PROGRAMMABLE UNITARY CONTROLLER
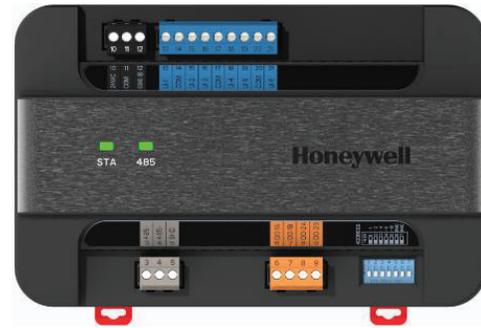## PUC SERIES IO EXTENSION MODULE

OVERVIEW

PUC I/O extension modules are part of the Honeywell PUC Series programmable unitary controller which supports Ethernet BACNet IP communication. Two types of I/O modules extend the functions of the controller and meet the need of more I/O points. The hardware design of the controller integrates with the elements of Honeywell's user experience, which embodies the essence of people-oriented concept no matter from appearance or usage. I/O extension modules, integrated with the controller, is programmable by using the same programming tools and can be widely used to control different building equipment.

FEATURES

- Work with PUC controller to monitor more equipment
- Fully programmable on the PUC controller via programming tools to meet different HAVC applications
- Enable I/O modules to be connected to the controller by RS-485 Bus
- Up to 2 extension modules can be connected to a single controller
- Elegant design, light weight and easy to operate, which continues Honeywell's style on the unitary controller
- Color-coded removable terminal blocks for differentiating signal types enable convenient and fault free termination

- Built-in input/output ports allowing extension module through RS-485 port to enrich point combination
- Support the connection of points among controllers, namely "binding", to make invocation more convenient
- Additional network security with advanced security encryption standard
- Embedded programmable tool under niagara platform with user friendly interface, compatibly use the programs edited by the existing WEBs tools
- CE, UL and RoHS certification

TECHNICAL SPECIFICATION

Description

TABLE 1 ORDERING PART NUMBER

PART NUMBER	DESCRIPTION
PUC5533-EM2	IO extension module UIx5, DIx5, AOx3, DOx3
PUC6002-EM2	IO extension module UIx6, DOx2

ELECTRICAL

Nominal voltage: 20-30 VAC; 50/60 Hz

POWER CONSUMPTION: PUC5533-EM2 11 VA max. (including controller and all input, output and communication channels)

PUC6002-EM2 7 VA max. (including controller and all input, output and communication channels)

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OPERATING ENVIRONMENT

- Operating temperature 0°C - +50°C
- Relative humidity: 5%~95% Non-condensating
- Protection rating IP20

SIZE (H/W/D)

- 180x115x57.5mm

CERTIFICATION

- CE
- UL
- RoHS

INPUT AND OUTPUT

DIGITAL INPUT (DI)

- Input type: Supervised dry contact ON/OFF
- Resistance: open circuit ≥ 12K Ohms;
                       closed circuit ≤ 500 Ohms

DIGITAL OUTPUT (DO)

- Nominal voltage: 20-30 VAC, 50-60Hz
- Rated current: 0 mA-1A(AC), continuous
                     1A Pilot Duty

ANALOG OUTPUT (AO)

The analog outputs must be current or voltage signals at the same time.
Analog current output:

- Current output: 4-20 mA
- Maximum output load resistance: 550 Ohms

Analog voltage output:

- Voltage output: 0-10 VDC
- Maximum output current: 10 mA

Analog output can be defined as digital output and run as follows:

- False (0%) output 0 VDC, (0 mA)
- True (100%) maximum output 11 VDC, (22 mA)

UNIVERSAL INPUT (UI) DETAILS ARE SHOWN IN TABLE 2

TABLE 2 UNIVERSAL INPUT DETAILS

INPUT TYPE	SENSOR	Operating Range
Outdoor temperature for room/area air supply	20K Ohm NTC	–40°C to 93°C
Outdoor temperature	PT1000 (IEC751 3850)	–40°C to 93°C
Input resistance	Normal	100 Ohms– 100K Ohms
Input voltage	Transmitter Controller	0-10 VDC
Digital input	Dry contract	Open circuit ≥12K Ohms Closed circuit ≤ 500 Ohms

Accuracy of digital/analog conversion: 12 bit

COMMUNICATION INTERFACE

- 485 Bus: 1 RS485 port, connected with the main controller, supporting up to two IO extension modules, and 18-22AWG shielded twisted pair cable are recommended for use.

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LED DISPLAY

Controller's status can be displayed via LED.

TABLE 3 STA LED STATUS DESCRIPTION

STA LED STATUS	CONTROLLER STATUS
Off	No power; damaged LED; insufficient power supply; initial power-on; or boot loader damaged
Solid on	Start up power insufficient; check power supply – this requires about 3.5 sec – occurs on power up, reset and refresh
Blinking mode 1 – continuously blinks on for 1 sec and off for 1 sec	Operating normally
Blinking mode 2 – continuously blinks on for 0.5 sec and off for 0.5 sec	Equipment alarm active; downloading configuration; loss of configuration

DIP SWITCH (BINARY ENCODING)

The DIP switch is pulled up to "ON".
Dip Switch Numbers 1-5, corresponding to low order to high order, are used to set address
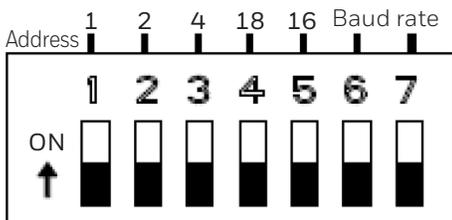
Dip Switch Numbers 6-7 are used to adjust Baud rate (the default value is 38400)

| DIP SWITCH NUMBER6	DIP SWITCH NUMBER7	Baud rate
Off	Off	38400
On	Off	19200
Off	On	9600
On	On	4800

TABLE 4 485 LED STATUS DESCRIPTION

RS485 communication status

485 LED STATUS	CONTROLLER STATUS
Solid on	Equipment fault or system crashed
Solid Off	No power supply or equipment malfunction or system crashed
Solid off, blink once every 2.5 sec	Controller is operating normally without Modbus communication
Solid off, blink twice every 2.5 sec	Controller is operating normally with Modbus communication
Solid off, blink three times every 2.5 sec	Controller is operating with applications downloading
Rapid blinking	Equipment fault or system crashed

Pollution level: level 2

Electric shock protection level: Class II

The distance among contact heads: micro-gap

Load-type: continuous

The connection of input/output: use screw clamp terminals

Installation: DIN-rail EN50022

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PRODUCT DIMENSIONS (UNIT: mm)
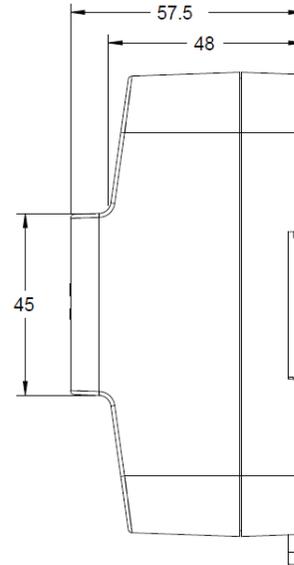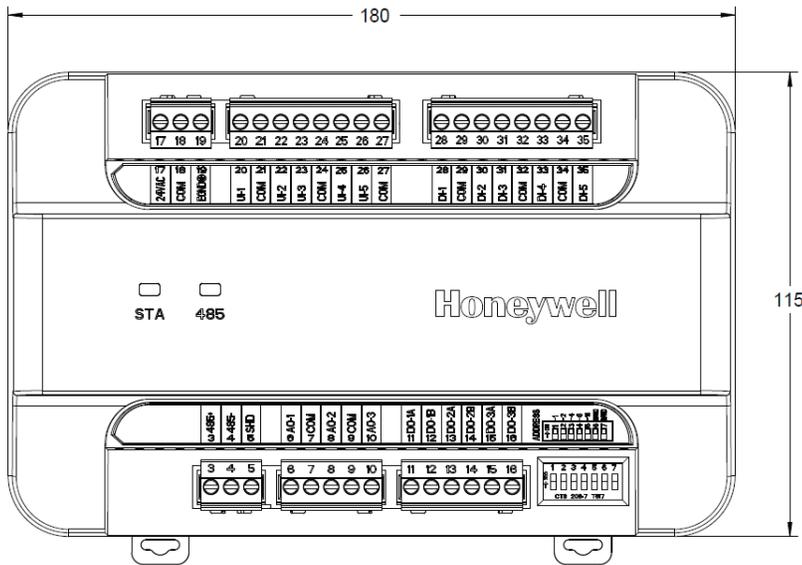
PRODUCT INSTALLATION

INSTALLATION NOTES

- Removable terminals make it easier for installation and maintenance;

- Controller must be installed in adequate space for wiring, maintenance and removal;

- Product supports DIN rail.
  DIN rail specification: EN50022
  7.5 mm x 35 mm.

INSTRUCTIONS:

1. Pull both hooks at the base of the controller. Tilt the controller and fix the hooks on the top of the controller onto the guide rail;

2. Press the controller for it to fit the guide rail;

3. Push in both hooks at the base to fasten the controller;

4. The controller after the hooks are pushed in is as shown in Figure 4.

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