InetSupervisor™

L-2 Lighting Controller

MADE IN U.S.A.

APPLICATIONS

L2 typical application: Indoor lighting automation.

L2 can be used stand-alone to control a light fixture based on Motion and Light Level S1 sensors. Optionally a wireless switch is used.

If more functionality is required, L2 integrates into a wireless network for a fully-featured automation system.

OVERVIEW

L2 includes energy saving sequence of operation that incorporates built-in motion and light level sensors and generates two dimming signals. Some of the features include:

- Natural light harvesting
- Motion activated or deactivated dimming
- Constant light level control during occupied times
- Stand-alone operation for KiSS deployment
- Seamless integration into BAS systems via open system protocols, BACnet, LonWorks.
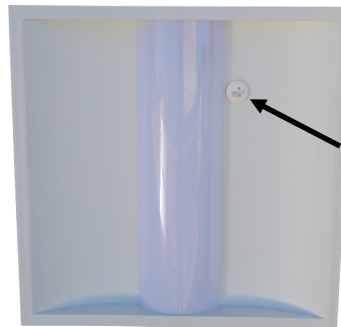- Cloud connectivity via choice of REST protocols

PRODUCT PART NUMBERS

Controller HW Part Number: **L2**

Sensor HW Part Number: **S1**

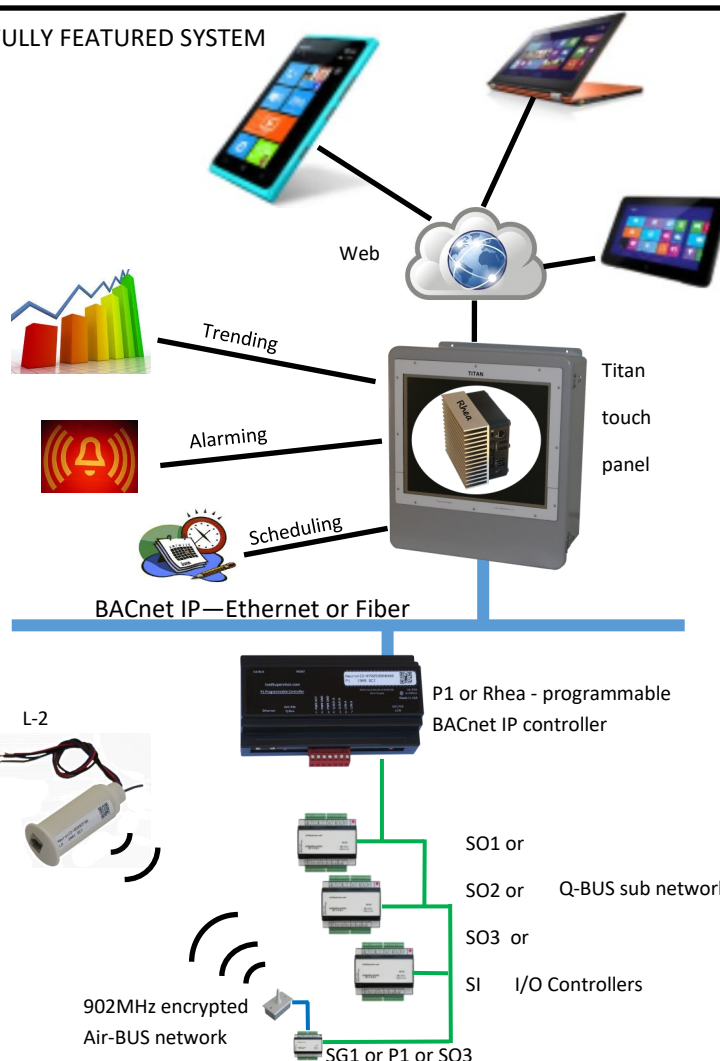### SIMPLE AUTOMATION

L2 controller

S1 sensor

Wireless switch

FULLY FEATURED SYSTEM

Web

Trending

Alarming

Scheduling

Titan touch panel

BACnet IP—Ethernet or Fiber

L-2

P1 or Rhea - programmable BACnet IP controller

SO1 or
SO2 or   Q-BUS sub network
SO3 or
SI   I/O Controllers

902MHz encrypted
Air-BUS network

SG1 or P1 or SO3

IOT Network Platform

In a networked scenario L2s communicate with P1 a graphically programmable controller. Software logic in P1 is the primary source of sequencing of events, however in the event of loss of signal from the P1, the L2s will resume stand-alone operation based on chosen default sequence.

The following choices are available during stand alone operation:

- Switch only

- Switch, and motion sensor

- Switch, and light level

- Switch, motion, and light level

L2 independent 0-10V analog outputs can be used to dim light fixture, or control tunable circadian fixture. Graphical programming provides a platform for unlimited, easy sequencing of the two analog outputs. S1 sensor head can be connected with an RJ11 6-conductor phone cable to the L2. L2 automatically reads the S1 sensor data (motion and light level) and utilizes this data in sequence of operation. All data from sensors, switches and L2 controllers can and should be used in lighting sequences, HVAC, irrigation, etc. for a fully integrated smart building.

Mobile App

InetSupervisor Portal app provides graphical programming interface for free programming of the outputs, and the logic. The app stores configuration for multiple L2 IOT controllers and arranges it into projects. Programs can be backed up and sent for use in another project. The app currently runs on full version of windows desktops and tablets.

InetSupervisor™   L-2 Lighting Controller
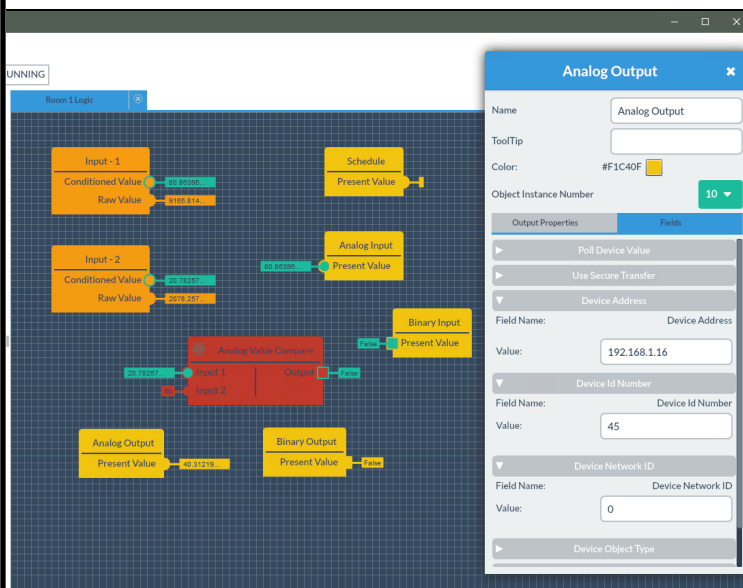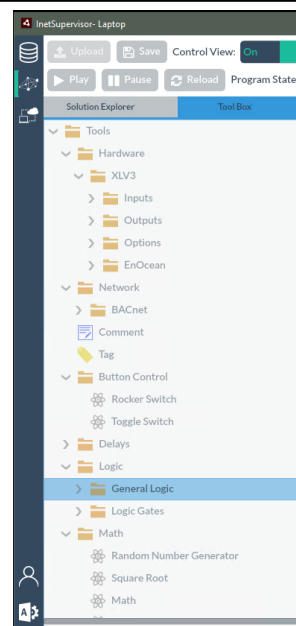
I/O CONFIGURATION

NOTE: No Hardware Jumpers required to configure I/O

Analog Outputs	
L2	2 x Analog 0-10V DC, 20mA MAX each.

Sensors	
S1 motion sensor	PIR, 16 feet detection distance, 90°
S1 light level sensor	0.01 LUX to 83k LUX

INSTALLATION

Top end of the enclosure provides 1/2" NPT threaded connector compatible with 0.5in electrical knockout. Power and analog-output wires protrude out of the connector with length of 10in. O.D. of the main body of the L2 is threaded and fits a standard electrical lock nut.

WIRE COLOR CODE

Jacket color	Function
Black	Common -
Red	Power + to L2
Blue	Analog Output 1 +
Brown	Analog Output 2 +

WARNING!

Short wire is the antenna, do not connect it to anything and do not cut it off. Care needs to be taken as the Common -, and Outputs are not isolated.

AGENCY APPROVALS

Safety Certifications	UL916 Energy Management Equipment

WARRANTY

Standard 2-year warranty.

UL916   RoHS

ETL Intertek

MECHANICAL

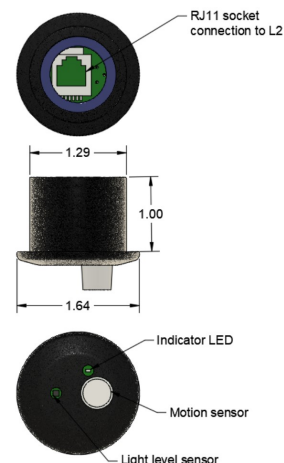| Hardware	
Processor	ARM Cortex M0
Transceiver	902MHz
Power	
Supply Voltage	12-20V DC
Supply Current	150mA max
Enclosure	
Material	PVC Plastic, UL94V0
Color	White
Installation	0.5in NPT threaded nipple
Environment	
Temperature	0°-50°C (32°-122°F)
Humidity	0-90% non-condensing
Storage	-20°- 70°C (-4° - 158°F)

Wire gland, wire length 10"
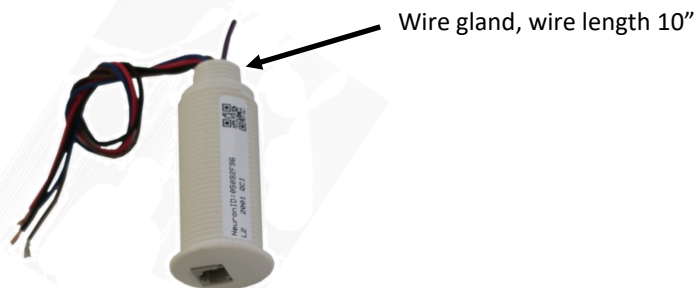
S1 Motion and light level sensors for use with L2. Connection by RJ11 6-conductor phone cable up to 7ft.

L2 controller drawing

1.29
.82
.50
3.65
2.90
1.64

S1 sensor drawing

RJ11 socket connection to L2

1.29
1.00
1.64

Indicator LED
Motion sensor
Light level sensor
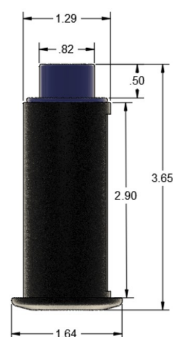
Typical networked High Bay installation

Web, BACnet IP—Ethernet, Fiber, WiFi

Rhea or P1

902MHz AirBus antenna

Fixture with L2 and S1 sensor
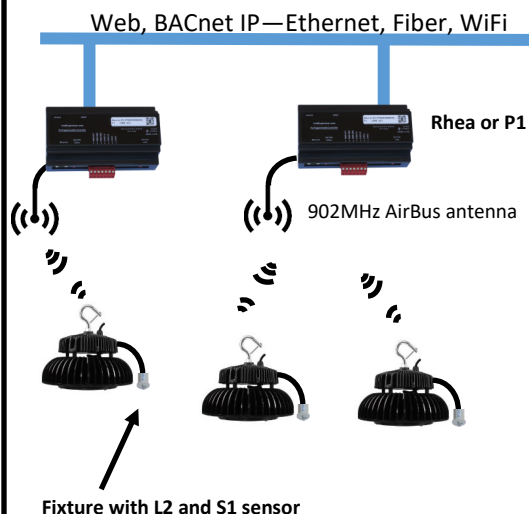
Rules of thumb:

- Antenna covers about 200ft radius, line of sight.

- Rhea needs an NI-FT and can serve about 200 L2s max.

- Rhea can service 15 antennas max.

- P1 can service about 150 L2s max. (alternative to Rhea)

- P1 can service about 12 antennas max.

- P1 has one VA-Bus port for one antenna, additional antennas are added by SG1 on Q-Bus.

Individual projects vary and the integrator may find the above rules conservative or optimistic, mostly conservative.

Typical networked office installation

Office installation is the same as high bay with the following exceptions:

- Max radius of service by each antenna is reduced by walls and other obstacles, try 100 ft.

Typical stand-alone installation

The simplest form of installation is when L2 is installed into a light fixture and paired-up with a wireless switch. L2 interfaces with 0-10V dimmable LED lighting fixtures. Typically, dimmable LED drivers provide AUX 12V power output which is used by L2 to power internal electronics. To pair up the L2 with a switch click the switch within the first 10 seconds of power up. Up to four switches can be paired up with L2s and all of them have to be clicked withing the 10 seconds of power up. Once switches are paired up with the L2 and the 10 seconds is up, the pairing process is locked up. Additional management is then only possible by use of the AirBus Tool app and a USB dongle on a WIN10 computer. AirBus Tool allows for adjusting of:

- Max light level

- Bound switches

- Motion delays

- Choice of sequence of operation

- Etc.

L2 and S1 sensor