



Air Quality



Gases



Odors



Particles



Noises



Liquids
and soils



Temperature



Relative
humidity



Atmospheric
pressure



WT1_{v1.4}

Technical Datasheet

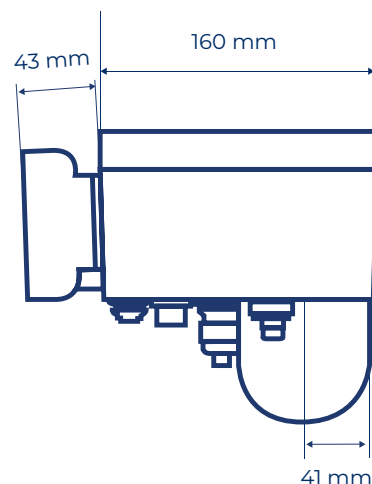
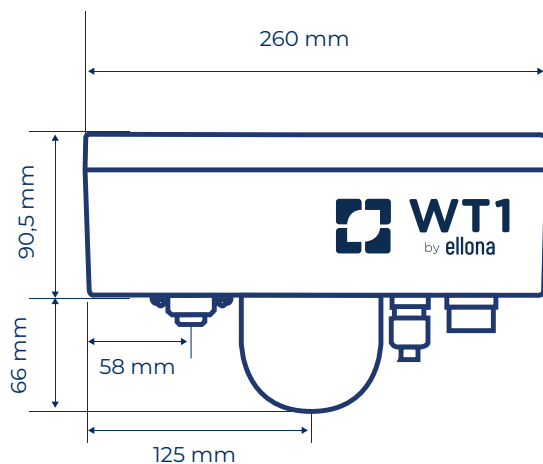
 **ellona**

General features

The WT1 is the most comprehensive online outdoor monitoring system, including gas, odors, VOCs, fine particles, noise, temperature, relative humidity and atmospheric pressure.



- Multi-sensor device for **continuous physical, chemical and perception data collection**
- **Alarm mode** on all measurement channels (triggering thresholds)
- On-Off relay and 4-20mA switch for **automatic triggering of processes**
- Standalone instrument ideally suited to **automated pollution control processes**
- **Cutting edge** data acquisition and processing
- **Real-time and historical dispersion** plume
- Software on **secured servers and online update** (on-premises option)
- **Odor data banks** (odor identification and management)
- **Subjective perception** reporting via QR Code attached to each module



- Communication: Wi-Fi, Ethernet or LTE-M/GPRS⁽¹⁾
- Power: 12V DC input (100-240V AC – 12V DC power adapter included), power over Ethernet or 12-V solar panel battery (option)
- Geolocation: Built-in GNSS (GPS, Galileo, Beidou, Glonass)
- Data logger: up to 1 month of data storage if connection loss.
- Data frequency customization: from 1 data set every 10 seconds
- Installation: ≤ 2h hours

Options



Solar Panel



**Automated
sample vacuum
chamber**



**Sampling
chamber**



**Protective
shelter**



**All-in-one
dryer**



**Soil & liquid
sensors**



**Weather
station**



Calbox

Other options available on demand.

⁽¹⁾Used as LTE-M fallback

Standard configuration

Safe condition

1

WT1 Safe condition	
Temperature	-30°C to 60°C
Atmospheric pressure	500 to 1500 mb
Humidity	0 to 100% non condensing
Chemical products	
H2S	Concentration below 500ppm with 50% humidity
SO2 & acid gas	Concentration below 500ppm with 50% humidity
Ammonia	Concentration below 2000ppm with 50% humidity

Standard sensors

Sensors	Type	Range	LOD	Accuracy R2		lifespan
Temperature	Solide state	-40°C to 85°C	0.1°C	±1	0.1	/
Atmospheric pressure	Solid state	300 to 1100 hPA	1 hPA	0,0025	1 hPA	/
Humidity	Solid state	0 to 100%	0.01	0.03	0.01	/
Equivalent Noise level	Omnidirectional mic	60 to 120 dB(A)	1 dBA	/	0.1 dBA	/
Odor sensor array	MOS	1- 10 000 UO	1 UO	>0.75 (depending on dynamic olfactometry accuracy)		3 -5 years (12-month warranty)

⁽²⁾ Refer to the gas sensor list on page 6

⁽³⁾ To be chosen from a list of 2 PM sensors: 1 specialized in size and concentration or 1 specialized in type fingerprinting. This last one is for construction sites only and on demand

⁽⁴⁾ Refer to the lists on pages 7-9



Electrochemical sensors combination

Options:

- Up to 6 Electrochemical sensors: H₂S, NH₃, NO₂...⁽²⁾

Gas type	Range	LOD	Résolution	lifespan
NH ₃	0-100ppm	0.090 ppm	0.030 ppm	≥12 months
H ₂ S	0-50 ppm	0.015 ppm	0.005 ppm	≥12 months
RSH (mercaptan)	0-150 ppm	0.1 ppm	0.030 ppm	≥12 months
NO ₂	0-100 ppm	0.009 ppm	0.003 ppm	≥12 months
NO ₂ +O ₃	0-100 ppm	0.009 ppm	0.003 ppm	≥12 months
SO ₂	0-75 ppm	0.025 ppm	0.008 ppm	≥12 months
NO	0-800 ppm	0.025 ppm	0.008 ppm	≥12 months
CO	0-1000 ppm	0.171 ppm	0.057 ppm	≥24 months
O ₂	0.01-30%	1000 ppm	100 ppm	≥36 months
Cl ₂	0-50 ppm	0.018 ppm	0.006 ppm	≥12 months
HCl (HBr)	0-40 ppm	0.090 ppm	0.030 ppm	≥12 months
CH ₂ O Formaldehyde	0-20 ppm	0.002 ppm	0.001 ppm	≥18 months
EtO	0-200 ppm	0.005 ppm	0.002 ppm	≥12 months
Alcohols (ETO at +50 mV)	0-200 ppm	0.009 ppm	0.003 ppm	≥12 months
TVOC	PID : lamp 10,6 ev	0-100 ppm	>0.95	/
HCN	0-150 ppm	0.129 ppm	0.043 ppm	≥12 months
H ₂	0-2000 ppm	6 ppm	2 ppm	≥12 months
H ₂ O ₂ (Peroxyde)	0-1000 ppm	0.1 ppm	0.03 ppm	
PH ₃	0-50 ppm	0.009 ppm	0.003 ppm	

⁽²⁾ Refer to the gas sensor list on page 6

⁽³⁾ To be chosen from a list of 2 PM sensors: 1 specialized in size and concentration or 1 specialized in type fingerprinting. This last one is for construction sites only and on demand

⁽⁴⁾ Refer to the lists on pages 7-9

Additional sensors

Options:

- 1 double-band NDIR: NO₂, CH₄ or CO₂
- 1 double-membrane PID or 1 optical sensor
- 1 optical particles sensor (PM 1-2.5-10)⁽³⁾
- Noise sensor
- Other gases or measuring ranges on request

Type of sensor	Type	Range	LOD	Accuracy R2	Résolution	lifespan	Ref
Mass concentration of particles (PM1-2.5-10)	Optical particle counter	0-1 000 µg/m ³	< 0.1 µg/m ³	>0.9	0.1 µg/m ³	≥12 months	100-0024-FR
PM type fingerprinting	Optical particle counter	0-10 000 p	1 p	1 p	1 p	≥12 months	
CO₂	NDIR	0 to 5000 ppm	20 ppm	20 ppm +3 %	1ppm	≥36 months	100-0004-FR
CH₄	NDIR	0-5 %	0,01 %	≤5 %	0.2% of FS range	/	100-0005-FR
Noise	Noise	60 to 120 dB	1 dBA	/	1 dBA	/	100-0046-FR
VOC concentration	PID	0-20 ppm	5 ppb	≤5%	≤10 ppb	≥24 months/ 5000h lamp	100-0002-FR

⁽²⁾ Refer to the gas sensor list on page 6

⁽³⁾ To be chosen from a list of 2 PM sensors: 1 specialized in size and concentration or 1 specialized in type fingerprinting. This last one is for construction sites only and on demand

⁽⁴⁾ Refer to the lists on pages 7-9