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enviSENS

AUTOMATIC SENSOR
IMMISSION MONITORING STATION

NO_2 CO SO_2 O_3 PM H_2S NH_3 VOC

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The enviSENS unit is a device used for online monitoring of air quality in a specific location. For this purpose, it uses different types of sensors, according to the customer's requirements for the monitored variables. The unit is checked and adjusted before shipment by means of alignment with a reference/equivalent measuring unit.

The standard version is 230V mains powered, and the unit can optionally be equipped with a battery module for lamp or solar power supply, providing a minimum of 12 hours of operation.

Dust sensor - monitors the size and quantity of particles fraction PM_1, $PM_{2.5}$, PM_{10} in µg/m³ working on optical principle in the range 0-500 µg/m³, manufacturer Plantower.

NO_2 sensor - monitors the concentration of nitrogen dioxide in the ambient air, measurement range is 0-250 ppb, manufacturer ENVEA.

NH_3 sensor - monitors the concentration of ammonia in the ambient air, measurement range is 0-1/0-20/0-200 ppm, manufacturer ENVEA.

H_2S sensor - monitors the concentration of hydrogen sulfide and methane in ambient air, measurement range is 0-250 ppb, manufacturer ENVEA.

The unit can also be equipped with sensors for measuring noise, CO, O_3, SO_2, NO or VOC.

Key benefits and features

- Modular unit.
- Possibility to create local measurement networks.
- Low acquisition costs compared to professional analyzers. No consumables required for operation - low operating costs.
- Compact unit with variable installation options.
- Online transmission of measured data using GSM + GPS technology.
- Power supply - internal switching power supply with maximum output 25W input 230V/0,11A, output 5V/5A. Battery module or solar power as an option.
- Operating temperatures: minimum ambient temperature -20°C, maximum ambient temperature +40°C.
- Box (231x125x90 mm), polycarbonate, non-flammable, self-extinguishing, IP44 with input for dust meter and gas sensors, aluminium bracket for mounting the station on a wall, vertical or horizontal structure (railing, public lighting).

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TECHNICAL PARAMETERS OF THE MOST COMMONLY USED SENSORS

	Cairpol Cairsens NO_2	Cairpol Cairsens NH_3	Cairpol Cairsens H_2S
Measuring principle:	electrochemical sensor	electrochemical sensor	electrochemical sensor
Range:	0 – 250 pbb	0 – 1000 ppb	0 – 1000 ppb
Resolution:	1 µg/m³	1 µg/m³	1 µg/m³
Communication:	UART	UART	UART
Operating conditions:	Temperature -20 to +40 °C Relative humidity 10–90 % Active sample aspiration	Temperature -20 to +40 °C Relative humidity 10–90 % Active sample aspiration	Temperature -20 to +40 °C Relative humidity 10–90 % Active sample aspiration
Maximum measurement uncertainty:	< 30 %	± 30 %	± 30 %

	Cairsens nmVOC Photo Ionisation Detector (PID) VOC senzor	Noise sensor
Measuring principle:	PID, measuring of total VOC	microphone (PID)
Measured substances:	nm VOC	noise
Measuring range:	0 - 2 | 0 - 16 ppm	40–100 dB
Detection limit:	200 ppb	40 db
Resolution:	1 ppb	–
Communication:	UART	UART
Operating conditions:	-20 to +50 °C Relative humidity 10 – 90 % –	-20 to +40 °C Relative humidity 15 – 85 % –
Time resolution:	1 min	≤ 1 sec

	Plantower PMS
Measuring principle:	Optical light scattering
Measured variables:	PM_1, $PM_{2.5}$ and PM_{10}, particle number concentration (also by individual size channels)
Mass concentration:	0 –500 µg/m³
Detection limit:	≤ 1 µg/m³
Communication:	UART

Sensors


Plantower PMS


Cairpol Cairsens NO_2

Cairsens nmVOC
Photo Ionisation Detector

Cairsens H_2S
Photo Ionisation Detector


Noise sensor

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