



24/7 Air Quality Monitoring

Duet Sensor



We make the invisible, visible:
what's in the air you breathe.

TelosAir's cutting-edge indoor air quality sensors, AI-enabled analytics and insights, and integration with building management systems allow you to see clearly what's in the air you breathe and how to make it safer and healthier.



Particulate Matter



CO₂



VOCs



Relative Humidity



Pressure



Temperature

Precision

Precision measurements made with Duet sensors co-located and exposed to nebulized aerosol. In Figure 3, the response of 22 co-located units when exposed to a short pulse of NaCl aerosol is shown. The measurements from the co-located units are within +/- 10% of each other.

Accuracy

Accuracy measurements are made by co-locating Duet sensors with an Aerodynamic Particle Sizer (TSI Inc, MN). Both units are then exposed to nebulized NaCl aerosol. In Figure 4, the time series of the response of 3 co-located units with APS is shown. The measurements from the co-located units are within +/- 10% of each other.

Sampling Rate

USB: Samples are generated on a 3-second interval when connected over USB, with the radio disabled. When radio is enabled, the unit will behave like a radio connected unit, even if data is only read over USB.

Radio: The unit will attempt to generate a sample every 3000 milliseconds, however, due to the nature of radio transmission, sometimes these samples are unable to be generated, or successfully transmitted to the gateway device. The distribution of the amount of time between samples forms a poisson distribution.

Reliability

With increasing obstruction, the ability of the unit to successfully transmit data becomes more variable. In the above graph, increasing obstruction index represents an increased amount of obstruction.

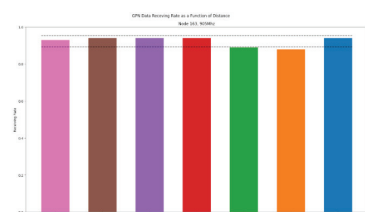
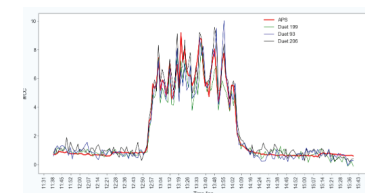
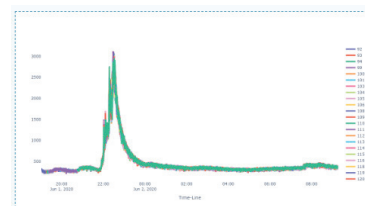


Table 1: Electrical Specifications – End-Node

| Parameter | Min | Typ. | Max | Unit |
|----------------------------------|-----|------|-----|------|
| Model A (USB-C) | | | | |
| Supply Voltage | 4.7 | 5 | 5.3 | VDC |
| Current via USB adapter @ 5V | | | | mA |
| Current via USB computer @ 4.84V | | | | mA |
| Power | | | | W |
| Model B (Terminal Block) | | | | |
| Supply Voltage | 7 | - | 36 | VDC |

Table 2: Sensor Specifications

| Parameter | Min | Typ. | Max | Unit |
|--|-----|-------|------|-------------------|
| Temperature/Humidity | | | | |
| Operating Range - Temperature | -40 | - | 125 | °C |
| Temperature Accuracy @ 25°C | - | ±0.3 | - | °C |
| Operating Range – Humidity (RH) | 0 | - | 100 | %RH |
| Relative Humidity Accuracy @ 25°C (20% RH to 80% RH) | - | ±2 | - | %RH |
| Pressure | | | | |
| Operating Range | 0 | - | 25 | PSI |
| Tolerance | - | ±0.25 | - | %FSS BFUL |
| Particle Measurement | | | | |
| Operating principle: Light Scattering | | | | |
| Detection size range | 0.3 | - | 10 | µm |
| Particle Concentration Range | 0 | - | 1000 | µg/m ³ |
| Resolution | - | 1 | - | µg/m ³ |
| VOC | | | | |
| VOC Index Range | 1 | - | 500 | VOC Index Points |
| Repeatability | - | ±5 | - | VOC Index Points |
| Absolute CO₂ Measurement | | | | |
| Measurement Range | 400 | | 5000 | ppm |
| Resolution | | ±10 | | ppm |

Table 3: RF Specifications

| Parameter | Min | Typ. | Max | Unit |
|--------------------------------|-----|--------|-----|------|
| Frequency Band Used – ISM band | 902 | 915 | 928 | MHz |
| Operating Frequency | 902 | varies | 928 | MHz |
| Radio Bandwidth | - | 500 | - | KHz |
| Data Sampling Period (USB) | - | 3 | - | s |

Our *air quality experts* are ready to help you.



Contact us today to schedule a
free consultation!



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