

## GG2 Electrochemical Detector Humidity Performance Issues

### PURPOSE

Ampcontrol would like to bring to your attention that some of our GG2 Detectors are being operated outside of their designed specifications, which ultimately has led to their reduced operating life and/or failure.

It is important to note that our GG2 Detectors are specified to operate within specific temperature, humidity, and pressure ranges. When the product is operated outside of these specified parameters, it can cause the GG2 Detector to fail, leading to inaccurate readings or ongoing fault conditions.

### ITEMS AFFECTED

#### Equipment List – Detectors



Part Number	Description
177872	DETECTOR GASGUARD2 ELECTRO CHEMICAL OXYGEN 25%
177873	DETECTOR GASGUARD2 ELECTRO CHEMICAL CARBON MONOXIDE 50PPM
177874	DETECTOR GASGUARD2 ELECTRO CHEMICAL CARBON MONOXIDE 100PPM
192855	DETECTOR GASGUARD2 ELECTRO CHEMICAL HYDROGEN SULPHIDE 50PPM
193071	DETECTOR GASGUARD2 ELECTRO CHEMICAL HYDROGEN SULPHIDE 100PPM

### HARDWARE INVESTIGATION

The findings from a site visit initiated a hardware investigation in relation to the GG2 electrochemical detectors; The investigation findings were consistent with that of the detector cells being operated outside of the designed humidity limits.

### HUMIDITY CHARACTERISTICS

The electrochemical toxic gas cells contain sulfuric acid electrolyte for ionic transport. This aqueous acid electrolyte will lose water at low humidity and gain water at high humidity. When the electrochemical detectors are continually exposed to high humidity levels for long durations the cell “bursts”, causing the electrolyte to leak from the cell, resulting in associated hardware failures. The GG2 toxic gas detector datasheet/user manual specifies an operational humidity range of 15 to 90% relative humidity non-condensing.

### FIND OUT MORE

For more information on this Notification, contact Ampcontrol Customer Service on +61 1300 267 373 or [customerservice@ampcontrolgroup.com](mailto:customerservice@ampcontrolgroup.com)

### DISCLAIMER

While every effort has been made to assure the accuracy of this document at the date of issue, Ampcontrol assumes no liability resulting from any omissions or errors in this document, and reserves the right to revise content at any time.



# Industry Notification

## Product Information

### GG2 ELECTROCHEMICAL CELL HISTORY

The GG2 Electrochemical detectors have been in service in the coal mining industry since late 2019 with negligible detector/system failures.

### WHAT TO DO

Ampcontrol urges users of the GG2 Detectors to ensure that they are operating the gas monitor within its specified parameters, as outlined in the product data sheet/manual. Additionally, we recommend that users regularly calibrate and maintain their gas monitors to ensure accurate and reliable performance in accordance with "AS/NZS 2290.3 Electrical equipment for coal mines— Introduction, inspection and maintenance Part 3: Gas detecting and monitoring equipment".

If a cell has been exposed for a long period to an ambient humidity significantly different to the equilibrium humidity of the cell, then its properties may change. However, this is reversible and if exposed to a high humidity after dehydration or a low humidity after water absorption, then the cell will return to its normal state. For those users with ambient humidity's exceeding the cell specifications, it is recommended that the detector head be cycled monthly (30 days) from a high to low humidity environment. Exposure for 30 days to the relatively low humidity of an air-conditioned room will release moisture absorbed by the cell. Operation for extended periods outside the 15-90% rh range will invalidate the warranty.

### AMPCONTROL'S POSITION

As the industry leader in the Group I gas monitoring instrumentation and in support our customers who operate in high humidity environments, Ampcontrol is committed to developing a humidity tolerant/robust detector for harsh environments.

Ampcontrol have commenced a development project and are committing significant R&D resources towards providing a solution for the harsh environment that some of these detectors are being exposed to.

We take the quality and performance of our products seriously and will continue to work diligently to provide you with the highest level of service and support.


If you have any questions or concerns regarding this matter, please do not hesitate to contact the Product Manager - Environmental Monitoring (details below).

Thank you for your understanding and continued support.



#### Tim Mills

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