

SpaceLogic UI-8/AO-V-4-2 Plant Room Controllers

EcoStruxure™ Building



8-channel universal input and 4-channel analog voltage output I/O modules

Introduction

SpaceLogic™ UI-8/AO-V-4-2 and UI-8/AO-V-4-H-2 Central IO modules connect directly to the SpaceLogic AS-P or AS-P-3 server to provide input and output points for the centralized control of large mechanical systems in a plant or equipment room. The Central IO modules are part of a modular system that delivers power and communications on a common I/O bus for scalable custom configurations.

SpaceLogic UI-8/AO-V-4-2 and UI-8/AO-V-4-H-2 Central IO modules are universal input, 8-channel and analog output, 4-channel I/O modules.

The universal inputs are ideal for any mix of temperature, pressure, flow, status points, and similar point types in a building control system. They can be configured to read several different types of inputs:

- Digital
- Counter
- Supervised
- Voltage
- Current
- Temperature
- Resistive

SpaceLogic UI-8/AO-V-4-2

As counter inputs they are commonly used in energy metering applications. 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 trouble conditions to the system.

The analog outputs are capable of supporting analog voltage point types. Therefore, analog outputs support a wide range of devices, such as actuators.

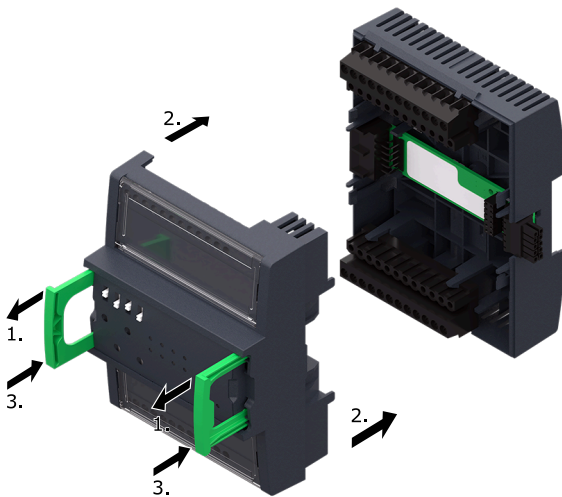
Features

Modular and scalable system

The modules are part of a modular system that delivers power and communications on a common bus. Connecting modules is a one-step process: just slide the modules together using the built-in connectors.

Patented two-piece design

Each module can be separated from its terminal base to allow the site to be wired prior to the installation of the electronics. The patented locking mechanism serves as handles for removing the module from its base. All critical components have a protective cover that permits convection cooling to occur.



Two-piece design

Hot-connect and Hot-swap

Because critical applications require 24-hour operation, Schneider Electric designed the Central IO modules for hot-connection of terminal bases and hot-swapping of the modules to their bases. This design ensures continuous power and communication during service operations.

Auto-addressing

The auto-addressing feature automatically assigns device addresses without the need to set DIP switches or press commission buttons. Each device automatically knows its order

in the chain and assigns itself accordingly – significantly reducing engineering and maintenance time.

Simple DIN-rail installation

Fasteners easily snap into a locked position for panel installation. The fastener has a quick-release feature for easy DIN-rail removal.

Efficient terminal management

The Central IO module terminals are clearly labeled and protected by transparent covers. The terminals are at the top and bottom of each module and are accessible for maintenance without removing the module. The EcoStruxure Building Operation WorkStation software can generate custom as-built labels for each module. Pre-perforated letter and A4 size label sheets are available as an accessory.

Accommodates multiple row panel installations

The SpaceLogic devices use built-in connectors for single row connectivity, side by side. If a panel size requires multiple rows, extension cords are available.

LED status indicators

The Central IO module has a status indicator that denotes the health and status of the module.

Each input channel has a dedicated two color status LED. The LED can be configured to display either red or green for each input state.

Hand/Off/Auto switches

The front panel of the UI-8/AO-V-4-H-2 includes Hand/Off/Auto (HOA) switches to provide override control of the analog outputs.

Each output also has a potentiometer to modulate the output signal when the switch is in the Hand position.

The position of the HOA switch is readable through user interfaces, such as the EcoStruxure Building Operation WorkStation software, enabling more precise monitoring and control.

Protection

Protection components on the inputs and the outputs protect against high-voltage short-duration transient events.

The current inputs are protected against over current.

The analog outputs have current limits to protect against permanent short-circuit to ground.

Secure boot

Secure boot is a security standard to help ensure that a device boots using only software that is trusted by Schneider Electric.

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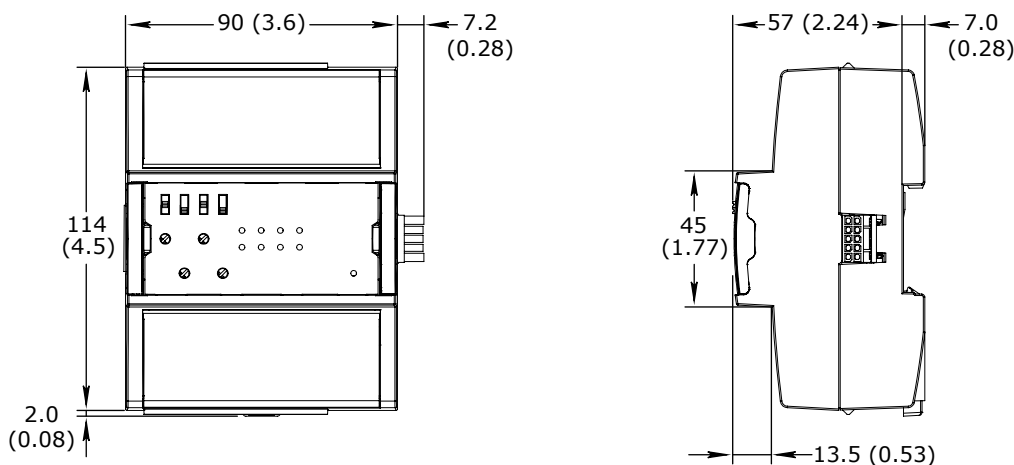
Secure boot is supported by all Central IO modules with product names ending with “-2”.

Specifications

SpaceLogic UI-8/AO-V-4-2

Input channels	8
Output channels	4
DC input supply power	1.0 W
DC input supply voltage	24 VDC
Environment	
Ambient temperature, operating	0 to 60 °C (32 to 140 °F)
Ambient temperature, storage	-20 to +70 °C (-4 to +158 °F)
Maximum humidity	95 % RH non-condensing
Material	
Plastic flame rating	UL94 V-0
Ingress protection rating	IP 20
Mechanical	
Dimensions including terminal base	90 W x 114 H x 64 D mm (3.6 W x 4.5 H x 2.5 D in.)

mm (inches)



Terminal base^a

TB-IO-W1-2

a) Existing TB-IO-W1 terminal bases can be used with UI-8/AO-V-4-2 and UI-8/AO-V-4-H-2.

UI-8/AO-V-4-2

Weight including terminal base	0.259 kg (0.570 lb)
Weight excluding terminal base	0.136 kg (0.299 lb)

SpaceLogic UI-8/AO-V-4-2

UI-8/AO-V-4-H-2	
Weight including terminal base	0.265 kg (0.583 lb)
Weight excluding terminal base	0.142 kg (0.313 lb)
Compatibility	
Central IO module v2 firmware	version 3.004 and later
Agency compliances	
Emission	RCM; BS/EN IEC 61000-6-3; BS/EN IEC 63044-5-2; FCC Part 15, Sub-part B, Class B; CAN ICES-003(B)
Immunity	BS/EN IEC 61000-6-2; BS/EN IEC 63044-5-3
Safety standards	BS/EN IEC 60730-1; BS/EN IEC 60730-2-11; BS/EN IEC 63044-3; UL 916 C-UL US Listed
Product	BS/EN IEC 63044-1
Part numbers	
UI-8/AO-V-4-2, Central IO module 8 universal inputs, 4 analog voltage outputs	SXWUI8V4X10002
UI-8/AO-V-4-H-2, Central IO module with HOA switches 8 universal inputs, 4 analog voltage outputs with Hand/Off/Auto override switches	SXWUI8V4H10002
TB-IO-W1-2, terminal base for Central IO module ^a (Required for each Central IO module)	SXWTBIOW110002
a) Existing TB-IO-W1 terminal bases can be used with UI-8/AO-V-4-2 and UI-8/AO-V-4-H-2.	
Accessory part numbers	
DIN-RAIL-CLIP, DIN-rail end clip package of 25 pieces	SXWDINEND10001
PRINTOUT-A4-W1, printout sheets for terminal labels A4 sheet size, 100 sheets, 18 labels per sheet	SXWTERLBL10011
PRINTOUT-LTR-W1, printout sheets for terminal labels Letter sheet size, 100 sheets, 16 labels per sheet	SXWTERLBL10012
S-CABLE-L, S-cable extension cord for the I/O bus, L shaped connectors 1.5 m	SXWSCABLE10002
S-CABLE-L, S-cable extension cord for the I/O bus, L shaped connectors 0.75 m	SXWSCABLE10003
Universal inputs	
Absolute maximum ratings	-0.5 to +24 VDC
A/D converter resolution	16 bits
Digital	
Range	Dry contact switch closure or open collector/open drain, 24 VDC, typical wetting current 2.4 mA

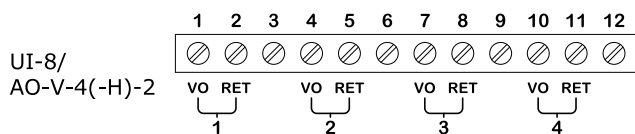
SpaceLogic UI-8/AO-V-4-2

Minimum pulse width	150 ms
LED polarity	Software selectable, if the LED is activated when the input is high or low
LED color	Red or green, software selectable
Counter	
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
LED polarity	Software selectable, if the LED is activated when the input is high or low
LED color	Red or green, software selectable
Supervised	
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	
Range	0 to 10 VDC
Accuracy	+/- (7 mV + 0.2 % of reading)
Resolution	1.0 mV
Impedance	1 Mohm
Current	
Range	0 to 20 mA
Accuracy	+/- (0.01 mA + 0.4 % of reading)
Resolution	1 µA
Impedance	47 ohm
Resistive	
10 ohm to 10 kohm accuracy R = Resistance in ohm	+/- (7 + 4 x 10 ⁻³ x R) ohm
10 kohm to 60 kohm accuracy R = Resistance in ohm	+/- (4 x 10 ⁻³ x R + 7 x 10 ⁻⁸ x R ²) ohm
Temperature	
Range	-50 to +150 °C (-58 to +302 °F)
Supported thermistors	
Honeywell	20 kohm
Type I (Continuum)	10 kohm

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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
Measurement accuracy	
20 kohm	-50 to -30 °C: +/-1.5 °C (-58 to -22 °F: +/-2.7 °F) -30 to 0 °C: +/-0.5 °C (-22 to +32 °F: +/-0.9 °F) 0 to 100 °C: +/-0.2 °C (32 to 212 °F: +/-0.4 °F) 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) -30 to +100 °C: +/-0.2 °C (-22 to +212 °F: +/-0.4 °F) 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) -30 to 0 °C: +/-0.75 °C (-22 to +32 °F: +/-1.35 °F) 0 to 100 °C: +/-0.2 °C (32 to 212 °F: +/-0.4 °F) 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)

Analog outputs, AO



Voltage	
Range	0 to 10 VDC
Accuracy	+/-60 mV
Resolution	10 mV
Minimum load resistance	5 kohm
Load range	-1 to +2 mA
Terminals	Voltage Output (VO), Return (RET)

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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.



CE - Compliance to European Union (EU)

2014/30/EU Electromagnetic Compatibility 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.



UK Conformity Assessed

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



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

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