

Maestro
Digital Mine



Real time data means more time at the face.

Congreso Internacional Minero Sonora Maestro Digital Mine Eco-System

October 2024

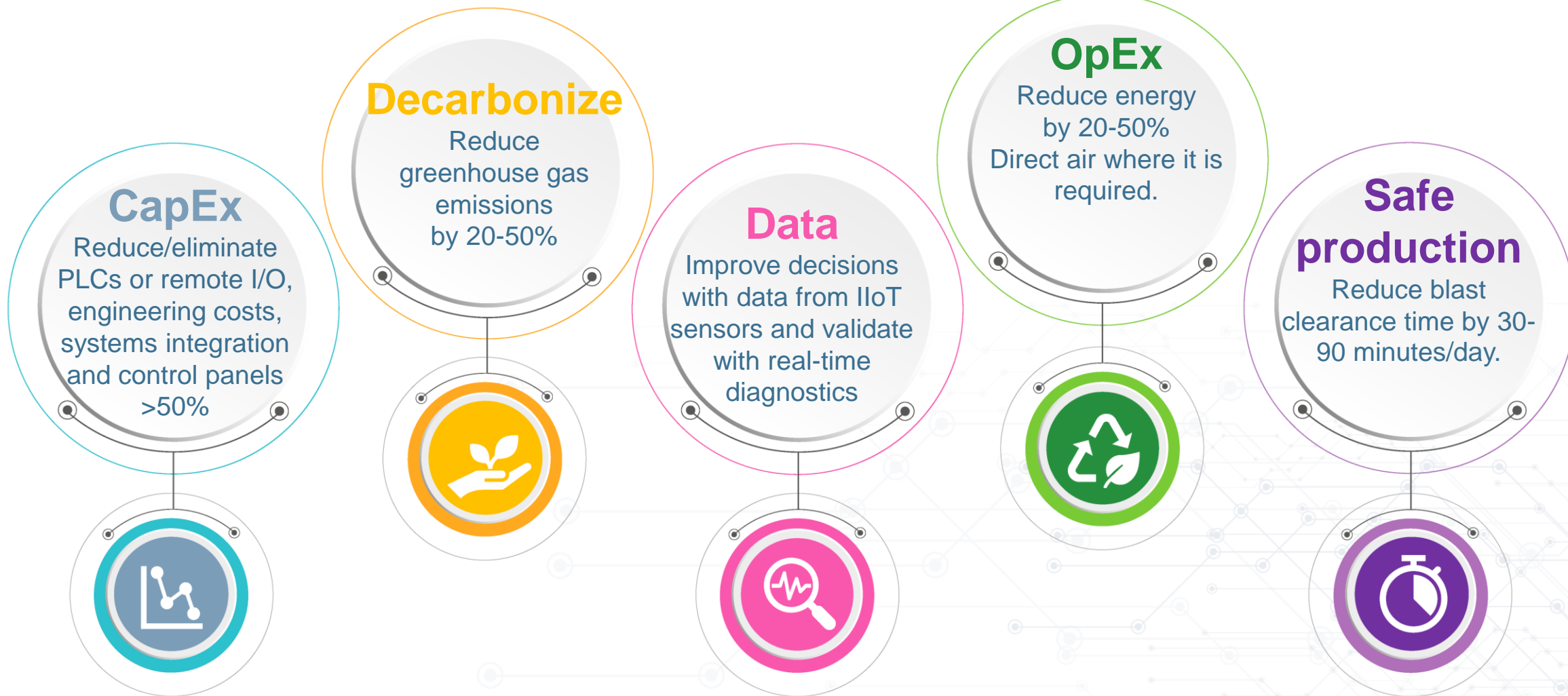
Vigilante AQS

www.madigitalmine.com



DISRUPTIVE

Disruption by elimination





Mine Ventilation Opportunities

Energy

- Ventilation accounts for 40-65% of the underground mine's electrical spend
 - 20-40% possible reduction
- Control of primary, booster & auxiliary fans
 - Greenhouse gas reduction



Blast Clearance

- Reduce return time to face
- Quicker return to drill and blast cycle



Production Equipment Utilization

- Focus ventilation to work locations only
 - More equipment working at face
- Possible major Capex Infrastructure savings



Health, Safety & Risk Avoidance

- Monitor for fires, gas concentrations, Radon, DPM
 - Reporting and data historian
- Claude Fortin vs. IAMGOLD - Quebec Superior Court





VIGILANTE AQS™

Endless options

8 gases on a single controller

4 sets of airflow sensors

2 relative humidity sensors

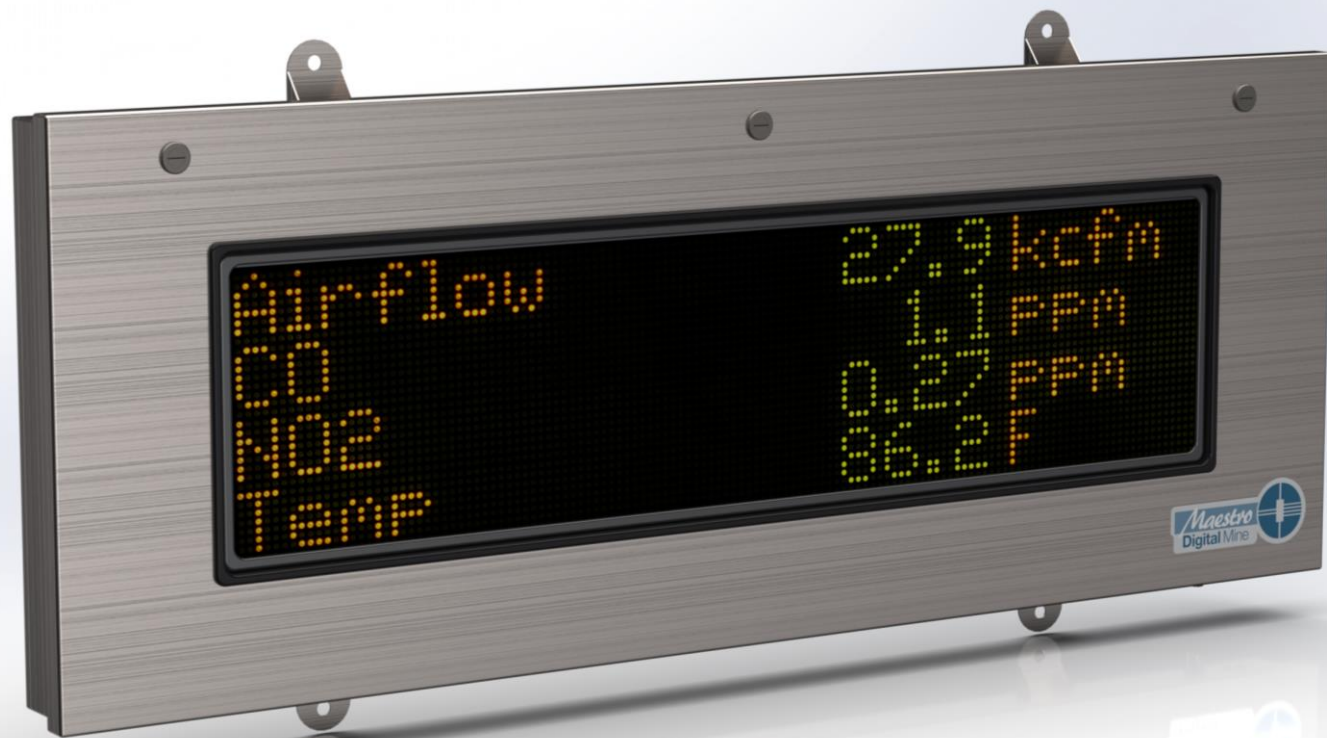
Differential pressure across a bulkhead

Alarm light

Real-time gas, TWA, STEL levels

Pressure compensated Dry/Wet bulb, relative humidity

Worker heat stress



SUPERBRITE™ MARQUEE

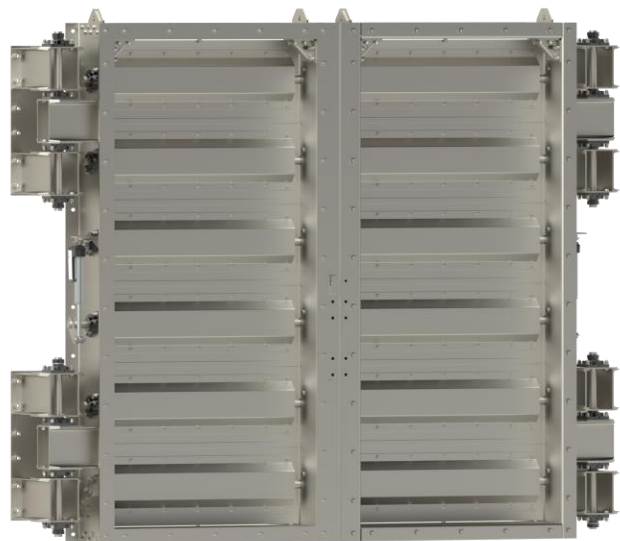


World's only fail-safe sign.

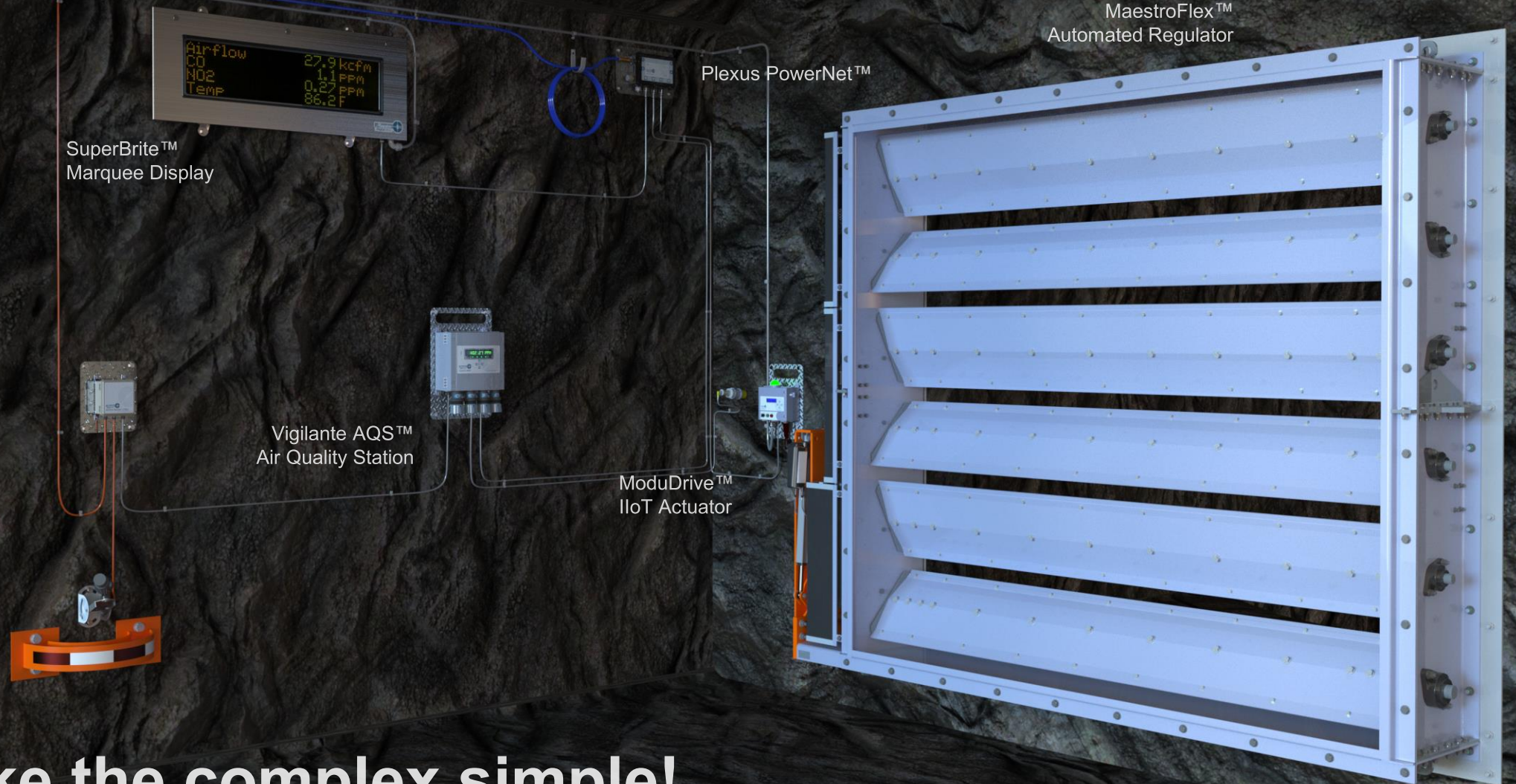


Options and Additions

- ✓ Optional Wireless 802.11 g WiFi
- ✓ Optional LTE
- ✓ Digital differential pressure (DP) sensor to measure pressure across bulkheads, booster fans or regulators
- ✓ Digital pressure sensors to measure pressure in water, compressed air or paste/back fill lines
- ✓ Alarm light
- ✓ DustMon™ PM, IIoT particulate monitor, PM10, PM4, PM2.5, PM1 and temperature
- ✓ MaestroFlex Regulator/ModuDrive



Maestro's Ecosystem



We make the complex simple!



Duetto On-premise Management Software

The screenshot displays the Maestro Digital Mine software interface. The main dashboard is titled "Air Quality Stations" and features several key metrics and data tables.

Key Metrics:

- Device Health:** 72% (2,121)
- Alert Summary:** 33% (1,121)
- Environmental Data:** 72% (2,121)
- Time till next maintenance:** 11 Days

Events Timeline:

- Airflow malfunction (13 Mar 2024 9:00 AM)
- Gas needs to be recalibrated (12 Mar 2024 8:00 AM)
- AD4 configuration invalid (11 Mar 2024 7:00 AM)
- Gas #XF-2356 (10 Mar 2024 6:00 AM)
- Marquee comms out #XF-2346 (09 Mar 2024 5:00 AM)

Data Tables:

Airflow	Value	Sensor State	Location	Status
No Data				

Gas	Value	Sensor State	Location	Status
NO ₂ Integral	0 ppm	Warming Up	Integral	🔴
CH ₄ Integral	0 % LEL	Normal	Integral	🟢
O ₂ Integral	20.9 %	Warming Up	Integral	🔴
CO Integral	0 ppm	Normal	Integral	🟢

Climate Sensor	Dry Bulb	Humidity	Pressure	Wet Bulb	WBGT	TWL	Status
RH Sensor Integral	23.70°C	20.4 %	1.00 kPa	11.70°C	15.30°C	306.80 W/m ²	🟢



Dashboard

Feb 22, 2023 8:34 AM

Device Information

Manufacturer	Maestro Digital Mine
Contact Details	87 Magill Street, Lively, ON, Canada P3Y 1K6
Hardware Version	2.1
Software Version	3.2.0
Software Released on	Sep 28, 2022
Release Information	New Features

- Added support for Remote RH Sensor.
- Remote Gas Sensor Calibration added.

Improvement

- Changes in Ethernet/IP™ and Modbus.
- Bug fix in Expansion board configuration.
- Bug fix in the Gas Calibration.
- Performance Improvement.
- Memory related issue fixed.

Vigilante AQS Guide

User Manual

Vigilante AQS Integration

Ethernet/IP™ Manual

Modbus Manual

Restart Device

Update Software

Factory Default





Maestro Digital Mine's Global Market Reach

**40 Countries
Across the
Globe!**



**More than 300
mines!**

Region	Country
North America	Canada USA Mexico
South America	Guatemala Ecuador Peru Brazil Chile Argentina
Africa	Botswana Burkina Faso Namibia Ghana DR Congo Tanzania Zambia South Africa Mali
Europe	Spain United Kingdom Poland Norway Sweden Finland Denmark Italy Portugal Bulgaria Greenland
Asia	Turkey Russia Mongolia India South Korea Israel Hong Kong Indonesia
Oceania	Australia New Zealand Tasmania



The pursuit of safety and productivity excellence.