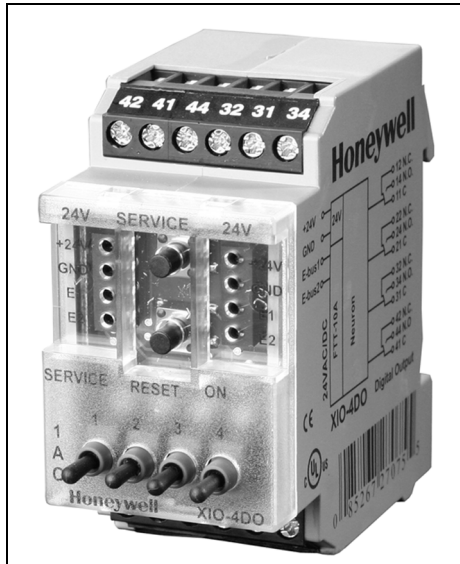


## Compact I/O Module

### XIO-4DO LON<sup>®</sup> DIGITAL OUTPUT MODULE

#### INSTALLATION INSTRUCTIONS



## GENERAL

The Honeywell XIO-4DO LON<sup>®</sup> Digital Output Module is a LON Module with four digital outputs to switch electrical components like motors, contactors, lamps, blinds etc.

In a LON installation the four relays can be individually activated by standard network variables. The relays are provided with a manual control function that is only activated in the "Configured Mode". In addition the module includes a wiper function. Settings are done by LNS<sup>®</sup>-Plugin.

## SPECIFICATIONS

### Electrical Ratings:

Supply Operating Voltage: 20 to 28 V AC/DC.  
Current Consumption: 205 mA (AC) / 67 mA (DC).  
Duty cycle: 100%.  
Recovery time: 550 ms.

### Terminal Blocks:

Supply and Bus: 16 AWG (1.5 mm<sup>2</sup>).  
(terminal block and strapping plug included with backing).  
Digital Outputs: 14 AWG (2.5 mm<sup>2</sup>).

### LON Interface:

Transceiver: FTT10A free topology.  
Neuron: 3120, 2K Flash downloadable.  
Data format: standard network variables (SNVT).  
Transmission rate: 78 kBit/s.  
Maximum Length:  
Line topology: 8858 ft. (2700 m) / 64 nodes.  
Free topology: 1640 ft. (500 m) / 64 nodes.  
Cabling: Twisted Pair.

### Display:

Operation: green LED.  
Function: yellow LED for status (service).  
Output status: yellow LED.

### Temperature Ratings:

Operating: 23° F to 131° F (-5 °C to +55 °C).  
Storage: -4° F to +158° F (-20 °C to +70 °C).

### Dimensions (W x H x D):

1.4 x 2.8 x 2.9 in. (35 x 70 x 74 mm).

**Weight:** 4 ounces (104 grams).

**Mounting Position:** Any.

**Mounting:** DIN rail per EN 50022.

### Output:

Output contact: 4 changeover contacts.  
Contact material: AgNi.  
Switching voltage: 250 V AC.  
Nominal current: 5 A.  
Total current for all contacts: maximum 12 A.  
Contact fuse: 5 A.  
Mechanical endurance: 1.5 x 10<sup>7</sup> switching cycles.  
Electrical endurance: 1.5 x 10<sup>5</sup> switching cycles.  
Permissible switching frequency: 6/min. at nominal current.

### Construction Material:

Housing and Terminal Blocks: Polyamide 6.6 V0.  
Faceplate: Polycarbonate.

### Protective circuitry:

Operating voltage: polarity reversal protection.

### Protection:

IP40 housing DIN 40050.  
IP20 terminal blocks DIN 40050.



## SAFETY INSTRUCTIONS

### NOTES REGARDING DEVICE DESCRIPTION

These instructions include indications for use and mounting of the device. In case of questions that cannot be answered with these instructions, please consult the product supplier or manufacturer. It is the responsibility of the equipment installer to ensure that all federal, state and local codes are followed.

### SAFETY INSTRUCTIONS

- Keep these Installation Instructions for industrial safety and the prevention of accidents.
- Only qualified personnel shall do mounting and installation work with these devices, see section titled “Qualified Personnel”.
- The information in these instructions must be read and understood by every person using this device.

### QUALIFIED PERSONNEL

Qualified personnel in the sense of these instructions are persons who are well versed in the use and installation of such devices and whose professional qualification meets the requirements of their work.

This includes, for example:

- Qualification to connect the device according to applicable specifications and regulations, and a qualification to put this device into operation, to power it down, or to activate it by respecting the internal directions.
- Knowledge of safety rules.
- Knowledge about application and use of the device within the equipment system.

## BEFORE INSTALLATION

1. Unpack the XIO-4DO LON Digital Output Module.
2. Check the equipment and report any damage to a Honeywell representative.
3. Read all of these instructions and ensure they are understood.

## MOUNTING

Mount the XIO-4DO LON Digital Output Module on standard DIN rail per EN 50022 (1.38 x 0.3 in. [35 x 7.5 mm]), in junction boxes and/or on distribution panels.

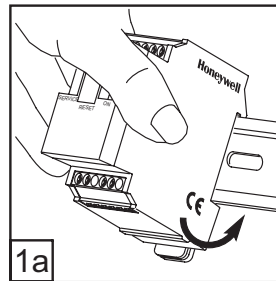
## INSTALLATION



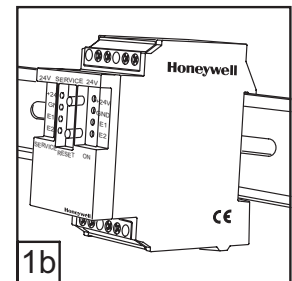
### CAUTION

**Electrical installation and device termination shall be accomplished by qualified persons only, by respecting all applicable specifications and regulations.**

1. Power down the equipment. Mount the module on the DIN rail.

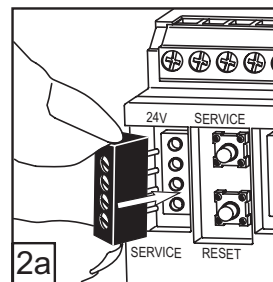


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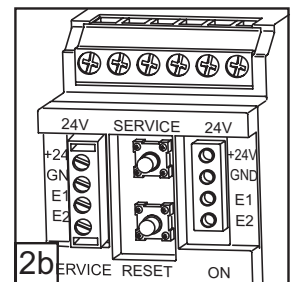


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2. Plug in the terminal block for bus connection.

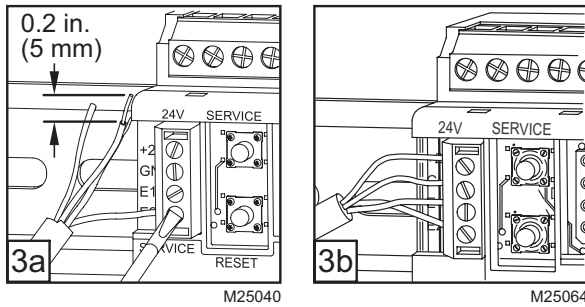


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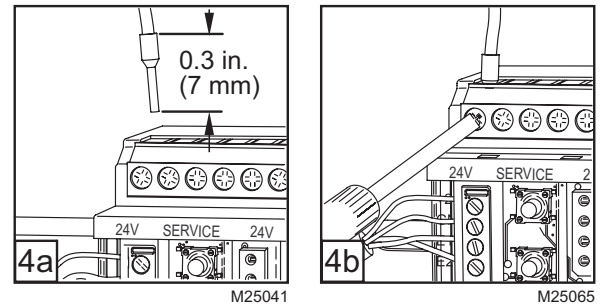
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3. Prepare the cable for bus connection:

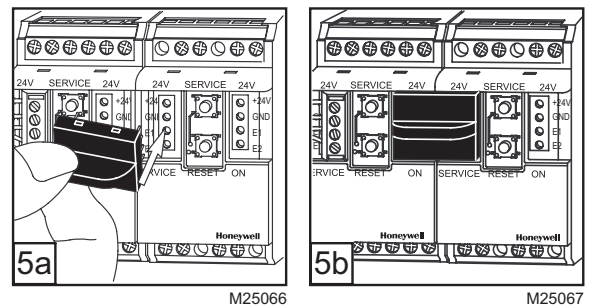


- Remove about 0.75 in. (2 cm) of the plastic cable sheath.
- Strip 0.2 in. (5 mm) insulation from each wire. Put a wire end sleeve on stranded wires.
- Insert the wire to the respective contact and secure it by screwing down the contact screw.
- Wire cross section of the 4 pole terminal block bus/main connection:
  - Maximum 16 AWG (1.5 mm<sup>2</sup>) single wire.
  - Maximum 18 AWG (1.0 mm<sup>2</sup>) stranded wire.
  - Wire diameter minimum 28 AWG (0.3 mm) up to 16 AWG (1.4 mm).

4. Prepare cable for module connections

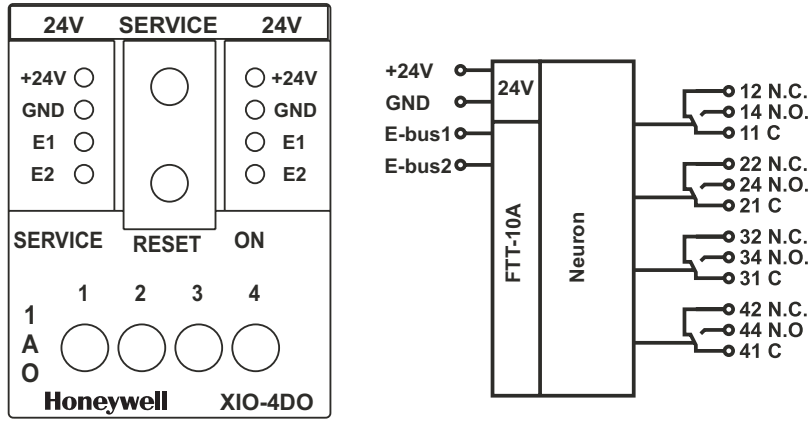


- Strip the wires by 0.3 in. (7 mm). Put a wire end sleeve on stranded wires.
  - Insert the wire into the respective module contact and secure it by screwing down the contact screw.
  - Wire cross section of the module contacts:
    - Maximum 12 AWG (4.0 mm<sup>2</sup>) single wire.
    - Maximum 14 AWG (2.5 mm<sup>2</sup>) stranded wire.
    - Wire diameter: minimum 28 AWG (0.3 mm) up to maximum 10 AWG (2.7 mm).
5. The module can be aligned without interspace. Use the strapping plug to connect bus and supply voltage when the modules are mounted in series. The modules can be mounted in series without interspace. The maximum number of modules connected in series is 15, with each group needing an external power supply.



# TERMINATION

Figure 1 illustrates the terminations for the XIO-4DO LON Digital Output Module.

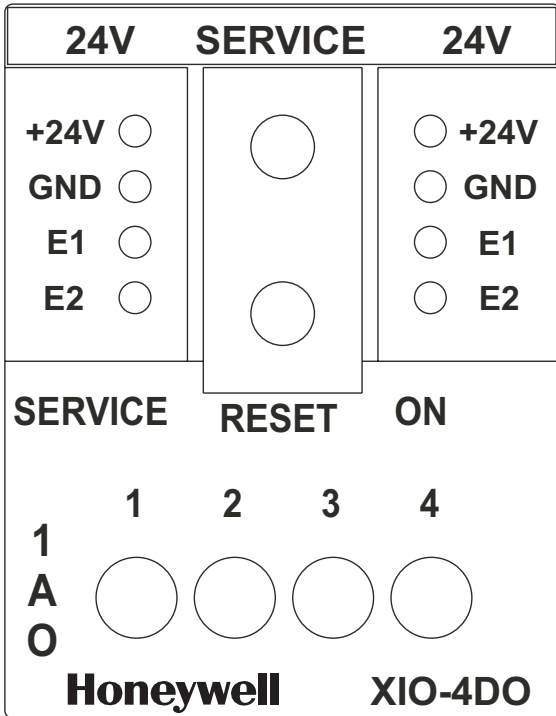


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Fig. 1. Termination diagram for the XIO-4DO.

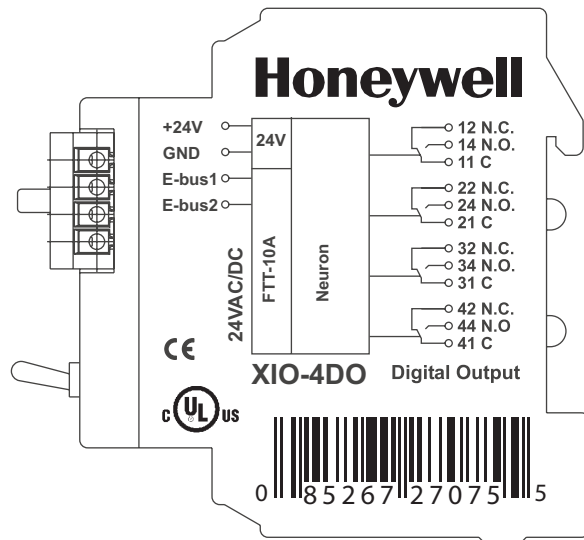
# WIRING

Wiring of the XIO-4DO must be accomplished in accordance with federal, state, and local requirements. Figures 4 and 5 show sample diagrams of wiring of the XIO-4DO.



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Fig. 2. Front panel diagram of XIO-4DO.



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Fig. 3. Side panel diagram of XIO-4DO.

## SOFTWARE DESCRIPTION

The Node Object monitors and controls the functions of the different objects in the device. It supports the basic functions Object-Status and Object-Request required by LonMark<sup>®</sup>. Refer to Fig. 4 for a basic illustration of Node Objects. The following objects are monitored by the Node Object:

**nviRequest**  
**nvoStatus**  
**nvoFileDirectory**

**NVT\_obj\_request**  
**SNVT\_obj\_status**  
**SNVT\_address**

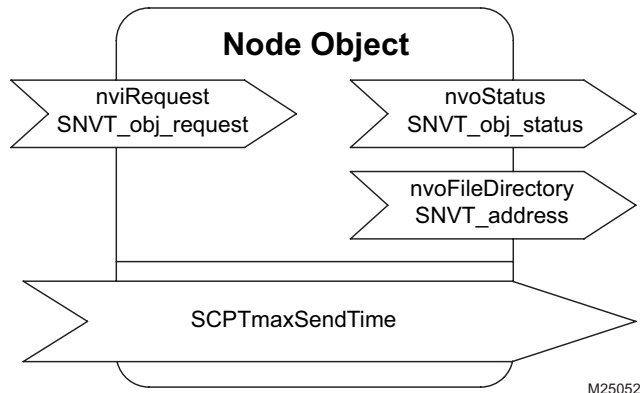


Fig. 4. XIO-4DO Node Object.

**SCPTmaxSendTime**

**SNVT\_time\_sec**

All output variables described below will be issued at the latest at the end of the preset period even without status change.

Time settings: 0 timer function off-state  
6553.4 s (factory setting 60 s)

**nvoManualFB\_1...4**

**SNVT\_switch**

Transmits the manual control feedback.  
Manual switch on automatic 100,0 1  
Manual switch on "0" or "1" 0,0 0

**SCPTInvertOut**

**SNVT\_lev\_disc**

Inverting the relay switching states when actuated by nviValue\_1...4.  
Applicable values:  
ST\_ON contact open; nviValue\_1...4 set.  
ST\_OFF contact closed; nviValue\_1...4 set.

**SCPTdelayTime**

**SNVT\_time\_sec**

Wiper function. When nviValue\_1...4 is set and the preset period is over the relay changes status. In the manual mode the wiper function is off-state.  
Applicable values: 0 wiper function off-state  
6553.4 s (factory setting 0 s)

**nviValue\_1...4**

**SNVT\_switch**

The respective relay is switched on through the nviValue\_1...4 variable with a value having a value portion above 0 and a state portion of 1, in all other cases the relay is switched off.

**nvoFeedback\_1...4**

**SNVT\_switch**

Transmits the feedback value of the object.  
Automatic mode ON: 100,0 1  
Automatic mode OFF: 0,0 0  
Manual mode ON: 100,0 -1  
Manual mode OFF: 0,0 -1

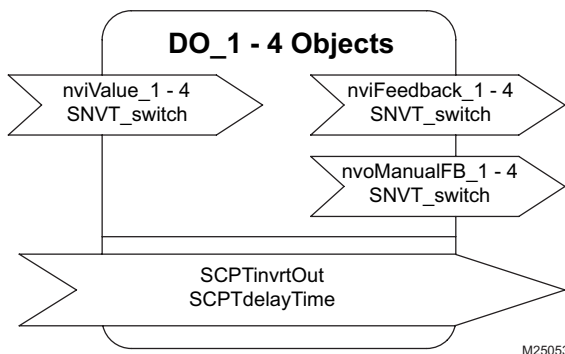


Fig. 5. XIO-4DO DO Objects.

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**Automation and Control Solutions**

Honeywell International Inc.  
1985 Douglas Drive North  
Golden Valley, MN 55422  
customer.honeywell.com

Honeywell Limited-Honeywell Limitée  
35 Dynamic Drive  
Scarborough, Ontario M1V 4Z9

**Honeywell**