



Pxx - VERSASENSE WIRELESS DEVICE (SmartMesh IP)

PRODUCT DESCRIPTION

The VersaSense IoT Fabric provides a simple, reliable and affordable Industrial Internet of Things (IIoT) solution for wireless sensing and control. Each VersaSense Wireless Device acts as a wireless hub for up to three plug-and-play sensors (e.g. humidity or temperature) and actuators (e.g. relays or buzzers). A full list of compatible sensors and actuators can be found in the VersaSense Catalog.

The VersaSense software automatically installs and configures all necessary drivers, eliminating the cost and complexity of deploying an IIoT network.

You can immediately interact with your sensors and actuators via a web interface or programmatically using standard REST or Web Sockets APIs.

NETWORK TECHNOLOGY

The VersaSense IoT Fabric is designed for challenging environments such as factories, distribution facilities and data centers.

The Pxx model of the VersaSense Wireless Device uses SmartMesh IP™ from Linear Technology® to automatically form a self-healing mesh network that delivers battery life of up to 10 years, 99.999% reliability and accurate time-stamping. Each wireless device acts as a repeater or 'router' with an approximate indoor range of 50M. This allows a single mesh network to cover very large areas, such as entire factories, office buildings, ships or trains.

Note: each SmartMesh network requires an Edge Gateway (**M01**).

APPLICATION FEATURES

- ★ Atmel® ATmega1284P¹
- ★ 3 * MicroPnP sensor ports (UART, I2C, SPI, digital, analog)
- ★ Wide range of plug and play sensors and actuators
- ★ IETF CoAP network API
- ★ IPSO compliant data model
- ★ < 60µA typical passive current
- ★ Secure code updates

NETWORK FEATURES

- ★ SmartMesh IP LTC5800²
- ★ IEEE 802.15.4e transceiver in the 2.4GHz ISM band
- ★ Extensible, redundant and self-healing mesh network
- ★ Channel hopping reduces interference and multi-path fading
- ★ > 99.999% end-to-end reliability
- ★ < 50µA typical routing current
- ★ NIST-certified security

POWER FEATURES

- ★ LTC3335³ Nanopower Buck-Boost DC/DC and Coulomb Counter
- ★ Accurate real-time battery monitoring
- ★ Up to 10 year battery lifetime

AVAILABLE VERSIONS

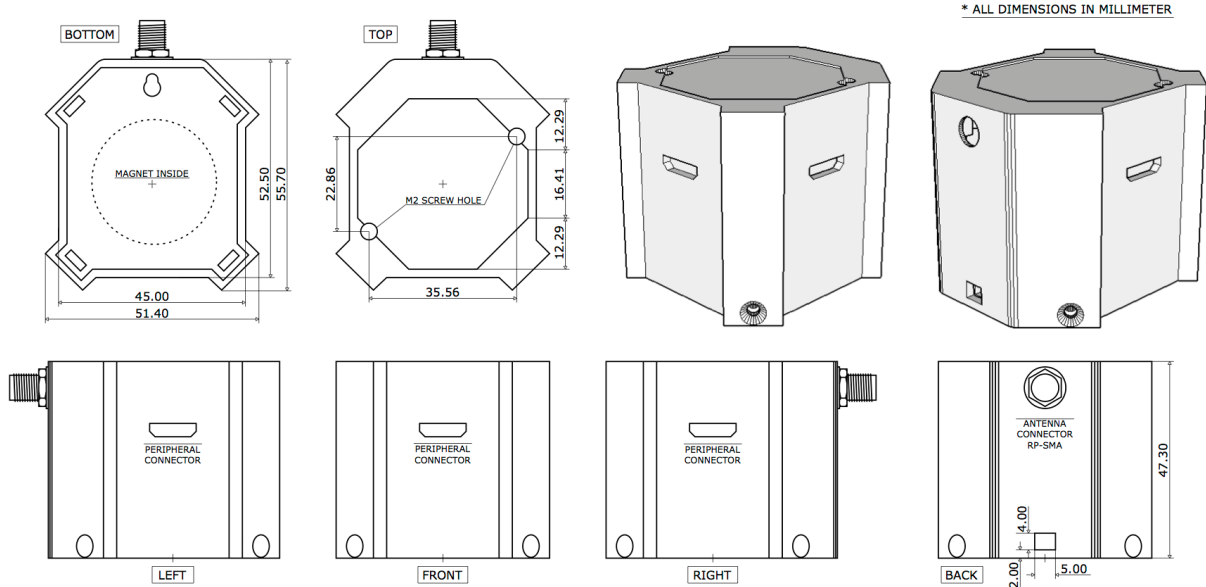
- ★ P01: high capacity 2400mAh dual replaceable battery pack, 2 * Saft 14250 batteries or similar
- ★ P02: high capacity 3000mAh fixed battery pack
- ★ P07: high capacity 4200mAh dual replaceable battery pack, 2 * Saft 17330 batteries or similar
- ★ P06: P07 without batteries, use 2 * Saft 17330 or Tadiran TL-4955-S

¹ [ATmega1284P.pdf](#)

² [LTC5800.pdf](#)

³ [LTC3335.pdf](#)

MECHANICAL SPECIFICATIONS



Case construction material.....	Polyamide ⁴
Antenna connector.....	R-SMA
Peripheral connectors.....	µPnP v1.0
Weight including batteries and antenna.....	107g

NOTE: Peripheral connectors resemble mini HDMI sockets, but they are in no way compatible. The connection of a HDMI device to a peripheral connector may result in damage to one or both devices.

DEVICE CHARACTERISTICS:

Supply voltage range.....	1.8V to 3.8V
Maximum current draw.....	30mA
Temperature range.....	0°C to 40°C
Maximum humidity.....	90% RH
Minimum software updates before EEPROM failure.....	10,000x
Recommended maximum distance between wireless devices (outdoor).....	100M ⁵
Recommended maximum distance between wireless devices (indoor).....	50M ⁵
Maximum link layer data rate (per wireless manager).....	26 Kbps
Maximum link layer data rate (per wireless device).....	10 Kbps

PRODUCT INFORMATION:

Product brochure:	VersaSense-Brochure.pdf
Product catalog:	VersaSense-Catalog.pdf
Documentation:	General documentation and software development APIs

CONTACT INFORMATION:

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⁴ <https://i.materialise.com/3d-printing-materials/polyamide/technical-specifications>

⁵ **Note:** Longer range links are feasible, but are discouraged for reasons of robustness.