



# Stench Gas Systems

MineARC Stench Gas is a non flammable, emergency alert system, designed to suit noisy locations where alarms cannot be heard.



stENCHGAS



MineARC Systems - Built for Safety.

[www.minearc.com](http://www.minearc.com)



# Company Profile

MineARC Systems is the global leader in the manufacture and supply of emergency safe refuge solutions for the mining, tunnelling, chemical processing and disaster relief industries.

With over 20 years' experience, our dedication to ongoing research and development is driven by our key focus to continually offer the best and most advanced safety solutions on the market.

Our team of qualified engineers, electrical designers and technical experts form a global network across several international locations including;

- Perth, Western Australia
- Johannesburg, South Africa
- Dallas, Texas
- Santiago, Chile
- León, Mexico
- Beijing, China
- Reading, UK

This allows MineARC to provide 24 hour service and engineering support to our expanding list of clients in over 65 countries across the globe.

All MineARC Refuge Chambers and Safe Havens comply with the highest international regulations and recognised 'world's best practice' industry guidelines. Our key focus on quality control and product advancement has meant that MineARC Refuge Chambers have successfully saved lives in multiple real life industrial emergencies around the globe.

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Bureau Veritas ISO  
9001:2008 Quality  
Management Systems

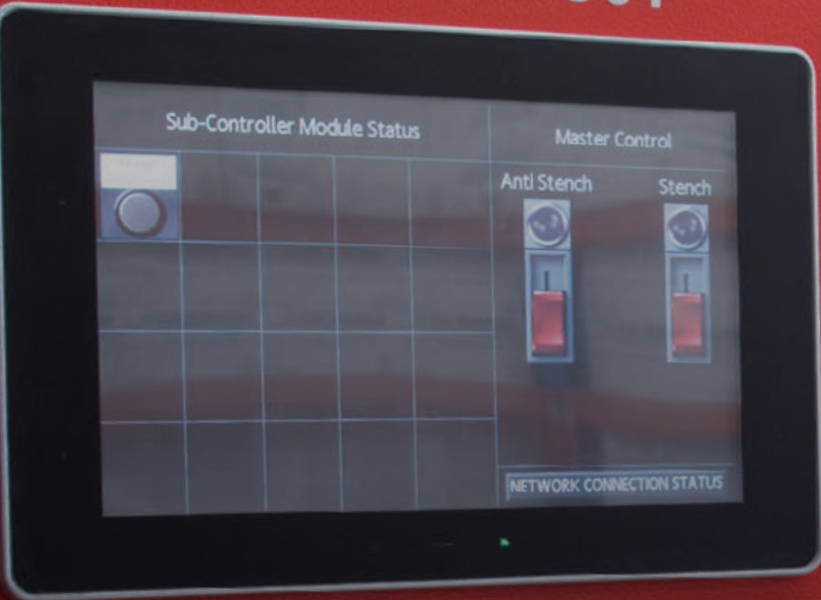


ISO 9001 Quality Rating





# MASTER CONTROL MODULE SGS-001-MC01



**EXPULSER  
Z ANTI-PUANT**  
RELEASE ANTI-STENCH GAS

**EXPULSER  
GAZ PUANT**  
RELEASE STENCH GAS



Stench gas is commonly used in underground ventilation systems as an alert gas for emergency evacuations. The powerful odour can be quickly dispersed throughout an underground mine to alert workers of impending danger.

The MineARC Stench Gas System is designed to suit noisy locations where alarms cannot be heard. Available in either a manual or remotely operated electric configuration, the unit will send a clear and definitive odour in the event of an emergency, indicating the initiation of emergency response procedures. MineARC Stench Gas is non-flammable and can be located near a mine portal.

MineARC also provides an anti-stench flushing agent and wintergreen used to counteract the pungent smell of stench gas once the all-clear has been given, allowing production to quickly re-commence.

mine  
SYSTEMS

BATTERY  
BOX



# Manual Stench Gas System

MineARC's standard manual stench gas unit comprises a set of twin gas cylinders housed within a durable steel cabinet with reflective signage, designed specifically for harsh underground conditions.

The stench gas cylinders are manually activated via gas release valves on the top of the exterior housing. Pressure gauges indicate successful release of the gas.

SG-M-ST



## Features

- Easy installation
- Dispersion line venting 10m (33ft) from your location
- Two 1L stench gas cylinders (100g Ethyl Mercaptan & R134A Propellant)
- Independent operation of cylinders
- Steel housing with reflective signage and viewing window
- Powder coated red in accordance with ANSI Z535.1
- Pressure gauge to indicate gas levels
- Stainless steel pipe work and valving
- Tamper proof tags
- Simple operation via gas release valves
- Mounting brackets with slotted holes

## What is Stench Gas?

MineARC Stench Gas cylinders carry 100g of Ethyl Mercaptan, a colourless organic liquid with a strong odour that, when added to an odourless gas, acts as a pungent warning agent. One MineARC Stench Gas Unit is effective in odourising approximately 1.25 million cubic metres of air throughout an underground mine, operating within a temperature range of 1°C to 54°C. MineARC Stench Gas is a non-flammable substance.





# Manual Standard Features

NOT PICTURED:  
TAMPER PROOF TAGS  
MOUNTING BRACKETS

**GAS RELEASE VALVE**  
• Independent operation of cylinders

VIEWING WINDOW

PRESSURE GAUGES

**TWIN GAS CYLINDERS**

- 1L cylinders
- R134A Propellant
- Non-flammable

REFLECTIVE SIGNAGE

**STEEL HOUSING**  
• Red powder coating ANSI Z535.1



# Electric Stench Gas System

The electric stench gas system is MineARC's premium range, comprising a twin cylinder stench gas unit and a sub-controller that can be connected through to an existing mine control system or to the optional MineARC Stench Gas Master Controller.

This fully electrical system allows for safe, remote operation of the stench gas units via the sub-controller in the event of an emergency, removing the need for local activation.



The electric stench gas unit (ESGU) allows the remote release of stench gas. A low voltage (24 V dc / 0.9 A) connection is used to control the gas release valve.

Activation status can be remotely monitored via 4-20 mA signals from local pressure sensors. Redundancy is ensured by a manual gas release valve and analogue gauge, allowing the unit to be operated without power.

Electrical connections are made via a multipole plug with IP66 rating when mated.

- 24V dc (0.9A) connection to drive automatic gas release valve
- 4-20mA signals provided from pressure sensors
- Dispersion line venting 10m (33ft) from your location
- Two 1L stench gas cylinders (100g Ethyl Mercaptan & R134 Propellant)
- IP66 rated steel housing with reflective signage and viewing window
- Powder coated red in accordance with ANSI Z535.1
- Gas release valve & mechanical pressure gauge to locally operate unit if required
- Stainless steel pipework and valving
- Tamper proof tags
- Mounting brackets



# Electric System Components

## SUB-CONTROLLER

The electric sub-controller allows for safe, remote operation of the stench gas units in the event of an emergency, removing the need for local activation.

The MineARC Electric Sub-Controller is capable of connection to most commonly used mine site control systems. Alternatively the sub-controller can be hooked up to the MineARC Master Controller.

- Drives up to two electric stench gas (ESGU) or anti-stench gas units (EASGU)
- Operates as a network node
- Converts networked commands for gas release into a 24V DC power signal to valve inside ESGU
- Converts pressure signals from the ESGU into a format that can be monitored on the network
- Provides operational status information locally through LED light indicators
- Local controls for the release of gas
- Optional uninterruptible power supply (UPS), with enough capacity to keep the unit operational for at least 8 hours
- Housed in an IP66 rated (dust and water resistant) steel unit



SG-EL-SC

## MASTER CONTROLLER

MineARC's Master Controller provides a fully comprehensive stench gas network solution. The touch screen Human Machine Interface (HMI) provides an intuitive, easy to use method of remotely monitoring and activating your mine site's entire electric stench gas system.

The unit is pre-programmed by MineARC Engineers to be used as a "plug-and-play" solution, removing any need for lengthy on-site software configuration and system integration. It is housed within an IP66 rated stainless steel unit.

The master controller constantly monitors your entire network, providing you with real-time system data.

- Intuitive graphic display, via a 9" high resolution touch screen
- Data logging
- System diagnostics and network monitoring
- Zoned stench gas unit control
- Pressure and valve status
- System activation and deactivation



SG-EL-MC

## OPTIONS

### Stench Gas Mounting Frame

- Ideal for locations requiring the installation of multiple stench gas units.
- Easy installation in unevenly walled mine tunnels
- Transportation lugs for easy transport
- Stable base can be fixed directly onto a cement pad



SG-EL-FR

### UPS Battery Box

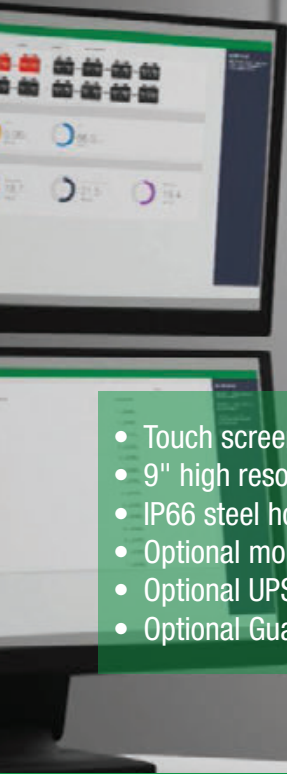
- Fully sealed, water resistant housing
- Maintenance-free design
- 8 hour UPS battery back up



SG-EL-UPS



# Electric Stench Gas Remote Activation



- Touch screen interface
- 9" high resolution screen
- IP66 steel housing
- Optional mounting frame
- Optional UPS battery box
- Optional GuardIAN integration



- IP66 steel housing
- Manual override gas release valve
- 500psi pressure gauge
- LED light indication
- Twin gas cylinders
- Optional mounting frame
- Optional UPS battery box
- Optional GuardIAN integration



# Electric Stench Gas GuardIAN Integration

When integrated with MineARC's GuardIAN Intelligence Network, the release of stench gas can be activated remotely via the GuardIAN Dashboard. This provides an alternative and immediate trigger for stench gas release in an emergency situation.

The GuardIAN network has been engineered to provide site-wide integration; allowing real-time monitoring of the underground environment, site assets, and personnel via any PC, tablet or mobile device.

When the stench gas system is activated via GuardIAN, a prompt alert will also be sent to personnel via MineARC's SiriUS-LUX Tracking Cap Lamps; immediately displaying a unique light sequence to indicate a warning of the imminent stench gas release.

Wearers must confirm receipt with the press of a cap lamp button and commence emergency response procedures.



Stench gas remotely activated via GuardIAN Dashboard



Visual alert via tracking cap lamp is triggered



Personnel acknowledge alert with button push



Stench gas released throughout mine



# Post-Alarm Units

MineARC offers a selection of post-emergency units to compliment the stench gas system. The range consists of anti-stench, an effective stench gas flushing agent, and wintergreen, an all-clear signal.

Available in both manual and electric configurations, the units can plug directly into a MineARC Sub-Controller for remote activation and monitoring if required.



SG-M-AS

## ANTI-STENCH GAS UNIT

Anti-stench works as a flushing agent to clean the compressed air lines. It is recommended that following stench gas activation, all ventilation lines are flushed with MineARC Anti-Stench, to remove the active scent component of the chemical.



- Available in both electric and manual models
  - Two 1L anti-stench cylinders
  - Dispersion line venting 10m (33ft) from your location
- Optional Steel Housing Unit**
- Reflective signage and viewing window
  - Blue powder coating for easy identification in low light conditions
  - Pressure gauge to indicate gas levels
  - Stainless steel pipe work and valving
  - Tamper proof tags
  - Mounting brackets with slotted holes
  - Gas release valves for manual activation

## WINTERGREEN GAS UNIT

Wintergreen is intended as an 'all clear' signal, to be used following an emergency to indicate that it is safe to commence production. A pleasant aromatic scent, MineARC Wintergreen 1L cylinders contain 100g of Wintergreen Oil and R134A propellant.



- Available in both electric and manual models
  - Dispersion line venting 10m (33ft) from your location
  - Two 1L wintergreen cylinders (100g wintergreen oil and R134A propellant)
  - Steel housing with reflective signage and viewing window
- Green powder coating for easy identification in low light conditions
  - Pressure gauge to indicate gas levels
  - Stainless steel pipe work and valving
  - Tamper proof tags
  - Mounting brackets with slotted holes
  - Gas release valves for manual activation



# Possible Configurations

MineARC's Electric Stench Gas System can be installed in a range of configurations. Each sub-controller module can communicate with up to two stench, anti-stench or wintergreen units, allowing a variety of arrangements for any requirement.







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