

ECG100-CE

Building Edge Advanced Technologies

The ECG100-CE Gateway is the advanced device that integrates and aggregates data from field devices like Thermostats, Sensors and IO Honeywell BMS Supervisor platform for monitoring and control.

Honeywell ECG100-CE Edge Data Gateway has high-performance dual-core CPU, which is used for edge computing with high processing ability of data. With 1GB RAM and 4GB Flash Memory, it is used to meet the requirement of large amount of data in edge computing, and it can process up to 1500 digital points per second. Each system bus connection has independent magnetic isolation to ensure the reliability; With Linux operating system, Honeywell firmware and encryption chip are built in to ensure cyber security.

Honeywell ECG100-CE Edge Data Gateway is an advanced BACnet device. In order to ensure the accuracy and real-time of data transmission, BACnet Broadcast Management Device (BBMD) function is also supported. ECG100-CE's BACnet® device capability interconnects BACnet® IP network, BACnet® MS/TP network and Modbus RTU network to ensure safe communication, so as to monitor and control HVAC system, energy management, lighting control and many other equipment systems for future smart buildings.

Honeywell ECG100-CE has two Ethernet connections, which support: ring topology, bus topology and star topology architectures. It help user for saving network resources also reduce the cost of implementation. ECG100-CE supports RSTP, which is a fast spanning tree protocol. When the network structure changes, this technology can recover the network faster and ensure the real-time data transmission.

Honeywell ECG100-CE has three fully isolated RS485 ports with a maximum isolation voltage of 2500V (rms in 1 min), and supports BACnet MS/TP and Modbus RTU protocols (user defined). Three RS485 communications adopt independent power isolation technology respectively, and the communication between ports does not affect each other, which is beneficial to ensure the reliability and security of data transmission.

PRODUCT CHARACTERISTICS

- BACnet standard-compliant, BACnet Router device with BBMD function
- Dual-core processor: Arm Cortex-A9
- Main frequency: 800mhz; Arm Cortex-M4
- Main frequency: 227MHz
- Operating system: LINUX/RTOS
- Real time clock
- Random Access Memory (RAM): 1 G
- Flash memory: 4 G
- Two Ethernet ports, supporting BACnet IP protocol
- Three-way fully isolated RS485 interface supports BACnetMS/TP protocol or Modbus RTU protocol (customized by customers)
- BACnetMSTP communication rate: 9.6, 19.2, 38.4, 76.8, 115.2 Kbps
- Communication rate of Modbus RTU: 4.8, 9.6, 19.2, 38.4, 57.6, 115.2kbps.
- Three pairs of LED indicators are used to indicate RS485 communication status.
- An LED breathing indicator lamp is used to indicate the operation state of the controller.



APPLICATIONS

Honeywell ECG100-CE is a state of the art BACnet network device for VAV control, fan coil networking, energy management system and other applications. It can be widely used in various building automation scenarios, such as commercial building, office buildings, data centers, government facilities and high-end manufacturing, industrial and high-end manufacturing, hospital, transportation, hospitality etc., to help users manage the data of building automation systems.

APPEARANCE AND TERMINAL

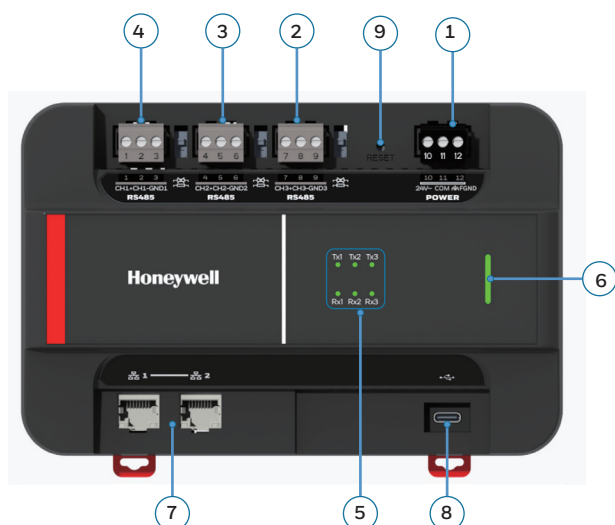


Table 1

Type	Legend	Logo	Description
Power terminal	1	GND	Connect to site ground
		24V0	Controller common terminal
		24V~	Controller (24Vac/dc)
RS485 port 3	2	CH3+	Port 3 RS485(+)
		CH3-	Port 3 RS485(-)
		GND3	Port 3 ground
RS485 port 2	3	CH2+	Port 2 RS485(+)
		CH2-	Port 2 RS485(-)
		GND2	Port 2 ground
RS485 port 1	4	CH1+	Port 1 RS485(+)
		CH1-	Port 1 RS485(-)
		GND1	Port 1 ground
LED	5	Tx1 LED (green)	RS485 port 1 to 3 send and receive instructions
		Rx1 LED (green)	
		Tx2 LED (green)	
		Rx2 LED (green)	
		Tx3 LED (green)	
		Rx3LED (green)	
	6	Columnar LED	Operating status indicator light
RJ45 port	7	Ethernet 1	10/100 base-T/Tx
		Ethernet 2	
USB interface	8		TYPE-C developer debug port
Reset key	9		Press hold for 10s to restore the factory default settings.

Tx AND Rx LED INDICATORS

ECG100-CE has three pairs of transmit (Tx) and receive (Rx) LEDs, for display the transmitting and receiving status of RS485 communication.

Table 2 Status information of RS485 LED indicator

LED lamp status	Description
Not bright	The corresponding RS485 channel has no communication.
Tx bright	The corresponding RS485 channel is sending data
Rx bright	The corresponding RS485 channel is receiving data

LED BREATHING LIGHT

Table 3 Status information of LED breathing light

LED lamp status	Description
Not bright	The product is not powered on or damaged.
Green light is always on	The product works normally
Green light is flashing	During the configuration file download process
Red, green and yellow are alternating	During the product startup process

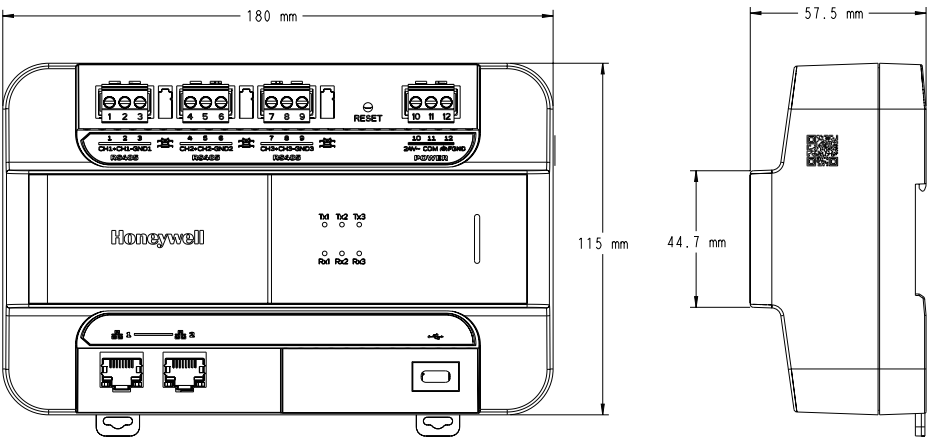
ETHERNET 1 AND 2 INTERFACE

Two RJ45 ports, 10/100Mbps adaptive, default IP: 192.168.1.97, supporting star and daisy chain connection, and ring redundant link connection. It is recommended to use super-category five network cables for cables.

TECHNICAL PARAMETER

Product model	ECG100-CE			
Hardware parameters				
Central processing unit (CPU)	Dual-core: Arm Cortex-A9 main frequency: 800 MHz; Cortex -M4 frequency: 227MHz			
Operating system	Linux			
Random Access Memory (RAM)	DDR3L: 1 Gbyte			
Flash memory	EMMC: 4 Gbyte			
Real time clock accuracy	+/- ± 2.63 minutes/year (+/- ± 0.43 seconds/day)			
Real-time clock power-down holding time	72 hours			
System data				
Operating voltage (AC)	19 to 29 Vac (50/60Hz)			
Operating voltage (DC)	19 to 29 Vdc			
Overvoltage protection	Maximum overvoltage protection 29V AC or 40V DC. Terminals have short-circuit protection.			
Power consumption	4W/11VA@24VAC, 4W/4VA@24VDC;			
Standard				
Protection grades	IP20			
Test rules for electronic products	IEC68			
Certification and standards	CUL60730-1 UL60730-1 EN60730-1 CE RoHS 2.0 IEEE 802.3			
System transformer	The system transformer must be a safety isolation transformer conforming to IEC 61558-2-6. In America and Canada, NEC Class 2 transformers must be used.			
Working environment				
Ambient working temperature	0 to 50 ° C (32 to 122 ° F)			
Working humidity	5 to 95% relative humidity (no condensation)			
Storage temperature	-28.9 to +70 ° C (- 20 to 158 ° F)			
Storage humidity	5 to 95% relative humidity (no condensation)			
Dust, vibration	Comply with EN60730-1			
Radio frequency interference, electromagnetic interference	Residential, commercial and light industrial environment			
MTBF (mean time between failures)	11.5 years			
Controller parameters				
Software point	1500 points			
Supported bus				
Protocol	Maximum number of devices per channel	RS485-1	RS485-2	RS485-3
BACnet MS/TP	64 (load > 24 kΩ)	YES	YES	YES
Modbus RTU	31 (load > 12 kΩ)	YES	YES	YES
Ethernet	10/100 Mbps, RJ45			
BACnet MSTP	9.6, 19.2, 38.4, 76.8, 115.2 Kbps			
Modbus RTU	4.8, 9.6, 19.2, 38.4, 57.6, 115.2 Kbps			
Automated management function (BACnet B-BC)				
Alarm	Dynamically create standard BACnet trend alarm objects, ≥400 Records.			
Schedule	Dynamically create standard BACnet trend schedule objects, ≥150 Records.			
Calendar	Dynamically create standard BACnet trend calendar objects, ≥100 Records.			
Trend Log	Dynamically create standard BACnet trend log objects, ≥400 Records.			

DIMENSIONS (MM)



ORDERING INFORMATION

Model	Product Description
ECG100-CE	Honeywell ECG100-CE Edge Data Gateway has dual-core high-performance CPU; With 1Gbyte RAM and 4Gbyte Flash, it can process up to 1500 data points per second; It has three RS485 fully isolated communication ports, the maximum isolation voltage is 2500V(rms for 1 min), and supports BACnet MS/TP protocol or Modbus RTU protocol (user defined). Three RS485 channels adopt independent power isolation technology respectively, and the communication between ports influences each other, which is beneficial to ensure the reliability and security of data transmission. With Linux operating system, Honeywell network security software is built in to ensure user data security. BACnet broadcast management device (BACnet broadcast management device, BBMD) function. Honeywell ECG100-CE has two Ethernet interfaces, which are supported in Ethernet architecture: ring topology, bus topology and star topology. ECG100-CE supports RSTP(Rapid Spanning Tree Protocol), which is a fast spanning tree protocol. When the network structure changes, it can converge the network faster and ensure the real-time data.

For more information

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