## 1.1 General Specifications

| | |
|---|---|
| Required Power (Steady State) | <230mA @ 5V<br><16mA @ 24V |
| Digital Inputs | 4 |
| Relay Outputs | 4 |
| Relative Humidity | 5-95% non-condensing |
| Port Connectors | Phoenix Contact 2201780 |
| Port Wiring | 16-24 AWG / 0.2-1.5mm² |
| Operating Air Temp | -40°C (-40°F) to 60°C (140°F) |
| Storage Temp | -40°C (-40°F) to 85°C (185°F) |
| Weight | 110g (3.87 oz.) |
| Dimensions | 76.5mm x 124.5mm x 19mm<br>3" x 4.9" x 0.75" |
| Certifications (UL/CE) | North America:  https://hornerautomation.com/certifications/<br>Europe: https://www.hornerautomation.eu/support/certifications-2/ |

## 1.2  Digital Inputs

| | |
|---|---|
| Inputs per Module | 4 |
| Commons per Module | 4 |
| Input Voltage Range | 12 to 24VDC |
| Absolute Max Voltage | 32VDC |
| Input Impedance | 10kΩ |
| I/O Indication | Status LED per Input |
| Logic Polarity | Selectable - common for all four inputs |
| Connector Tye | Phoenix Contact 2202234 |

## 1.3  Digital Outputs - Relay

| | |
|---|---|
| Outputs per Module | 4 |
| Commons per Module | 4 |
| Max Output Current per Relay | 3 A |
| Max Output Voltage | 120VAC |
| Contact Isolation to Ground | 500VDC |
| Expected Life | 100k @ rated load (resistive) |
| Type | 1a |

## WIRING
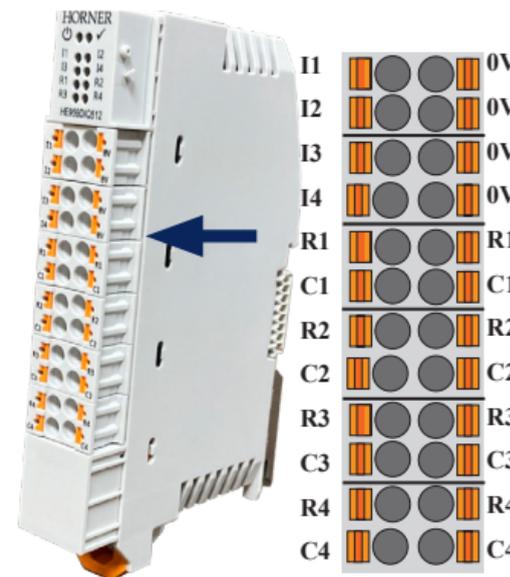


| 4 RELAY OUTPUTS | | | |
|---|---|---|---|
| Signal | Description | Signal | Description |
| I1 | Digital Input 1 | 0V | Common |
| I2 | Digital Input 2 | 0V | Common |
| I3 | Digital Input 3 | 0V | Common |
| I4 | Digital Input 4 | 0V | Common |
| R1 | Relay Output 1 | R1 | Relay 1 |
| C1 | Common 1 | C1 | Relay Common 1 |
| R2 | Relay Output 2 | R2 | Relay 2 |
| C2 | Common 2 | C2 | Relay Common 2 |
| R3 | Relay Output 3 | R3 | Relay 3 |
| C3 | Common 3 | C3 | Relay Common 3 |
| R4 | Relay Output 4 | R4 | Relay 4 |
| C4 | Common 4 | C4 | Relay Common 4 |

**NOTE:** Wiring used for main wiring should be 300V 105C rating or higher.

⚠ Relay outputs should be connected to the same voltage levels (e.g. all connected to 132VAC supply sources or all connect to 24V supply sources).

### Relay Output Wiring
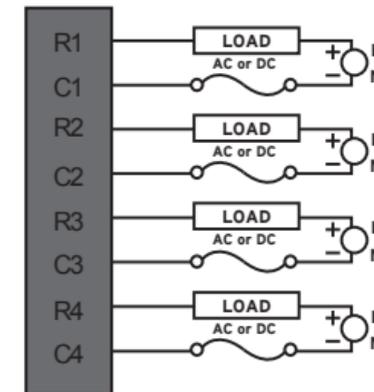


### Digital Inputs Wiring
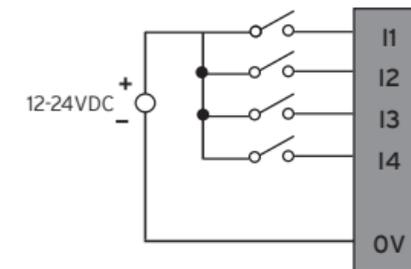


⚠ Digital Inputs should be connected to the same voltage levels (e.g. all connected to 24VDC).

## WARNINGS

**WARNING** - If the equipment is used in a manner not specified by Horner APG, the protection provided by the equipment may be impaired.

**WARNING - EXPLOSION HAZARD** - Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous
**AVERTISSEMENT - RISQUE D'EXPLOSION** -Ne débranchez pas l'équipement tant que l'alimentation n'a pas été coupée ou que la zone n'est pas dangereuse.

**WARNING - EXPLOSION HAZARD** - Substitution of any component may impair suitability for Class I, Division 2
**AVERTISSEMENT - RISQUE D'EXPLOSION** -Le remplacement de tout composant peut nuire à la compatibilité avec la classe I, division 2

**WARNING – POSSIBLE EQUIPMENT DAMAGE** - Remove power from the I/O Base and any peripheral equipment connected to this local system before adding or replacing this or any module.
**AVERTISSEMENT - DOMMAGES POSSIBLES À L'ÉQUIPEMENT** - Coupez l'alimentation de la base d'E / S et de tout équipement périphérique connecté à ce système local avant d'ajouter ou de remplacer ce module ou tout autre module.

**WARNING** -  Outputs should be connected to the same voltage levels (all connect to 24V supply sources)
**WARNING** - Digital Outputs are non-isolated and considered hazardous live.
**WARNING** - Loads for outputs require a Class 2 or Limited Power Source from a UL Listed power supply.

## SAFETY

a.   All applicable codes and standards should be followed in the installation of this product.

b.   Shielded, twisted-pair wiring should be used for best performance.

c.   Shields should be grounded at one end only, preferably at the end providing the best noise shunting.

## TECHNICAL SUPPORT

For further details, please refer to the Datasheets on the Horner website.

For assistance, contact Technical Support at the following locations:

**North America**
+1 (317) 916-4274
www.hornerautomation.com
APGUSATechSupport@heapg.com

**Europe**
+353 (21) 4321-266
www.hornerautomation.eu
technical.support@horner-apg.com

## INSTALLATION

The HE959DIQ512 is compact and mounts on a DIN-rail. Each I/O module installed adds width in increments of 19mm.

**NOTE:** The distance between wiring duct and surrounding modules should be at least 50mm apart.

OCS-I/O modules can be added after the OCS-I/O base has been installed on the DIN-rail and can be hot swapped with power applied.  I/O scanning will stop until the correct modules for the system are detected in all slots.

I/O modules are physically added with the following procedure:

1.   Connect the bus connectors together to form a backplane that can accept up to 8 modules including the CNX116 or another base.
2.   Snap the bus connectors into the DIN rail.  The DIN rail should be 35 mm x 7.5 mm and made to EN 60715 standards.
3.   Place the OCS-I/O base to the leftmost connector.
4.   Inset modules buy latching at the top of the DIN rail first and rocking down until the latch at the bottom of the DIN rail engages.
5.   To remove a module, insert a flat blade screwdriver into the metal DIN rail latch at the bottom of the module.  Pry down to the release the latch, the rock the module up and off the DIN Rail. Modules may be removed while powered however I/O scanning on the remaining modules will stop and I/O will go to the default state until a new module is inserted and all modules in the configuration are present.

# HORNER
AUTOMATION GROUP

CE

## OCS-I/O

### Digital Input/Relay Output Module - HE959DIQ512