

enviSENS

AUTOMATIC SENSOR IMMISSION MONITORING STATION



enviSENS

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 PM₁, PM_{2,5}, PM₁₀ in µg/m³ working on optical principle in the range 0-1000 µg/m³, manufacturer Sensirion.

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 0-25 ppm, manufacturer ENVEA.

H₂S sensor - monitors the concentration of hydrogen sulfide and methane in ambient air, measurement range is 0-1000 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. Averaging time: 1/10/60 min for gases, 1/24hours for dust
-  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, IP65 with input for dust meter and gas sensors, aluminium bracket for mounting the station on a wall, vertical or horizontal structure (railing, public lighting).

enviSENS

AUTOMATIC SENSOR IMMISSION MONITORING STATION



TECHNICAL PARAMETERS OF THE MOST COMMONLY USED SENSORS

	Cairpol Cairsns NO ₂	Cairpol Cairsns NH ₃	Cairpol Cairsns H ₂ S	
Measuring principle:	electrochemical sensor	electrochemical sensor	electrochemical sensor	
Range:	0 – 250 ppb	0 – 25 ppm	0 – 1000 ppb	
Resolution:	1 ppb	1 ppb	1 ppb	
Low detection limit:	20 ppb	0,5 ppm	10 ppb	
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:	± 25 %	± 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 +50 °C Relative humidity 15 – 85 % –		
Time resolution:	1 min	≤ 1 sec		
	Sensirion SPS30			
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 – 1000 µg/m ³			
Detection limit:	≤ 1 µg/m ³			
Size range:	0,3 - 10 µm			
Operating temperature:	-20 to +40 °C			

Sensors

Sensirion SPS30

Cairpol Cairsns NO ₂ Electrochemical Sensor

Cairsens nmVOC Photo Ionisation Detector

Cairsens H ₂ S Electrochemical Sensor

Noise sensor