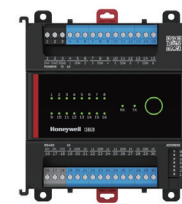


PROGRAMMABLE UNITARY CONTROLLER EXPANSION MODULE

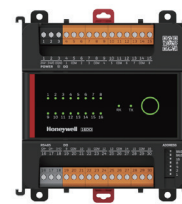
PUC16000-EM2

PUC00016-EM2

The programmable unitary controller expansion module supports Ethernet communication network controller, and is used to expand system capacity, to meet the management requirements of more input/output devices, greatly improve system efficiency, and better protect users' overall investment. The family-based system design enables the expansion module and controller to be freely programmable with the same programming tools and flexibly and widely applied to the control of intelligent building equipment accordingly.



PUC16000-EM2



PUC00016-EM2

The PUC16000-EM2 and PUC00016-EM2 expansion modules are designed for the full life cycle of intelligent building automation system, including the design phase, installation and commissioning phase, and post-maintenance phase, to ensure optimal support for each link and achieve efficient operation and long-term stability of the entire system.

The PUC16000-EM2 universal input expansion module has a 16-bit resolution and provides a higher monitoring accuracy to ensure detailed and accurate system response.

The design of PUC16000-EM2 and PUC00016-EM2 expansion modules covers the maintenance and update requirements of existing building automation systems. The appearance design is more compact to adapt to existing control cabinets or other installation environments. The color identification of wiring terminals and clear indicator light design aim to simplify the commissioning and installation process. At the same time, a more reasonable interface allocation ensures the resource utilization of building automation system.

The PUC16000-EM2 and PUC00016-EM2 expansion modules are compatible with Honeywell's existing PUC/PEC series controllers, ensuring seamless system upgrades and expansions by users, protecting investments, and ensuring long-term reliability and performance of the system.

The product is designed in a rail mounted manner, to ensure that the product can be easily installed on standard DIN rail. The product is flexible and convenient and is particularly suitable for scenarios that require high modularity and maintainability.

The PUC16000-EM2 and PUC00016-EM2 expansion modules are used together with an Ethernet controller. The overall concept is to improve the design and configuration efficiency of basement ventilation, water supply and drainage, floor fresh air units, circuit lighting, multi-parameter sensors, and power metering, effectively respond to complex building automation needs, achieve refined management, improve energy efficiency, and save costs.

FEATURES

- The I/O expansion module is used together with Ethernet controller to complete more device monitoring and improve system configuration efficiency
- Fully programmable on the Ethernet controller via programming tools to meet different HAVC applications
- Up to 2 extension modules can be connected to a PUC controller
- Up to 8 extension modules can be connected to a PEC 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 Alaya tools
- CE, UL and RoHS certifications

Honeywell

TECHNICAL SPECIFICATION

Part No.	Description
PUC16000-EM2	I/O expansion module UIx16
PUC00016-EM2	I/O expansion module DOx16
Parameters	
CPU	HDSC 32-bit processor 240MHz,16M flash memory
Electrical	
Rated voltage	24VAC, 50/60Hz
Power consumption	PUC16000-EM2: 7VA MAX PUC00016-EM2: 5VA MAX (controller only) total output power no more than 75VA
Operating environment	
Storage temperature	-40 ° C to 65.5 ° C
Operatingtemperature	0 ° C to 55 ° C
Relative humidity	5%RH to 95%RH, non-condensing
Protection rating	IP20
Size (H/W/D)	
PUC16000-EM2 PUC00016-EM2	110×108×58 mm
Certifications	
Certifications	CE UL RoHS
Real-time clock	
Operating range	24 hours, 365 days, permanent calendar
Power-offmaintenance	72 hours at 0 ° C to 50 ° C
Input and output	
Digital output(DO) applicable to PUC00016-EM2	Output type: Silicon controlled, rated voltage 20 to 30VAC, 50/60Hz, rated current 25 mA to 500 mA (AC) total output power no more than 75VA
Universal input(UI) applicable to PUC16000-EM2	Input type: Room/Zone air supply, outdoor temperature, resistance input, voltage input, digital input.
Communication interface	
RS485 bus	One RS485 port, connected to the main controller, recommended to use 18-22AWG shielded twisted pair cable.

Table 2.General Input Details

Input type	Sensor	Operating range
Room/Zone airtsupply, outdoor temperature	20K Ohm NTC	-40° C to 93° C
Resistance input	Custom	100 Ohms to 100K Ohms
Voltage input	Transmitter Controller	0 to10 VDC
Digital input	Dry contact	Open circuit ≥ 12K Ohms Closed circuit ≤ 500 Ohms

UI1-UI13 digital/analog conversion accuracy: 12-bit
UI14-UI16 digital/analog conversion accuracy: 16-bit

**Table 4 485 LED Status Description
RS485 Communication Status**

485 LED status	Communication status description
Solid on	Equipment crashed, faulted
Solid off	No power supply, equipment fault,crashed
Solid off, blink once every 2.5 sec	Controller is operating without communicating with RS485
Solid off, blink twice every 2.5 sec	Controller is operating normally with communication with RS485
Solid off, blink three times every 2.5 sec	Controller is operating normally with applications being downloaded
Rapid blinking	Equipmentfault or system crashed

Table 3 STA LED Status Description

STA LED status	Controller status description
Lights off	No power; damaged LED; insufficient power supply;initial power-on; or boot loader damaged.
Solid on	Startup power insufficient.
Blinking mode 1 -continuously blinks on for 1sec and off for 1 sec	Operating normally.
Blinking mode 2-continuously blinks on for 0.5 sec and off for 0.5 sec	Equipment alarms active; downloading configuration;loss of configuration.
Blinking mode 3-continuously blinks on for 0.25 sec and off for 0.25 sec	Controller's firmware is faulted.

**Table 5 IO LED Status Description
DO LED Status**

LED status	Communication status description
Solid on	DO on
Solid off	DO off

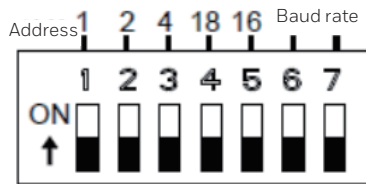
UI LED tatus

LED status	Communication status description
Solid on	UI configured as DI and input as 1 UI configured as AI and input within normalrange
Solid off	UI configured as DI and input as 0 UI configured as AI and input exceeds the allowable range

DIP Switch (Binary Encoding)

The DIP switch is effective when 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 the baud rate (default value 38400)

Dial switch number 6	Dial switch number 7	Baud rate (bps)
off	off	38400
on	off	19200
off	on	9600
on	on	4800

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

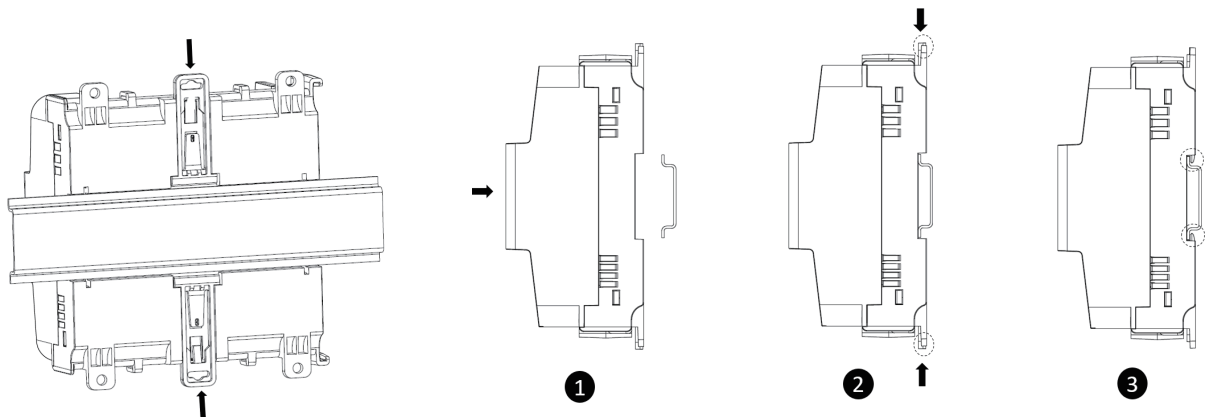
PRODUCT INSTALLATION

Installation Notes:

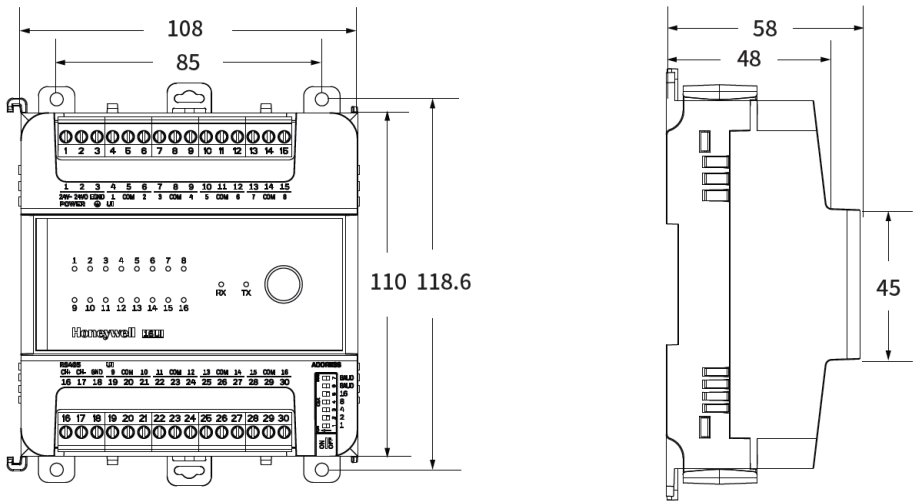
- Removable terminals make it easier for installation and maintenance.
- Controller must be installed in adequate space for wiring, maintenance and removal.
- Product supports DIN rail. DIN rail specification: EN50022 7.5 mmx35 mm.

Instructions:

- Pull out the two rail hooks at the bottom of the controller and push the bottom of the controller and make sure the controller tightly attached on the DIN rail.
- Push two rail hooks up and lock the controller.
- The controller after the hooks is pushed in is as shown in the figure below.



PRODUCT DIMENSIONS (UNIT:mm)



ORDERING INFORMATION

Part No.	Product Description
PUC16000-EM2	Honeywell's programmable unitary controller expansion module PUC16000-EM2 is a universal input expansion module with 16-bit resolution and 16 UI universal input.
PUC00016-EM2	Honeywell's programmable unitary controller expansion module PUC00016-EM2 is a switch output expansion module with 16 DO output.

For more information
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HBT-BMS-PUC16000/00016-MAY-27
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