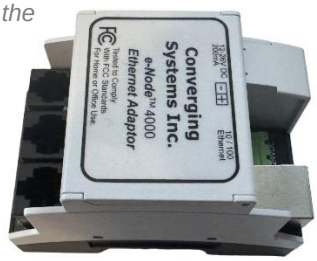
e-Node™ 2000/4000 Internet Protocol Gateways

Enables CS-Bus™ Devices to be Remotely Commissioned, Monitored and Controlled via the Ethernet

Built-in Web Server for CS-Bus™ Device Standalone Operation

Enables all major Third-Party Automation Systems to Easily Control and Receive Feedback from CS-Bus Equipment



Enables Apple iPads, Smart phones and Other Browser-Equipped Devices to Control CS-Bus Equipment

Support for Motor and Lighting Control Products

Human Centric (Circadian) Server for supported Lighting devices targeting any location throughout the world!

Background

The e-Node™x000 Intelligent IP (Internet Protocol) Gateway devices are designed to enable wired (or optionally wireless) Ethernet control of nearly a limitless range of lighting and motor control devices. The factory default allow the Gateway to communicate and control a wide range of CS-Bus™ connected lighting and motor control devices. In addition, the e-Node 4000 gateway also enables alternative connectivity with Converging Systems' DALI-II encoders for the support of DT8 compatible DALI-II fixtures. Regardless of the connected device, a complete set of powerful, customized device drivers supporting all major lighting and automation systems (i.e., Lutron, Crestron, Control4, NICE/ELAN, RTI, URC, Vantage et. al.) makes the e-Node™ platform the definitive Gateway with which to connect, commission and control nearly an unlimited range of supported lighting and motor devices--hence the "Universal Gateway." Typically just one Gateway is required for more applications.

Operation

The e-Node™ x000 gateways provide an Internet Protocol (IP) data stream that can be connected through the Internet by any remote system, IP trigger or 3rd party application. A publicly available comprehensive DDK (device driver toolkit) is available for new applications. All native commands, responses and error messages required to commission, control, and monitor CS-Bus™ devices are available through the e-Node™x000 gateways. Auto-generated and dynamically displayable User Interfaces (UI) populate the Gateway's Home Web page to allow mobile and cross-browser control for connected/supported equipment. For automation platforms that do not currently support Human Centric Lighting (Circadian Lighting), a built-in Circadian Server can be triggered to match the colorimetric output of the sun for an expanded during duration (not just from sunrise to sunset). Multiple/ expanded twilight shows extending below the point when the sun reaches the horizon are available and easily selected.

Easy Setup and Configuration

A built-in 32-bit processor simplifies setup and enables easy upgrade to future-proof the device. The e-Node™ x000 gateway is designed for plug and play operation. The Gateway is automatically discoverable through Windows using File Explorer. Its network address (IP) is set dynamically without user intervention through a built-in DHCP server. Network settings (for static IP addressing) can be easily changed though embedded web pages viewable though any browser. All popular control and automation systems have (free) drivers available for e-Node™ gateways (regardless of model), and some automatically discover the gateway's presence without installer discovery or setup. And some of the more advanced automation platforms today can even auto-discover all connected fixtures connected to the gateway as well.

Applications

The e-Node™ x000 gateways provide a seamless interface to third-party control devices, touchscreens and keypads from all major lighting and automation system. In addition, for environments without third-party control systems, the e-Node™ x000 gateways provide built-in robust web pages with a set of easy to navigate keypad images motifs for standalone control. When connected to a network switch or wireless Access Point, any CS-Bus™ device connected to the e-Node™ x000 gateways can be controlled through web pages which can be browsed and controlled through Apple iPads, PDAs and all smartphones with internet browsers. And as a bonus, when the e-Node™ x000 gateways are connected to any supported third-party lighting panel, scene selections made on those lighting panels can control CS-bus™ lighting and motor controllers without requiring an existing zone (on that panel) to be dedicated for the connection whatsoever.

Features

- CS-Bus™ control accessory
- 32-bit embedded microprocessor simplifies setup and commissioning of CS-Bus™ devices
- Supports up to 254 CS-Bus™ controllers/64 DALI-II devices
- Can be located up to 4000 feet away from controlled devices
- Built-in Human Centric (Circadian) Server that accurately tracks the sun for calibrated luminaires
- Easy to install/small format form factor
- Enables Automation systems by AMX, Control4, Crestron, NICE/Elan, Lutron, RTI, Savant, URC, Vantage and others to control CS-Bus™ equipment through Internet Protocol
- Web server with customized HTML device User interface controls

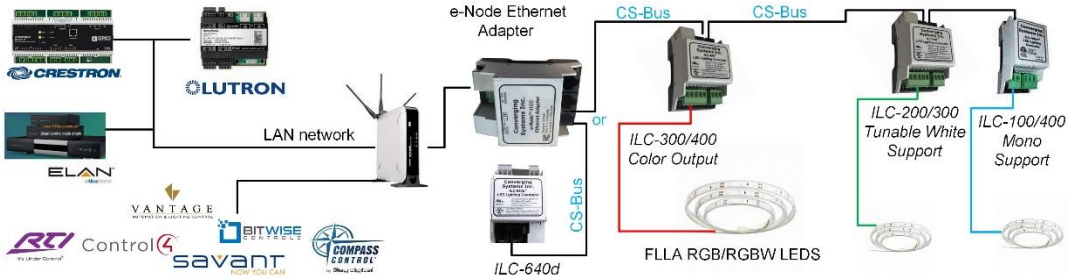
Intelligent Adapters | e-Node x000™ Internet Interface Gateways

Specifications (model dependent*)

Feature	Detail
IP Control	Intelligent Internet Protocol Adapter designed to enable Ethernet control of compatible CS-Bus™ clients. Four IP Sockets + 1 TLS Socket available.
Auto MDIX	No crossover cable required
Wireless Control	With 802.11 (b/g/n) Access Point (optional), remote access of configuration pages as well as embedded HTML control pages
Dynamic IP	Built-in DHCP client with AutoIP for direct connection to laptops (zero configuration)
Identification	Built-in NetBios discovery feature provides Windows-type naming convention on IP bus
Protocols	TCP, UDP, TELNET Client, ARP, ICMP, DLC, WINS, WEB Server, HTTP. DNCP, NetBIOS, SNTPO, CGI and XML processor,
MAC address	Unique registered MAC address
TCP/IUDP Support	Robust support of all functionality of the e-Node™ is also available using a rich set of IP commands.
AJAX	HTTP support for sending commands and retrieving status using XML data
User Interface	-Embedded HTML control pages provide for remote support, OTA firmware updates -e-Node™ web Pilot webpage enables network setup/device discovery, activation and feature setup (by dealer)

Feature	Detail
Bus Connections	One RJ-25 for CS-Bus™ , 2 RJ-45 for alternative applications.
Compatibility	AMX, Control 4, Crestron, Lutron, NICE/Elan, RTI, Savant, URC, Vantage
Ethernet Link Wiring	Standard CAT5 or better connects e-Node to router, switch or other Ethernet source. Maximum cable length 328' (100 m). Ethernet network and cable provided by others
Power Requirements	12v-24vDC via 2-pin indexed detachable connector, 200 ma. @12vdc standard
Power Supply	External UL-listed 12v DC power supply, 250ma. POE Class 0 built in with e-Node 4x00
Enclosure	Molded plastic enclosure-DIN Rail mounting. DIN Rail bracket not supplied.
Size	3.53" x 2.375" X 2.125" (89.66mm x 60.339mm x 53.98mm). Same form factor for all models.
Weight	3.4 oz. (.10kg)
Manufacturing	Made in the USA
Compliance	-PCB UL listed -Power Supply—Separate UL listed Category 2

Wiring



*Compatibility Matrix

Supported Output Controller/Functionality Availability		Output Load Type			e-Node Compatible Model			
Type/Functionality	Model	CS-Bus	DMX	DALI-II (DT-8)	e-Node 2000	e-Node 4000	e-Node 2100[1]	e-Node 4100[1]
Compatible Controller Support								
Constant Voltage Controller	ILC-100/200/300/400/xxx	✓			✓	✓	✓ 2	✓ 2
Constant Current Controller	ILC-450	✓			✓	✓	✓ 2	✓ 2
3rd party DMX Decoders	ILC-460 or 3rd-party devices		✓				✓	✓
3rd party DMX Wi-Fi Fans	3rd party devices		✓					✓
DALI-II Controller (Encoder)	ILC-640d			✓ 3		✓ 3		✓ 3
Feature Support								
Build-in Circadian Support	Profiled devices only					✓		✓ 2
Built-in POE (for e-Node)	Relative to e-Node Model				Call [4]	✓	Call [4]	✓
Other than Lutron Compatibility	(See list under Specifications)	✓	✓	✓	✓	✓	✓	✓
Lutron Support Pre-LEAP	RadioRA2/HWQS/Quantum	✓	✓	✓	✓	✓	✓	✓
Lutron Full Support (LEAP)	RadioRA3/HWQSX/Athena+	✓	✓	✓		✓		✓

1-See Separate Spec Sheet for e-node/dmx **2**-In Alternative CS-Bus mode. **3**- In Alternative DALI Mode **4**-Contact Factory