SIEMENS

Technical Specification Sheet
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Wireless Field Level Network (WFLN)

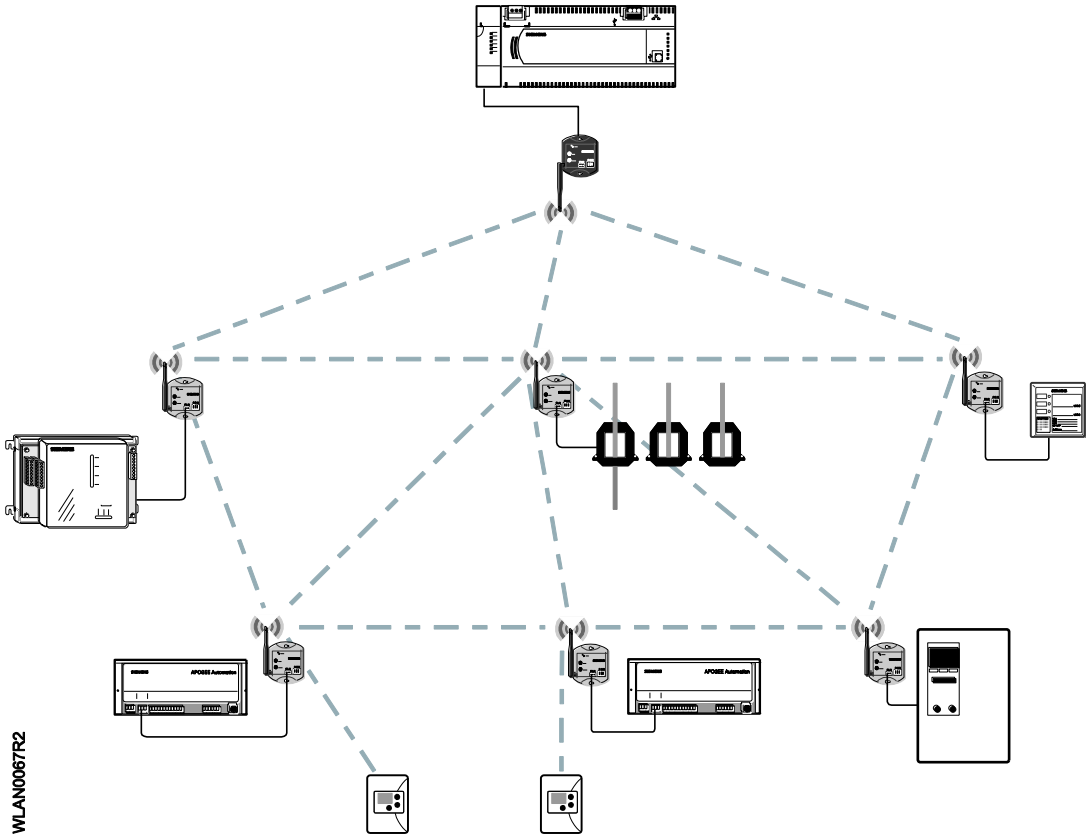

Figure 1. Wireless Field Level Network.

Description

The Wireless Field Level Network (WFLN) is a Field Level Network (FLN) that communicates via radio frequency links instead of a hard-wired communications network (Figure 1). The WFLN utilizes wireless mesh technology to form a wireless mesh network.

A wireless mesh network consists of a collection of nodes that communicate to each other via wireless links that do not need to be routed through a central node.

A grid-like topology enables the signal to hop among different paths in order to circumvent obstructions as it seeks and ultimately finds its target device. These redundant communication paths enable a very high level of reliability. Because multiple signal paths exist, the network can adjust to potential communication link disruptions due to changes in the building environment.

The self-forming, self-healing nature of the mesh network eliminates the need for maintenance as the environment changes.

To implement the WFLN, a Field Level Network Transceiver (FLNX) is mounted at the FLN device and a Field Panel Transceiver (FPX) is mounted at the field panel. Both must be powered by 24 Vac. The transceiver antenna can be mounted either directly or remotely. In cases where the radio transceiver is mounted in a metal enclosure, the remote mount antenna would be used. The transceivers are plenum rated for direct mount without an enclosure.

Figure 2. Field Level Network Transceiver (FLNX).

Figure 3. Field Panel Transceiver (FPX).

Once installed and powered, the transceivers automatically form the mesh network, and the WFLN's wireless mesh communication is virtually transparent to the system and end user.

The WFLN also supports communications with the Wireless TEC Room Temperature Sensor (WRTS). The WRTS can be bound to a specific Terminal Equipment Controller (TEC). Because the WRTS utilizes the mesh network, it can either communicate directly with the FLNX located at its TEC or through other nearby FLNXs that will route the data to the appropriate TEC.

Features

- Supports communications with Wireless TEC Room Temperature Sensors (WRTSs).
- Multiple FPXs (WFLNs) and hard-wired FLN devices can reside on the same FLN cable.
- Field selectable frequency/channel switch selects one of 16 channels of operation in the 2.4 GHz frequency band.
- Field selectable network identification to allow multiple WFLNs to operate in close proximity at the same frequency/channel.
- Direct mount or remote mount antennas.
- LED to indicate power and communications.

Wireless Mesh Network

- Self-forming for simple deployment.
- Self-healing for high reliability.
- Bi-directional routing for command and control.

Benefits

- Highly reliable even as the RF environment changes.
- Provides simpler, faster, and easier installation of FLNs.
- Minimizes impact to facility and occupants during installation in retrofit situations.
- Can easily move FLN devices without needing to reroute network cable.
- Can easily add FLN devices to an existing WFLN.
- Eliminates reliance on old, unreliable, or incompatible wired infrastructures.
- Allows staged migration for retrofit situations.

Specifications

General Specifications (FLNX and FPX)	
Frequency	16 selectable channels of operation in the 2.4 GHz international license free ISM band (IEEE 802.15.4 radio channels 11 through 26) 2405 to 2480 MHz - 5 MHz channel spacing Channels are factory set to IEEE 802.15.4 Channel 26 (2480 MHz)
Modulation	O-QPSK Direct Sequence Spread Spectrum radio in accordance with the IEEE 802.15.4 specification
Agency Listings	UL 916 CSA Complies with FCC Part 15 Regulations (Low Power Unlicensed Transmitters)
Certification	Designed for ZigBee®
Range	Outdoor line of sight range of 350 ft (107 m) Typical indoor range of 25 to 100 ft (8 to 30 m) (actual range varies based on environmental conditions)
Operating Temperature	32° to 122°F (0° to 50°C)
Operating Relative Humidity	20% to 90% relative humidity (non-condensing)
Dimensions	L 4.5" × W 3.5" × D 1.35" (114 mm × 89 mm × 34 mm)
Antenna	6” (15 cm) beyond radio enclosure
Power:	
Voltage Requirement	24 Vac @ 50/60 Hz (19 to 32 Vac)
Power Consumption	1.2 VA (Nominal) at 24 Vac

System Specifications	
Maximum number of FLN devices	32 devices (either hard-wired or wireless) total per field panel FLN port
Compatibility:	PXC Modular Series Controller with Expansion Module – for P2 or BACnet ALN
Automation Level	PXC Compact Series Controller with FLN – for P2 or BACnet ALN Series 1000 Modular Equipment Controller (MEC) with FLNs, 32 MB or greater RAM, and Firmware Revision 2.8 – for P2 ALN Modular Building Controller (MBC) with PowerPC and Firmware Revision 2.8 – for P2 ALN
Field Level	Terminal Equipment Controller (TEC) using P1 protocol Point Pickup Module (PPM) using P1 protocol Point Expansion Modules Digital Energy Monitor Variable Speed Drives Other third-party FLN devices (using P1 protocol)

Ordering Information

Description	Part Number
Field Level Network Transceiver (FLNX)	563-054
Field Panel Transceiver (FPX)	563-055
Direct Mount Antenna	563-007
Remote Mount Antenna	563-008
Pre-terminated Cable Kit (optional) Includes two 14 in. (36 cm) cables: – Power – Communication	563-027

NOTE: Antennas are not included with the transceivers and must be ordered separately.

Regions where this Product is Sold

Canada, Hong Kong, Korea, Mexico, Singapore*, Taiwan, US.

* Singapore registration statement:

Complies with
IMDA Standards
DB01752

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