## 5.20. Universal Input Output – CC-PUIO31

### Function

The Universal Input Output module interfaces with analog input, analog output, digital input, and digital output field devices.

### Notable Features

- Each channel user configurable as:
  - Analog Input
  - Analog Output
  - Digital Input
    - DISOE - Sequence of Events (1ms resolution SOE, 20ms PV scan)
  - Digital Output
  - Pulse Input (any four channels)
- Open Wire Detection
- Electronic short circuit protection[1]
- Fast Scan (Priority I/O Module Scan)
- Safe-state (FAILOPT) behaviors configurable on a per channel basis for Digital / Analog Output
- HART 7 support (Analog I/O)
- HART Modem per Channel for Fast Performance
- Extended Temperature Range -40 to +70°C module ambient

### Model Specifications

| Parameter | Specification | | |
|---|---|---|---|
| Universal Process IO Module | **CC-PUIO31** | | |
| IOTA Model Numbers | **CC-TUIO31** | Non Redundant | 9” |
| | **CC-TUIO41** | Redundant | 12” |
| Note 1: Each signal can be shorted in the field with no damage to the IOM or IOTA. Other channels on the same IOM will not be affected. AI, AO and DI channels are further protected and certified to support energy limited / nonincendive field wiring connections to Zone 2 / Division 2 hazardous locations. | | | |

## Detail Specifications – Analog Input

| Parameter | Specification |
|---|---|
| Input type | Current (2, 3, or 4 wire devices) |
| Input Channels | 32 Maximum per module<br>(with or without open wire detect) |
| A/D Converter Resolution | 16 bit |
| Input Range | 0-20 mA or 4-20 mA |
| Normal Mode Rejection Ratio | 18 dB at 50 Hz, 20 dB at 60 Hz |
| Input Filter Response | Single pole, -3dB @ 6 Hz |
| Crosstalk, dc to 60 Hz (channel-to-channel) | 60 dB |
| Input Impedance | 250 Ω |
| Input Voltage Range (any input referenced to common, no damage) | +33 VDC to -1 VDC (1) |
| Input Scan Rate | 10 ms |
| Hardware accuracy | 0.1% of full-scale (23.5 ± 2°C)<br>0.175% of full-scale (0 to +70°C)<br>0.25% of full-scale (-40 to +70°C) |
| Short Circuit Current Limit | 25 mA |
| Note 1: Return terminal is connected directly to Common (Ground) | |

## Detail Specifications – Pulse Input

| Parameter | Specification |
|---|---|
| Channels | Any 4 channels |
| Frequency | 0-15 kHz |
| Minimum Pulse Width | 25 µs |
| Duty Cycle | Any Duty Cycle that meets the Minimum Pulse Width specification |