

enviSENS

AUTOMATIC SENSOR IMMISSION MONITORING STATION



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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.

Dust sensor - monitors the size and quantity of particles fraction PM₁, PM_{2.5}, PM₁₀ in µg/m³ working on optical principle in the range 0-500 µg/m³, manufacturer Plantower.

NO₂ sensor - monitors the concentration of nitrogen dioxide in the ambient air, measurement range is 0-250 ppb, manufacturer ENVEA.

NH₃ sensor - monitors the concentration of ammonia in the ambient air, measurement range is 0-1/0-20/0-200 ppm, manufacturer ENVEA.

H₂S/CH₄ 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, O₃, SO₂, 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.



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 ₂ S/CH ₄
Measuring principle:	electrochemical sensor	electrochemical sensor	electrochemical sensor
Range:	0 – 250 ppb	0 – 25 ppm	0 – 1/0 – 20/0 – 200 ppm
Detection limit:	20 ppb	500 ppb	10/30/200 ppb
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 VOC senzor	Noise sensor	
Measuring principle:	photoionization detector (PID)	microphone (PID)	
Measured substances:	nm VOC	noise	
Measuring range:	0 - 2 0 - 16 ppm	40–100 dB	
Detection limit:	0.2 0.5 ppm	40 db	
Calibration gas:	isobutylene	–	
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/m ³		
Detection limit:	≤ 1 µg/m ³		
Communication:	UART		

Sensors



Plantower PMS



Cairpol Cairsens NO₂, NH₃, H₂S/CH₄S



Cairsens nmVOC
Photo Ionisation Detector



Cairsens H₂S/CH₄
Photo Ionisation Detector



Noise sensor