GMS PLUS
MULTI FUNCTION GAS DETECTION SYSTEM

WALLACE & TIERNAN® ANALYZERS/CONTROLLERS

The GMS plus system is a flexible two channel measuring system designed for gas and temperature monitoring in up to two rooms. It can either use a single Chloratekt sensor or a pair of Chloratekt sensors to measure chlorine gas, chlorine dioxide or ozone, or it can also use other sensors to measure different gases. Pt 1000 sensors are used to measure the ambient temperature. Inside the Chloratekt as sensor there is an electrode that is permanently kept moist by electrolyte. This is achieved using a wick to draw electrolyte from a transparent reservoir by capillary action. The factory filling of electrolyte is enough to last for about six months of operation when measuring Cl_2/ClO_2 or three months when measuring ozone (O_3). It is very simple for the operator to maintain the electrolyte reservoir. In the event of a gas leak the electrode will depolarise as a result of an electrochemical reaction. The depolarisation current generated is proportional to the gas concentration in the air.

The gas concentrations and temperatures are displayed on the display panel. The peak and average values over the past 8 hours can also be displayed. The desired alarm levels can be set using the menu via a control pad. Two values per channel can be specified. An alarm contact is activated for each limit value and the system will also set off an audible and a visual alarm. Two general alarm contacts can also be set off by these alarms. These alarm contacts, up to 4 of which are possible, can be used to control safety equipment such as a chlorine scrubber, a shut off valve or a water spraying system. The integrated sensor monitor sets off a sensor alarm if there is a fault with any of the sensors.

INSTALLATION

If you need to measure chlorine, chlorine dioxide or ozone concentrations, the gas sensors need to be installed so that the sensors are about 35 cm above the floor of the room being monitored, since these gases are heavier than air, and

Key Benefits

- A variety of gas sensors can be used
- User-adjustable alarm contacts
- Clear, easy to read display of average and peak values over the past 8 hours
- Automatic fault detection and sensor monitoring
- External alarm acknowledgment
- Power backup using rechargeable batteries optional
- Connection to Process Monitoring System via RS 485 interface

therefore sink to ground level. The temperature sensor should be installed near the gas tank or cylinder. The safety regulations on water chlorination specify that the ambient temperature in chlorination rooms should not fall below +15 °C (59 °F) and should not exceed +50 °C (122 °F). A minimum temperature of +15 °C (59 °F) is needed to ensure the evaporation of liquid chlorine in the chlorine cylinder.

The electronic module, alarm klaxon and any other warning devices or alarms connected to the alarm output contacts can be installed anywhere outside the chlorination room. The electronic module may be up to 100 metres from the sensor.

GMS PLUS ELECTRONIC MODULE

Dual channel measuring system for two gas sensors (may be identical or different). Chloratekt sensor or passive 4 – 20 mA sensor and two Pt 1000 thermocouple for measurement of the ambient temperature

Chloratekt sensor:
for measurement of chlorine, chlorine dioxide or ozone
Measuring ranges:
Chlorine: 0 – 5 ppm or 0 – 20 ppm
Chlorine dioxide: 0 – 5 ppm or 0 – 20 ppm
Ozone: 0 – 1 ppm

Ambient temperature: 5 – 50 °C (41 – 122 °F)
Relative humidity: 15 – 90 % non-condensing
Response time: $T_{90} \leq 90$ s
Sensitivity: 0.1 ppm for gases
Protection type: IP 20
Ambient temperature sensor: Pt 1000

Measuring range: 0 – 50 °C (32 – 122 °F)

Sensitivity: 0.1 °C

Protection type: IP 65

Display:

Backlit LCD display Resolution 2 x 16 characters units selectable: ppm/ml/m^3 ; 4 characters (user-definable) Displays the current readings as well as peak and average values over the past 8 hours; Text menu available in 5 languages

Digital Inputs:

3 isolated contact inputs (door contacts I and II, external alarm acknowledgment) Two additional digital inputs for running 24 V equipment with rechargeable backup batteries Power failure detection, battery error, battery power low. Digital input can be assigned to the general alarm.

Relay outputs:
Two alarm contacts per measuring channel
Gas alarm contacts (two MAX contacts)
Temperature alarm contacts (1 MIN , 1 MAX contact)

Three general alarms, user-definable (for example, advance alarm, main alarm) One sensor alarm (dry electrode, cable break, etc.) All of the alarms can be N.O. or N.C. and logged or not logged. An internal signal transmitter (buzzer) can also be activated. Logged alarms can be acknowledged on the unit itself or externally.

Alarm contact threshold:
Continuously adjustable within the selected measuring range
Alarm delay: Continuously adjustable from 0 – 120 min.
Electrical data from the relay contacts:
max. 1250 VA to 250 V DC; max. 150 W to 30 V DC
Power failure output: Possible using a general alarm
Analogue outputs (4 – 20 mA):
Three outputs for values from channel 1 and 2, temperature on channel 1 Output load = 600 Ohm, non-isolated, Accuracy ± 0.5 % FS

Power supply:
200 – 240 V AC 50/60 Hz; 100 – 120 V AC 50/60 Hz
24 V DC in accordance with EN 61131 (18 – 30, 2 V)

Backup power supply for 24 V devices:
2 x 12 V lead-acid batteries 3Ah Operating time in the event of power failure: min. 10 h Operating temperature: 0 – 45 °C (32 – 113 °F)

Interfaces:
RS 232 or RS 485 for connection to Process Monitoring System or OPC-Server

Protection type: IP 66
Ambient temperature: 0 – 50 °C (32 – 122 °F)
Testing and labels:
Conforms to CE (89/336/EEC) Inspected for EMC in accordance with EN 61326 Tested for electrical safety in accordance with EN 61010 Designed for use in an industrial environment as well as for domestic or office use.

Weight (incl. packaging): approx. 5.5 kg
Dimensions (W x H x D):
20 x 310 x 175 mm (12.6 x 12.2 x 6.9 ")