Honeywell CC-PUIO01 51454205-175

Installation & IOTA Field Connections

Honeywell CC-PUIO01 51454205-175 is a Series C Universal I/O module for connecting process transmitters, current-loop outputs, switch contacts and digital loads to an Experion PKS control system. Its 32 configurable channels allow different signal types on the same module, making the exact I/O configuration as important as the module number when selecting a spare.



Technical Specifications

Product Identity	
Manufacturer	Honeywell
Model	CC-PUIO01 51454205-175
Product type	Series C Universal I/O module
Functional Configuration	
Channel capacity	32 configurable I/O channels; AI, AO, DI or DO
Analog input	0–20 mA or 4–20 mA; 2-, 3- or 4-wire current devices
Analog output	4–20 mA current loop; 12-bit resolution
HART	HART 7 on analog input/output
Pulse input	Channels 15–18 only; 0–10 kHz; minimum pulse width 50 µs
Digital output	Solid-state sourcing; 0.5 A maximum per channel; 9 A maximum per module, subject to configuration and ambient temperature
Digital output load caveat	Loads below 20 mA can incorrectly report Line Monitoring or OP Fail
Non-redundant IOTA	CC-TUIO01, nominal 12 in
Redundant IOTA	CC-TUIO11, nominal 18 in
Configuration environment	Experion Control Builder, Series C I/O library (UIO)
Performance & Power	
Analog input conversion / scan	16 bit; 50 ms input scan
Power arrangement	Module power and field connections via the matching IOTA; Series C IOTA power supplied from a 24 VDC carrier bus
Environment	
Module ambient temperature	–40 to +70 °C; apply the configuration-dependent thermal derating calculation

Selected original manufacturer material follows on pages 3–6.

Compatibility & Selection Guide

System compatibility. Configure CC-PUIO01 51454205-175 in the Series C I/O library of Experion Control Builder, using the matching CC-TUIO01 or CC-TUIO11 IOTA. Honeywell's May 2026 lifecycle notice lists this UIO family as Phase-out, with spares available for the installed base but not allowed for greenfield or brownfield expansion. For those expansions, Honeywell recommends CC-PUIO31 with CC-TUIO31 or CC-TUIO41 and Experion R432 or later. Assess the installed IOTA, redundancy, firmware and saved channel configuration before migrating; the recommendation does not establish an automatic drop-in exchange.

Wiring & Installation Reference

Field connections

Analog input. Use the documented 2-, 3- or 4-wire current-transmitter arrangement; check the transmitter power reference and allowable field-loop resistance.

Digital input. Fit the specified field resistor arrangement near the switch when open-wire detection is enabled.

Digital output. Check per-channel current, module total and thermal limits. Do not apply the module's maximum current rating to every channel simultaneously.

Mounting and configuration

Confirm the assembly. Identify CC-PUIO01 and the installed CC-TUIO01 or CC-TUIO11 IOTA. Confirm redundancy and the saved channel configuration.

Prepare the installation. Turn off all power at the installation location before the installation procedure. Mount and ground the correct IOTA/carrier assembly as described in the user guide.

Fit the module. Mate the module correctly with the IOTA connector and secure the specified screws. Use a #2 Phillips screwdriver for the long gray plastic screw; do not use a battery-powered screwdriver.

Check loading and temperature. Mount the module upright for natural-convection cooling and complete the applicable UIO thermal calculation before putting configured channels into service.

Installation precautions. UIO analog inputs measure current; do not connect a voltage, thermocouple, RTD or NAMUR signal directly as though it were a supported current loop. Channel settings, open-wire monitoring components and actual load must match. Follow all power-isolation, grounding and installation requirements in the manufacturer's complete guide. The published –40 to +70 °C module ambient range does not permit unrestricted output loading. Apply the current configuration and inlet-air temperature to the manufacturer's thermal calculation.

User Guide printed pp. 73–74, mounting and grounding · PDF page 3 | User Guide printed pp. 196–197, IOTA field connections · PDF page 5

Manufacturer sources: Series C I/O User's Guide (EPDOC-X126) / Series C I/O Specification (EP03-490-520).

4.3 Mounting the I/O module on the IOTA

4.3.1 Prerequisites

It is recommended to attach the IOTA board to the Backplane prior to mounting the module to the IOTA. Ensure the following:

- IOTA is mounted on the Backplane.
- Power supply is installed.
- Control firewall is installed.
- All wiring and pre-fabricated cables are available and labeled as applicable.
- All power is turned off at the installation location.
- You have the mounting hardware supplied with the components.

4.3.2 Mounting the module

1. Insert the module onto the IOTA board making sure that the circuit board mates properly with the IOTA board connector.
2. Secure the module to the:
   - IOTA board - with two screws located on each side of the plastic cover.
   - Backplane - with the long gray plastic screw located on the module's face.

> **CAUTION**
> Use only a #2 Phillips screw-driver to carefully loosen or tighten the long gray plastic screw. Do not use either a #1 Phillips screw-driver or a battery-powered screw-driver to remove or install the plastic screw as this can damage the screw head.

4.4 Grounding and power considerations - IOTA boards

4.4.1 Attaching the IOTA board

The Series C cabinet allows mounted carriers that support the attachment of the IOTA boards. By making these connections, power, and chassis, grounding is provided to the IOTA board.

- Testing for power

4.4.2 Testing for power

> **CAUTION**

Extreme care must be taken when testing for power at the Series C bus bars. Improper testing can result in an electrical short circuit, which will impact all modules attached to the channel carrier assembly.

Never use a test probe at an unattached IOTA's 24V screw hole. The probe can potentially touch the back channel assembly causing a short circuit.

The following locations are recommended for testing power:

Preferred location if IOTAs are attached

- Center of the screw that attaches the IOTA to the 24V bus bar.

Preferred location if IOTAs are NOT attached.

- Center of the screw of top connection terminal for power cable.

Testing for power at IOTA screw

1. Insert the test probe at the center of the screw that attaches the IOTA to the 24V power connection.
2. This concludes this procedure.

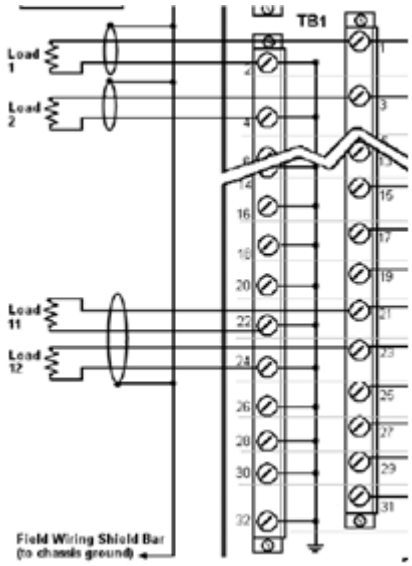
Testing for power at 24V bus bar top terminal

1. Carefully pull the red cap from the top of the terminal. It remains attached to the power cable.
   - Insert the test probe at the center of the screw to the 24V power terminal.
2. Carefully pull the black cap from the top of the terminal. It remains attached to the ground cable.

   Insert the test probe at the center of the screw to the COM ground terminal.
3. Replace the both caps.

5.18.3 UIO channel configured as Analog Output

The UIO can drive 0, 4-20mA. The field terminal block is wired similar to Series C Analog Output 6 inch, non-redundant IOTA.

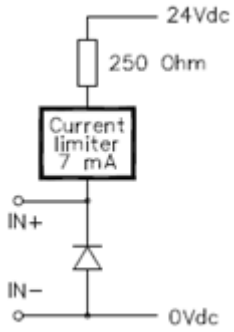


As the OP% approaches -6.9%, the current output approaches 2.896mA (based on the linear equation that correlates 0-100% with 4-20mA). However, when the OP% is set to exactly -6.9%, the output is unpowered (0mA).

5.18.4 UIO channel configured as Digital Input

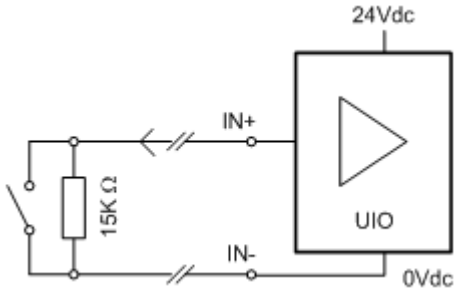
A UIO channel configured as a Digital Input consists of a 250-ohm resistor and a current limiter circuit. Refer to the following block diagram of the UIO channel configuration.

Figure 5.72 UIO_DI channel configuration



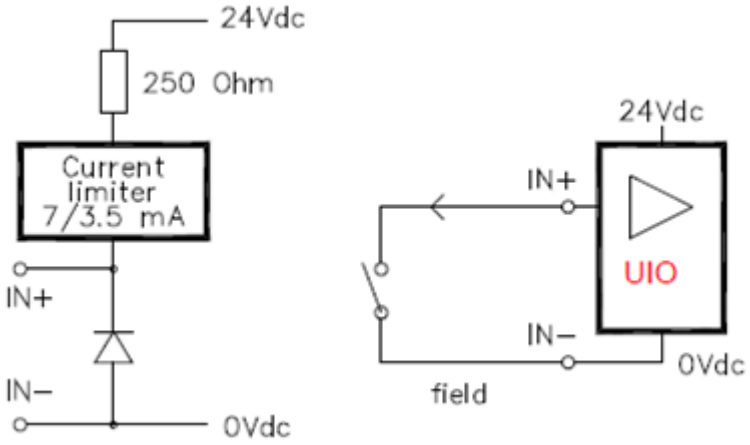
When the DI channel is configured with open wire detect (OWD), a resistor is required in the field near the switch contact as displayed in the following figure.

Figure 5.73 UIO-DI channel configured with open wire detection



A UIO channel configured as a digital input without open wire detect (OWD) consists of a 250-ohm resistance and a current limiter circuit. Refer to the following block diagram of this channel configuration, and a field-wiring example.

Figure 5.74 UIO-DI channel configured without open wire detection



Starting with R430, four UIO-DI channels are enhanced to support pulse counting when the DITYPE parameter is configured as "Accum." For more information about pulse counting configuration, refer to the Configuring the DI channel for pulse counting.

5.18.5 UIO channel configured as Digital Output

When you configure UIO as a Digital Output, the channel can supply up to 0.5A to the field.