

ECY-S1000 with Building Intelligence

Control, Automation and
Connectivity Servers

ECLYPSE™

Building Intelligence



Overview

The ECY-S1000 with Building Intelligence controller is sized to cost-effectively meet the requirements of any HVAC application from small to medium to large systems. The controller can be expanded to support up to 20 input/output (I/O) modules (up to 320 I/Os) while being able to adapt to new requirements as the need arises.

A connecting cable is used to connect successive rows of modules within a controls' cabinet to provide power and communication.

Features & Benefits

- Support for a range of communication protocols such as BACnet MS/TP, BACnet/SC, BACnet I/P, MQTT, Modbus RTU, Modbus TCP, and M-Bus
- With the RESTful API, data can be accessed from different applications, such as energy dashboards, analytics tools, and mobile applications
- Integrates up to three RS-485 ports
- Available remote access to program, configure, or maintain the installation, reducing costs associated with on-site visits
- Terminal blocks are uniquely identified and color-coded for clarity and to prevent wiring mistakes
- Embedded alarms, trend log and schedule support allows for fully distributed data and logic
- Automatic email notifications for system status and alarms to ensure faster system servicing and response time
- Two Ethernet ports (100Mbps) that can be configured individually for easy daisy-chain installation
- Connectivity packs enable remote devices to be added to a connector in ECLYPSE Building Intelligence. The connectivity packs along with optional I/O and expansion modules provide ultimate flexibility and expandability to customize your project needs.
- Readily supports Atrius Facilities that simplifies installation and maintenance of systems and increases the efficiency of building operations.

Model & Connectivity Selection

Model Selection

Example: ECY-**S1000-C0**
 ECY-**S1000-48-C0**
 ECY-**S1000-48-C5**
 ECY-**S1000-C50**

Series	Description	Connectivity
ECY	- S1000 : Connected building controller with ECLYPSE Building Intelligence - ECLYPSE S-1000 with support of up to 320 I/O points (20 ECY I/O extension modules max). Maximum connectivity is 50 connections. Note : Supported subnet devices are limited to Allure EC-Smart-Vue and ECx-Display.	- C0 : default model if no connectivity is required
	- S1000-48 : Connected building controller with ECLYPSE Building Intelligence - ECLYPSE S1000 with support of up to 48 I/O points. Max connectivity is 50 connections. Note : Supported subnet devices are limited to Allure EC-Smart-Vue and ECx-Display.	- C1 C50 : if connectivity is required (see table below)

Connectivity Packs

Connectivity packs enable remote devices to be added to a connector in ECLYPSE Building Intelligence. A single pack adds *x* connections and *x* * 100 points of connectivity.

BACnet Network Values in EC-*gfx*Program are available without connectivity packs.

Connectivity		Device ratios			
		1:1	2:1	8:1	100:1
Connectivity pack	Connections (device load)	BACnet devices (IP or MS/TP)	Modbus devices (TCP/IP or RTU)	M-Bus devices	Global point count
C1*	1	1	2	8	100
C3	3	3	6	24	300
C5	5	5	10	40	500
C10	10	10	20	60	1000
C25	25	25	50	60	2500
C50	50	50	100**	60	5000

*Minimum Connectivity Pack required to enable BACnet routing, MS/TP "Client", integration, use of RS485 port

**Modbus RTU limited to 32 devices/RS-485 port, 96 devices total

Depending on the connector, a device can consume a whole connection or a fraction of a connection. The device ratios are the following using a **C5** connectivity pack (refer to table above):

- BACnet (1:1) = 5 BACnet with C5
- Modbus (2:1) = 10 Modbus with C5
- M-Bus (8:1) = 40 M-Bus with C5

Connectivity packs are cumulative and only one pack can be ordered with a controller. More packs can be added afterwards in the field. The following shows how to calculate the connectivity needed:

$$20 \text{ BACnet} + (3 \text{ Modbus} \div 2) + (6 \text{ M-bus} \div 8) = 22.25$$

Select C25 (25 connections, 2500 points)

To assist in calculating the required connectivity, contact your RSM for more details or refer to the price list if available.

Accessories

ECLYPSE Wi-Fi Adapter	Wi-Fi Adapter for ECLYPSE Connected Controllers.
ECLYPSE HD15 Cable	6ft (1.8m) cable for multiple-row panel installations. An HD15 cable must always be followed by a power supply module. For more information, refer to the Hardware Installation Guide.
ECx-Subnet-Adapter	Required for daisy-chaining the ECx-Display or the EC-Multi-Sensor with other subnet devices

Product Specifications

Power Supply Input

Voltage	18VDC
Power Consumption	8.9W; external loads excluded

Communications

Ethernet Connection Speed	10/100 Mbps
Cable Type	Cat 5e, 8 conductor twisted pair (unshielded)
Addressing	IPv4 or Hostname
BACnet Profile	BACnet Building Controller (B-BC)
BACnet Listing	BTL (B-BC)
BACnet Interconnectivity	BBMD forwarding capabilities BACnet MS/TP to BACnet/IP and BACnet/SC routing
BACnet Transport Layer	IP, BACnet/SC (Node) & MS/TP (optional)
Web Server Protocol	HTML5
Web Server Application Interface	REST API
BACnet MS/TP or Modbus RTU	1 × RS-485 serial communications ports
RS-485 Wiring	1-pair + Common/shield
RS-485 EOL Resistor	Built-in
RS-485 Baud Rates	9600, 19 200, 38 400, or 76 800 bps
RS-485 Addressing	Controller's Web Configuration Interface
Modbus TCP	Devices must be on the same subnet
Wireless Adapter	Optional, USB Port Connection
Wi-Fi Communication Protocol	IEEE 802.11b/g/n
Wi-Fi Network Types	Client, Access Point, Hotspot

Subnetwork

Communication	RS-485
Cable Type	Cat 5e, 8 conductor twisted pair
Connector	RJ-45
Connection Topology	Daisy-chain
Maximum number of standard room devices supported per controller combined ¹	12
Allure EC-Smart-Vue Series ²	12
Allure EC-Smart-Comfort Series	6
Allure EC-Smart-Air Series ²	6
EC-Multi Sensor	4
ECx-Light-4 / ECx-Light-4D / ECx-Light-4DALI ¹	2
ECx-Blind-4 / ECx-Blind-4LV / ECx-Blind4SMI / ECx-Blind-4SMI-LoVo ¹	2
Maximum number of Bluetooth low energy room devices per controller combined ³	6
Allure UNITOUCH™	2
EC-Multi-Sensor-BLE	4

- For more details about supported quantities, see the Product Selection Tool available in Builder: <https://builder.distech-controls.com>.
- 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	1GHz
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)
USB Connections	2 × USB 2.0 Ports 1 × Micro-USB 2.0 Ports
RS-485 Serial Communications	Screw terminals (Supported Protocols: BACnet MS/TP or Modbus RTU)
Subnet	RJ-45
Green LED	Power status, Subnet TX, RS-485 TX, and Ethernet Traffic
Orange LED	Controller status, Subnet RX, RS-485 RX, and Ethernet Speed

Mechanical

Dimensions (H × W × D)	4.74 × 3.57 × 2.31" (120.31 × 90.67 × 58.56mm)
Shipping weight	0.85lbs (0.39kg)
Mounting	DIN rail or screw mounting
Enclosure Material	FR/ABS
Enclosure Rating ¹	Plastic housing, UL94-V0 flammability rating

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

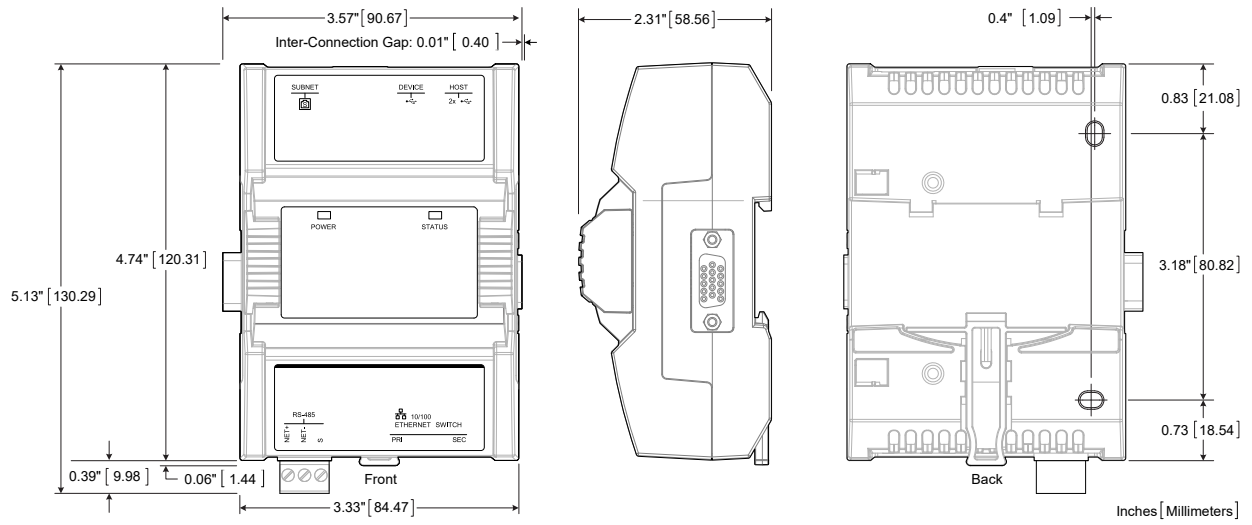
Environmental

Operating Temperature	32 to 122°F (0 to 50°C)
Storage Temperature	-22 to 158°F (-30 to 70°C),
Relative Humidity	0 to 90% non-condensing
Ingress Protection Rating	IP20
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





Specifications subject to change without notice.

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