InetSupervisor™

P1 Programmable Device

APPLICATIONS

P1 typical application includes outdoor, indoor, circadian tunable, street and high bay lighting, HVAC automation, industrial automation, compressed air system automation, etc.

DESCRIPTION, continued on page 2

P1 is a programmable device used to execute graphical programming language and communicate it to I/O expansion modules. P1 is typically used in a topology where network is designed with reliable twisted-pair floor level network, referred to as FT-10, high-speed Ethernet backbone, and Q-Bus I/O subnetwork. P1 routes Q-Bus traffic to the high-level Ethernet network. Protocols used on the Ethernet side include BACnet IP, Modbus TCP*, REST IoT*, and encrypted BACnet IP. Protocols used on the floor-level networks include FT-10, Q-Bus and VA-Bus.

To configure the P1 communication parameters, user will install the InetSupervisor Portal app application on a remote computer then perform device discovery during which all available P1 devices will show up.

The InetSupervisor Portal app performs a function of an IDE used to create programs, debug and compile. Simply drag graphical blocks, referred to as qubits, from the library and connect them with lines which define the path of data flow. P1 poses no limit to the length or complexity of the code other than hardware memory and CPU processing speed, which is displayed during debugging.
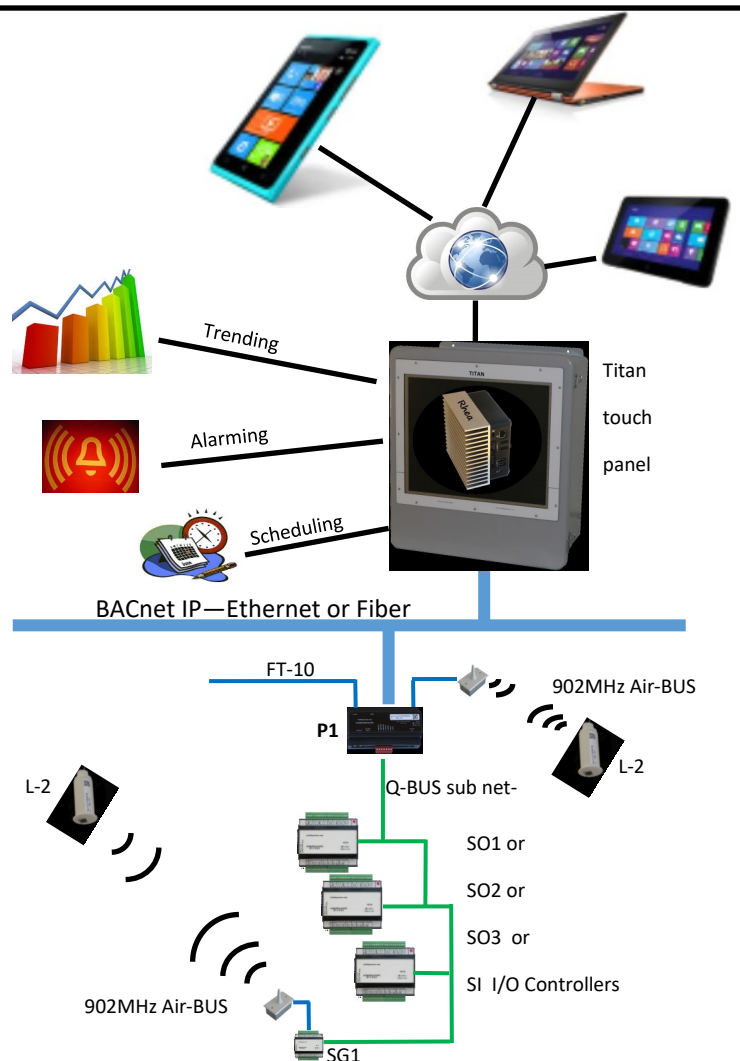
A high performance, scalable and programmable controller is formed by P1 in combination with one or more I/O devices. P1 performs program logic execution and directs its results to Q-bus I/O devices. Devices that connect to Q-BUS port of P1 include:

SI1 – 16 universal inputs

PRODUCT PART NUMBERS

Part Number: **P1**

Or Part Number: **P1-LON**

Trending

Alarming

Scheduling

Titan touch panel

BACnet IP—Ethernet or Fiber

FT-10

P1

902MHz Air-BUS

L-2

L-2

Q-BUS sub net-

SO1 or
SO2 or
SO3 or
SI I/O Controllers

902MHz Air-BUS

SG1

DESCRIPTION—continued

SO1 – 16 solid state relay outputs

SO2 – 8 analog outputs, and 8 digital triac outputs

SG1 – gateway capable of performing the following tasks:

- Connectivity of Modbus RTU/RS-485 devices to the InetSupervisor Portal app graphical programming
- One VA-BUS port capable of attaching one EnO antenna, or one H1.

P1 also includes one VA-BUS port suitable to connect one of the following devices:

H1 – Human Interface, software-definable buttons, many feedback LEDs. Wall mounted.

EnO – EnOcean antenna, provides wireless network connectivity, an AIR-Bus, to the Q-Bus. The following devices can reside on the AIR-Bus:

- L2 – 2 analog outputs 0-10V DC, optionally integrated motion and light level sensors, 12V DC powered.
- EnOcean sensors and switches, including lighting switch, temperature, CO_2, humidity sensors, etc. For more, refer to the standard EnOcean 902MHz products.
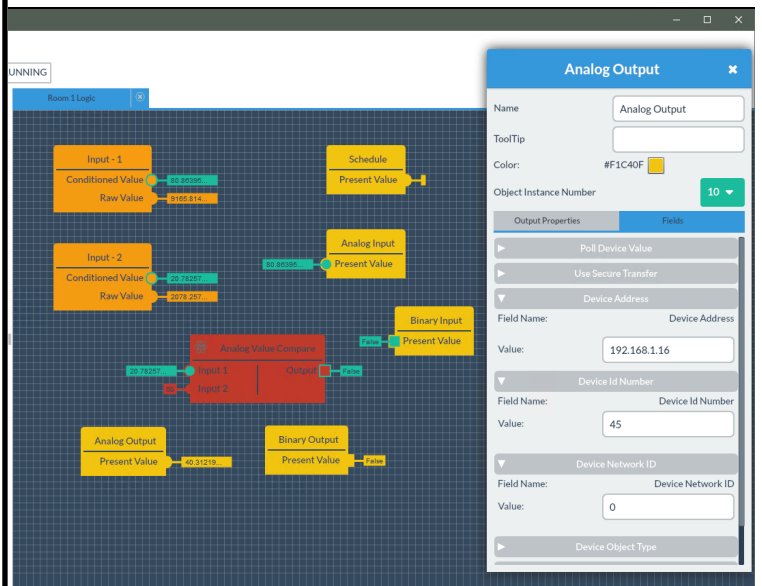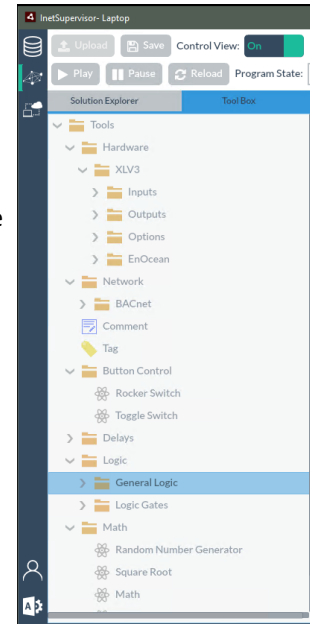
P1 optional LonWorks interface includes 100 NVI (Network Variable Inputs) and 100 NVO (Network Variable Output). Due to changeable types user can expose wanted information from within the graphical programming as a set of SNVT (Standard Network Variable Types) and connect/bind them to other FT-10 devices.
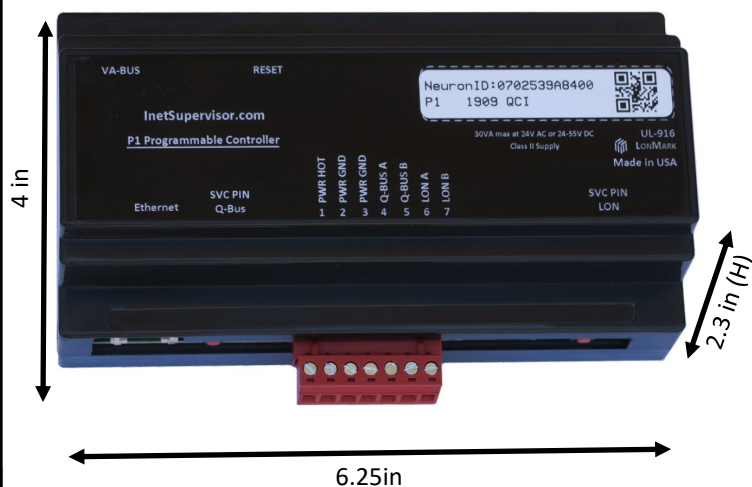
P1 includes on-board real-time clock with a full battery backup. The life expectancy of the battery backup is about 9 years with no external power. When connected to the Internet, P1 will use time servers to synchronize the time automatically, else the user needs to use the Portal app to set proper time.

*Future protocol support. Subject to change

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.

I/O CONFIGURATION

Communication ports	
RJ-45 Ethernet:	BACnet IP, Modbus TCP*, REST*, encrypted BACnet IP. *Future protocol support. Subject to change
Q-BUS:	encrypted BACnet IP
VA-BUS:	Antenna or H1 hardware port.
LonWorks:	Optional FT-10, turns P1 into a LonWorks device, compatible with standard LON, changeable types.

INSTALLATION

P1 shall be installed into a NEMA enclosure using 35mm DIN rail.

MECHANICAL

Hardware	
Processor	ARM A8, 1GHz
Storage	4 Gb flash solid state memory
Power	
Supply Voltage	12-50V DC or 24V AC
Supply Current	450mA max
Enclosure	
Material	ABS plastic
Color	Black
Installation	35mm DIN rail
Environment	
Temperature	0°-50°C (32°-122°F)
Humidity	0-90% non-condensing
Storage	-20°- 70°C (-4° - 158°F)

AGENCY APPROVALS

Safety Certifications	UL916 Energy Management Equipment

WARRANTY

Standard 2-year warranty.

LonMark   **UL916**   RoHS   ETL Intertek

http://www.InetSupervisor.com

Typical High Bay lighting installation

Web, BACnet IP—Ethernet, Fiber, WiFi

Rhea HMI

P1

Twisted pair Q-BUS

SG1

((•)) **Antenna**

902MHz Air-BUS

Fixture with L2

Rules of thumb:

- Antenna/SG1 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.

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

Typical LonWorks installation

LonWorks Bindings

Q1

LonWorks FT-10

P1

BACnet IP, Ethernet

Third-party LonWorks device

Twisted pair Q-BUS

SG1

SO1
SO2
SI1

((•)) **Antenna**

902MHz Air-BUS

Fixture with L2