

# SpaceLogic IP-IO Plant Room Controllers

EcoStruxure™ Building



## Introduction

SpaceLogic™ IP-IO module provides I/O expansion to your HVAC application over BACnet/IP. The module can share its I/O resources across applications running in automation servers, BACnet/IP controllers, or third-party systems. With the support of local alarms and local trend logs, the IP-IO module avoids unnecessary traffic over the network while being able to log important information locally. The IP-IO module can be installed near facilities in the field, away from the automation server or the BACnet/IP controller. All IP-IO models support an optional display that provides insight and control of the inputs and outputs.

The IP-IO module has the following features:

- IP enabled with dual-port Ethernet switch
- BACnet/SC node
- Versatile onboard I/O point mix
- Advanced monitoring
- Commission mobile application for commissioning of the controller before the BMS is in place
- Full EcoStruxure Building Operation software support, providing efficient engineering tools

For information on the maximum number of IP-IO modules that can be used with an automation server or a BACnet/IP controller, see the Architectural Guidelines.

# SpaceLogic IP-IO

## IP connectivity, flexible network topologies, and support for BACnet/SC applications

The IP-IO module is based on open protocols that simplify interoperability, IP configuration, and device management, and can be enabled as BACnet/SC nodes for increased cybersecurity:

- IP addressing
- BACnet/IP or BACnet/SC communications
- DHCP for easy network configuration

The IP-IO module has a dual-port Ethernet switch, which enables flexible network topologies:

- Star
- Daisy chain
- Rapid Spanning Tree Protocol (RSTP) ring

In a star topology, the IP-IO module and the parent EcoStruxure BMS server are individually connected to an Ethernet switch. Daisy-chain multiple IP-IO modules together to reduce the installation time and cost. Use an RSTP ring topology when you

want a non-operational IP-IO module to be detected and recovered quickly and efficiently.

## BACnet/SC (Secure Connect) support

The IP-IO module supports BACnet/SC applications as a BACnet/SC node. This allows the IP-IO module to be used in a BACnet/SC network, which allows secure transport of BACnet traffic and information between BACnet/SC devices over private and public networks without the need for BBMDs, VLANs, and VPNs, because the BACnet/SC protocol uses WebSocket technology and TLS 1.3 encryption. In addition, BACnet/SC uses certificate management to help ensure only those devices authorized to be on a BACnet/SC network can operate on that network.

## Models with a versatile mix of I/O points

The IP-IO module comes in three models with different I/O point count and a versatile mix of I/O point types that match a wide variety of applications. The universal inputs/outputs are highly flexible and can be configured as either inputs or outputs.

### I/O Point Types by IP-IO Models

| I/O Point Types                 | IP-IO-DI10 | IP-IO-UIO10 | IP-IO-UIO5DOFA4 |
|---------------------------------|------------|-------------|-----------------|
| Digital inputs                  | 10         | -           | -               |
| Universal I/O Type Ub           | -          | 10          | 5               |
| Relay outputs Form A            | -          | -           | 3               |
| High power relay outputs Form A | -          | -           | 1               |

### Configurations by I/O Point Types

| Configurations               | Digital Inputs | Universal I/O Type Ub | Relay Outputs Form A | High Power Relay Outputs Form A |
|------------------------------|----------------|-----------------------|----------------------|---------------------------------|
| Digital inputs               | yes            | yes                   | -                    | -                               |
| Counter inputs               | yes            | yes                   | -                    | -                               |
| Supervised inputs            | -              | yes                   | -                    | -                               |
| Voltage inputs (0 to 10 VDC) | -              | yes                   | -                    | -                               |
| Current inputs (0 to 20 mA)  | -              | yes                   | -                    | -                               |
| Temperature inputs           | -              | yes                   | -                    | -                               |
| Resistive inputs             | -              | yes                   | -                    | -                               |

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Continued

| Configurations                | Digital Inputs | Universal I/O Type Ub | Relay Outputs Form A | High Power Relay Outputs Form A |
|-------------------------------|----------------|-----------------------|----------------------|---------------------------------|
| 2-wire RTD temperature inputs | -              | yes                   | -                    | -                               |
| Voltage outputs (0 to 10 VDC) | -              | yes                   | -                    | -                               |
| Digital outputs               | -              | -                     | yes                  | yes                             |
| Digital pulsed outputs        | -              | -                     | yes                  | yes                             |
| PWM outputs                   | -              | -                     | yes                  | yes                             |
| Tristate outputs              | -              | -                     | yes                  | -                               |
| Tristate pulsed outputs       | -              | -                     | yes                  | -                               |

## Digital inputs

The digital inputs can be used for cost effective sensing of multiple dry contact digital inputs in applications, such as equipment status monitoring or alarm point monitoring. As counter inputs, digital inputs are commonly used in energy metering applications.

## Universal inputs/outputs

The universal inputs/outputs are ideal for any mix of temperature, pressure, flow, status points, and similar point types in a building control system.

As counter inputs, the universal inputs/outputs are commonly used in energy metering applications. As RTD inputs, they are ideal for temperature points in a building control system. As supervised inputs, they are used for security applications where it is critical to know whether or not a wire has been cut or shorted. These events provide a separate indication of alarms and events in the system.

For all analog inputs, maximum and minimum levels can be defined to automatically detect over-range and under-range values.

The universal inputs/outputs can also be used as voltage outputs, without the need for external bias resistors. Therefore, the universal inputs/outputs support a wide range of devices, such as actuators.

## Relay outputs

The relay outputs support digital Form A point types. The Form A relays are designed for direct load applications.

## High power relay output

The high power relay output is ideal for switching loads of up to 12 A, such as electrical heating elements.

## Advanced monitoring

The I/O module supports local trends and alarms, enabling local operation when the I/O module is offline.

With user-defined fallback values, the I/O module outputs will be in a predictable state in cases of network disruption.

The battery-free power backup of the memory and real-time clock helps prevent data loss and allows seamless and quick recovery after a power disruption.

All IP-IO models can be equipped with a display add-on module (same module as used for the MP-C), which features an LCD display and five keys. With this module, you can manually override analog and digital outputs for testing, commissioning, and maintenance of equipment connected to the outputs. The display module's dedicated processing power ensures reliable override for maintenance applications. The override status can be viewed in EcoStruxure Building Operation WorkStation and WebStation, enabling precise monitoring and reliable control.



Display module

In WorkStation, you update the firmware of multiple I/O modules at the same time and with minimum down time. The EcoStruxure BMS server keeps track of the installed firmware to support

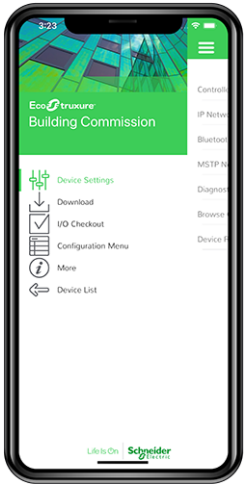
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backup, restore, and replacement of the I/O modules. The server can host I/O modules of different firmware versions.

## Commission mobile application

The Commission mobile application is designed for local configuration, field deployment, and commissioning of IP-IO modules. The mobile application reduces the commissioning time, allows flexibility in project execution, and minimizes dependencies on network infrastructure.

The mobile application is designed for use with Android, Apple (iOS), and Microsoft Windows 10 and Windows 11 devices. For more information, see the EcoStruxure Building Commission Specification Sheet.



Commission mobile application

Using the Commission mobile application, you can connect to IP-IO modules and BACnet/IP controllers over the network. Using a wireless access point or a network switch, you can connect to a network of IP-IO modules and BACnet/IP controllers on the local IP network.

### Device configuration

With the Commission mobile application, you can easily discover IP-IO modules and BACnet/IP controllers on the IP network. You can change the configuration of each module and controller, including the BACnet and IP network settings, location, and parent server. To save engineering time, you can save common device settings and then reuse them for devices of the same type and model.

### Field deployment and I/O checkout

The Commission mobile application does not require an EcoStruxure BMS server or a network infrastructure to be in place. You can use the mobile application to load the IP-IO application directly into the local IP-IO module and deploy the IP-IO module. The IP-IO application can be created offline using Project Configuration Tool or WorkStation while preserving all

external bindings to server and controller applications using the IP-IO module's I/O points. You can also perform an I/O checkout to ensure that the IP-IO module's I/O points are configured, wired, and operating correctly.

## Full EcoStruxure Building Operation software support

The power of the I/O module is fully realized when it is part of an EcoStruxure BMS, which provides the following benefits:

- WorkStation/WebStation interface
- Device discovery
- Engineering efficiency

### WorkStation/WebStation interface

WorkStation and WebStation provide a consistent user experience regardless of which EcoStruxure BMS server the user is logged on to. The user can log on to the parent EcoStruxure BMS server to engineer, commission, supervise, and monitor the I/O modules and RP and MP controllers. For more information, see the WorkStation and WebStation specification sheets.

### Device discovery

The enhanced Device Discovery in WorkStation enables you to easily identify the I/O modules on a BACnet network and to associate the I/O modules with their parent server.

### Engineering efficiency

The engineering and maintenance of the I/O modules can be done very efficiently using the EcoStruxure Building Operation reusability features. With these features, you can create library items (Custom Types) for a complete I/O module application that contains I/O point configurations and all necessary objects such as trends and alarms. The I/O module application in the Custom Types library is reusable across all I/O modules of the same model. You can use the I/O module application as a base for creating new I/O modules intended for similar applications. You can then edit the I/O module application, and the changes are automatically replicated to all I/O modules, while each I/O module keeps its local values.

WorkStation supports both online and offline engineering of the I/O modules. You can make the configuration changes online or use database mode to make the changes offline. In database mode, the changes are saved to the EcoStruxure Building Operation database so that you can apply the changes to the I/O modules later.

Project Configuration Tool enables you to perform all the engineering off site, without the need for physical hardware, which minimizes the time you need to spend on site. You can run the EcoStruxure BMS servers virtually and engineer the RP and MP controllers and the I/O modules before you deploy your server, controller, and I/O module applications to the servers,



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controllers, and I/O modules on site. For more information, see the Project Configuration Tool specification sheet.

## Part Numbers for IP-IO

| Product                          | Part number   |
|----------------------------------|---------------|
| IP-IO-DI10                       | SXWPIOAA10001 |
| IP-IO-UIO10                      | SXWPIOBA10001 |
| IP-IO-UIO5DOFA4                  | SXWPIOCA10001 |
| IP-IO-DI10-BAA <sup>a</sup>      | SXWPIOAA10A01 |
| IP-IO-UIO10-BAA <sup>a</sup>     | SXWPIOBA10A01 |
| IP-IO-UIO5DOFA4-BAA <sup>a</sup> | SXWPIOCA10A01 |
| IP-IO-DI10-SMK <sup>b</sup>      | SXWPIOAA1S001 |
| IP-IO-UIO10-SMK <sup>b</sup>     | SXWPIOBA1S001 |
| IP-IO-UIO5DOFA4-SMK <sup>b</sup> | SXWPIOCA1S001 |

a) Buy American Act (BAA) compliant.

b) Approved for use in UL 864 smoke control systems. The smoke control (SMK) models are shipped with a validated UL 864 software version, which can differ from the latest released software. For information on the approved software revisions for the device when used in UL 864 smoke control systems, see the Smoke Control System Approved Software Revisions - EcoStruxure Building Management document, 01-16001-XX-en.

## Part Numbers for IP-IO Accessories

| Product   | Part number    |
|---|----------------|
| MP-C DISPLAY <sup>a</sup><br>(MP-C override display module)         | SXWMPCDSP10001 |
| MP-C-BAA DISPLAY <sup>b</sup><br>(MP-C BAA override display module) | SXWMPCDSP10A01 |
| DIN-RAIL-CLIP, DIN-rail end clip<br>package of 25 pieces            | SXWDINEND10001 |

a) Approved for use in UL 864 smoke control systems.

b) MP-C-BAA-DISPLAY is included in Buy American Act (BAA) compliant bundles along with either the MP-C-15A-BAA or MP-C-36A-BAA controller. MP-C-BAA-DISPLAY can only be ordered using the part number for the MP-C-15A-BAA bundle (SXWMPC15AB10A01) or MP-C-36A-BAA bundle (SXWMPC36AB10A01). MP-C-BAA-DISPLAY does not differ from MP-C DISPLAY in terms of hardware and functionality.

For more information on part numbers for Network Connectivity Accessories, see the Product Selection Guide - EcoStruxure Building.

## Specifications

| SpaceLogic IP-IO          |                                   |
|---------------------------|-----------------------------------|
| AC input                  |                                   |
| Nominal voltage           | 24 VAC                            |
| Operating voltage range   | +/- 20 %                          |
| Frequency                 | 50/60 Hz                          |
| Maximum power consumption | 17 VA                             |
| Power input protection    | MOV suppression and internal fuse |

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## DC input

|                           |                                   |
|---------------------------|-----------------------------------|
| Nominal voltage           | 24 to 30 VDC                      |
| Operating voltage range   | 21 to 33 VDC                      |
| Maximum power consumption | 9 W                               |
| Power input protection    | MOV suppression and internal fuse |

## Environment

|                                |  |
|--------------------------------|--|
| Ambient temperature, operating | -40 to +60 °C (-40 to +140 °F) for rooftop applications, horizontal installation only <sup>a</sup><br>0 to 50 °C (32 to 122 °F) at normal operation <sup>a</sup> |
|--------------------------------|--|

a) MP-C Display has an operating temperature range of -30 to +60 °C (-22 to +140 °F).

|                              |                                |
|------------------------------|--------------------------------|
| Ambient temperature, storage | -40 to +70 °C (-40 to +158 °F) |
|------------------------------|--------------------------------|

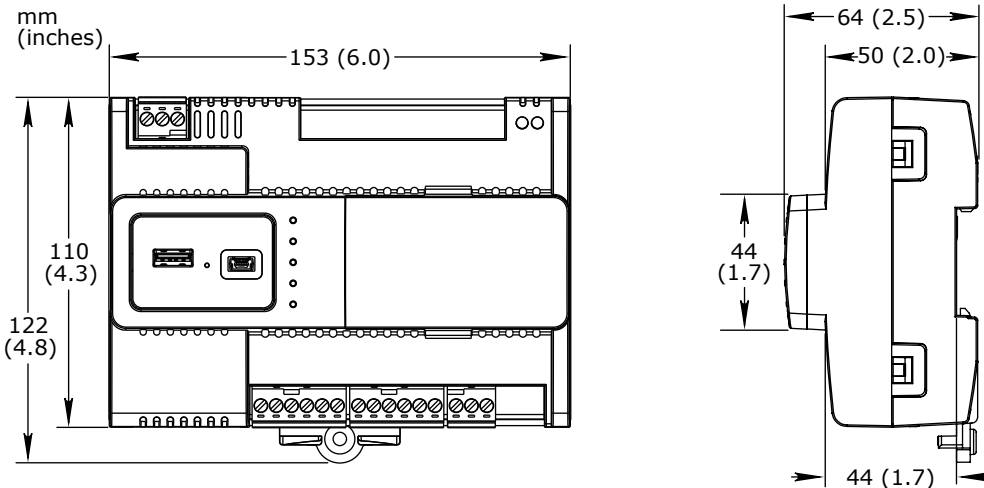
|                  |                        |
|------------------|------------------------|
| Maximum humidity | 95 % RH non-condensing |
|------------------|------------------------|

## Material

|                           |         |
|---------------------------|---------|
| Plastic flame rating      | UL94-5V |
| Ingress protection rating | IP 20   |

## Mechanical

|            |   |
|------------|---|
| Dimensions | 153 W x 110 H x 64 D mm (6.0 W x 4.3 H x 2.5 D in.) |
|------------|---|



|   |                     |
|---|---------------------|
| Weight, IP-IO-DI10<br>Including terminal blocks | 0.337 kg (0.742 lb) |
|---|---------------------|

|  |                     |
|--|---------------------|
| Weight, IP-IO-UIO10<br>Including terminal blocks | 0.336 kg (0.740 lb) |
|--|---------------------|

|  |                     |
|--|---------------------|
| Weight, IP-IO-UIO5DOFA4<br>Including terminal blocks | 0.357 kg (0.787 lb) |
|--|---------------------|

|  |  |
|--|--|
| Recommended installation<br>a) It is recommended to install the device in an enclosure (cabinet), unless local regulations allow an exception. | DIN rail or flat surface in a cabinet <sup>a</sup> |
|--|--|

|                 |           |
|-----------------|-----------|
| Terminal blocks | Removable |
|-----------------|-----------|

# SpaceLogic IP-IO

## Compatibility

EcoStruxure BMS server communication  
EcoStruxure Building Operation

version 2.0.4 and later

BACnet/SC network support  
EcoStruxure Building Operation

version 6.0.1 and later

EcoStruxure Building Management Smoke Control System<sup>a</sup>  
EcoStruxure Building Operation

For information, see the Smoke Control System Approved Software Revisions - EcoStruxure Building Management document, 01-16001-XX-en.

a) Applies to the Smoke Control (SMK) models.

## Agency compliances

Emission

RCM; BS/EN 61000-6-3; BS/EN IEC 63044-5-2; FCC Part 15, Sub-part B, Class B

Immunity

BS/EN 61000-6-2; BS/EN IEC 63044-5-3

Safety standards

BS/EN 60730-1; BS/EN 60730-2-11; BS/EN IEC 63044-3; UL 916 C-UL US Listed

Smoke control product safety<sup>a</sup>

UL 864

a) Applies to the Smoke Control (SMK) models and MP-C DISPLAY module. For specifications and information on the restrictions that apply to the SMK models and display module when used in UL 864 smoke control systems, see the EcoStruxure Building Management - Smoke Control System Design Guide, 04-16014-XX-en.

## Real-time clock

Accuracy, at 25 °C (77 °F)

+/-1 minute per month

Backup time, at 25 °C (77 °F)

7 days minimum

## Communication ports

Ethernet

Dual 10/100BASE-TX (RJ45)

USB

1 USB 2.0 device port (mini-B)  
1 USB 2.0 host port (type-A), 5 VDC, 2.5 W

## Communications

BACnet

BACnet/IP, port configurable, default 47808  
BACnet/SC, port configurable, no default port  
BTL B-ASC (BACnet Application Specific Controller)<sup>a</sup>

a) See the BTL Product Catalog for up-to-date details on BTL listed firmware revisions on BACnet International's home page.

## CPU

Frequency

500 MHz

Type

ARM Cortex-A7 dual-core

DDR3 SDRAM

128 MB

NOR flash memory

32 MB

Memory backup

128 kB, FRAM, non-volatile

## MP-C Display (Optional)

Removable

No

Display size

36 W x 17 H mm (1.4 W x 0.7 H in.)

Display resolution

128 x 64 pixels

Display type

FSTN monochrome LCD, white color transfective backlight

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|                                   |   |
|-----------------------------------|---|
| Power consumption                 | max. 0.15 W (45 mA at 3.3 V)  |
| Ambient temperature, operating    | -30 to +60 °C (-22 to +140 °F)  |
| Ambient temperature, storage      | -40 to +70 °C (-40 to +158 °F)  |
| Maximum humidity                  | 95 % RH non-condensing  |
| Weight                            | 0.035 kg (0.077 lb)   |
| Compliance with standards         | EN ISO 16484-2  |
| Digital inputs, DI                |   |
| Channels, IP-IO-DI10              | 10, DI1 to DI10   |
| Channels, IP-IO-UIO10             | 0   |
| Channels, IP-IO-UIO5DOFA4         | 0   |
| Absolute maximum ratings          | -0.5 to +24 VDC   |
| Digital input protection          | Transient voltage suppressor on each digital input  |
| Digital inputs                    |   |
| Range                             | Dry contact switch closure or open collector/open drain, 24 VDC, typical wetting current 2.4 mA |
| Minimum pulse width               | 150 ms  |
| Counter inputs                    |   |
| Range                             | Dry contact switch closure or open collector/open drain, 24 VDC, typical wetting current 2.4 mA |
| Minimum pulse width               | 20 ms   |
| Maximum frequency                 | 25 Hz   |
| Universal inputs/outputs, Ub      |   |
| Channels, IP-IO-DI10              | 0   |
| Channels, IP-IO-UIO10             | 10 Ub, Ub1 to Ub10  |
| Channels, IP-IO-UIO5DOFA4         | 5 Ub, Ub1 to Ub5  |
| Absolute maximum ratings          | -0.5 to +24 VDC   |
| A/D converter resolution          | 16 bits   |
| Universal input/output protection | Transient voltage suppressor on each universal input/output                                     |
| Digital inputs                    |   |
| Range                             | Dry contact switch closure or open collector/open drain, 24 VDC, typical wetting current 2.4 mA |
| Minimum pulse width               | 150 ms  |
| Counter inputs                    |   |
| Range                             | Dry contact switch closure or open collector/open drain, 24 VDC, typical wetting current 2.4 mA |
| Minimum pulse width               | 20 ms   |
| Maximum frequency                 | 25 Hz   |



# SpaceLogic IP-IO

## Supervised inputs

5 V circuit, 1 or 2 resistors  
Monitored switch combinations

Series only, parallel only, and series and parallel

Resistor range  
For a 2-resistor configuration, each resistor must have the same value +/- 5 %

1 to 10 kohm

## Voltage inputs

Range

0 to 10 VDC

Accuracy

+/- (7 mV + 0.2 % of reading)

Resolution

1.0 mV

Impedance

100 kohm

## Current inputs

Range

0 to 20 mA

Accuracy

+/- (0.01 mA + 0.4 % of reading)

Resolution

1 µA

Impedance

47 ohm

## Resistive inputs

10 ohm to 10 kohm accuracy  
R = Resistance in ohm

+/- (7 + 4 x 10<sup>-3</sup> x R) ohm

10 kohm to 60 kohm accuracy  
R = Resistance in ohm

+/- (4 x 10<sup>-3</sup> x R + 7 x 10<sup>-8</sup> x R<sup>2</sup>) ohm

## Temperature inputs (thermistors)

Range

-50 to +150 °C (-58 to +302 °F)

## Supported thermistors

Honeywell

20 kohm

Type I (Continuum)

10 kohm

Type II (I/NET)

10 kohm

Type III (Satchwell)

10 kohm

Type IV (FD)

10 kohm

Type V (FD w/ 11k shunt)

Linearized 10 kohm

Satchwell D?T

Linearized 10 kohm

Johnson Controls

2.2 kohm

Xenta

1.8 kohm

Balco

1 kohm

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## Measurement accuracy

|         |   |
|---------|---|
| 20 kohm | -50 to -30 °C: +/-1.5 °C (-58 to -22 °F: +/-2.7 °F)<br>-30 to 0 °C: +/-0.5 °C (-22 to +32 °F: +/-0.9 °F)<br>0 to 100 °C: +/-0.2 °C (32 to 212 °F: +/-0.4 °F)<br>100 to 150 °C: +/-0.5 °C (212 to 302 °F: +/-0.9 °F) |
|---------|---|

|                                 |   |
|---------------------------------|---|
| 10 kohm, 2.2 kohm, and 1.8 kohm | -50 to -30 °C: +/-0.75 °C (-58 to -22 °F: +/-1.35 °F)<br>-30 to +100 °C: +/-0.2 °C (-22 to +212 °F: +/-0.4 °F)<br>100 to 150 °C: +/-0.5 °C (212 to 302 °F: +/-0.9 °F) |
|---------------------------------|---|

|                    |   |
|--------------------|---|
| Linearized 10 kohm | -50 to -30 °C: +/-2.0 °C (-58 to -22 °F: +/-3.6 °F)<br>-30 to 0 °C: +/-0.75 °C (-22 to +32 °F: +/-1.35 °F)<br>0 to 100 °C: +/-0.2 °C (32 to 212 °F: +/-0.4 °F)<br>100 to 150 °C: +/-0.5 °C (212 to 302 °F: +/-0.9 °F) |
|--------------------|---|

|        |   |
|--------|---|
| 1 kohm | -50 to +150 °C: +/-1.0 °C (-58 to +302° F: +/-1.8 °F) |
|--------|---|

## RTD temperature inputs

|                |                               |
|----------------|-------------------------------|
| Supported RTDs | Pt1000, Ni1000, and LG-Ni1000 |
|----------------|-------------------------------|

### Pt1000

|                                |                                 |                       |
|--------------------------------|---------------------------------|-----------------------|
| Sensor range                   | -50 to +150 °C (-58 to +302 °F) |                       |
| BACnet/IP device environment   | Sensor range                    | Measurement accuracy  |
| 0 to 50 °C (32 to 122 °F)      | -50 to +70 °C (-58 to +158 °F)  | +/-0.5 °C (+/-0.9 °F) |
| 0 to 50 °C (32 to 122 °F)      | 70 to 150 °C (158 to 302 °F)    | +/-0.7 °C (+/-1.3 °F) |
| -40 to +60 °C (-40 to +140 °F) | -50 to +150 °C (-58 to +302 °F) | +/-1.0 °C (+/-1.8 °F) |

### Ni1000

|                                |                                 |                       |
|--------------------------------|---------------------------------|-----------------------|
| Sensor range                   | -50 to +150 °C (-58 to +302 °F) |                       |
| BACnet/IP device environment   | Sensor range                    | Measurement accuracy  |
| 0 to 50 °C (32 to 122 °F)      | -50 to +150 °C (-58 to +302 °F) | +/-0.5 °C (+/-0.9 °F) |
| -40 to +60 °C (-40 to +140 °F) | -50 to +150 °C (-58 to +302 °F) | +/-0.5 °C (+/-0.9 °F) |

### LG-Ni1000

|                                |                                 |                       |
|--------------------------------|---------------------------------|-----------------------|
| Sensor range                   | -50 to +150 °C (-58 to +302 °F) |                       |
| BACnet/IP device environment   | Sensor range                    | Measurement accuracy  |
| 0 to 50 °C (32 to 122 °F)      | -50 to +150 °C (-58 to +302 °F) | +/-0.5 °C (+/-0.9 °F) |
| -40 to +60 °C (-40 to +140 °F) | -50 to +150 °C (-58 to +302 °F) | +/-0.5 °C (+/-0.9 °F) |

## RTD temperature wiring

|                         |                            |
|-------------------------|----------------------------|
| Maximum wire resistance | 20 ohm/wire (40 ohm total) |
|-------------------------|----------------------------|

|  |       |
|--|-------|
| Maximum wire capacitance<br>The wire resistance and capacitance typically corresponds to a 200 m wire. | 60 nF |
|--|-------|

## Voltage outputs

|       |             |
|-------|-------------|
| Range | 0 to 10 VDC |
|-------|-------------|

|          |          |
|----------|----------|
| Accuracy | +/-60 mV |
|----------|----------|

|            |       |
|------------|-------|
| Resolution | 10 mV |
|------------|-------|

# SpaceLogic IP-IO

## Continued

|                                    |   |
|------------------------------------|---|
| Minimum load resistance            | 5 kohm  |
| Load range                         | -1 to +2 mA   |
| Relay outputs, DO                  |   |
| Channels, IP-IO-DI10               | 0   |
| Channels, IP-IO-UIO10              | 0   |
| Channels, IP-IO-UIO5DOFA4          | 3, DO1 to DO3   |
| Contact rating                     | 250 VAC/30 VDC, 2 A, Pilot Duty (C300)                    |
| Switch type                        | Form A Relay<br>Single Pole Single Throw<br>Normally Open |
| Isolation contact to system ground | 3000 VAC  |
| Cycle life (Resistive load)        | At least 100,000 cycles                                   |
| Minimum pulse width                | 100 ms  |
| High power relay outputs, DO       |   |
| Channels, IP-IO-DI10               | 0   |
| Channels, IP-IO-UIO10              | 0   |
| Channels, IP-IO-UIO5DOFA4          | 1, DO4  |
| Contact rating                     | 250 VAC/24 VDC, 12 A, Pilot Duty (B300)                   |
| Switch type                        | Form A Relay<br>Single Pole Single Throw<br>Normally Open |
| Isolation contact to system ground | 5000 VAC  |
| Cycle life (Resistive load)        | At least 100,000 cycles                                   |
| Minimum pulse width                | 100 ms  |

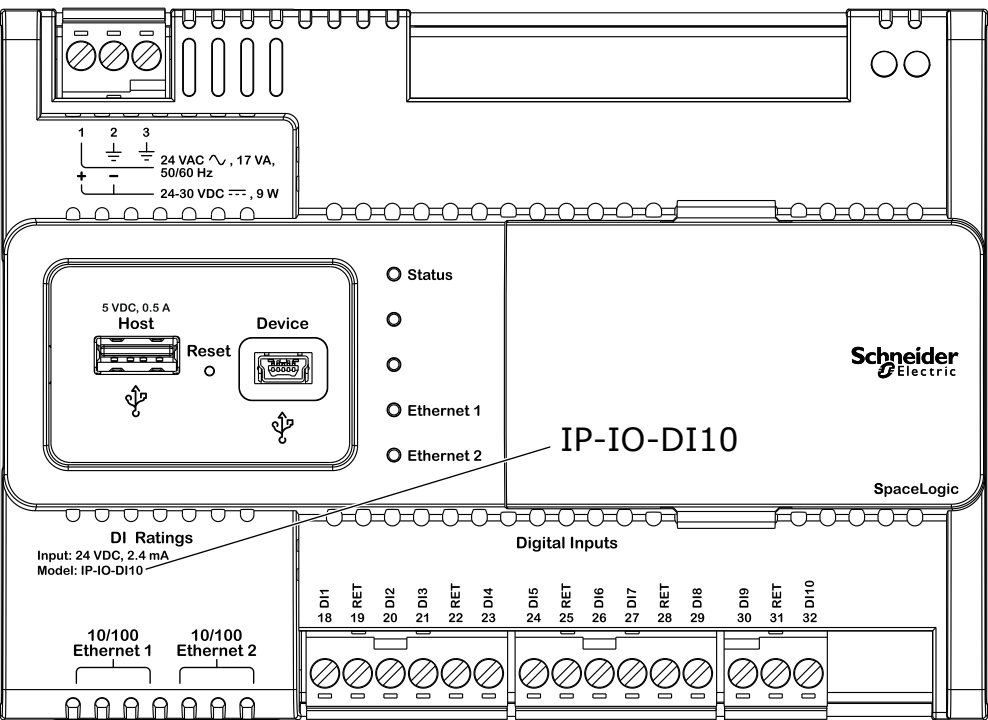
## Terminals

Follow proper installation wiring diagrams and instructions, including these instructions:

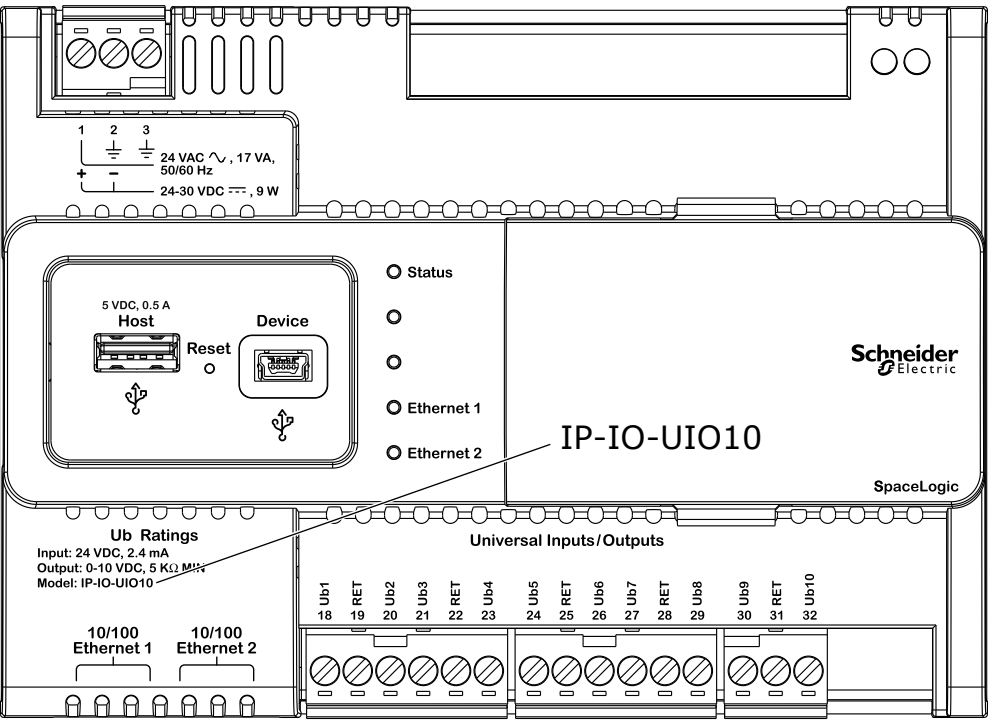
- All IP-IO models have several RET terminals for connection of I/O returns, so a common chassis/signal ground rail is optional and may not be needed.

- Individual 24 V power sources to the field must be current limited to maximum 4 A for UL compliant installations, and maximum 6 A in other areas.
- For more information on wiring, see Hardware Reference Guide.

# SpaceLogic IP-IO



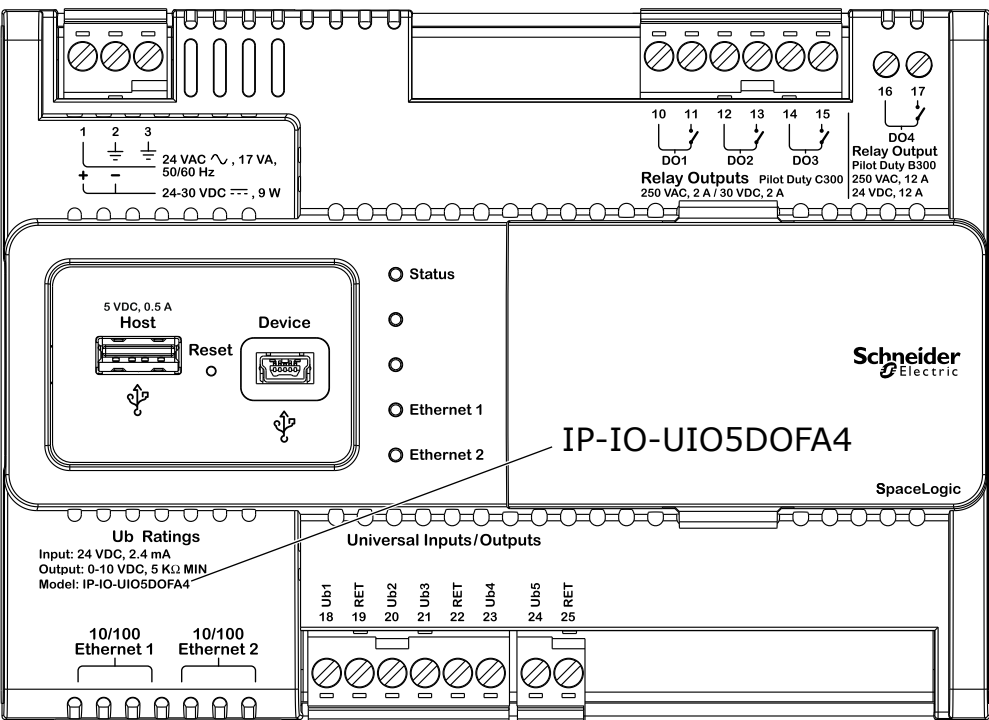
IP-IO-DI10



IP-IO-UIO10



# SpaceLogic IP-IO



IP-IO-UIO5DOFA4

# SpaceLogic IP-IO

## Regulatory Notices



### Federal Communications Commission

FCC Rules and Regulations CFR 47, Part 15, Class B

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference. (2) This device must accept any interference received, including interference that may cause undesired operation.

### Industry Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.



### Regulatory Compliance Mark (RCM) - Australian Communications and Media Authority (ACMA)

This equipment complies with the requirements of the relevant ACMA standards made under the Radiocommunications Act 1992 and the Telecommunications Act 1997. These standards are referenced in notices made under section 182 of the Radiocommunications Act and 407 of the Telecommunications Act.



### UK Conformity Assessed

S.I. 2016/1091 - Electromagnetic Compatibility Regulations 2016

S.I. 2016/1101 - Electrical Equipment (Safety) Regulations 2016

S.I. 2012/3032 - Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

S.I. 2013/3113 - Waste Electrical and Electronic Equipment Regulations 2013

This equipment complies with the rules, of the UK regulations, for governing the UKCA Marking for the United Kingdom specified in the above directive(s).



### CE - Compliance to European Union (EU)

2014/30/EU Electromagnetic Compatibility Directive

2014/35/EU Low Voltage Directive

2011/65/EU Restriction of Hazardous Substances (RoHS) Directive

2015/863/EU amending Annex II to Directive 2011/65/EU

This equipment complies with the rules, of the Official Journal of the European Union, for governing the Self Declaration of the CE Marking for the European Union as specified in the above directive(s).



### WEEE - Directive of the European Union (EU)

This equipment and its packaging carry the waste of electrical and electronic equipment (WEEE) label, in compliance with European Union (EU) Directive 2012/19/EU, governing the disposal and recycling of electrical and electronic equipment in the European community.



UL 916 Listed products for the United States and Canada, Open Class Energy Management Equipment. UL file E80146.



UL 864 Listed products for the United States. 10<sup>th</sup> Edition Smoke Control System. UL file S5527.

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