



ADVANCED ACCESS CONTROL

COMPONENT CODES:

HMI900-1-0-UL-XX HMI901-1-0-UL-XX

I/O Module

INSTALLATION MANUAL

Specifications

The I/O Module is a Group Expansion Module that works in conjunction with a PMTronics Control Module (CM), offering eight digital inputs and 4 output relays.

Working Environment

Plastic Housing	Designed to work in an indoor (dry) environment similar to IP20, the module is not sealed against water.
PCB Card for IPS enclosure	Designed to work in an indoor (dry) environment similar to IP20, the Card is not sealed against water.

Access Control Levels

Destructive attack	Level 2
Line Security	Level 1
Endurance	Level 3

Power

Input Voltage	12 V DC to 15 V DC, polarity protected.	
Power Requirements	Current (mA)	Power (W)
Input Voltage 12 V DC, Relays off	50	0.6
Input Voltage 12 V DC with all 4 relays activated	230	2.7
Relay Power Requirements	~0.4 W per Relay in use.	

Communication with the Control Module

Electrical Interface.....	Propriety Group-Bus
Baud Rate	115 200
Encryption	AES Encryption

Digital Inputs

Type	8 Dry-contact inputs with End-of-line (EOL) Sensing.
Detection Resistance Range	< 2 kΩ.
Protection Range.....	+15 V continuous.

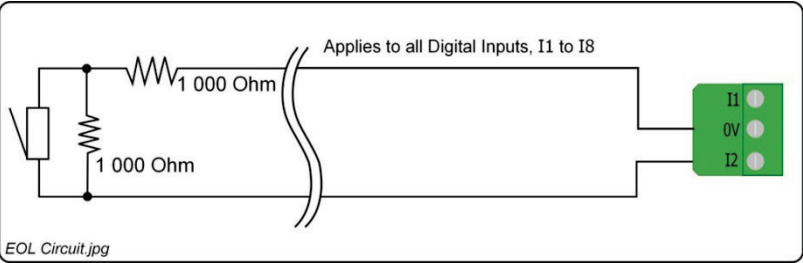


Figure 1: End-of-Line (EOL) Sensing Circuit

Relays

Relay Output	4 Independent, single-pole, double-throw (SPDT) Relays, each with NO, COM and NC contacts.
Relay Contact Ratings.....	10 A at 28 V DC, 5 A at 220 V AC, 12 A at 120 V AC.
Operations.....	100 000 Minimum.

LED Status and Diagnostic Indicators

Status LED (RED)

Supply Voltage Status.....	Off when supply voltage is too high, or too low
Upgrade Mode	Flashing at a steady rate during upgrade
Communications Failure	Two brief flashes, repeating

Data LED (GREEN)

Flashing Green during communication

Digital Inputs (1-8)

(1-8)	Continuous Green on detected contact closure
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Relays (1-4)

(1-4)	Continuous Red on activation of the Relay
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INSTALLATION INFORMATION

Accessories

CAUTION: DO NOT use the Metal-oxide Varistors (25 Vrms, 500 A, 77 V max clamping) with mains power applications.

Find the following when unpacking the I/OM:

Plastic Group Module Housing (HMI700)

A PMT I/O Module (I/OM) is supplied in a Customizable Black, ABSPlastic housing with the following features/components:

- Housing, consisting of a Base, a Cover and a selection of Cable Entry Gland Plates.
- The Housing Base has:
 - Two slots to hold the User-Selectable Cable Entry Plates
 - Six knock-out Cable Entry Points
 - Four Drill-out Cable Entry Points
- The Housing Cover and Base are held together with two Allen Head Screws (M4 x 10 mm) through the cover of the housing.
- Five Ziploc bags, containing the following:
 - Four Stand-Offs (for spacing the I/OM away from the mounting surface and two Group Connector Covers (for closing off the group connectors when not in use.)
 - Four metal-oxide varistors 25 Vrms, 500 A, 77 V max clamping.
 - A 2mm Allen Key and a spare Hex Head Screw
 - Two extra gland plates
 - An extra Fixed Address Label, for installation site mapping

NOTE: *The installer needs to obtain fasteners (< 5 mm [0.167"] diameter to fit through the supplied stand-offs) that are suitable for securing the module to the mounting surface – these are NOT supplied in the kit.*

PCB Card for IPS Housing (HMI701)

Included in the packaging is:

- PZMTronics Digital I/O PCB Card on a base plate.
- An extra fixed address label, for installation site mapping
- Four metal-oxide varistors 25 Vrms, 500 A max clamping

General

Remember the following when installing the I/O Module:

Grouping

Grouping allows for the easy addition or replacement of Modules, it saves on wiring and requires only one DC Power Supply connection for the Group.

The following applies:

- The I/OM may be plugged directly into its associated Control Module, or into an existing Group consisting of a Control Module and other Expansion Modules.
- No more than eight Expansion Modules can be grouped with their associated Control Module.
- The I/OM is powered and controlled via its Group Connector.

Arc Suppression

Snubber devices are recommended for EMF Flyback and Arc Suppression when driving an inductive load with the Relay, see Figure 2.

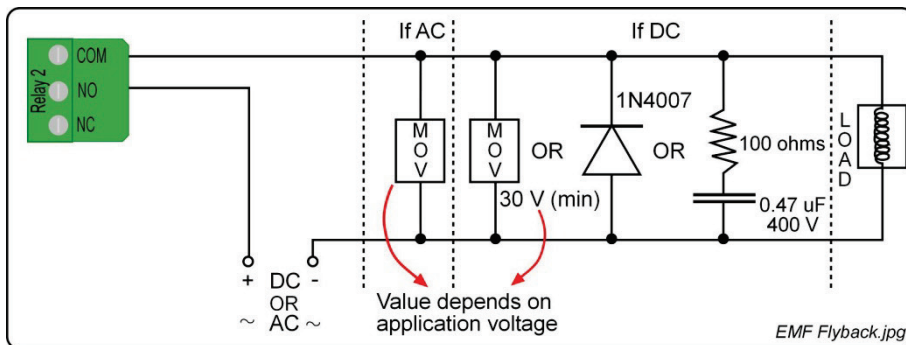


Figure 2: EMF Flyback and Arc Suppression

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Mounting the PMTronics(I/OM) I/O Module

CAUTION: Make certain that you mount the I/OM on a vibration-free surface.

NOTE: The I/OM can be mounted onto virtually any surface including metal.

Grouping

Provided there are less than eight other Expansion Modules already grouped with the Control Module, you may add the I/OM to an existing Group:

- Remove the Housing Cover from the I/OM and plug the I/OM into the Group Socket on the right hand side of the Control Module – or that of the outermost Expansion Module in the group.
- Holding the I/OM square against its neighboring Module, mark the mounting hole locations through the mounting holes in the back of the Housing Base.
- Remove the I/OM, drill the mounting holes.
- Use the plastic Stand-Offs to provide space for cables behind the group, or if the other modules in the Group are already mounted with stand-offs.
- Mount the I/OM Housing Base firmly to the mounting surface using fasteners (not included) appropriate for the mounting surface material.
- Select the gland plates that best suit the installation and/or knock out the cable entry points as needed.
- Connect the digital inputs and the relay terminals as necessary for the installation
- Commission the I/OM via the menu options on the Access Control Application.
- Replace the I/OM Housing Cover and fasten closed with the two Allen head screws provided.

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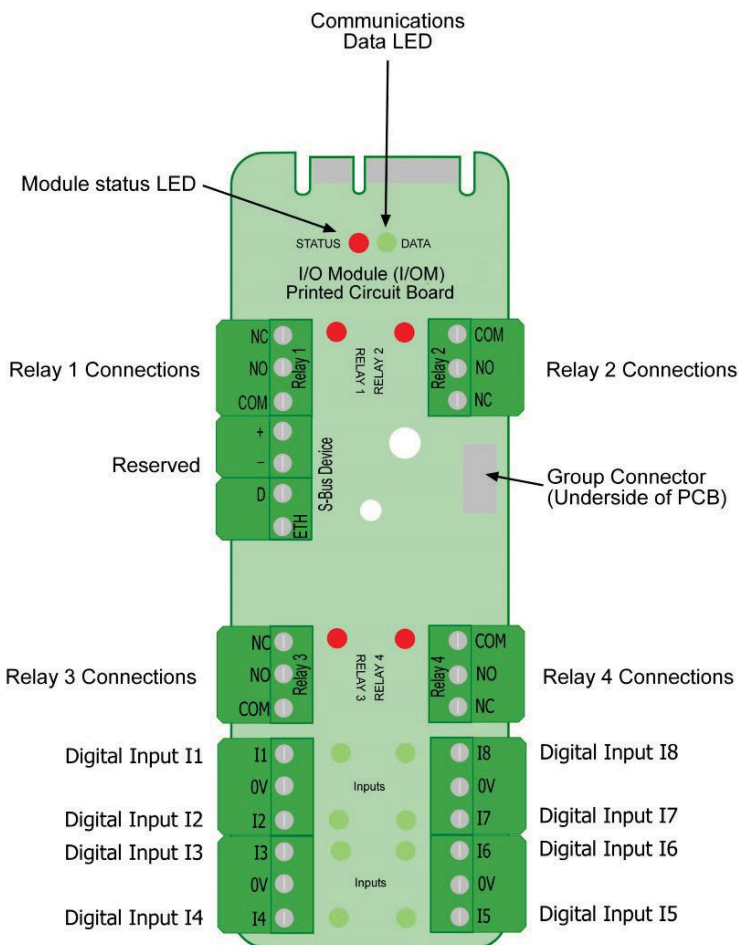


Figure 3: Key Component Positions

Connecting to a grouped I/O Module

Figure 4 shows a detailed electrical connection diagram for the (Grouped) I/O Module.

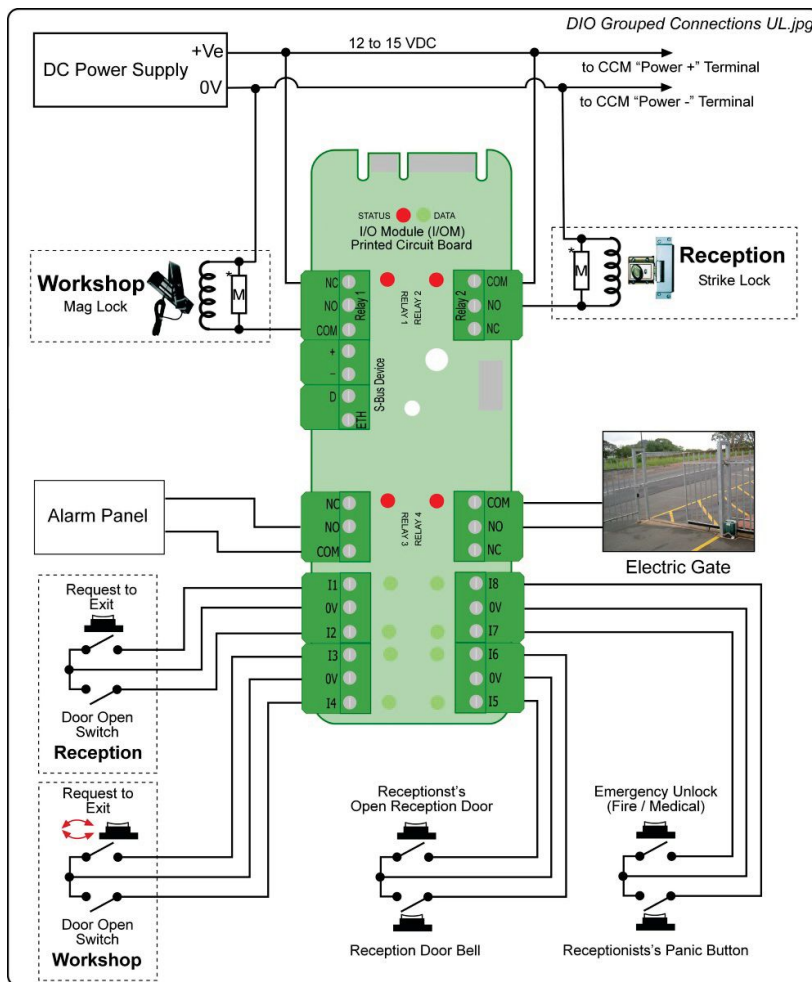


Figure 4: Typical (Grouped) I/O Module Electrical Connections

NOTE: * Refer to Figure 2 for Arc Suppression details.

(See further Notes on the next page)

NOTE: **Figure 4** shows typical connections to the I/OM when grouped with its Control Module.

The 8 digital inputs and the logic driving the 4 relays are configurable from within the OMNIA Software.

Note: **Figure 4** doesn't show the end-of-line resistors on the Digital Input Circuits - See Figure 1 (on page 2) for the correct placement of the 1k Ω EOL Resistors.

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Fixed Address Label

Once the installation is complete, do the following:

- Sketch a rough site plan.
- Attach the loose additional Fixed Address Label, packaged with the I/OM, in the position of the I/OM on the sketched site plan.
- When the system installation is complete and all the modules are represented on the site plan by their Fixed Address Labels, file the site plan for future reference.

Unit Serial Numbers

All units have a unique serial number. The format of the serial number is as follows:

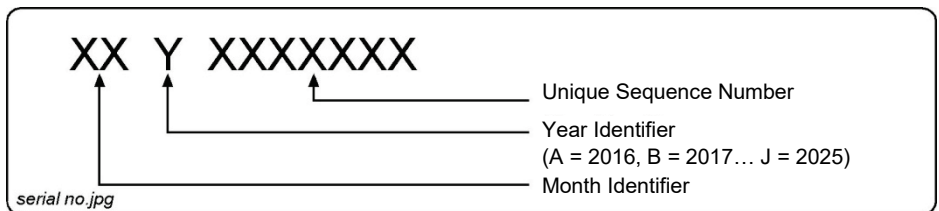


Figure 5: Unit Serial Numbers

GUARANTEE OR WARRANTY

This product conforms to our Guarantee or Warranty details placed on our Web Site, to read further please go to www.pmtronics.com

ENVIRONMENTAL PROTECTION



Waste electrical products should not be disposed of with household/office waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.

USER NOTES



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www.pmtronics.com

NOTE: *This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.*



This manual is applicable to the PMT (I/OM) I/O Module, Product Order Codes: HMI900-0-0-UL-XX, HMI901-0-0-UL-XX (The last two digits of the PMT stock code indicate the issue status of the product).			
HMI300-0-0-UL-00	Issue 01	June 2021	IMPRO\GEN3 Access Portal Era\Cluster Modules\DIO Digital IO Module\UL Manual\ LATEST MANUAL\condio-insm-UL-01.pdf