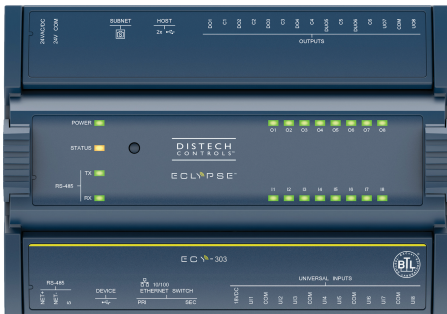


ECLYPSE™ Connected Equipment Controller

ECLYPSE™



Overview

The ECLYPSE Connected Equipment Controller (ECY-303) is designed to satisfy the needs of a wide range of HVAC applications such as small and medium terminal applications. It integrates a control, automation and connectivity server, power supply, and I/O in one convenient package. It supports BACnet/IP communications and is a listed BACnet Building Controller (B-BC). In addition, the ECY-303-M3 model supports Modbus to connect to meters, Variable Frequency Drives, etc.

This programmable controller comes with an embedded web server that enables web-based application configuration and a visualization interface. It also features embedded scheduling, alarming, and logging. Control logic and graphic user interface can be customized as required for the application.

Features & Benefits

- Utilizes BACnet/IP and IT standards, delivering empowered IP connectivity and open integration with building management systems
- Uses cryptographic modules making it FIPS 140-2 "Inside"
- Via its RESTful API, data can be accessed from different applications, such as energy dashboards, analytics tools, and mobile applications
- Comes with ENVYISION™ Viewer and the associated preloaded rooftop unit applications and graphics pre-installed
- xpressENVYISION offers a simplified and streamlined experience in a workflow oriented, drag & drop GUI environment
- Supports EC-gfxProgram, which makes Building Automation System (BAS) programming effortless
- Supports both Modbus TCP & Modbus RTU devices
- Supports Smart Room Control for an end-to-end system for the control of HVAC equipment, lighting, and shades/sunblinds
- The status LEDs allow the user to confirm the status of the inputs/outputs and facilitate commissioning and troubleshooting
- Embedded alarms, trend log and schedule support allows for fully distributed data and logic providing a more robust system. Embedded trend logs simplify system troubleshooting when compared to a centralized system
- Automatic email notifications for system status and alarms to ensure faster system servicing and response time

Model Selection

Example: ECY-303-**M3 (SI)**

Series	Modbus TCP & RTU Devices	Units
ECY-303	[blank] : No Modbus TCP & RTU device support -M3 : Supports up to 3 Modbus TCP & RTU devices	(SI) : Preloaded Apps in SI (Metric) units (IMP) : Preloaded Apps in Imperial (US) units
16-points, 8 UI, 2 UO, 4 DO, 2 DUO, 18 Vdc power supply, ENVYISION Viewer		

Accessories

ECLYPSE Wi-Fi Adapter	Wi-Fi Adapter for ECLYPSE Connected Controllers.
ECLYPSE Open-To-Wireless™ Adapter	EnOcean communication protocol adapter for ECLYPSE Connected Controllers.

Product Specifications

Power Supply Input

Voltage	24VAC; ±15%; Class 2
Nominal Power Consumption	18VA; all external loads excluded, no USB peripherals
Full Load Power Consumption	36VA; external 24VAC loads excluded
Frequency Range	50 to 60Hz
Overcurrent Protection	Field replaceable fuse
Fuse Type	2A, fast-acting, 5 × 20mm (GMA-2A)

Communications

Ethernet Connection Speed	10/100 Mbps
Addressing	IPv4 or Hostname
BACnet Profile	BACnet Building Controller (B-BC)), AMEV AS-A and AS-B
BACnet Listing	BTL, WSP B-BC
BACnet Interconnectivity	BBMD forwarding capabilities
BACnet Transport Layer	IP
Web Server Protocol	HTML5
Web Server Application Interface	REST API
Modbus RTU	1 × RS-485 serial communications port
RS-485 Wiring	1-pair + Common/shield
Modbus TCP	Devices must be on the same subnet
Wireless Adapter	Optional, USB Port Connection
Wi-Fi Communication Protocol	IEEE 802.11b/g/n and 802.11s
Wi-Fi Network Types	Client, Access Point, Hotspot

Subnetwork

Communication	RS-485
Cable	Cat 5e, 8 conductor twisted pair
Connector	RJ-45
Connection Topology	Daisy-chain
Maximum number of standard room devices supported per controller combined ¹	4
Allure EC-Smart-View Series ²	4
Allure EC-Smart-Comfort Series	4
Allure EC-Smart-Air Series ²	4
EC-Multi Sensor	4
ECx-Light-4 / ECx-Light-4D / ECx-Light-DALI	4
ECx-Blind-4 / ECx-Blind-4LV	4
Maximum number of Bluetooth low energy room devices per controller combined ³	4
Allure UNITOUCH™	2
EC-Multi-Sensor-BLE	4

- For more details about supported quantities, see the ECLYPSE Selection Tool.xlsx spreadsheet file available for download on the Documentation and Resources Portal.
- A controller can support a maximum of 2 Allure sensor models equipped with a CO₂ sensor. Any remaining connected sensors must be without a CO₂ sensor.
- A mixed architecture with standard room devices and Bluetooth low energy enabled devices is not recommended.

Hardware

Processor	Sitara ARM processor
CPU Speed	600MHz
Memory	4GB Non-volatile Flash (applications & storage) 512MB RAM
Real Time Clock (RTC)	Real Time Clock with rechargeable battery Supports SNTP network time synchronization
RTC Battery	20 hours charge time, 20 days discharge time Up to 500 charge / discharge cycles
Cryptographic Module	FIPS 140-2 Level 1 Compliant
Ethernet	2 switched RJ-45 Ethernet ports (Supported Protocols: BACnet/IP, Modbus TCP, NTP, and REST)

Integrated fail-safe for daisy-chaining In case of power failure to one of the controllers, communication data is still relayed to the following controller on the daisy-chain

USB Connections 2 × USB 2.0 Ports
1 × Micro-USB 2.0 Ports

RS-485 Serial Communications Screw terminals (Supported Protocols: Modbus RTU)

Subnet RJ-45

Green LED Power status, Subnet TX, and Ethernet Traffic

Orange LED Controller status, Subnet RX, and Ethernet Speed

Open-to-Wireless Adapter

Communication Protocol EnOcean wireless standard¹

Connector Type USB

Number of Wireless Inputs Unlimited²



- Available when an optional external ECLYPSE Open-to-Wireless Adapter is connected to the controller. Refer to the Open-to-Wireless Application Guide for a list of supported EnOcean wireless modules.
- Wireless inputs will only be limited by physical distance between the EnOcean devices and the ECLYPSE Open-to-Wireless Adapter.

Mechanical

Dimensions (H × W × D) 4.74 × 6.78 × 2.31"
(120.31 × 172.10 × 58.56 mm)

Shipping weight 1.20lbs (0.55 kg)

Mounting DIN rail or screw mounting

Enclosure Material¹ FR/ABS

Enclosure Rating Plastic housing, UL94-V0 flammability rating
Plenum rating per UL1995

- All materials and manufacturing processes comply with the RoHS directive and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive

Environmental

Operating Temperature -40 to 122°F (-40 to 50°C)

Storage Temperature -40 to 158°F (-40 to 70°C)

Relative Humidity 0 to 90% non-condensing

Ingress Protection Rating IP20 (IEC 60549)

Nema Rating 1

Standards and Regulations

CE Emission EN61000-6-3: 2007+A1:2011

CE Immunity EN61000-6-1: 2007

FCC Compliance with FCC rules part 15, subpart B, class B

UL Listed (CDN & US) UL916 Energy management equipment



Universal Inputs (UI)

General

Input Type Universal; software configurable

Input Resolution 16-bit analog to digital converter

Power Supply Output 18VDC; 80mA maximum

Protection Auto-reset fuse for 24VAC protection

Contact

Type Dry contact

Counter

Type Dry contact

Maximum Frequency 1Hz maximum

Minimum Duty Cycle 500 ms On / 500 ms Off

0 to 10VDC

Range 0 to 10VDC (40kΩ input impedance)

0 to 5VDC

Range 0 to 5VDC (high input impedance)

0 to 20mA

Range 0 to 20mA, 249Ω external resistor wired in parallel

Resistance/Thermistor

Range 0 to 350 KΩ

Supported Thermistor Types Any that operate in this range

Pre-configured Temperature Sensor Types:

Thermistor 10KΩ Type 2, 3 (10KΩ @ 77°F; 25°C)

Platinum Pt1000 (1KΩ @ 32°F; 0°C)

Nickel RTD Ni1000 (1KΩ @ 32°F; 0°C)
RTD Ni1000 (1KΩ @ 69.8°F; 21°C)

Universal Outputs (UO)

General

Output Type Universal; software configurable

Output Resolution Converter 10-bit digital to analog Converter

Output Protection, Built-in snubbing diode to protect against back-EMF, for example when used with a 12VDC relay

Output is internally protected against short circuits

Auto-reset Fuse Provides protection from accidental 24VAC connection

0 or 12VDC (On/Off)

Range 0 or 12VDC

Source Current Maximum 20 mA at 12VDC (minimum resistance 600Ω)

PWM

Range Adjustable period from 2 to 65 seconds

Thermal Actuator Management Adjustable warm up and cool down time

Floating

Minimum Pulse On/Off Time 500 milliseconds

Drive Time Period Adjustable

0 to 10VDC

Source:

Voltage Range 0 to 10VDC linear

Source Current Maximum 20 mA at 10VDC (minimum resistance 600Ω)

Sink:

Voltage Range 0 to 10VDC linear

Sink Current Maximum 2.5 mA at 1VDC (minimum resistance 4kΩ)

Digital Output (DOT)

General

Output Type 24VAC Triac; software configurable
 Maximum Current 0.5A continuous
 1A @ 15% duty cycle for a 10 minute period
 Power Source, External power supply

0 or 24VAC (On/Off)

Range 0 or 24VAC

PWM

Range Adjustable period from 2 to 65 seconds

Floating

Minimum Pulse On/Off Time 500 milliseconds
 Drive Time Period Adjustable

Digital-Universal Output (DUO)

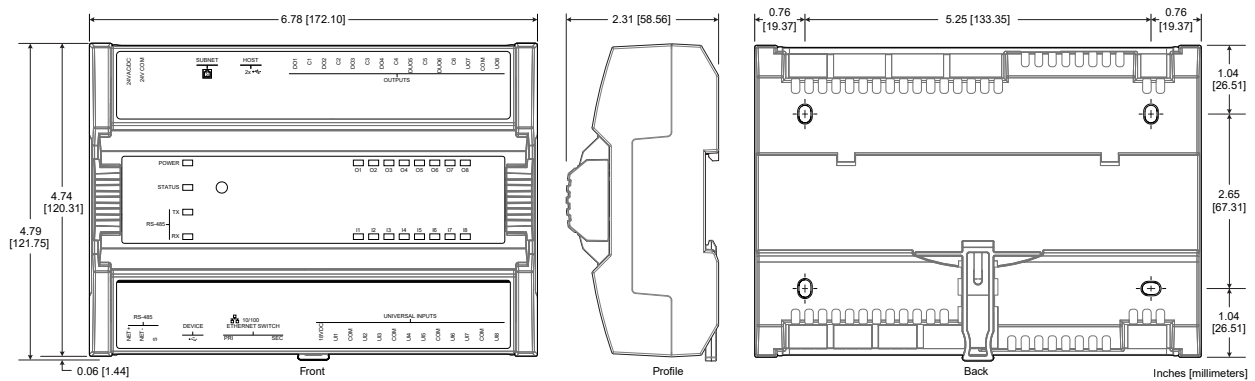
General

Output Type Universal or digital triac;
 Software configurable

Specifications

Universal Output Mode See Universal Output (UO)
 Digital Output Mode See Digital Output (DOT)

Dimensions



Specifications subject to change without notice.

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Global Head Office - 4205 place de Java, Brossard, QC, Canada, J4Y 0C4 - EU Head Office - ZAC de Sacuny, 558 avenue Marcel Mérieux, 69530 Brignais, France