ReliaSENS 19-15

Environmental Monitoring System

- **Air Pollution Monitoring System**
- **Compact and Lightweight**
- **Real-time Data**
- **EC Ready**

Features

Air Pollution Monitoring System - Provides reliable measures of gaseous pollutants, PM1/PM2.5/PM10 particulates, EM fields, radioactivity (α, β, γ), temperature, pressure and humidity, thanks to high precision and accuracy pre-calibrated sensors
Compact and Lightweight - The small size and lightness makes the ReliaSENS 19-15 ideal for fixed (e.g. light poles) and mobile installations (e.g. construction sites)
Real Time Data - Cellular and Wi-Fi connectivities allow to connect the device to the Cloud, send data and read sensors measures in real time, 24/7
EC Ready - The Eurotech Everyware Cloud web interface enables remote device management and data access

Description

The ReliaSENS 19-15 is a compact and easy to install environment monitoring system that collects air quality parameters, electromagnetic fields, ionizing radiation levels, in order to enable trend and outlier analysis . It is an indicative instrument to get the AQI (Air Quality Index), which is a synthetic computed value that can indicate how polluted the air is, or it is forecast to become.

The ReliaSENS 19-15 is the ideal solution for private and public agencies that need to get real-time 24/7 data, scaling from a single device to a large monitoring network.

The ReliaSENS 19-15 supports the Eurotech Everyware Cloud (EC) platform: data can be displayed in real-time, and thresholds on the collected metrics can be set, in order to enable the generation of automatic alert messages. System-generated metrics, graphics and charts are also available on EC.

Data can be easily exported and integrated with existing IT systems to perform statistical analyses, and to identify spatial and time patterns related to pollutant generation and propagation.

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Specifications

SENSORS	Gaseous Pollutants	CO, CO2, NO, NO2, O3, SO2, H2S and VOC (see table below for more details)
	Particulate Matter	Option 1: Sensor for PM10 Only – Option 2: Sensor for PM1, PM2.5, and PM10 (PM Accuracy includes assumptions about particle density and refractive index which will vary with application)
	Ionizing Radiations	α, β, γ Counts Range 10 - 10^6 Bq (10Bq = Natural Radiation Background - Sea Level)
	Non-ionizing Radiations	Low Frequencies: 30Hz - 300Hz (Range: 1 to 400µT, Resolution: 1µT) – High Frequencies: 0.5MHz to 8GHz – Response to Typical Bands: 900MHz (Range: 0.01 to 10V/m, Resolution: 0.01V/m), 1.8GHz (Range: 0.05 to 10V/m, Resolution: 0.05V/m), 2.1GHz (Range: 1 to 10V/m, Resolution: 1V/m), 2.4GHz (Range: 0.1 to 10V/m, Resolution: 0.1V/m)
	Other	Temperature, Pressure, Humidity
I/O INTERFACES	Ethernet	1x 10/100Mbps
RADIO INTERFACES	Cellular	GPRS/3G Integrated
	GPS	Integrated GPS
	Wi-Fi / BT	b/g/n, BLE
POWER	Input	12 - 24VDC
	Consumption	4.5W (Suitable for Battery and Photovoltaic Sources)
ENVIRONMENT	Operating Temp	External Air Temperature: -20 to +50°C
MECHANICAL	Dimensions	160x410x140mm (WxHxD)
	Weight	6kg
DATA ACCESS	IoT Integration Platform	Everyware Cloud Ready

Sensors Features

Features		Max Range (1)	Noise	Uncertainty (2)
Gaseous Pollutants	CO (Carbon Monixide)	1000 ppm	5 ppb	9.2% @ 10 ppm of Sampling Gas
	CO2 (Carbon Dioxide)	5000 ppm	1 ppm	7.8% @ 3500 ppm of Sampling Gas
	NO (Nitrogen Oxide)	20 ppm	15 ppb	7.1% @ 4.5 ppm of Sampling Gas
	NO2 (Nitrogen Dioxide)	20 ppm	15 ppb	16.6% @ 1 ppm of Sampling Gas
	O3 (Ozone)	20 ppm	15 ppb	16.6% @ 1 ppm of Sampling Gas
	SO2 (Sulfur Dioxide)	100 ppm	5 ppb	3.5 ppb Mean Value @ 0 ppb of Sampling Gas
	H2S (Hydrogen Sulfide)	100 ppm	1 ppb	10.5 ppb Mean Value @ 0 ppb of Sampling Gas
	VOC (Volatile Organic Compounds; includes: Benzene, Toluene, Xylene)	50 ppm	1 ppb	6.0% @ 2.2 ppm of Sampling Gas

(1) Depending on conditioning settings.

(2) Extended uncertainty. It includes reference instrumentation error (2%) and sampling gas error (2%), both multiplied by a coverage factor (= 2).

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