM	Fiber Optic Extender - Single Mode
HPN	Honeywell Part Number
IO	Input/Output
IOL	Input Output Link
IOM	Input/Output Module
IOTA	Input/Output Termination Assembly
NEMA	National Electrical Manufacturers Association
ORU	Optimal Replaceable Units
PCA	Panel-mounted Carrier Assembly
SC	Series C
SS	Stainless Steel
TPC	TotalPlant Configurator
UIO	Universal Input/Output
UPC	Universal Process Cabinet

2 Overview of UPC

The Universal Process Cabinet (UPC) allows the Series-C Universal I/O to be installed in a remote location. The UPC protects Universal I/O equipment, power supplies, Fiber Optic Extenders (FOEs), and Terminal Block assemblies remotely located from the Experion C300. The UPC is Ingress Protection-rated (IP66-rated).

The following two versions of UPC enclosures are available.

- Painted carbon steel – Indoor use only
- Stainless steel 316 – Indoor or outdoor use

These versions permit UIO products to be installed at a remote location. These cabinets are provided with a removable gland plate. To maintain the IP66-rating of the cabinet, appropriate-sized holes for cable entries are required to conform with the rules and regulations of the local authority by utilizing, for example, IP66-rated conduit fittings or cable glands. This cabinet is supplied with mounting brackets fabricated with 316 SS. When all of the assemblies are mounted in the SS UPC enclosure and the doors are closed and securely locked, then the system meets the GX (Harsh) operating conditions. Class GX is a severity level according to “ANSI/ISA-S71.04-1985; Environmental Conditions for Process Measurement and Control Systems: Airborne Contaminants.”

Related topics

“UPC components” on page 8

“UPC benefits” on page 10

“UPC features” on page 11

“Limitations of UPC” on page 12

“UPC system layout and specifications” on page 13

“Cabinet Temperature Limits” on page 14

“Supported power system” on page 15

“Supported Fiber Optic I/O Link Extenders” on page 16

“Supported Input/Output Module” on page 17

“UPC and its options” on page 18

“Hazardous locations certifications and agency approvals” on page 19

2.1 UPC components

The following table lists the part numbers of each component installed in the UPC, depending on options selected in the configuration.

Table 1: Part numbers of UPC components

Part Number	Description
51454265-100 or 51454260-100	Enclosure, Painted Steel, 800mm W x 1200mm H x 300mm D Enclosure, SS 316, 800mm W x 1200mm H x 300mm D
51454261-100	Flat mounting panel, Control
51454204-100	Panel Carrier Assembly, Series-C, 18-inches
51306852-175	PWA UIO IOTA, Redundant (CC-TUIO11)
51306854-175	PWA UIO IOTA, Non-Redundant (CC-TUIO01)
51454205-175	Universal I/O Module Assembly (CC-PUIO01)
ICF-1150I-S-SC-T	MOXA Single Mode Fiber Optic Extender, isolated
51454235-100	Two power supply unit chassis, SPS5984-LF Module Rack
51198685-100	Power Supply Module, SPS5710-2-LF
51202693-100	14-port, DIN-rail mount patch panel
51121566-100	Ground bar assembly, Safety
51121566-101	Ground bar assembly, Shield
51202674-103	Fused, DC terminal block
51202677-006	DIN rail, 6-inches
51202694-100	AC terminal block assembly
51202963-200	Flat Tie Holder
51202699-100	Cable Assembly, 16-Channels
FC-PS-FLTR-MARINE	Marine Filter
51454261-100	Flat Panel, Marine Process
51306852-175	PWA, UIO IOTA, Redundant, CC
51306854-175	PWA, UIO IOTA Non-Redundant, CC
51306344-100	Filler Panel, 3 inch, Experion
51454248-100	Fan Assembly
51202682-100	Bracket, UIO
51190582-180	Fuse, Type F, 250V, 800MA
51154224	Label, Process URM System/Cabinet
51154228-100	Label, Fuse, UPC
51154230-100	Universal Process Cabinet Warning Label
51190582-310	Fuse, Type F, 125V, 10A
51190582-210	Fuse, Type F, 250V, 1A
51190584-140	Fuse, Type T, 250V, 400mA
51121575-100	Fuse, Class CC, Type T, 600V, 10A
51121576-100	Reed Switch, Contact Form A, SPST

Part Number	Description
51202685-100	24V Terminal Block
51202684-100	16-Channel Terminal Block

2.2 UPC benefits

The following are some of the benefits of UPC.

- Easy to locate and control; in addition, helps eliminate marshaled wiring.
- Accommodates more input/output modules in a single Remote Instrument Enclosure (RIE).
- Available for standard layouts; that is, the components are pre-configured in the cabinet thereby reducing the engineering effort involved in customizing the cabinets.
- Allows the displacement of other controller and PLC components and hence allows a complete view of the process environment.

In Greenfield projects, the UPC can deliver a faster and more efficient startup and minimize the time spent on site. In Brownfield projects, the UPC can be mounted remotely in the field, thus avoiding central control rooms that are already full or are very difficult to maintain due to years of incremental changes.

2.3 UPC features

The following are some of the features of UPC.

- IP66 316 stainless steel cabinets and painted carbon steel cabinets
- Series-C Hazardous Location (HAZLOC) approvals
- Maximum of 64 redundant UIO points
- Extended temperature ranges of -40°C to +55°C (316 stainless steel) and -30°C to +55°C (painted carbon steel) with no external cooling or heating. Refer to “About heat dissipation in the cabinet” in the Planning section for further information regarding temperature ranges and configuration allowances.
- Document holder on the inside of the door
- This product supports FOE “leapfrogging” to enable cabinet-to-cabinet connection
- This product supports AC power “daisy chaining” from cabinet to cabinet
- Future products will include a Lloyd's Register Marine Type Approval Certification
- Future products will include VIPER FTAs

2.4 Limitations of UPC

The UPC does not support the following:

- FTE devices (FIM, Profibus, C300, CF9)
- Other Series C I/O Modules
- Multi-mode (MM) Fiber Optic Extenders (FOE)

2.5 UPC system layout and specifications

The UIO modules, power system, Fiber Optic Extenders, and other components are installed in a single-access cabinet as displayed in following figure.

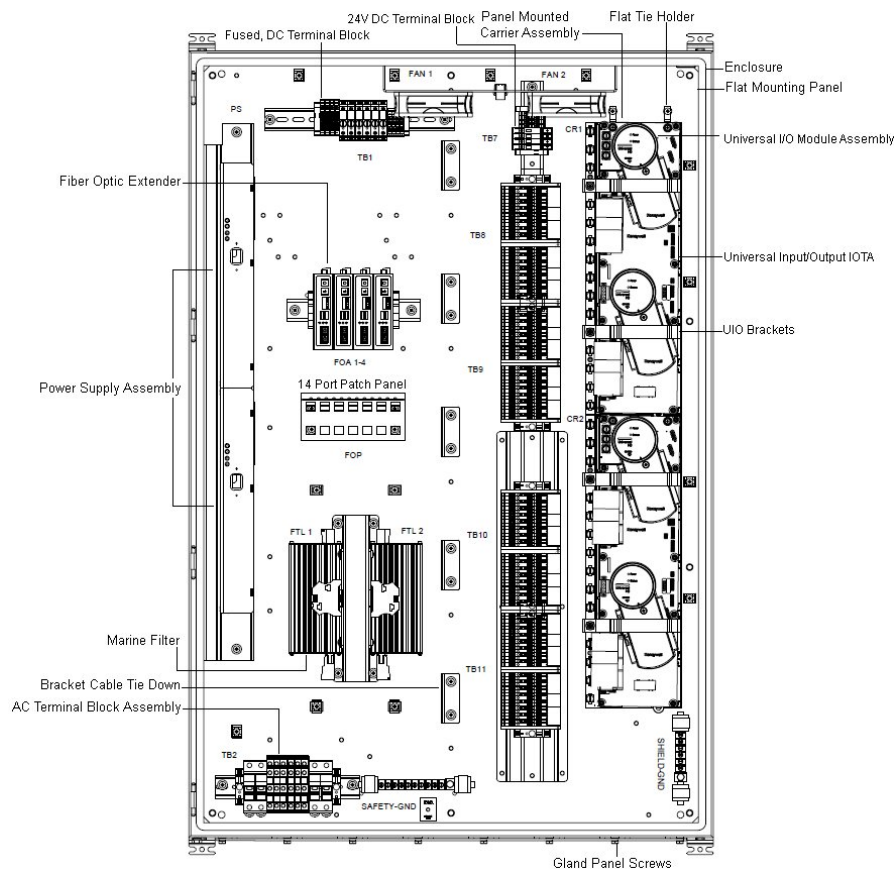


Figure 1: UPC layout (door and cabling not shown for simplicity)

Size of the enclosure

The size of the enclosure is 1200mm (39.4in.) high x 800mm (31.5in.) wide x 300mm (11.8in.) deep.

Weight

The enclosure weight varies depending on the mounted equipment. For reference, the weight of a cabinet that is loaded with a typical equipment configuration is approximately 113.4 kg (250 lbs).

Labels

The UPC System Label is mounted on the outside of the cabinet door, specifying all certifications, product identification, and serial data. The UPC Warning Label is also mounted on the outside of the door. The UPC Fuse Label is mounted on the inside of the door for aid in fuse maintenance.

2.6 Cabinet Temperature Limits

Table 2: Temperature limits of UPC systems

Cabinet Type	Temperature Range	Output Current Limit	Internal Fans
Stainless Steel	-20°C to +55°C	16 A ¹	yes
Stainless Steel	-40°C to +45°C	16A ²	no
Painted Steel	-20°C to +55°C	16A ¹	yes
Painted Steel	-30°C to +45°C	16A ²	no

¹Between +50°C and +55°C, the current derates linearly down to 9A

²Between +40°C and +45°C, the current derates linearly down to 9A

Refer to “About heat dissipation in the cabinet” in the Installation section for further information regarding temperature ranges and configuration allowances.

2.7 Supported power system

The UPC is configured with one of the following power supply systems.

- Redundant 20A power supply system
- Non-redundant 20A power supply system

The supported power module and two PSU Chassis for both redundant and non-redundant power supply system are listed in the following table.

Table 3: Supported power module and Two PSU Chassis

Power supply system	Part Number	Description
Redundant power supply system	51198685-100 (2x)	Power module
	51454235-100 (1x)	Two PSU Chassis
Non-Redundant power supply system	51198685-100 (1x)	Power module
	51454235-100 (1x)	Two PSU Chassis

! Attention

- The following options are not available for the power supply system.
 - Cabinet level battery backup unit
 - External +24VDC support for UPC

For more information about the power supply, see “AC input requirements” on page 30.

2.8 Supported Fiber Optic I/O Link Extenders

A Fiber Optic I/O Link Extender (FOE) is available within the UPC to extend the wire-based I/O link back to the Series C control system location. The Fiber Optic I/O Link Extender is available as a Single Mode FOE module.

Attention

- Within the UPC, the exact layout of the FOE modules differs from the FOE modules that are located in the Series C control system location.

Unlike the modules mounted in the Series C cabinet, the FOEs are not mounted to the IOTAs. This approach frees up two 6 inches positions of valuable space on the PCAs.

The Single Mode FOE modules clip to a DIN rail and are laterally secured by end brackets.

The following figure illustrates the Single Mode FOE module in the UPC, (MOXA ICF-1150I-S-SC-T). Please refer to the Section 4.2, “Connecting the FOE Cable” in the Users Guide for more information on layout and use.

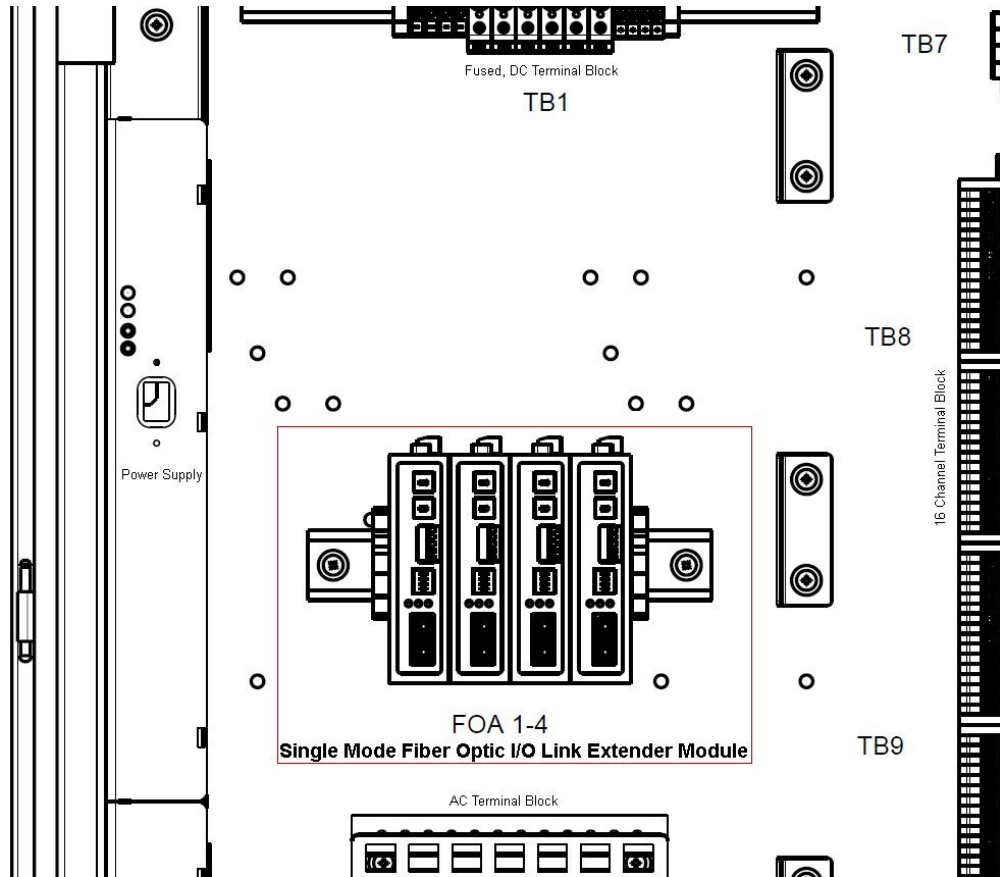


Figure 2: Single Mode FOE module (door and cabling not shown for simplicity)

2.9 Supported Input/Output Module

The UPC supports both redundant and non-redundant Universal Input/Output (UIO) IOTAs/modules.

For redundancy, two modules are mounted on one redundant IOTA. Non-redundant is a single module on the non-redundant IOTA (not shown).

I/O modules are mounted to their respective IOTAs. However, the IOTA sizes vary for both redundant and non-redundant modules .

The following table lists the supported I/O modules/IOTAs and their specifications.

Table 4: IOM and IOTA specifications

I/O Module	IOTA	Description	Circuits	Size (inches)
CC-PUIO01		Universal IO Module Assembly	32	
	CC-TUIO11	UIO IOTA, Redundant	32	18
	CC-TUIO01	UIO IOTA, Non-Redundant	32	12

The following figure displays two UIO modules and the UIO IOTA, redundant mounted on a PCA.

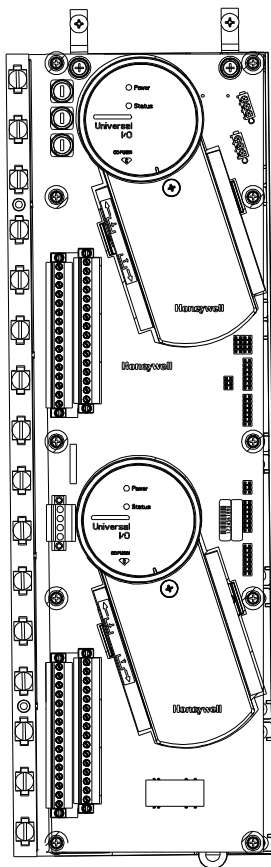


Figure 3: Universal Input/Output Modules and UIO IOTA, redundant

Up to 64 channels can be supported. For more information, see “IOM/IOTA selection” on page 26.

2.10 UPC and its options

Enclosure

Stainless steel cabinet, (HPN: 51454260-100) is fabricated from 316. It is a rectangular-shaped enclosure with front access only and a door hinge on the left-hand side. The door is sealed by a foamed-in gasket and is secured by six cam locks that require a special tool for access. The SS enclosure has an Ingress Protection rating of IP66.

Painted carbon steel cabinet, (HPN: 51454265-100) is fabricated from carbon steel and is powder-coat painted. It is a rectangular-shaped enclosure with front access only and a door hinge on the right-hand side. The door is sealed by a foamed-in gasket and secured by two cam locks that require a special tool for access. This enclosure is meant for indoor applications only.

UPC options

UPC hardware is configured based on the user's functional needs. Each IOTA supports a mounted IOM (HPN: CC-PUIO01) and functions either redundantly or non-redundantly.

The redundant IOTA (HPN: CC-TUIO11) is 18 inches long and fits two IOMs, while the non-redundant IOTA (HPN: CC-TUIO01) is 12 inches long and fits one IOM.

The UPC can accommodate a maximum of two such IOTA assemblies.

In addition, IOTAs can also accommodate options for Field Marshalling with a Weidmuller assembly, a Fan Assembly and a pending option with Marine certifications.

2.10.1 Indoor usage of the UPC

The stainless steel cabinet (51454260-100) and the painted carbon steel cabinet (51454265-100) are qualified for indoor use. When the SS cabinet is installed in an indoor location, you must use IP66 rated cable glands.



Note

When utilizing the painted carbon steel cabinet (51454265-100), the equipment shall be mounted in a location providing a minimum degree of protection of IP54 in accordance with ANSI/ISA 60529.

2.10.2 Outdoor usage of the UPC

Only the 316 stainless steel cabinet (51454260-100) has been independently certified as IP66 and can be used outdoors.

When mounted outdoors, the UPC must be protected from direct sunlight exposure with a sun shield.

All cable glands or conduit connections must be IP66 certified.

2.11 Hazardous locations certifications and agency approvals

The agency approvals for the UPC are listed here.

- FM
- CSA
- ATEX
- IECEX
- Lloyd's Register Marine Type Approval – In Process

For further information regarding Hazloc certification and regulatory agency requirements, refer to Appendix A of this manual . Please note that this is only a copied version of the master source document, Hazloc Addendum (51154227).

CE conformity

The UPC is in conformity with the protection requirements of the following European Council Directives:

- 94/9/EC, the Explosive Atmospheres (ATEX) Directive
- 2004/108/EC, the Electromagnetic Compatibility (EMC) Directive.

In conformity with the ATEX directive, the CE mark on the certification nameplate is adjacent to the EC Type Examination Certificate number.

3 Planning of UPC

Both cabinets of the UPC are intended to be wall-mounted and are provided with mounting brackets and mounting hardware. In the case of the stainless steel cabinet, (51454260-100), brackets are fabricated from 316 SS.

Power and signal cable entry into the cabinet must be provided through the gland plate in the bottom. Use conduit fittings or cable glands to maintain IP66 integrity of the enclosure. After determining the number of holes, their locations, and the compliant fittings, cut the cable entry holes into the gland plate. Use IP66 rated cable/conduit fittings for the SS cabinet to maintain IP66 integrity.

Related topics

“Planning guidelines for UPC” on page 22

“Views of the remote cabinet enclosure” on page 23

“Hardware installed in the UPC” on page 25

“Cabling” on page 27

“Power and grounding requirements” on page 29

3.1 Planning guidelines for UPC

The following guidelines must be adhered before installing the UPC.

Transport the UPC

The UPC must be transported in an enclosed shock-mounted air ride van. Precautions must be taken not to exceed vibration sinusoidal loads of 0.5 Gs. It must be transported in a horizontal position strapped to a wooden skid.

Weather protection

When installing the UPC outside where it is exposed to natural elements, a sun shield or rain canopy is mandatory. The shield must totally protect the unit from direct sunlight.

Clearance space

The UPC shall be mounted in a manner which ensures that the exposure to ambient temperature remains the same on all surfaces of the cabinet. Extra care should be taken when mounting the cabinet close to structures and heat producing surfaces. Do not place any items on top of the UPC, or obstruct free air flow around the UPC in any way.

Field servicing



CAUTION

Be aware of hazloc static buildup when wiping polymeric materials in the UPC.

Field servicing of the UPC during rain/or high humidity must be avoided. If unavoidable, precautions must be taken not to wet the interior of the UPC. When servicing is complete, the interior walls of the UPC must be wiped with a dry cloth before closing and latching the door.

3.1.1 Torque requirements

The following table lists the torque requirements for each component of the UPC.

Table 5: Torque requirements

HPN	Description	Components	Torque value
51202685-100	Field 24Vdc Terminal Block	Fused terminal	0.8 Nm
		Feed-through terminal	0.6 Nm
51202684-100	Field Terminal Blocks	Feed-through terminal	0.5 to 0.6 Nm
		Test-disconnect terminal	0.5 to 0.6 Nm
51202694-100	AC Terminal Block	Feed-through terminal, Double-tier	1.5 to 2.4 Nm
51121566-100 and 51121566-101	Ground Bar Assembly	10mm x 16mm x 24mm (WxHxD) Clamping yoke	2.6 Nm (min)
		14mm x 18mm x 34mm (WxHxD) Clamping yoke	4.5 Nm (min)
51306852 and 51306854	UIO IOTA Terminal Block	PCB Plug in Connector	0.4 Nm (min)
			0.5 Nm (max)

3.2 Views of the remote cabinet enclosure

The following figures illustrate the front, bottom, and inside views of the stainless steel and painted steel enclosures.

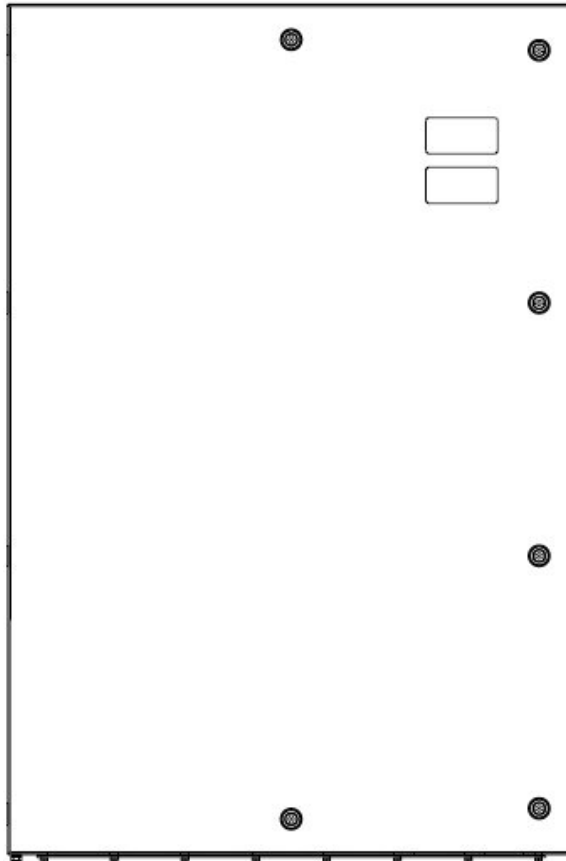


Figure 4: Front view of enclosure (stainless steel and painted steel)

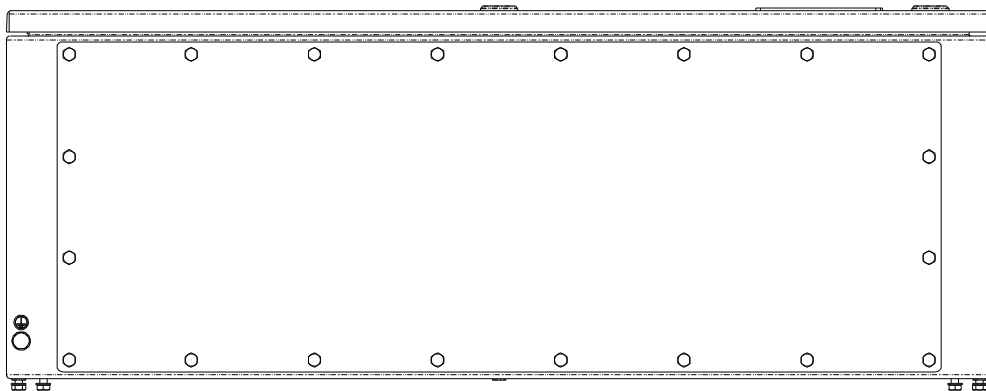


Figure 5: Bottom view (stainless steel)

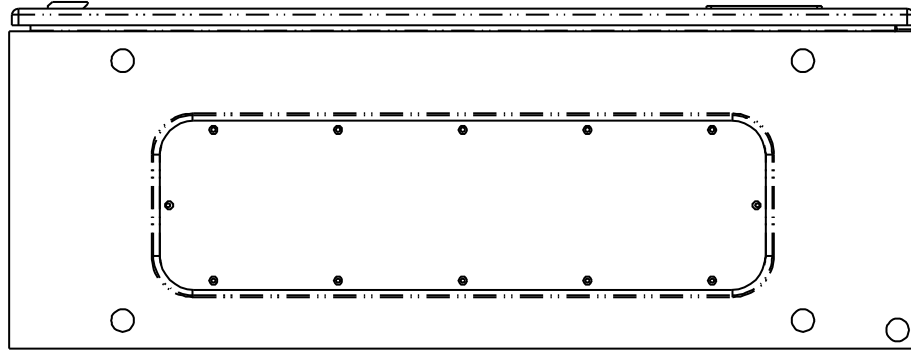


Figure 6: Bottom view (painted steel)

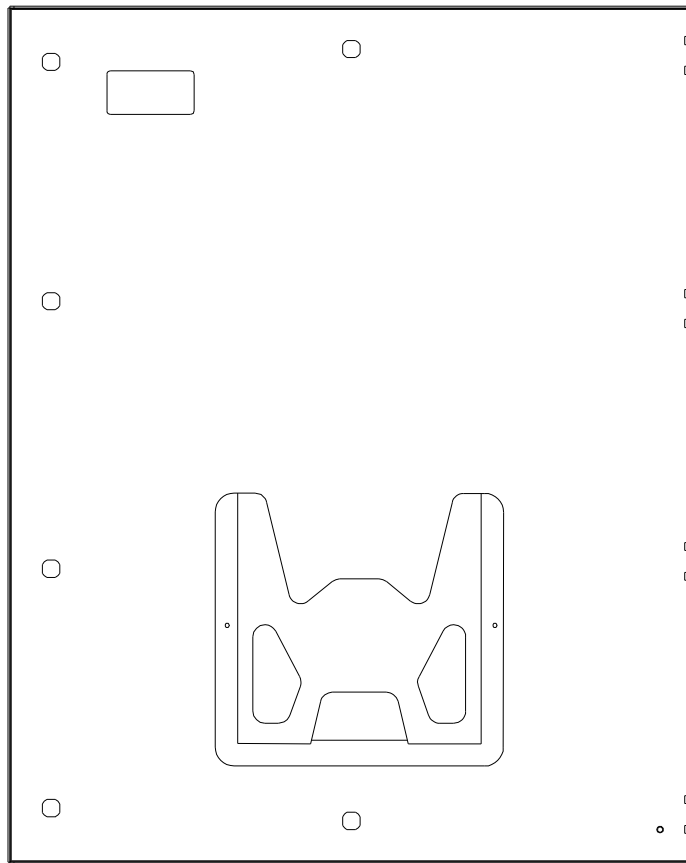


Figure 7: Inside view of UPC door (stainless steel and painted steel)

3.3 Hardware installed in the UPC

The following hardware is configurable and quantities will vary based on the cabinet configuration chosen.

- Panel-mounted Carrier Assembly (PCA)
- Redundant 20A power supply system or non-redundant 20A power supply system
- Single Mode FOE
- UIO IOTA
- UIO Module
- IOL interface cable
- Fiber optic cable
- Marshalling — Field I/O Terminal Block Assembly
- Fan Assembly (for internal air circulation only)
- Marine filters

3.3.1 IOTA Assembly Rules

Hardware is furnished with either one IOTA (32 channels) or two IOTAs (64 channels), depending on the number of channels required. A non-redundant IOTA can be mounted with a single UIO Module, or a redundant IOTA can be mounted with two UIO modules. In case of a single IOTA, the default position is on the upper right of the cabinet. For 64 channels, both IOTAs shall be the same type (non-redundant or redundant).

3.3.2 20A power supply system

The UPC power supply can be configured as a redundant power supply system of two power supply modules (51198685–100), or as a non-redundant power supply system of one power supply module. The modules are installed in the two PSU Chassis (51454235–100).

Refer to section 3.5.1 AC Power Requirements for more information about AC power operating limits.

3.3.3 Non-redundant 20A power supply system

The UPC can be configured with a non-redundant power supply system. In this setup, one power supply module (51198685–100) is installed in the two PSU Chassis (51454235–100).

For more information about the operating band and operating limits of a non-redundant power supply system, see “#unique_27/AC_power_operating_units”.

3.3.4 Fiber Optic I/O Link Extender (FOE) module selection

There is one Fiber Optic Extender type available, which is the FOE SM. These modules are automatically selected during cabinet configuration.

While connecting to remote Series-C I/O, FOE's are used at both the local and the remote sites. Since Series-C I/O Links are redundant, FOE modules are always installed in pairs where one connects to the “A” link and the other connects to the “B” link. It therefore follows that two independent fiber cables are required between every local and remote connection. That is, one cable supports the “A” link and the other cable supports the “B” link.

The Fiber Optic I/O Link Extender consists of two components.

- a Fiber-Optic-Extender Module (FOE Module)
- an IOL interface cable that connects the FOE module to the in-cabinet wire-based I/O link

Attention

- Note that the connections between FOE and the components in the UPC are already established when the UPC ships from the factory.
-

As previously mentioned, separate fiber optic cables are required for the “A” and “B” I/O links. Each optical cable minimally consists of two fibers, one for transmit and one for receive. Since the fibers are glass and the cost of additional fibers in a cable is small compared to cable replacement, a sufficient number of spares should be specified and included in the cables. The fibers must include 9/125 micron single-mode terminated with SC style connectors. Honeywell does not provide the fiber optic cable as a standard item for the system. Purchase and installation of the cable must be handled on an individual and unique basis for each application.

3.3.5 IOM/IOTA selection

The IOM/IOTA module selection is dependent on the process that is being controlled and/or monitored. The required IOM/IOTAs are determined during cabinet configuration.

The IOTA configurations available for the UPC are.

- CC-TUIO01 – UIO (Universal Input Output) IOTA non-redundant
- CC-TUIO11 – UIO (Universal Input Output) IOTA redundant

Each IOTA supports 32 channels of inputs/outputs. Up to two IOTAs can be used in the UPC to provide up to 64 points. The redundant IOTA and the associated additional UIO IOM can be used to provide greater availability and ease of upgrade on process.

3.3.6 IOL interface cable selection

The IOL interface cables are determined based on the FOE SM module selection. The following IOL interface cables are available for the MOXA FOE.

- HPN ICF-1150I-S-SC-T for MOXA FOE module

Attention

- All the cables are redundant and they are installed when the UPC is shipped from the factory.
-

3.3.7 Conduit and cable gland selection

The UPC includes a gland plate on the cabinet bottom. The gland plate uses a cut-out in the enclosure to allow access to the cabinet.

Attention

- The gland plate must be removed to fabricate any custom holes and cut-outs. While designing the custom holes/cut-outs, ensure the following:
 - Avoid interference with the cabinet
 - Avoid encroaching the enclosure cut-out

To maintain the IP66 rating of the stainless steel cabinet (51454260-100), all cable entries to the enclosure must be provided through IP66 certified conduit/gland fittings.

For the front and bottom views of the gland plate, see the figures in the topic “Views of the remote cabinet enclosure” on page 23.

3.4 Cabling

Cable and wire entries, as well as sealing plugs made of metal or cold impact-resistant plastic, can be used provided they are rated and installed to maintain the IP66 certification of the SS cabinet.

The bottom of the cabinet is the only designated area for cable entry for the UPC. The maximum number of entries to avoid the weakening of the bottom of the cabinet and creating an unstable condition is listed in the following table.

Table 6: Maximum entries for Stainless Steel enclosure cables

Size	Bottom
M12	216
M16	161
M20	114
M25	80
M32	48
M40	30
M50	16
M63	14

Table 7: Maximum entries for Painted Steel enclosure cables

Size	Bottom
M12	86
M16	64
M20	46
M25	32
M32	19
M40	12
M50	8
M63	6

For more information about the cable gland, see previous section, “3.3.7 Conduit and cable gland selection.”

3.4.1 Guidelines for creating cable entry

Consider the following guidelines while creating the cable entry in the enclosure.

- All cable and wire entries must be installed using a counter-nut.
- The number of possible standard cable glands decreases if strain relief or cable guards are used.
- A mixture of cable and wire entries is used.
- Unused openings for cable and wire entries must be closed with plastic or metal plugs that maintain the IP66-rating of the SS enclosure. The painted steel has no required rating
- The cable and wire entries must be installed so that self-loosening is prevented and permanent sealing of the cable and wire entry locations is guaranteed.
- The distances between the cable entries should be chosen so that a torque wrench can be used for tightening the cable and wire entries and the box nuts.

- The tightening torques must be observed for the installation of the cable and wire entries per the manufacturers requirements.

3.5 Power and grounding requirements

Protected earth ground

The Safety Ground Bar (located in the lower left hand corner of the cabinet) is the location of the protective earth ground terminal. The protected earth ground conductor must be connected to the protected earth ground terminal prior to connecting AC wiring (AC1 and AC2). To connect the protected earth ground conductor to the ground terminal, 10AWG thru 6AWG (4.0-16.0 mm²) conductor can be used.

CE Conformity

For EMC compliance, attach a 4AWG (25 mm²) wire from the safety ground bar in the UPC to an equipotential earth ground (such as a stake in the ground) with a maximum length of 5 meters.

Shield/Screen ground bar

The UPC is provided with a standard shield/screen ground bar located in the lower right hand corner of the cabinet. The ground bar is pre-wired to the safety ground bar with 10AWG (4.0 mm²) wire. If the shield/screen ground bar is to be connected to a ground other than the safety ground bar, then disconnect the wire that connects the safety ground bar to the Shield/screen ground bar.

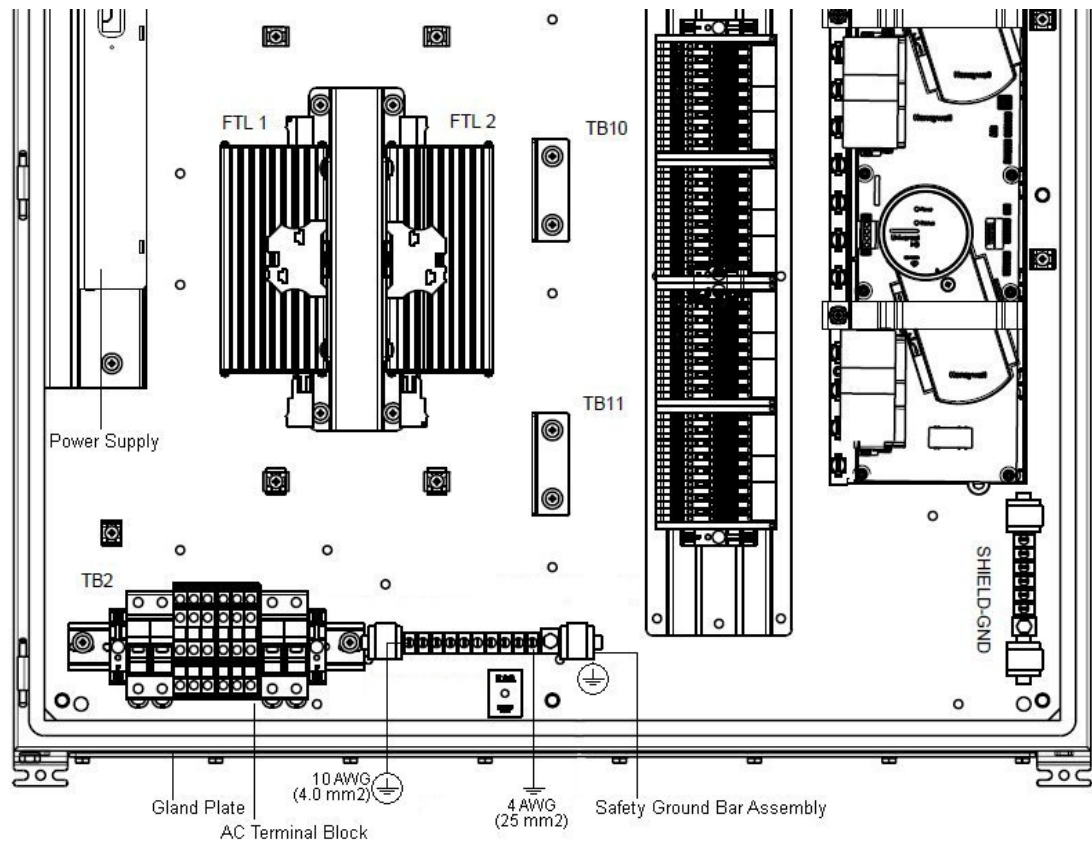


Figure 8: Safety ground bar with connections for protected earth ground and EMC compliance (shown with optional equipment for Marine certification) (door and cabling not shown for simplicity)

3.5.1 AC power requirements

Nominal operating limits

Nominal operating limits defines the range of operating conditions within which the system is designed to operate and for which operating influences are stated. Performance characteristics listed in the “AC power operating limits” table are maintained while operating in this state. For more information, see ANSI/ISA–51.1 Process Instrumentation Terminology.

Maximum operating limits

Maximum operating limits define the range of conditions to which the system may be subjected without permanent damage to the equipment. In general, performance characteristics are not guaranteed in this state. Stated Operating Band characteristics are restored when returning to the Operating Band specifications without damage to the equipment. For more information, see ANSI/ISA–51.1 Process Instrumentation Terminology.



Attention

Disconnection of the external supply to the system shall be accomplished through an appropriately rated circuit breaker, rated for 100% continuous load.

The following table lists the AC power requirements for the UPC.

Table 8: AC power operating limits

AC power	Nominal operating limits	Maximum operating limits
AC input voltage range (VAC, rms)	100-240	90-264
Input frequency (Hz)	47-63	47-63
RMS input current (A)	10A per supply line	10A per supply line
Output voltage (VDC)	24-26VDC	24-26VDC
Input current @ 120/240 VAC line Inrush/ Rerush	Less than 35A	Less than 35A
<i>Running (maximum)</i>		
@ 120 VAC	5.5A rms	9A rms
@ 240 VAC	2.7A rms	
Power Factor (minimum) with a 25VDC 10A to 20A load	0.90 (min)	0.90 (min)

3.5.2 AC input requirements

The redundant AC main wiring (AC1 and AC2) must be connected in the terminal block (TB2) that is located in the lower left hand corner of the cabinet. In case of a non-redundant power supply, only one AC main wiring needs to be connected or AC1. The terminal block (TB2) can accept the wire sizes from 22 to 10 AWG (0.5-4.0 mm²). In addition, the TB2 has a second row of screw terminals to allow for "daisy chaining" of AC power. With AC mains wiring connected to the TB2, the second set of screw terminals is used to power up a second UPC. The "daisy chain" configuration can be repeated for a maximum total of three UPC's. See the previous figure, “Safety ground bar with connections for protected earth ground and EMC compliance” for the location of the AC terminal block. In the following figure, “Dedicated Grounds” refers to both EMC ground and safety ground.

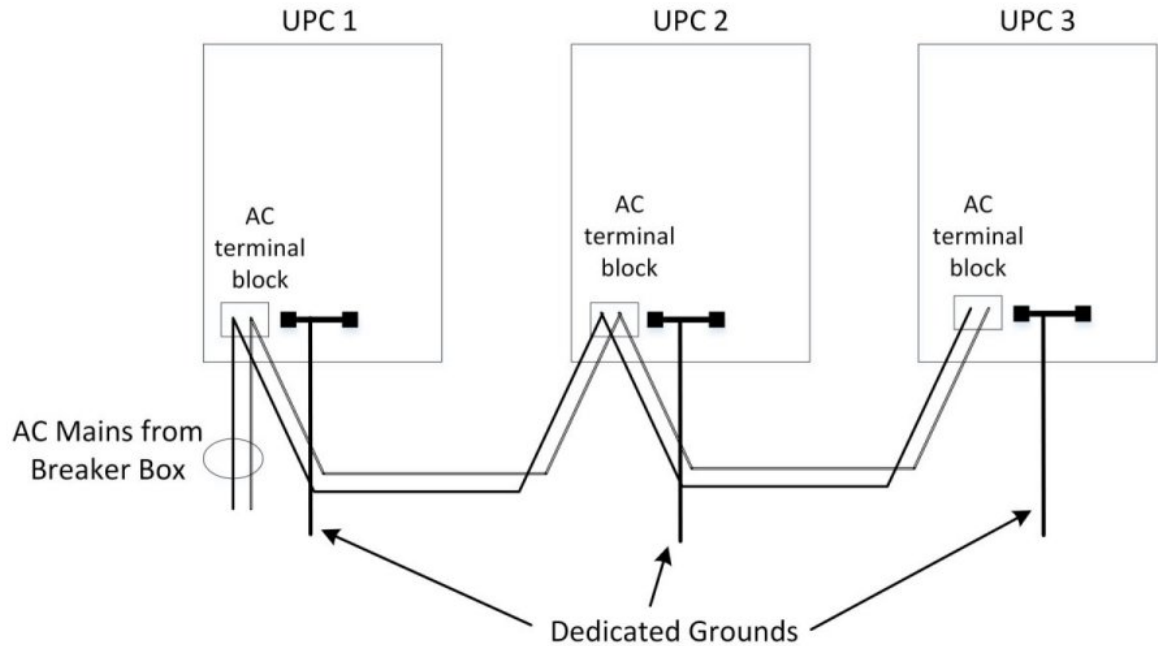


Figure 9: UPCs connected via AC daisychain

Daisy Chain General Rules

The AC input power lines to the power system must be protected by an exterior, appropriately-sized circuit breaker. (Same note from the Guidelines for Installing UPC section)



Attention

Disconnection of the external supply to the system shall be accomplished through an appropriately rated circuit breaker. The circuit breaker shall not exceed 30A. When utilizing a 30A breaker, the breaker shall be rated 100 percentage for continuous load.

Up to three (3) total UPC units may be daisy chained together.

Recommended minimum wire size is 14 AWG.

The maximum wire size that can be used for AC mains power is 10 AWG.

The wire size for the AC mains will depend on a few factors, such as load current per UPC, ambient temperature, and the distance from the breaker box to the UPC. This may limit the number of daisy chained UPC's to fewer than three.

No special parts are required for daisy chaining. The AC terminal block in the UPC is supplied with two-tiered terminals for two connections per wire.

Each UPC unit must have its own dedicated ground wire connection as specified in Power and Grounding Requirements above.

4 Installation of UPC

The Universal Process Cabinet (UPC) arrives from the factory fully assembled and configured. For the installation, operations, test, and maintenance of the UPC, proper procedures must be observed.

Related topics

- “Guidelines for installing UPC” on page 34
- “Alarm Circuit Wiring” on page 35
- “Connecting the FOE cable” on page 36
- “Mounting the UPC enclosure” on page 38
- “AC Terminal Block Connections” on page 40
- “Field 24VDC and Signal I/O Connection” on page 41
- “Input and field wiring separation” on page 42
- “Field wiring of UPC” on page 43
- “About heat dissipation in the cabinet” on page 45

4.1 Guidelines for installing UPC

External Power Source

A single AC power source or two independent power sources must provide power to the power system in the enclosure. In either case, the AC input power lines to the power system must be protected by an exterior, appropriately-sized circuit breaker.

Installation location

Choose an installation location for the UPC that prevents any damage.

UPCs installed on support frameworks must be protected from falling over. Appropriate precautions must be undertaken to accommodate the weight of the UPC during initial installation onto the support structure. The UPC must be mounted onto a support structure having a load capacity of 1000 lbs.

All fastening holes must be given fastening screws.

Ambient temperature

For proper storage, installation and operation, see Table 2 of section 1.6, Cabinet Temperature Limits.

Number of entry holes

The number of components that are installed in the enclosure determines the number, size, and location of the wire/cable entry holes that must be cut in the enclosure. For more information about creating cable entry, see “Cabling.”

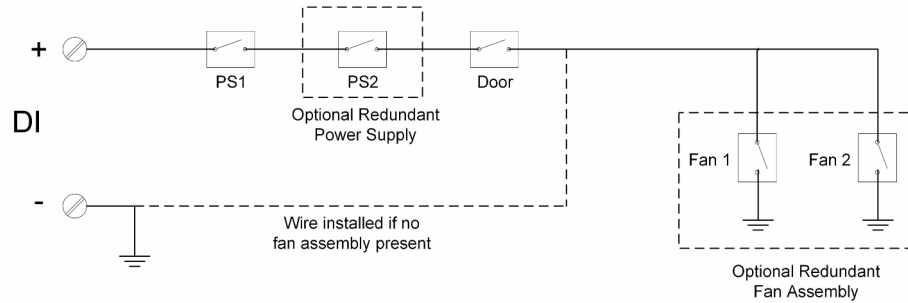
Conduit Fittings and Cable Glands

A conduit fitting or some type of sealed transit device that is appropriately labeled for cabinet protection/certification level must be used for the entry into the enclosure of the AC power cable(s), DC power cables (if present), fiber optic cables, coaxial cables, and field wiring. To maintain the IP66 rating of the stainless steel cabinet, all cable entries into the enclosure must be provided through conduit fittings or gland fittings that are certified to maintain the cabinet rating per local rules and regulations.

4.2 Alarm Circuit Wiring

The UPC comes from the factory with an alarm circuit pre-wired to channel 32 of the upper (first) UIO module. The alarm sources are connected in series – any trip in one or more of the alarm sources will change the state of the circuit from the normally closed (okay) state to the open (alarm) state.

See the following figure for a pictorial representation of the alarm circuit:



The alarm sources are defined as follows:

- PS1 and PS2 – Any malfunction of the power supply(ies) will open the circuit.
- Door – The alarm circuit will be open anytime the door to the UPC is opened.
- Fan 1 and Fan 2 – Any malfunction of one or both of the fans will open the circuit.

The actual alarm circuit present in your cabinet will depend on whether one or two power supplies are present, and whether or not the fan assembly is present.

Customers have the option to remove alarms. This will make channel 32 available for other I/O purposes. After disconnecting alarm circuit, secure wires.

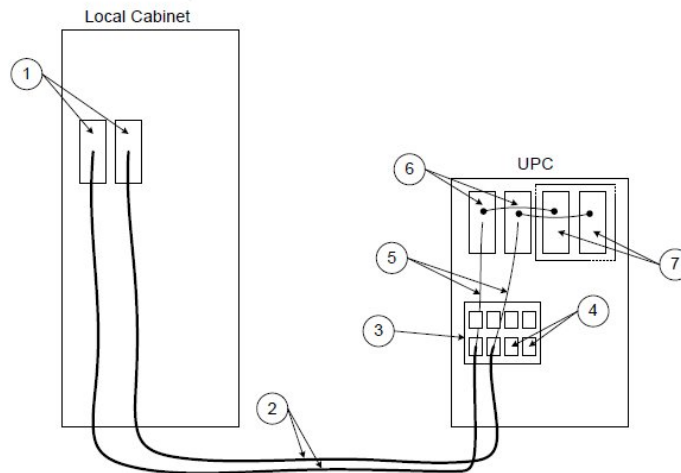
Customers also have the option to connect the alarm circuit to a different channel.

4.3 Connecting the FOE cable

The FOE provides an I/O link interface between the UPCs. The UPCs can communicate with the controller through one or two redundant sets of single mode FOEs. Redundant fiber optic cables must be used to connect each UPC, which contains the remote I/Os and the controller.

The UPC is provided with one 14–port patch panel by default. A fiber optic cable (or multiple fiber optic cables) is connected to the appropriate connector on patch panel for up to 10 km distance. The patch panel can accommodate different type of connectors depending on the type of fiber optic cables that are used. There are three common types of fiber connectors available as follows:

- LC
- ST
- SC



- ① MOXA ICF-1150-S-SC-T FOE with SC Fiber Optic Port (Redundant)
- ② Fiber Optic Cables with SC and LC Connectors (up to 10km long)
- ③ Fiber Optic Patch Panel (14 position)
- ④ Adapter – LC to LC (MX-F1-LC-01)
- ⑤ Fiber Optic Patch Cable with LC and SC Connectors (FJ2-LCUSCUL-01)
- ⑥ MOXA ICF-1150I-S-SC-T FOE with SC Fiber Optic Port (Redundant)
- ⑦ Optional MOXA ICF-1150I-S-SC-T FOE for Leap-frogging

Reference number	Description
1	MOXA ICF-1150I-S-SC-T FOE with SC fiber optic port (Redundant)
2	Fiber optic cables with SC and LC connectors (up to 10km)
3	Patch panel (51202693–100)
4	Fiber optic patch cable with LC and SC connectors (FJ2-LCUSCUL-01)

The following figure shows the fiber optic patch panel.

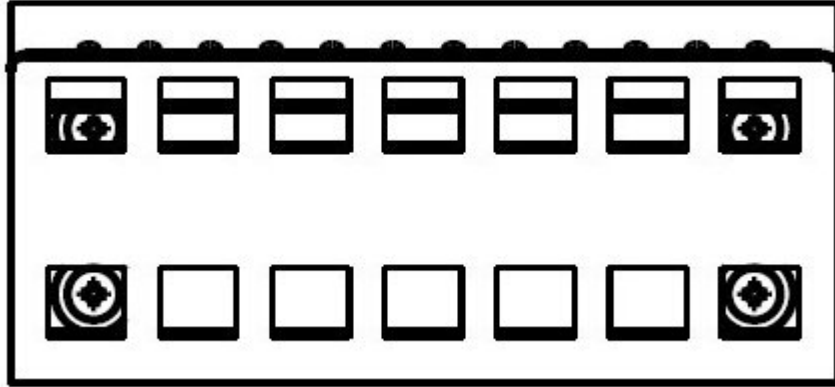
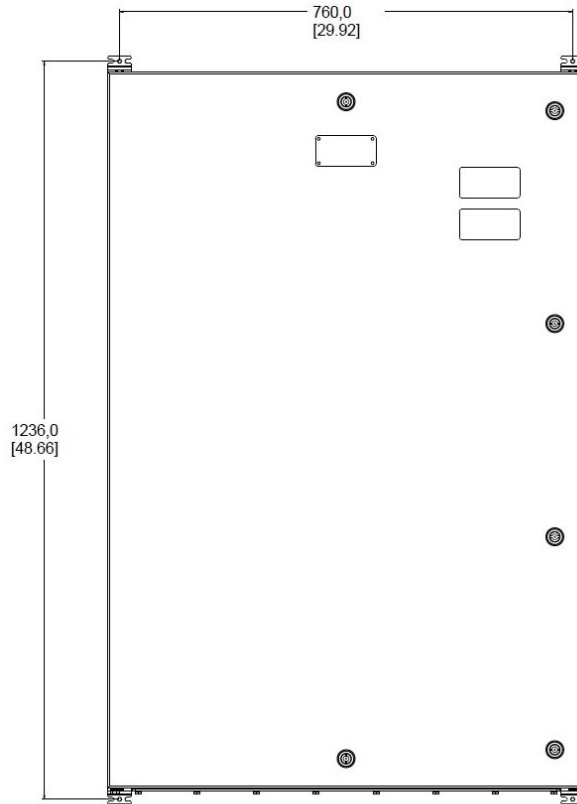


Figure 10: Patch panel

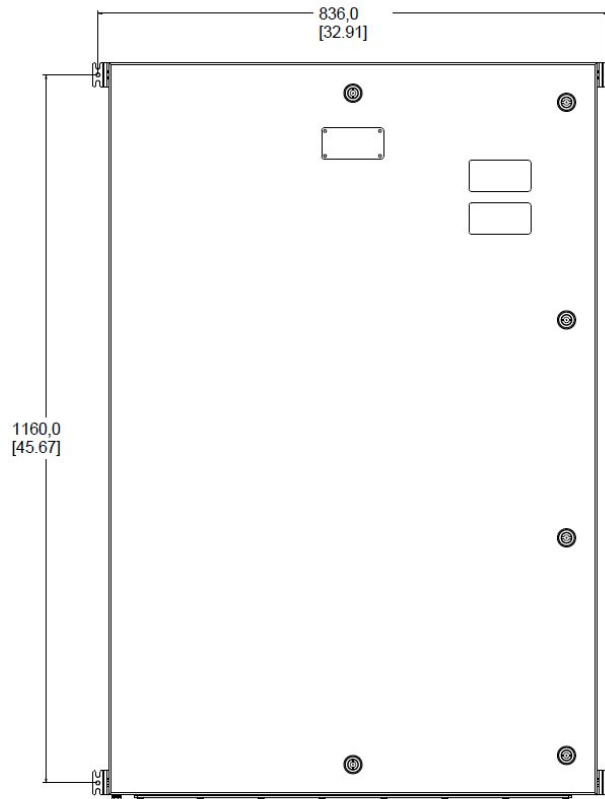
4.4 Mounting the UPC enclosure

The UPC is shipped with a mounting bracket kit, which includes four brackets and the hardware and instructions to mount these brackets to the cabinet. The brackets are mounted to the four corners of the back of the cabinet. But for each corner, the bracket can be oriented and mounted so it is either projecting from the side walls or the top and bottom walls. The orientation of the brackets must be determined based on the requirement. For more details, see packed instructions.

The following figures display dimensions for mounting the bracket hardware in two ways.



MOUNTING BRACKETS, OPTION 1



MOUNTING BRACKETS, OPTION 2

To mount the enclosure

- 1 Determine the appropriate mounting hardware for the cabinet material.

Attention

Appropriate precautions must be undertaken to accommodate the weight of the UPC during initial installation onto the support structure. The UPC must be mounted onto a support structure having a load capacity of 1,000 lbs. Below is the bolt size and grade information for the mounting hardware supplied with each cabinet type.

- 51454260-100: M6 x 1mm bolt size and A2-70 grade
- 51454265-100: M8 x 1.5mm bolt size and 8.8 grade

Zinc plated steel bolts are appropriate for the painted steel cabinet.

Passivated type 316 stainless steel bolts are required for the stainless steel cabinet.

- 2 Mount the chosen mounting hardware in the desired configuration.
 - 3 Determine the surface against which the cabinet is mounted. The enclosure must be mounted against a flat vertical surface.
 - If it is concrete then lead sinks might be appropriate.
 - If it is a steel panel, then a through hole that would accommodate a M8 bolt, lock washer, and nut might be appropriate.
 - 4 Mark the hole centers that match the chosen bracket pattern on the cabinet.
 - 5 Drill the diameter hole to match the chosen mounting hardware.
 - If it is a steel panel then it would just be multiple hole clearance for M8 screws.
 - If it is a concrete wall then drill the holes to accommodate the appropriate lead sinks.
- All four cabinet bracket mounting holes must be used.

4.5 AC Terminal Block Connections

This figure shows the proper connections for the AC terminal block (51202694-100). Refer to Section 3.6.2 in “Planning of UPC” for detailed AC input requirements. Note that the input AC wire gauge must be sized accordingly to handle 10A (Amperes), and wire gauge shall not exceed 10AWG (6mm²).

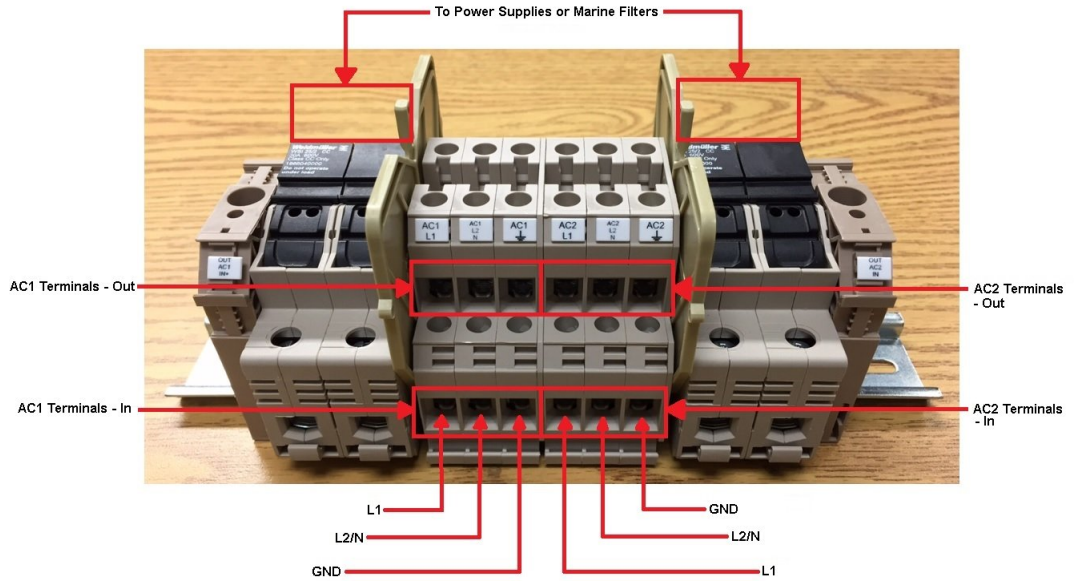
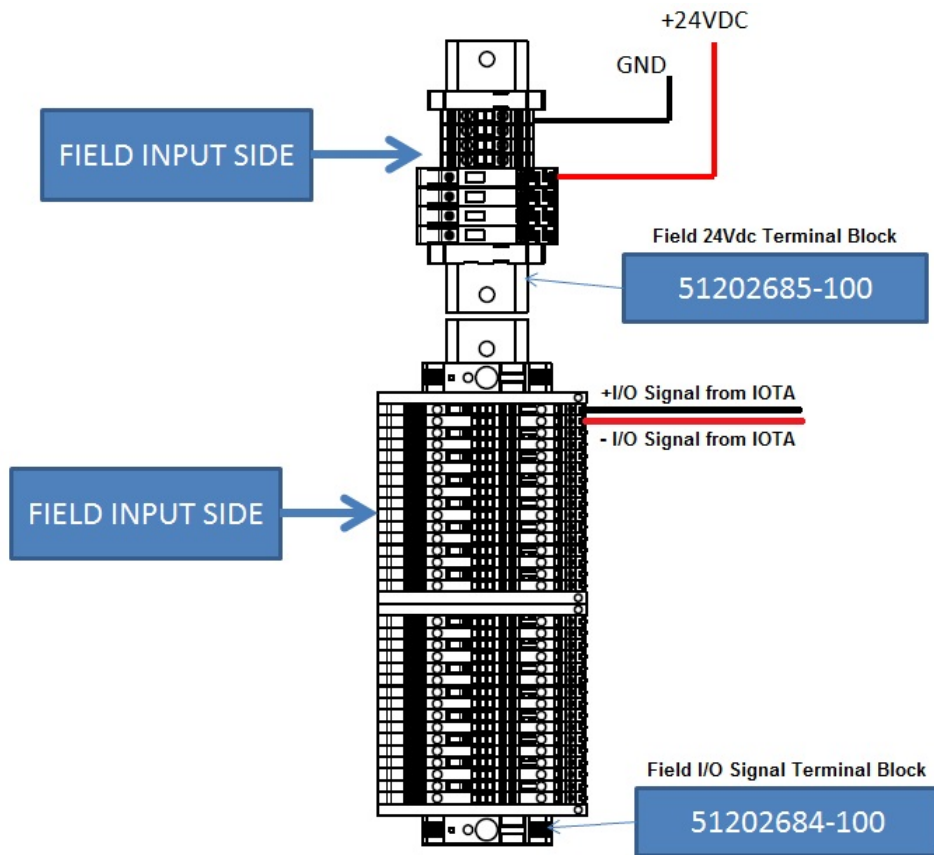


Figure 11: AC Terminal Block

4.6 Field 24VDC and Signal I/O Connection

Field 24Vdc Terminal Block (HPN 51202685) and Field Terminal Blocks (HPN 51202684)



As an option, the UPC can be installed with a Field I/O Terminal Block (51202685-100) to support not only field wire marshalling but also to provide a method of individual field wire disconnection. The purpose of the disconnect is to provide a physical disconnection to support various tasks. As an example, such tasks can include signal measuring or disconnecting the IO signal from the UIO prior to the removal of any field wires. Be aware that the disconnect on the Terminal Block shall not be used unless the area is determined to be Non-Hazardous or unless the field wire connection complies with item #2 of the Prescribed Service Conditions listed in Section 17, Service and Maintenance, of the Hazloc Addendum attached to the end of this UPC Guide.

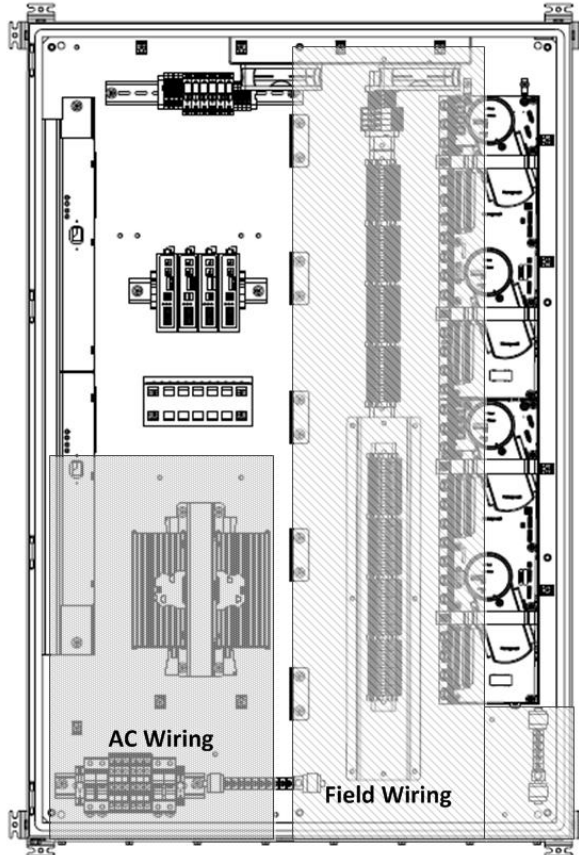
! Attention

Unless the area is determined to be Non-Hazardous, refer to the Prescribed Service Conditions listed in Section 17, Service and Maintenance.

4.7 Input and field wiring separation

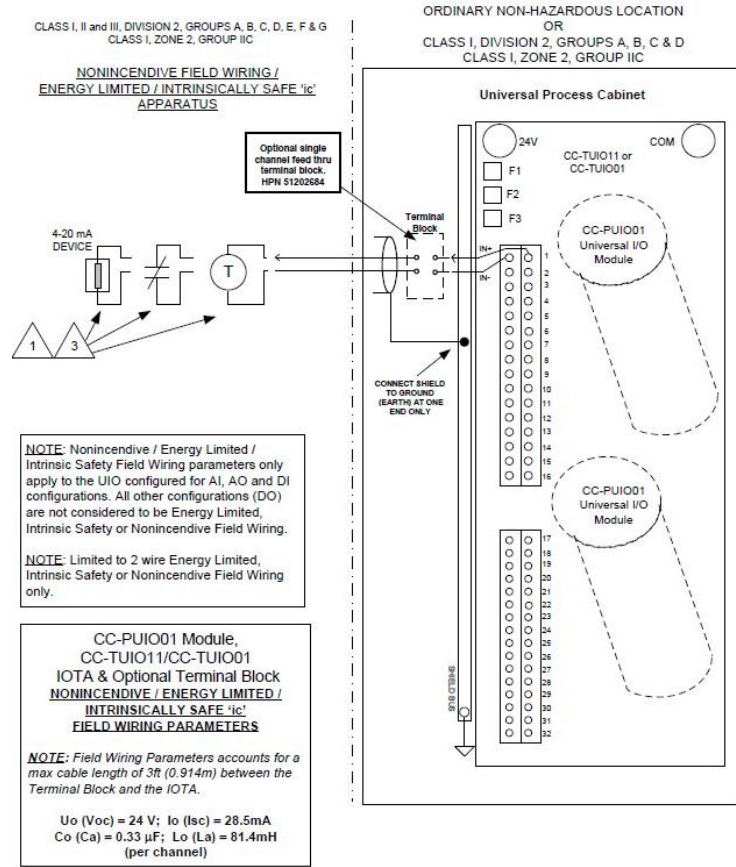
All field wiring and AC wiring shall be terminated and maintained within the designated areas shaded in the following figure in order to maintain a minimum 1 inch segregation. Proper segregation between all “ic” and non-”ic” field wiring shall be maintained in accordance with all applicable rules and regulations.

Figure 12: Input AC and Field Wiring



4.8 Field wiring of UPC

The following figure depicts UPC field wiring allowances.



For a listing of all the wiring modes, please refer to EP03-490-430 Release 430, "Experion Series C I/O Specification."

INSTALLATION NOTES:

- INTERCONNECTION OF NONINCENDIVE FIELD WIRING / ENERGY LIMITED / INTRINSICALLY SAFE 'IC' APPARATUS MAY ONLY BE ACCOMPLISHED IF THE FOLLOWING CONDITIONS ARE MET:

$V_{max} \text{ or } U_i \leq V_{oc} \text{ OR } V_i \text{ OR } U_o; I_{max} \text{ or } I_i \leq I_{sc} \text{ OR } I_i \text{ OR } I_o; C_i + C_{cable} \leq C_b \text{ OR } C_o; L_i + L_{cable} \leq L_b \text{ OR } L_o$

IF THE ELECTRICAL PARAMETERS OF THE CABLE ARE UNKNOWN, THE FOLLOWING VALUES MAY BE USED:

CAPACITANCE – 200 pF/ft (60 pF/m)
 INDUCTANCE – 0.66 µH/ft (0.20 µH/m)
- FM APPROVED NONINCENDIVE APPARATUS WITH APPLICABLE NONINCENDIVE / ENERGY LIMITED / INTRINSIC SAFETY FIELD WIRING PARAMETERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S CONTROL DRAWING OR SHALL BE SIMPLE APPARATUS. SIMPLE APPARATUS IS A DEVICE THAT WILL NEITHER GENERATE NOR STORE MORE THAN 1.2V, 0.1A, 25 mW, OR 20 µJ, SUCH AS SWITCHES, THERMOCOUPLES, LIGHT-EMITTING DIODES, RTD's OR CONNECTORS.
- INSTALLATION MUST BE IN ACCORDANCE WITH ARTICLE 500.505 OF THE NATIONAL ELECTRICAL CODE (ANSI/NFPA 70) OR SECTION 18 OF THE CANADIAN ELECTRICAL CODE (CEC) CSA C22.1 OF IEC/EN 6079-14.
- WARNING - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR DIVISION 2/ZONE 2.
 AVERTISSEMENT - RISQUE D'EXPLOSION - LA SUBSTITUTION D'ÉLÉMENTS PEUT ENDRE CE MATÉRIEL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE I, DIVISION 2

WARNING - EXPLOSION HAZARD - DO NOT OPEN, CONNECT OR DISCONNECT UNLESS AREA IS KNOWN TO BE NON HAZARDOUS OR UNDER PRESCRIBED SERVICE CONDITIONS.
 AVERTISSEMENT - RISQUE D'EXPLOSION - NE PAS OUVRIR, CONNECTEZ OU DÉCONNECTEZ MORGUE QUE L'ENVIRONNEMENT EST CONNU POUR ÊTRE NON DANGEREUX OU DANS DES CONDITIONS SERVICE RÉGLEMENTAIRES

WARNING - DO NOT REMOVE OR REPLACE FUSE WHEN ENERGIZED
 AVERTISSEMENT - NE PAS RETIRER OU REMPLACER UNE FUSIBLE SOUS TENSION
- NO WIRING CONNECTIONS SHALL BE ACCOMPLISHED WITHIN A DIVISION 2 /ZONE 2 HAZARDOUS (CLASSIFIED) LOCATION UNLESS POWER HAS BEEN REMOVED OR THE AREA IS KNOWN TO BE NON-HAZARDOUS OR UNDER PRESCRIBED SERVICE CONDITIONS LISTED IN MANUAL ADDENDUM 51154227.
- REFER TO THE FIELD DEVICE MANUFACTURER'S SPECIFICATIONS TO DETERMINE IF SHIELDED WIRE IS REQUIRED FOR NORMAL OPERATION OR CE CONFORMITY. WHEN SHIELDED WIRE IS REQUIRED BY THE FIELD DEVICE OR HONEYWELL REQUIREMENTS, THE SHIELD SHALL BE GROUNDED AT ONE END ONLY. FOR REMOTE INSTALLATIONS UTILIZING A FIELD TERMINATION ASSEMBLY (FTA), GROUND IN ACCORDANCE WITH ARTICLE 501-10 OF ANSI/NFPA 70 OR SECTION 18 OF THE CANADIAN ELECTRICAL CODE (CEC) CSA C22.1 OF IEC/EN 6079-14.
- NO REVISION TO THIS DRAWING IS PERMITTED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM FM Approvals.
- THIS CONTROL DRAWING ONLY APPLIES TO NONINCENDIVE, ENERGY LIMITED, INTRINSICALLY SAFE FIELD WIRING. ALL OTHER WIRING SHALL BE INSTALLED ACCORDING TO LOCAL AND NATIONAL ELECTRICAL CODE REQUIREMENTS (NEC, CEC OR IEC/EN 6079-14).
- FOR FURTHER INFORMATION REGARDING CHANNEL LOADING, AMBIENT TEMPERATURE RANGES AND MAXIMUM CONFIGURATION ALLOWANCES PLEASE REFER TO THE MANUAL ADDENDUM 51154227

<p>CERTIFICATION DOCUMENT ENGINEERING CHANGES (ECC) MUST BE AUTHORIZED BY PRODUCT SAFETY & APPROVALS ENGINEERING</p> <p>THE COPYRIGHT OF THIS DRAWING IS THE PROPERTY OF HONEYWELL. THIS DRAWING IS SUPPLIED IN CONFIDENCE AND MUST NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS SUPPLIED.</p>	<p>Honeywell</p> <p>UNIVERSAL PROCESS CABINET (UPC) CONTROL DRAWING NONINCENDIVE/ENERGY LIMITED/INTRINSIC SAFETY FIELD WIRING PARAMETERS</p> <p>A 51154226</p> <p>SCALE: NONE REV B SHEET: 3 OF 3</p>
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Figure 13: Field wiring connection of UPC

! Attention

2-wire Non-Incendive, Energy Limited and Intrinsically Safe field wiring connections shall not be installed within the same 8 segment Field IO terminal block as 3 or 4 wire.

4.9 About heat dissipation in the cabinet

The following table explains the channel configuration based on the maximum marked ambient temperature range.

Table 9: Maximum ambient temperature and total configurable current

Enclosure	Ta: Ambient temperature range (C)	Maximum total output current (Amp)
316 SS (HPN: 51454260-100)	$-40 \leq T_a \leq +40$	16
	$-40 \leq T_a \leq +45$	9
Painted Steel (HPN: 51454265-100)	$-30 \leq T_a \leq +40$	16
	$+40 \leq T_a \leq +45$	9
316 SS (HPN: 51454260-100)	$-20 \leq T_a \leq +50$	16
	$+50 \leq T_a \leq +55$	7
Painted Steel (HPN: 51454265-100)	$-20 \leq T_a \leq +50$	16
	$+50 \leq T_a \leq +55$	7

Attention

- The maximum current per channel for each channel type is listed in Table 4. Utilize the values listed in the following table to determine the appropriate combination of I/O channels. The combination of I/O channels cannot exceed the maximum total current listed in Table 3.

5A is the maximum total output current allowed per IOTA.

Table 10: Channel loads based on Internal Heat Dissipation

Channel	Maximum current for each channel type (mA)
AI	24.3mA
AO	21.1mA
DI	3.5mA
DO	500mA

Utilize Table 5 below to calculate the total current being provided to the field.

Table 11: Field current draw for each configuration

Channel	Current utilized	Number of channels	Calculated Current (Total must be \leq applicable ampere rating listed in Table 3)
AI ²	(24.3 mA /channel) x	___ =	___ A
AO ²	(21.1mA /channel) x	___ =	___ A
DI ²	(3.5mA /channel) x	___ =	___ A
DO ²	(___ mA /channel) x	___ =	___ A
3 & 4 Wire Devices ¹			___ A ³
			Total Current: ___ A

! Attention

- 13 & 4 wire devices are limited to 3.5A per fused terminal block
- ²5A is the max total output current allowed per IOTA
- ³Total combined 3 & 4 wire current output
-

5 Service and maintenance of UPC

! Warning:

Service and Maintenance shall only be performed by service personnel with the knowledge of associated risks inherent with servicing and maintaining live electrical equipment.

PRESCRIBED SERVICE CONDITIONS – Hazardous Atmosphere:

1. Opening of the cabinet door and visually inspecting status indicators and lights are allowed within Hazardous environments.
2. Only Non-incendive, Energy Limited & Intrinsically Safe field connections can be removed and/or relocated under power by service personnel with the knowledge of associated risks inherent with servicing and maintaining live electrical equipment. It is the responsibility of service personnel to ensure they are not in violation of any special conditions for safe use as specified in Section 11 of this manual.

! Attention

Once the area is determined to be Non-Hazardous, maintenance and service activities can be performed by service personnel with the knowledge of associated risks inherent with servicing and maintaining live electrical equipment. These service and maintenance activities include, but not limited to, the replacement of electronic modules, power supplies, fuses and field wiring

! Attention

Service and maintenance personnel must connect to the ESD Bonding point, located below the Safety Ground Bar on the lower left of the UPC, for grounding against static charge buildup during maintenance procedures such as changing out UIO IOMs.



INSTALLATION DECLARATIONS:



Attention

Equipment shall be installed in accordance with the requirements of the National Electrical Code (NEC), ANSINFPFA 70, or the Canadian Electrical Code (CEC), C22.1.

Electrostatic discharge can damage integrated circuits or semiconductors if you touch connector pins or tracks on a printed wiring board.

- Touch a grounded object to discharge static potential.
- Wear an approved wrist-strap grounding device.
- Do not touch the wire connector or connector pins.
- Do not touch circuit components.
- If available, use a static safe workstation.
- When not in use, keep the component in its static shield box or bag.

Related topics

“Fuse replacement” on page 49

“Optimal replaceable units” on page 50

5.1 Fuse replacement

Replacement fuses are provided for the fuses, which control the following components.

- MOXA Single Mode Fiber Optic Extender (part of HPN 51202674-101)
- Redundant and non-redundant IOTA (CC-TUIO11/CC-TUIO01)
- Fan Assembly (HPN 51454248–100) (Replace fans periodically)
-

It is recommended to replace the fuse with the appropriate fuse from the “Replacement fuse part numbers” table. Fuse data is also labeled inside the cabinet door. For more information about the fuses, see “UPC Fuse Reference Guide.”

Table 12: Replacement fuse part numbers

For Components	Part Number
MOXA Single Mode Fiber Optic Extender, FS1, FS2, FS3, FS4	51190582-180 (Fuse, Type F 250V, 800mA)
Redundant and non-redundant IOTA, F1	51190582-310 (Fuse, Type F 125V, 10A)
Redundant and non-redundant IOTA, F2 and F3	51190582-210 (Fuse, Type F 250V, 1A)
24V DC Terminal Block, FS1, FS2, FS3, FS4	51121575–100 (Fuse, Type F, 125V, 5A)
Fan Assembly, FS5, FS6	51190584–140 (Fuse, Type T, 250V, 400mA)
AC Terminal Block, FS1, FS2, FS3, FS4	51121575–100 (Fuse, Type T, 600V, 10A)

! Attention

- Fuses should be removed or replaced only in a non-hazardous atmosphere.
Do not remove or replace the fuse when the UPC is energized.

5.2 Optimal replaceable units

This subsection identifies the assemblies that may be required for maintenance during the life of the UPC.

Table 13: Optimal replaceable units

Part Number	Description
CC-TUIO11	Universal I/O IOTA, Redundant
CC-TUIO01	Universal I/O IOTA, Non-Redundant
CC-PUIO01	Universal I/O Module, Series-C
51198685-100	Power Supply Module, SPS5710-2-LF
ICF-1150I-S-SC-T (HPS)	MOXA Single Mode Fiber Optic Extender, isolated
51190582-180	Fuse, quick acting, type F, 250V, 800mA
51190582-250	Fuse, quick acting, type F, 125V, 5A
51190582-310	Fuse, quick acting, type F, 125V, 10A
51190582-210	Fuse, quick acting, type F, 250V, 1A
51190584-140	Fuse, type T, 250V, 400mA
51121575-100	Fuse, type T, 600V, 10A
FC-PSU-FLTR-MARINE	System PSU Input Filter 110/230VAC Marine
51454248-100	Fan assembly

6 Notices

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<http://www.honeywellprocess.com/support>

If you have comments about Honeywell Process Solutions documentation, send your feedback to:

hpsdocs@honeywell.com

Use this email address to provide feedback, or to report errors and omissions in the documentation. For immediate help with a technical problem, contact your local Honeywell Process Solutions Customer Contact Center (CCC) or Honeywell Technical Assistance Center (TAC).

How to report a security vulnerability

For the purpose of submission, a security vulnerability is defined as a software defect or weakness that can be exploited to reduce the operational or security capabilities of the software.

Honeywell investigates all reports of security vulnerabilities affecting Honeywell products and services.

To report a potential security vulnerability against any Honeywell product, please follow the instructions at:
<https://honeywell.com/pages/vulnerabilityreporting.aspx>

Submit the requested information to Honeywell using one of the following methods:

- Send an email to security@honeywell.com.
- or
- Contact your local Honeywell Process Solutions Customer Contact Center (CCC) or Honeywell Technical Assistance Center (TAC) listed in the “Support” section of this document.

Support

For support, contact your local Honeywell Process Solutions Customer Contact Center (CCC). To find your local CCC visit the website, <https://www.honeywellprocess.com/en-US/contact-us/customer-support-contacts/Pages/default.aspx>.

Training classes

Honeywell holds technical training classes on Experion PKSExperion HSExperion LXPlantCruise by Experion. These classes are taught by experts in the field of process control systems. For more information about these classes, contact your Honeywell representative, or see <http://www.automationcollege.com>.