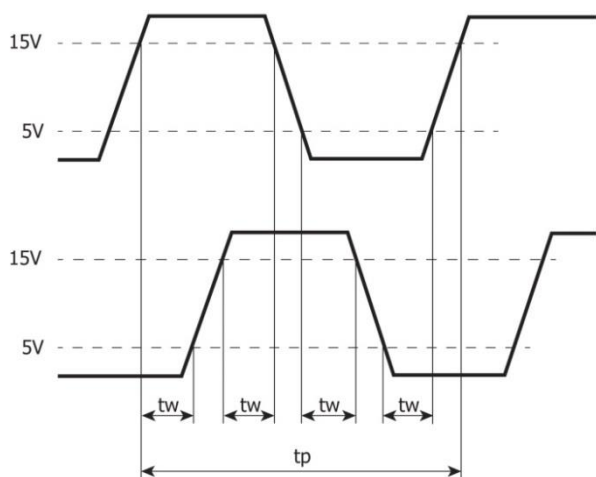


This guide provides specifications for Unitronics' Uni-I/O™ module UID-0808THS. This module can be set with up to 2 Shaft Encoders at 250kHz, or up to 2 High Speed PWM at 250kHz and 2 Normal Speed PWM outputs ^{(1) (2) (3)}.

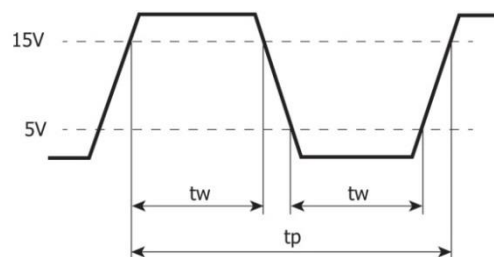
Uni-I/O modules are compatible with UniStream™ family of Programmable Logic Controllers. They may be either snapped onto the back of a UniStream™ HMI Panel next to a CPU-for-Panel to create an all-in-one HMI + PLC controller, or installed on a standard DIN Rail using a Local Expansion Kit.

Installation Guides are available in the Unitronics Technical Library at www.unitronics.com

| Inputs | |
|----------------------------------|--|
| Number of inputs | 8 |
| Type | Sink or Source |
| Isolation groups | Two groups of 4 inputs each |
| Isolation voltage | |
| Group to bus | 500VAC for 1 minute |
| Group to group | 500VAC for 1 minute |
| Input to input of the same group | None |
| Nominal voltage | 24VDC @ 6mA |
| Input voltage | |
| Sink/Source | On state: 15-30VDC, 4mA min. Off state: 0-5VDC, 1mA max. |
| Nominal impedance | 4kΩ |
| Filter | Settable between 1 to 32ms (individually per group) |
| High speed inputs ⁽¹⁾ | |
| Frequency / Period | Quadrature mode: 200kHz max. / 5μs min. (t _p in the Quadrature Mode figure below) Pulse/Direction mode: 250kHz max. / 4μs min. (t _p in the Pulse/Dir Mode figure below) |
| Pulse width | Quadrature mode: 0.8μs min. for each state (t _w in Quadrature Mode figure below). Pulse/Direction mode: 1.5μs min. for each state (t _w in Pulse/Dir Mode figure below). |
| Cable | Shielded twisted pair |



Quadrature Mode



Pulse/Direction mode

| Outputs | |
|---|---|
| Number of outputs | 8 |
| Output type | Transistor, Source |
| Isolation groups | One group of 8 outputs |
| Isolation voltage | |
| Output to bus | 500VAC for 1 minute |
| Output to output | None |
| Output power supply to bus | 500VAC for 1 minute |
| Output power supply to output | None |
| Current | 0.5A max. per output |
| Voltage | See Outputs Power Supply specification |
| On state voltage drop | O0, O1: 0.2V max O2 – O7: 0.5V max |
| Off state leakage current | 10µA max |
| Short circuit protection | O0, O1: None O2-O7: Yes |
| Switching times | O0, O1: Turn-on: 0.4µs max. (470Ω and 4kΩ load) Turn-off: 1.1µs max. (470Ω load), 3.4µs max. (4kΩ load) O2-O7: Turn-on/off: 80µs max. (Load resistance < 4kΩ) |
| PWM Frequency ⁽⁵⁾ ⁽⁶⁾ | O0, O1: 250kHz max. (470Ω load) 100kHz max. (4kΩ load) O4, O5: 3kHz max. (Load resistance < 4kΩ) |
| Cable (PWM mode) | O0, O1: Shielded twisted pair O4, O5: Shielded or unshielded |

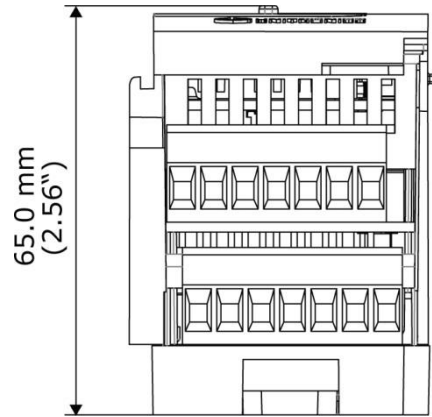
| Outputs Power Supply | |
|--|----------------|
| Nominal operating voltage | 24VDC |
| Operating voltage | 20.4 – 28.8VDC |
| Maximum current consumption ⁽⁷⁾ | 30mA@24VDC |

| IO/COM Bus | |
|-------------------------|------------|
| Bus current consumption | 120mA max. |

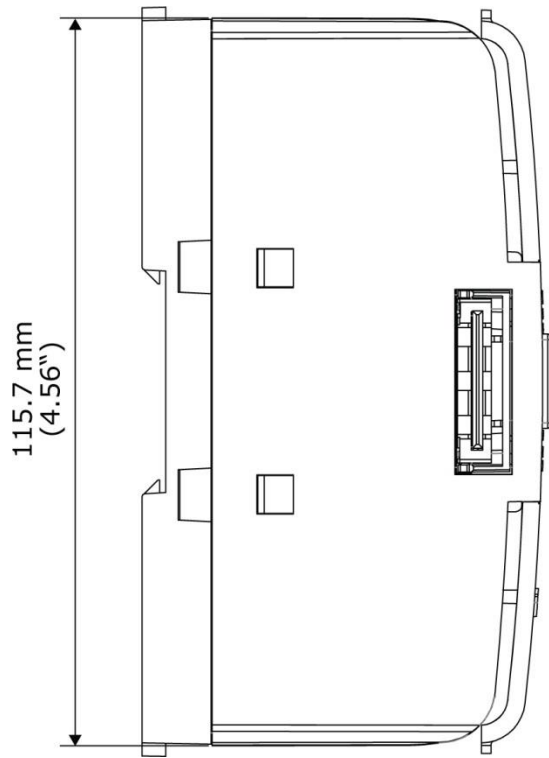
| LED Indications | | | |
|------------------------|---|--------------|------------------------|
| Input LEDs | Green | Input state | |
| Output LEDs | Green | Output state | |
| Status LED | A triple color LED. Indications are as follows: | | |
| | Color | LED State | Status |
| | Green | On | Operating normally |
| | | Slow blink | Boot |
| | | Rapid blink | OS initialization |
| | Green/Red | Slow blink | Configuration mismatch |
| | Red | Slow blink | No IO exchange |
| | | Rapid blink | Communication error |
| Orange | Rapid blink | OS Upgrade | |

| Environmental | |
|------------------------|--|
| Ingress Protection | IP20, NEMA1 |
| Operating temperature | -20°C to 55°C (-4°F to 131°F) |
| Storage temperature | -30°C to 70°C (-22°F to 158°F) |
| Relative Humidity (RH) | 5% to 95% (non-condensing) |
| Operating Altitude | 2,000 m (6,562 ft) |
| Shock | IEC 60068-2-27, 15G, 11ms duration |
| Vibration | IEC 60068-2-6, 5Hz to 8.4Hz, 3.5mm constant amplitude, 8.4Hz to 150Hz, 1G acceleration |

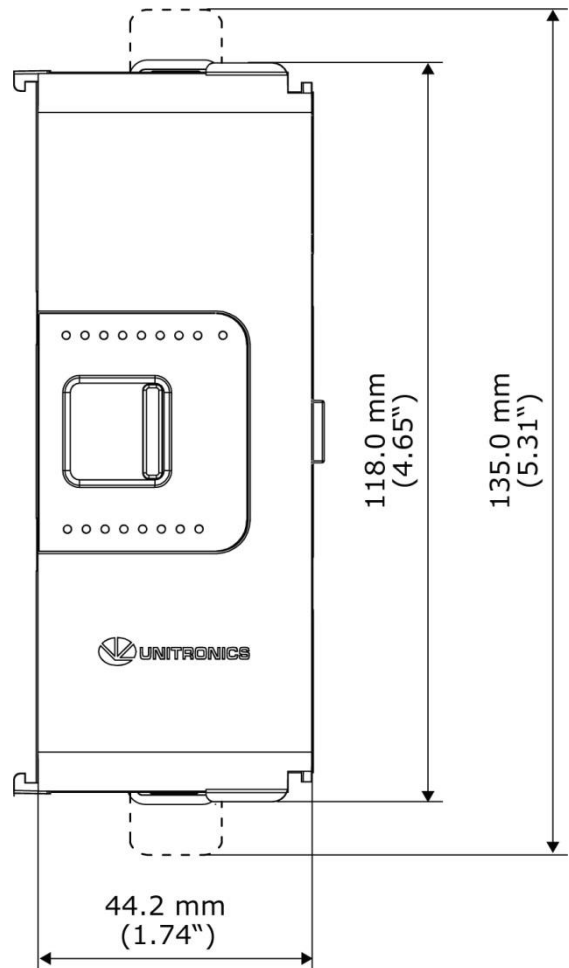
| Dimensions | |
|------------|---------------------------|
| Weight | 0.13 Kg (0.287 lb) |
| Size | Refer to the images below |



Top View



Side View



Front View

Notes:

1. The UID-0808THS utilizes two high speed blocks that can each be assigned either to the inputs or to the outputs.
2. Four inputs may be configured to function either as normal, or as high speed digital inputs, and can support a total of two shaft encoders.
3. Two outputs are high speed, up to 250kHz, and may function as normal or high-speed PWM outputs (same frequency and different duty-cycles). Two outputs are normal speed, and may function as normal-speed PWM outputs (same frequency but different duty-cycles).
4. Inputs I0, I1, I4, and I5 can be configured as either normal digital inputs or as high speed inputs that can receive high speed pulse signals from sensors or shaft encoders. High speed inputs specifications apply only when inputs are configured as high speed inputs.
5. Outputs O0 and O1 can be configured as either normal digital outputs or as high speed PWM outputs. Outputs O4 and O5 can be configured as either normal digital outputs or as normal PWM outputs. PWM outputs specifications apply only when outputs are configured as PWM outputs.
6. Outputs O0 and O1 share the same frequency but capable of producing different duty-cycles; Outputs O4 and O5 share the same frequency but capable of producing different duty-cycles.
7. Current consumption does not include load current.

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DOC27018-A8 08/13