



## Strata **Ventilation Automation & Control** (VAC)

Automate the operation of underground ventilation systems to conserve power consumption and significantly reduce energy costs.





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The Strata VAC system delivers centralized, remote, and fully automated management of underground ventilation networks through integrated PLC and VFD controls. Designed for flexibility, the system seamlessly interfaces with any number or brand of PLCs connected directly to fan VFDs, enabling easy integration into existing infrastructure.

Using real-time environmental monitoring, the VAC system continuously evaluates underground conditions and automatically adjusts fan speeds, as well as starts or stops fans based on predefined parameters. As conditions change, the system dynamically responds to maintain optimal airflow and air quality.

This intelligent control reduces unnecessary fan operation, improves overall system efficiency, and significantly lowers energy consumption and operating costs.

### ADVANTAGES OF STRATA VAC

- Enables easy integration to any number of PLC's with direct connection to VFDs
- Automatically control fan speeds and on/off operations according to environmental conditions

- Increase overall system efficiency by decreasing power consumption and energy costs
- Eliminate manual fan management and travel time
- Establish real-time atmospheric monitoring with warning alerts
- Completely wireless and battery-powered network that is fully interoperable with existing underground networks

### SPECIFICATIONS

- **Select and configure custom data-points:**
  - Harmful gas levels
  - Air quality due to diesel emissions
  - Number of personnel in working section
  - Number of vehicles in working section
  - Quantity of dust - Air flows
- Flexibility to automate partial or entire underground facility
- Fail-safe feature enables override of automation and remote-control capabilities

- System suitable for all motor control automation
  - Fan motors
  - Belts drives
  - Pumps
  - Levers

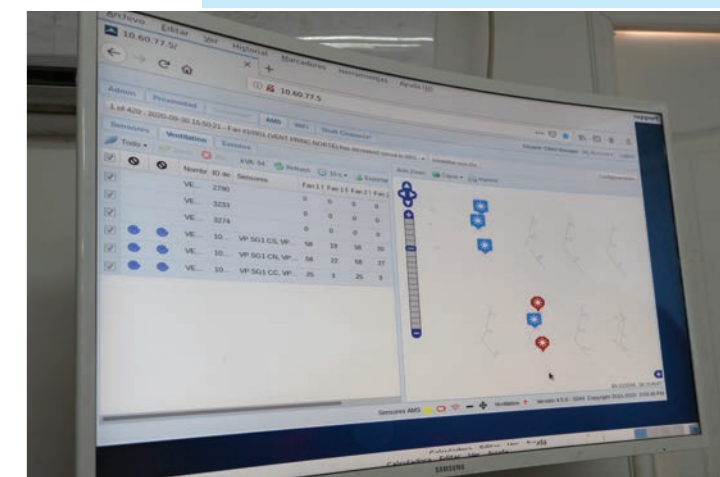


### GAS DETECTION

It is essential to monitor the quality of air and levels of potentially harmful gases in the atmosphere underground to ensure the safety of workers. Strata's system uses Trolex Sentro 1 and Sentro 8 advanced monitoring devices to protect against unsafe working conditions.

Sentro 1 is available in either a hardwired or completely wireless and battery-powered version. It provides highly sensitive early detection and warning against toxic and flammable gases. Each unit monitors one gas at a time but has the capability of monitoring over 64 different gases.

Sentro 8 is an ideal solution for applications that require simultaneous monitoring of a wide range of gases and other environmental conditions. Each unit provides monitoring of up to eight atmospheric variables.



### CASE STUDY

#### The Problem – High energy consumption related to mine ventilation.

Guanaco Compañía Minera (Mina Amancaya), operated by Austral Gold in Chile was experiencing high energy costs related to its fan ventilation system. Even though harmful gas levels would fluctuate and the number of diesel vehicles in the working areas would vary, the ventilation circuit was operating at a constant steady-state to always ensure a healthy supply of air was available.

Due to this high-level of fan activity, the mine's daily output of energy was consistently measuring around 1,380 kilowatt-hours. Management was looking for an economical solution to reduce the power consumption and resulting energy costs.

#### The Solution - StrataConnect™ Ventilation Automation and Control (VAC)

Teamed with its qualified Chilean distributor, Catanoor, Strata delivered a network solution to fully automate the operation of the mine's ventilation system. The automation and control system is configured to adjust the speeds of the primary fans automatically and activate the secondary fans only when needed, this is based on specific factors: Harmful gas levels in the environment; the number of people in a working area; and the number of vehicles in a working area, particularly diesel-powered vehicles.

#### Results

Following the installation of the StrataConnect™ VAC, Guanaco Compañía Minera reported a 21% savings in costs and energy in the first month of operation.

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