

INDOOR AIR QUALITY MONITORING

A101NL Specification

Introduction

The Aeropulse A101NL is an indoor air quality monitor that supports connectivity through 1NCE IoT SIM cards and is compatible with NB-IoT and LTE-M networks. Simply insert a compatible 1NCE card to establish a network connection.

With multiple power supply and communication options, the A101NL is well suited to a wide range of indoor and smart-building environments.

Key Features

- 1NCE SIM card connectivity and global coverage
- NB-IoT and LTE-M network support
- Modular sensor capsules for different project needs
- Up to 16 environmental measurements in one device
- Multiple power supply options
- Versatile connectivity for system integration
- Aeropulse App for device configuration and data access
- Aeropulse Dashboard for real-time data, analysis, and kiosk creation

Specifications

Sensors and Measurement Parameters

Sensor Type	Range	Accuracy	Resolution	Technology
PM2.5	0 - 1000 $\mu\text{g}/\text{m}^3$	$\pm 5 \mu\text{g}/\text{m}^3 + 20\%$ at 0-100 $\mu\text{g}/\text{m}^3$; $\pm 10\%$ at 101-1000 $\mu\text{g}/\text{m}^3$	1 $\mu\text{g}/\text{m}^3$	Light Scattering
PM10	0 - 1000 $\mu\text{g}/\text{m}^3$	$\pm 5 \mu\text{g}/\text{m}^3 + 20\%$ at 0-100 $\mu\text{g}/\text{m}^3$; $\pm 10\%$ at 101-1000 $\mu\text{g}/\text{m}^3$	1 $\mu\text{g}/\text{m}^3$	Light Scattering
Carbon Dioxide (CO2)	400 - 10,000 ppm	$\pm 30 \text{ ppm} \pm 2\%$ of reading	1 ppm	Non-dispersive Infrared
TVOC (Index)	1 - 500	± 15	1	MOx (MEMS)
TVOC ($\mu\text{g}/\text{m}^3$)	1 - 2000 $\mu\text{g}/\text{m}^3$	$\pm 20 \mu\text{g}/\text{m}^3 + 15\%$ at 1-500 $\mu\text{g}/\text{m}^3$	1 $\mu\text{g}/\text{m}^3$	MOx (MEMS)
NOx Index	1 - 500	± 15	1	MOx (MEMS)
Temperature	-40°C - 125°C	$\pm 0.2^\circ\text{C}$	0.1°C	Digital CMOSens® technology (MEMS)
Humidity	0% - 100% RH	$\pm 1.8\% \text{ RH}$	0.01% RH	Digital CMOSens® technology (MEMS)
Light	0.01 - 83,000 lux	$\pm 0.2\%$	0.01 lux	Photodiode
Noise	36 - 95 dB	$\pm 3 \text{ dB} @ 23 \pm 5^\circ\text{C}$	1 dB	Digital
Air Pressure	300 - 1100 hPa	$\pm 1 \text{ hPa}$	0.01 hPa	Piezoresistive Absolute Pressure Sensor (MEMS)

TVOC defaults to Index. TVOC ($\mu\text{g}/\text{m}^3$) can be selected under Units in the Aeropulse Dashboard or via the API.

Ozone (O ₃) (selective)	0 - 5 ppm	±5% F.S.	0.001 ppm	Solid Polymer Electrochemical
Nitrogen Dioxide (NO ₂) (selective)	0 - 5 ppm	±5% F.S.	0.001 ppm	Solid Polymer Electrochemical
Carbon Monoxide (CO) (selective)	0 - 1000 ppm	±5% F.S.	5 ppm	Micro Fuel Cell
Formaldehyde (HCHO) (selective)	0 - 1 ppm	±5% F.S.	0.001 ppm	Solid Polymer Electrochemical

Connectivity and Power Supply

- Wi-Fi: 2.4 & 5 GHz, 802.11 b/g/n
- Modbus RTU/IP
- BACnet MS/TP and BACnet/IP
- MQTT
- API
- Power Supply: 10-30 V DC, 24 V AC, PoE, Type-C

General Specifications

- Dimension: 150 × 112 × 32 mm
- Weight: 235 g
- Operating Temperature: 0°C - 50°C
- Operating Humidity: 10% - 90% RH (non-condensing)
- Data Storage: 1-minute data average, with over 1.5 years of storage capacity
- Installation: Wall or ceiling mount

Certification

- CE, FCC, RoHS, REACH, Works with WELL