



# Airflow Monitoring System

## MiPCA

The MiPCA is an airflow monitoring system that accurately measures airflow from a Pre-Conditioned Air Unit to an airplane at the gate or a mobile PCA. Airflow thresholds can be set to trigger indicator lights and ensure the PCA Unit is attached and operating optimally. Multiple pressure, temperature, and humidity sensors work in conjunction to determine the precise and accurate volume air provided to the aircraft.



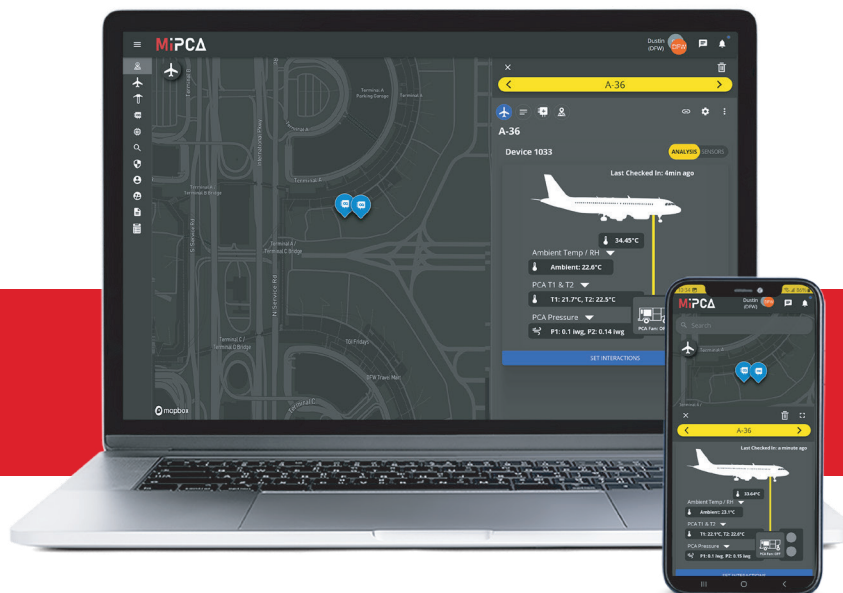
The MiPCA Platform provides an admin view for all devices, airports, and gates. All sensor and airflow data are saved in a secure database and can be exported for further analysis. This data can be used for preventative maintenance as you can see real-time fan performance and potential deterioration.

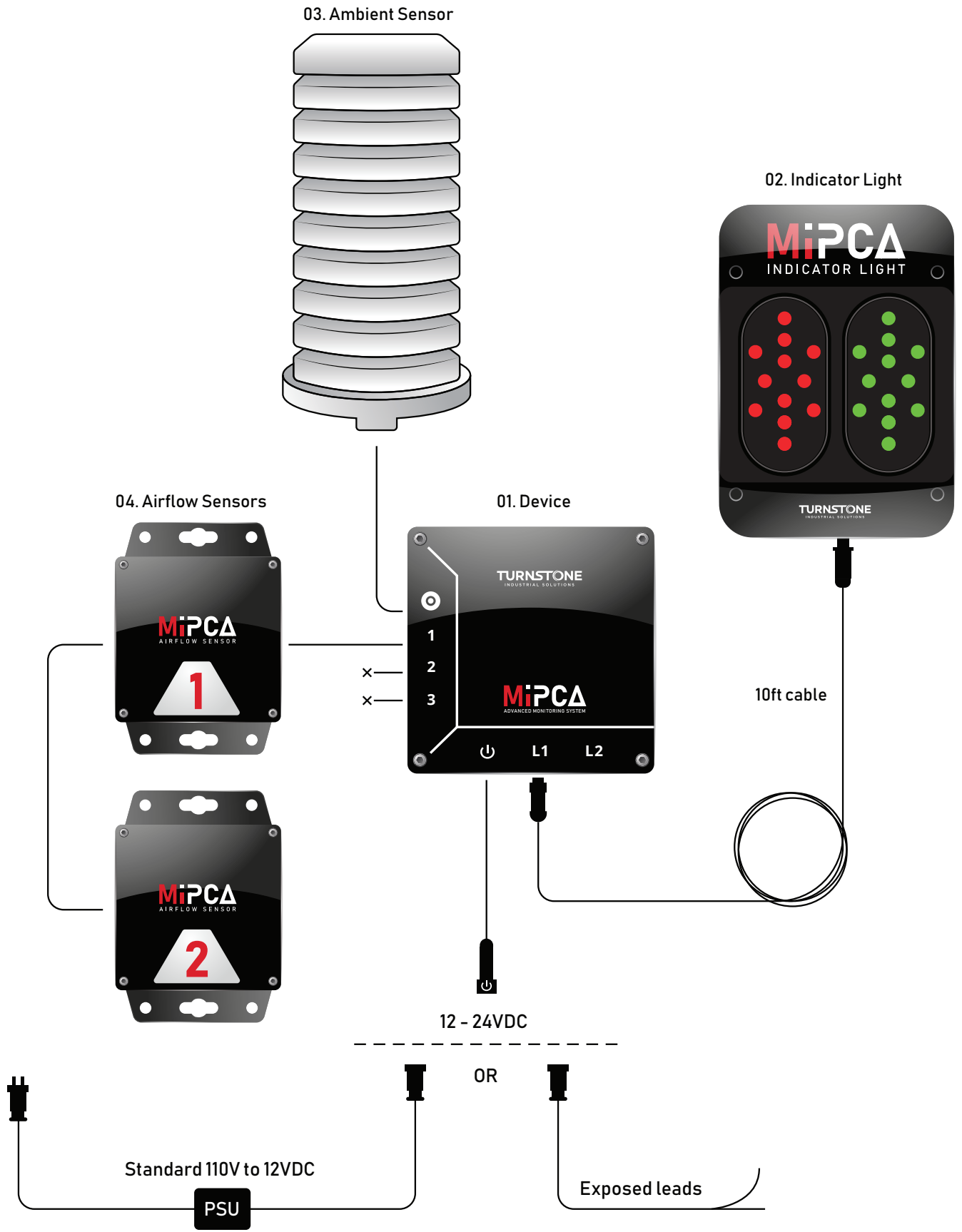
## Features:

- ▶ Modular Design (Device, Sensors, Lights)
- ▶ LTE Connectivity
- ▶ Intuitive Admin Dashboard
- ▶ Bright Indicator Lights

## Benefits:

- ▶ Adaptable to Most PCA Units (Retrofittable)
- ▶ Instantly Connects to Cellular Network
- ▶ View and Analyze All Historical Data.
- ▶ Ensures Proper PCA Use from Ground Support Crew





# MiPCA Platform Features:

The MiPCA platform is used to configure components, create interactions, and view historical data. Our devices remotely monitor the PCA pressures and temperatures to ensure appropriate operation while also calculating other datapoints that are helpful for decision making. Below is an example of a "Gate" Page where the PCA Performance is being monitored:

Navigation Menu

PCA Visualizer

Calculated Mass Air Flow

Mass Air Flow Thresholds AND Colors

Red Light

Green Light

Red Light

Mass Air Flow is calculated with a combination of pressure and temperature sensors at the PCA Unit. We develop thresholds for the PCA and Ducting to determine if adequate airflow is reaching the plane. The two circled points are when the PCA was operational AND within threshold. This would be reflected as a GREEN light to the ground support crew.

Pressure Component

Pressure Historic Data

Mass Air Flow is calculated using our proprietary Pressure Sensing technology. The chainable pressure component controls the operation of lights and is where all historical data can be viewed.

## When accessing the MiPCA Platform users can:

- ▶ Select and Modify Ducting Types that are attached to PCA and Aircraft.
- ▶ Easily change interaction set points for the RED / GREEN Light operation.
- ▶ Set up notifications/alerts via EMAIL or SMS (Text).
- ▶ Review Historical Data about PCA Operation at anytime.

# Interactive Airport Map:

MiPCA Platform can be used to manage fleets of PCA Units in multiple locations on our Interactive Site Map. Create an Airport by selecting the Aircraft button on the top right corner of the map



Click "Add Airport"



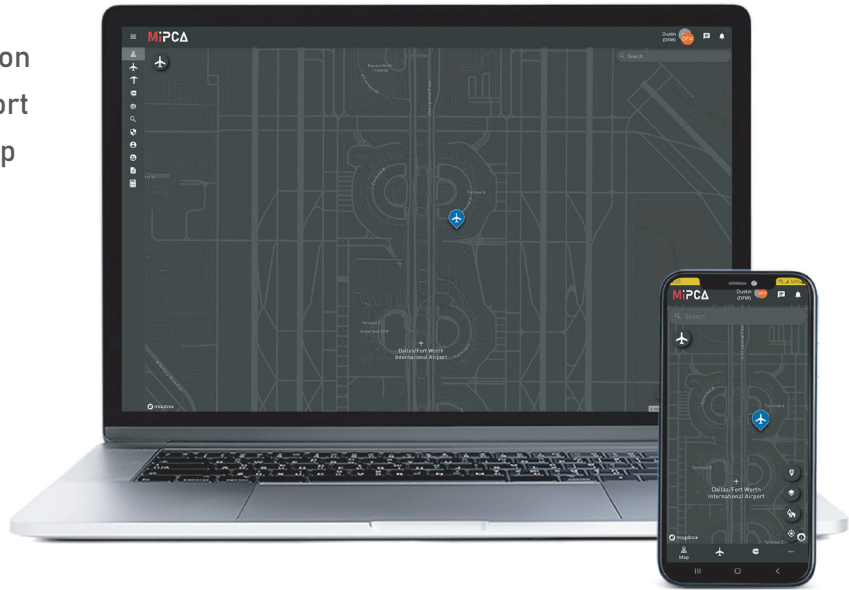
Select its location on the map



click "Confirm,"

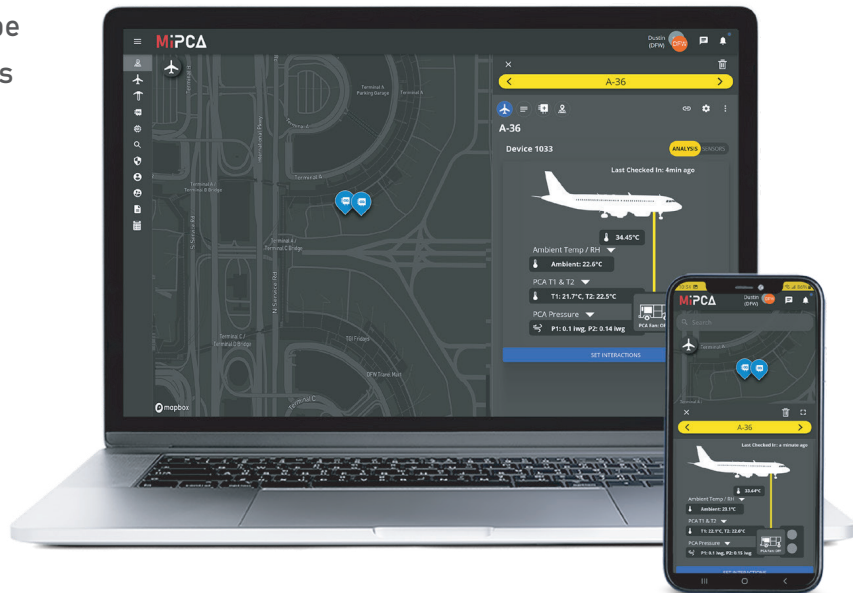


Name the Airport. Once an Airport is created you can make "Gates" that can be associated with MiPCA Devices. This can be done via the Map OR Airport Dashboard.



# Selected Gate:

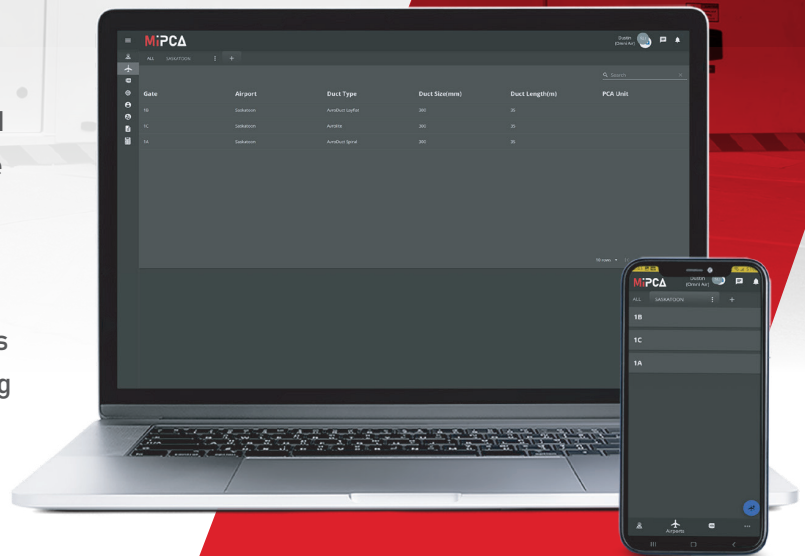
Multiple Devices, Users, and Teams can be associated with each Gate. When a Gate is selected on the Map all the connected devices will display in a drawer to the right. All of the most recent data will be displayed such as; Last measurement activity, pressures, temperatures, humidity, and ambient conditions. These measurements are used to calculate Mass Air Flow and End-of-Duct Temperatures.





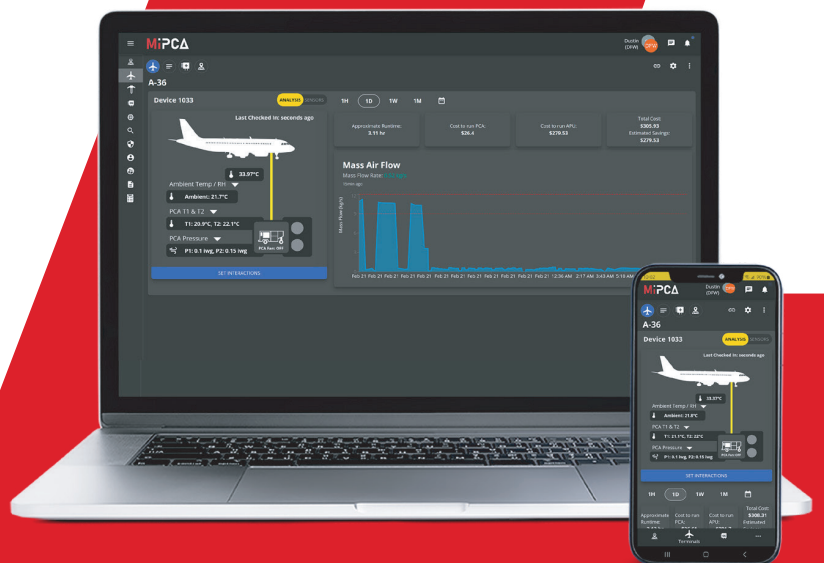
## Airport Dashboard:

All of the created Airports and Gates can be found in the Airport Dashboard, which displays the Gate Name, Airport, Ducting Type, Duct Diameter, Duct Length, and a PCA Descriptor. Airports are separated into tabs similar to a desktop browser, with the associated gates in a list form below. This Dashboard allows for a quick look into the Ducting and PCA that is used at each gate and assists in keeping information organized.



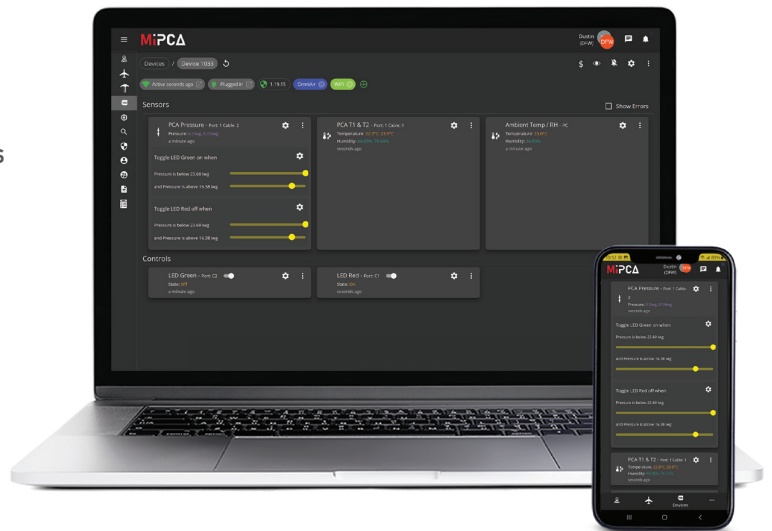
## Gate Page:

The Gate Page is where the MiPCA Devices are linked to a "Gate" AND where ducting properties are selected / modified. There is a PCA Visualizer on the left side that is used to select the proper components for the PCA and assign them as pressure, temps or ambient conditions. When in operation the Temperature at the end of the ducting is calculated and displayed. The Mass Air Flow Calculation and Graph is displayed to the right of the visualizer.



# Device Page:

The Device Page contains all of the components that are connected to MiPCA Device; both Sensors and Controllers (future development). The Device page is where new sensor components are configured to the device and where Notifications and Set Points can be created.



# Component Page:

Each component on the Device page can be clicked to view the historical data for the last hour, 12 hours, week, month, or customer duration. Interactions can be set and displayed on over the historical data. Overlays can also be customized to blink a custom color and display custom text for any values.



# MiPCA

ADVANCED MONITORING SYSTEM

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