Wireless IoT vibration and temperature sensor measurement solution.

In combination with its technology partner Treon, Althen has developed a smart industrial Internet of things measurement solution for condition monitoring applications. The system consists of wireless battery powered industrial sensor nodes and a gateway for communication to transmit data to the cloud.

Industrial Sensor Nodes

- **Vibration specifications**
  - Acceleration measurement on 3-axis Axial, Horizontal and Radial
  - Dynamic range +/- 4G (configurable to 2, 4, 8 or 16)
  - Frequency range 10-1000Hz
  - Sampling rate 6600Hz
  - Resolution 16-bit
  - FFT resolution 1Hz/bin

- **Temperature specifications**
  - Measurement range -40°C to +85 °C
  - Resolution 0.1°C
  - Accuracy +/- 2°C (mounting dependent)
  - Repeatability +/- 0.1°C

- **Wireless communication**
  - 4GHz / Wirepas Mesh

- **Battery**
  - 3.6V lithium thionyl chloride
  - Battery lifetime est. 3 years
  - (Battery life is dependent on operating temperature and configuration)

- **Dimensions of Node**
  - 5 x 28 mm
  - Mounting to M8 thread
  - Weight 129g
  - Cover material 316 ss
  - Top cap material PE HD

- **Environment**
  - Operating -40°C to +85 °C
  - Storage 30 °C maximum
  - IP68 (dust-tight and resistant to water up to 1m)

- **Designed for ATEX**
  - ATEX II 2 G Ex ib IIC T4 Zone 1 & 2
  - -40°C ≤ Ta ≤ +60°C
  - not yet certified

- **Software**
  - Fully configurable data delivery and integration to major clouds
  - Customer cloud application
  - Device management
Wireless IoT Vibration Measurement Solution
Vibration and Temperature Sensor Measurement Solution

Industrial IoT Gateway

Industrial IoT Gateway connects a mesh from few to hundreds of sensor nodes to backends. It collects, processes and transmits data to the cloud. Industrial IoT Gateway supports a wide range of wired and wireless connectivity, can integrate with any cloud platform, is extendable and runs edge applications. Stylish in design and compact in size, it fits any indoor environment and can be branded for OEM applications.

Hardware

- **Gateway specifications**
  - ARM Cortex-A8 1GHz Processor
  - 1 GB DDR3L RAM
  - 16 GB eMMC Storage
  - Power supply 5V DC
  - Size: ø95mm x 18,3mm

- **Connectivity**
  - USB A Host Port
  - Ethernet
  - 2G, LTE CAT M1 / NB-IOT • Wi-Fi, BT & BT LE 2.4GHz / Wirepas

Software

- **Development environment**
  - ARM-based Linux OS (Yocto)
  - Pre-loaded Python and Node.js
  - SDK, Native GCC
  - Optional tools on request *

- **Networking**
  - Firewall (iptables)
  - Linux TCP/IP stack
  - MQTT
  - BlueZ
  - Wirepas Connectivity Library

- **Cloud support**
  - Microsoft Azure
  - Amazon Web Services

Integration service to connect the gateway with any cloud *

Water and dust proof enclosure for Industrial IoT gateway

Industrial IoT Gateway Water and Dust proof enclosure has been designed to protect the Industrial IoT Gateway (model 1111) in outdoor or industrial indoor conditions. Enclosure includes gateway AC/DC power supply, DC cable and gateway holder. Class II design (no FG pin).

- **Ambient conditions**
  - Ambient temperature -20-50 °C
  - Storage temperature -40-85 °C
  - Relative humidity 20-90 %, noncondensing
  - Flammability rating: UL 746C

- **Mechanical specifications**
  - Degree of protection IP67 for enclosure
  - Size 175 x 175 x 75mm, excl. cable glands
  - Pressure equalizer plug
  - Wall mounting.
  - Impact strength: IK08.
  - Color: grey RAL-7035.
  - Material: Base Fiberglass-reinforced PC
  - Cover transparent PC plastic

- **Power Supply**
  - Voltage Range 85-264VAC
  - Frequency Range 47-440Hz
  - Power Consumption 30VA Max
  - Electrical connection variants:
    - EURO TYPE F UNGROUNDED 2 WIRE
    - NEMA 1-15 Class II Power Cords SAFETY and EMC
    - Safety UL60950-1, TUV EN60950-1
    - EMC immunity EN61000 1,2,3,5,6,8,11
    - Surge L-N 1kV

The information provided herein is to the best of our knowledge true and accurate, it is provided for guidance only. All specifications are subject to change without prior notification.

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