INTRODUCTION

The eBuilding System Controller (eSCI) from Cylon Controls is a system-level controller that delivers cost-effective control solutions for a variety of building sizes and building subsystems such as HVAC and lighting. The eSCI allows building managers to monitor and control thousands of facilities from a single location. Data from all the eSCI controllers is delivered to a single eBuilding Site Server and displayed on a common web browser. A simple menu screen allows for quick navigation to any specific store and the detailed store pages present a customized and user-friendly view of the single building.

The eSCI utilizes Cylon’s latest IP based, web enabled CBXi platform to present two models of the eBuilding controller. Both the eSCI-8x8 and eSCI-16x16 feature integrated I/O that can be easily configured to meet the most complex retailer’s needs.

The eSCI controller family provides backward compatibility and continuity to our existing Teletrol customers by harnessing the power of the new platform through a simplified upgrade program.

FEATURES

- IT-friendly implementation including XML over HTTP
- Ethernet 10/100 LAN support
- BACnet MS/TP RS-485 device network support
- Modbus device network support
- Supports remote update of control logic and firmware
- Ready to mount package with conduit knockouts

The eSCI has been designed to integrate into Cylon’s eBuilding facility automation system - a system that is:

- IT-friendly
- BACnet enabled
- Internet-powered

eBuilding is a scalable system designed for multisite retailers to maximize the potential of their existing Information Technology infrastructure to manage the complete portfolio of multisite facilities. The eSCI provides industry standard communications capabilities through its various built-in communications ports.

- 10/100Mbps Ethernet port - supports TCP/IP network traffic, ensuring seamless connectivity with industry standard network infrastructures all over a single port.
- BACnet MS/TP subnet port - designed to communicate with unitary controllers and intelligent sensors, including our SimpleSTAT, TRC and override button devices.

APPLICATION

The combination of features packed into the eSCI controller makes it ideal for supervisory building control and for integrating with a broad range of HVAC equipment in your facilities. The variety of protocol interface options and versatile control features make the eBuilding eSCI well-suited for retrofit as well as new construction applications.
# PRODUCT SELECTION CHART

<table>
<thead>
<tr>
<th>Service</th>
<th>eSCI-8x8</th>
<th>eSCI-16x16</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/O Point Qty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outputs with Relay</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Analog Outputs</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Analog Inputs</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Digital Inputs</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Input Options</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage 0 ... 10 V @ 40 kΩ</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Resistance 0 ... 450 kΩ</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Temperature -35 °F ... +240 °F</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Current 0 ... 20 mA @ 390 Ω</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Output Options</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analog 0 ... 10 V</td>
<td>×</td>
<td>✓</td>
</tr>
<tr>
<td>Digital 0 ... 10 V</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Relay Contacts 24 V AC</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>HOA Switch &amp; Pot.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>18 V Aux Power</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Subnet 1 &lt;sup&gt;(1)&lt;/sup&gt;</td>
<td>BACnet MS/TP</td>
<td>BACnet MS/TP</td>
</tr>
<tr>
<td>Subnet 2 &lt;sup&gt;(2)&lt;/sup&gt;</td>
<td>Modbus RTU</td>
<td>Modbus RTU</td>
</tr>
</tbody>
</table>

Note (1): A maximum of 48 connected BACnet MS/TP devices can be connected.

Note (2): A maximum of 120 points across a maximum of 12 devices are allowed for Modbus RTU.
### SPECIFICATIONS

#### MECHANICAL

<table>
<thead>
<tr>
<th>Spec</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>eSCI-8x8: 270 x 89.5 x 57 mm (10.6 x 3.55 x 2.25&quot;)</td>
</tr>
<tr>
<td></td>
<td>eSCI-16x16: 279.4 x 182.2 x 98.4 mm (11 x 7.25 x 3.875&quot;)</td>
</tr>
<tr>
<td>Housing</td>
<td>Flame-Retardant ABS DIN 43880 type-2 compatible enclosure IP 20</td>
</tr>
<tr>
<td>Enclosure</td>
<td>0.048&quot; Galvanneal</td>
</tr>
<tr>
<td>Conductor Area</td>
<td>Max: AWG 12 (3.31 mm²)</td>
</tr>
<tr>
<td></td>
<td>Min: AWG 22 (0.355 mm²)</td>
</tr>
</tbody>
</table>

#### CONNECTION

- Note: Use Copper or Copper Clad Aluminum 70 °C conductors only.
- Terminals: PCB mounted plug terminal connections
- Conductor Area: Max: AWG 12 (3.31 mm²) Min: AWG 22 (0.355 mm²)

#### ENVIRONMENT

- Note: This equipment is intended for field installation within an enclosure.
- Ambient Temperature: -25 °C ... 50 °C (-13 °F ... 122 °F)
- Ambient Humidity: 0% ... 90% RH non-condensing
- Storage Temperature: -30 °C ... +70 °C (-22 °F ... 158 °F)
- EMC Immunity: EN 61326-1: 2013
- Approvals: UL Listed (CDN & US) UL916 Energy Management Equipment
- Certification: File No. E123522 (within enclosure) File No. E176435 (without enclosure)

#### ELECTRICAL

- Supply Requirements: Component: eSCI-8x8: 24 V AC/DC ±20 % 50/60 Hz, Component: eSCI-16x16: ±20 % 50/60 Hz
- Enclosure: 100 ... 240 V AC, 50/60 Hz (connected via provided pigtail)
- Supply: eSCI-8x8: 30 VA, eSCI-16x16: 42 VA
- FLX Power Rating: Proprietary FLX bus connector carries power and comms between the components of the eSCI-16x16.
- Auxiliary Power: 18 V DC / 60 mA output

#### PROCESSOR

- Type: TI Sitara AM335X Dual-core ARM Cortex A8
- Clock Speed: 1000 MHz
- System Memory: 4 GB eMMC Flash + 512 MB DDR3 DRAM
- Real-Time Clock: Yes, backed for 7 days typical

#### COMMUNICATIONS

- Ethernet ports: Dual Switched 10/100BASE-TX (RJ45)
- Addressing: IPv4, IPv6 or Hostname / DHCP Client or Static IP
- Connection Topology: Daisy-chain
- BACnet/IP, BTL-BBC
- FLX bus: 115.2 K baud
- Max bus length (including extension cables): 30 m / 100 ft. using 22 AWG conductors

#### INPUTS / OUTPUTS

- Note: Shielded cable is recommended for all input connections.
- Digital Output with Relay: Digital Output 0 ... 10 V @ 20 mA max load
- Analog Output: Analog Output 0 ... 10 V @ 20 mA max load, 12-bit resolution
- Universal Inputs: Analog Input
  - Range: 0 ... 450 kΩ
  - Accuracy: ±0.5% of measured resistance
  - Temperature measurement: Range: -40 °C ... +110 °C
  - Accuracy: 1K Type 2 (10K3A1) or 10k Type 3 (10K4A1): ±0.3 °C, ± 0 to 90°C (±0.4 °C at 90°C) ±8 °C (±8°F at 90°F)
  - Current Input: Range: 0 ... 20 mA @ 390 Ω
  - Accuracy: ±0.5% full scale [100μA]
- Digital Inputs: Digital Volt-Free contact, 2 mA contact-wetting current

#### SOFTWARE FEATURES

- Maximum number of Equipment Blocks: 200
- Maximum number of Event Enrolments: 250
- Maximum number of Schedules: 10

#### INSTALLATION SUPPORT SERVICES

- Wireless Smart Device: via Archer T4U V3 USB 3.0 Wifi Adapter (ordered separately) plugged into USB port of eSCI

#### INTERFACE

- eBuilding Software: Envoy
DIMENSIONS

eSCi-8x8
Enclosure and Mounting

Components
eSci-16x16
Enclosure and Mounting

Components