



# Serinus<sup>®</sup> 51

## SO<sub>2</sub> / H<sub>2</sub>S Analyser

The Acoem Serinus 51\* analyser delivers precise and reliable performance at excellent value.

It combines pulsed fluorescence detection with an internal catalytic converter to sequentially measure H<sub>2</sub>S and SO<sub>2</sub> in the range of 0 - 2 / 0 - 20 ppm respectively with a detection limit of 0.3 ppb.

\* Acoem Serinus 51 formerly known as Ecotech Serinus 51.

Serinus 51 measurements involve two cycles. H<sub>2</sub>S is measured by passing the sample through an internal SO<sub>2</sub> scrubber which removes any SO<sub>2</sub>, the H<sub>2</sub>S is then converted to SO<sub>2</sub> using the internal converter & measured using the fluorescence technique.

SO<sub>2</sub> is then sequentially measured using the fluorescence technique to only measure the SO<sub>2</sub> concentration, bypassing the SO<sub>2</sub> scrubber & converter.

## Approvals

Based on the Serinus 50 which has the following approvals:

- US EPA approval (EQSA-0809-188)
- EN approval TÜV (0000040205-02)
- Australian Standard (AS 3580.5.1-2011)
- Russian approval (56263-14)
- French approval LSCQA
- Ukraine approval (12/3/B/24/295-17)
- Chinese Pattern Approval (JJF1361-2012)
- Korean approval NIER (AACMS-2017-04)

## Benefits

The Serinus range of analysers have been designed using our experience and knowledge gained from operating large air quality monitoring networks for more than 45 years. The result, instruments that integrate seamlessly into continuous monitoring networks.

- Guaranteed performance with a two year warranty
- Internal thermal catalytic H<sub>2</sub>S to SO<sub>2</sub> converter
- User selectable measurement of SO<sub>2</sub> / H<sub>2</sub>S, H<sub>2</sub>S or SO<sub>2</sub> only
- Minimise time spent on site performing maintenance through superior remote instrument control, diagnostic viewing & calibration
- Comprehensive data logging & remote viewing of over 200 operational parameters
- Versatile interfacing through RS232, analog & digital I/O & optional TCP/IP & Bluetooth
- Easier setup through an intuitive menu system with “Quick Menu”, advanced GUI and a large keypad with tactile keys
- Instant display of operational status using illuminated traffic lights on the front panel
- Removable flash memory stores 10 years of data, including up to 12 individual parameters & event logs. Operational parameters can also be transferred to memory for easy retrieval
- Latest firmware updates can easily be installed using the USB flash memory drive
- Programming, viewing, downloading & emailing of data is made even simpler using optional Bluetooth connectivity combined with the Serinus Remote Android App
- Enhanced operator safety through the use of 12 VDC internal voltages
- Reduced cost of spare parts, accessories & consumable items through extensive use of standard components across the Serinus range
- Rack slide design makes accessing internal components and removing the analyser from a rack cabinet easy
- AQMS power usage can be reduced due to the instrument’s low power demand & its ability to operate over a wide temperature range.

## Specifications

|                                |   |
|--------------------------------|---|
| <b>Range:</b>                  | H <sub>2</sub> S: 0 – 2 ppm (SO <sub>2</sub> < 500 ppb)<br>SO <sub>2</sub> : 0 – 20 ppm (Autoranging) |
| <b>Concentration display:</b>  | User selectable mg/m <sup>3</sup> , µg/m <sup>3</sup> , ppm, ppb, ppt                                 |
| <b>Noise:</b>                  | < 0.15 ppb  |
| <b>Lower detectable limit:</b> | < 0.3 ppb or 0.2 % of concentration whichever is greater  |
| <b>Linearity:</b>              | < 1 % of full scale   |
| <b>Precision:</b>              | 0.5 ppb   |
| <b>Zero drift:</b>             | 24 hours: < 0.5 ppb<br>7 days: < 0.5 ppb  |
| <b>Span drift:</b>             | 7 days: < 0.5 % of reading  |
| <b>Response time:</b>          | 60 seconds to 95 %  |
| <b>STP reference:</b>          | 0 °C, 20 °C, 25 °C at 101.3 kPa   |
| <b>Sample flow rate:</b>       | 725 cc/min  |
| <b>Temperature range:</b>      | 0 – 40 °C   |
| <b>Power:</b>                  | 100 – 240 VAC, 50 – 60 Hz (autoranging)   |
| <b>Power consumption:</b>      | 255 VA max (typical at start up)<br>180 VA after warm-up  |
| <b>Dimensions:</b>             | 429 x 175 x 638 mm  |
| <b>Rack spacing:</b>           | 3.5 RU  |
| <b>Weight:</b>                 | 18.1 kg   |

## Communication

- USB port (digital communication)
- Bluetooth (digital communication via Android App)
- TCP/IP Ethernet network connection (optional)
- RS232 Port 1: Digital communication
- RS232 Port 2: Multidrop port
- Protocols: Modbus RTU/TCP, Bavarian, EC9800, Advanced.

Bluetooth connectivity combined with the Serinus Remote Android App makes it even easier to program, maintain, download and email data without touching the instrument.

## Inputs / outputs

- 25 pin I/O port
- Menu selectable current or voltage output  
0 – 20 mA, 4 – 20 mA or 0 – 5 VDC
- Menu selectable offset of 0, 5 or 10 %
- Auto-ranging from 0 – 50 ppb to 0 – 20 ppm  
(between two user specified full scale values)
- 3 scalable analog inputs, 0 – 5 V, 160  $\mu$ V resolution
- 8 logic level digital status inputs/8 open collector digital outputs.

## Data logging

Removable USB flash memory drive that stores data in the following formats:

- Instantaneous data from 1, 3, 5, 10, 30, or 60 minute intervals & 2, 5, 10, 30 seconds
- Average data from 1, 3, 5, 10, 15, 30 minutes, 1, 4, 8, 12, or 24 hours
- Data storage of 10 years of 12 parameters, 1 minute data on 8 GB memory.

## Options & accessories

- External AC powered pump (capable of operating 3 analysers, excluding NO<sub>x</sub>)
- Dual filter (particulate)
- Rack slide kit
- TCP/IP network port
- Bluetooth
- High pressure zero/span valve
- Printed User Manual (a soft copy of the user manual is supplied on USB with each analyser)
- SO<sub>2</sub> scrubber.

