



## Serinus<sup>®</sup> 31 Carbon Dioxide Analyser



**The Acoem Serinus31 carbon dioxide (CO<sub>2</sub>) analyser (previously known as the Ecotech Serinus31) uses non-dispersive infrared (IR) gas correlation spectroscopy to provide accurate, stable & repeatable measurements of gaseous CO<sub>2</sub>.**

The Serinus31 can be configured to operate in absolute or differential mode providing flexibility within the analyser, making it well suited for ambient CO<sub>2</sub> measurements in addition to applications such as dilution extractive stack monitoring.

### APPROVALS

Based on the Serinus30 which has the following approvals:

- USEPA approval (RFCA-0509-174)
- EN approval (TÜV 936/21221977/D)
- Non Dispersive I.R. Spectrometry method EN1426
- Russian approval (56262-14)
- French approval LSCQA
- Ukraine approval (12/3/B/24/295-17)
- Chinese Pattern Approval (JJF1364-2012)
- Korean approval NIER(AACMS-2017-02)

### BENEFITS

The Serinus range of analysers has been designed using our experience and knowledge gained from operating large air quality monitoring networks for nearly 50 years. The result is instruments that integrate seamlessly into continuous monitoring networks.

- Guaranteed performance with a 2 year warranty
- Superior remote instrument control, diagnostic viewing & calibration minimise on-site maintenance requirements
- Comprehensive data logging & remote viewing of over 200 operational parameters
- Versatile interfacing through RS232, USB, Bluetooth, analog & digital I/O & optional TCP/IP
- Easier setup through an intuitive menu system with 'Quick Menu', advanced GUI & 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
- Install latest firmware updates via the USB flash memory drive
- Easily program, view, download & email data using Bluetooth connectivity combined with the 'SerinusRemote' app from the Google Play store
- 12VDC internal voltages for enhanced operator safety
- Standard components across the Serinus range reduces the cost of spare parts, accessories & consumables
- Rack slide design makes accessing internal components & removing the analyser from a rack cabinet easy
- Choose either an external sample pump suitable for use by multiple analysers or the optional low power internal pump for greater sample versatility
- Lower power demand & ability to operate over a wide temperature range reduce AQMS power usage.

## SPECIFICATIONS

|                                |  |
|--------------------------------|--|
| <b>Range:</b>                  | 0 - 3000 ppm (autoranging)                                     |
| <b>Concentration display:</b>  | Userselectable mg/m <sup>3</sup> , µg/m <sup>3</sup> ppm & ppb |
| <b>Noise:</b>                  | 0.1 ppm  |
| <b>Lower detectable limit:</b> | 0.2 ppm (200 ppb), with Kalman filter active                   |
| <b>Linearity:</b>              | < 1% of full scale   |
| <b>Precision:</b>              | 0.2 ppm or 0.5 % of reading whichever is greater               |
| <b>Zero drift:</b>             | 24 hours: < 1 ppm  |
| <b>Span drift:</b>             | 7 days: < 0.5 % of reading or 1 ppm whichever is greater       |
| <b>Response time:</b>          | 60 seconds to 95 %   |
| <b>STP preference:</b>         | 0 °C, 20 °C, 25 °C at 101.3 kPa                                |
| <b>Sample flow rate:</b>       | 1000 cc/min  |
| <b>Temperature range:</b>      | 0 to 40 °C   |
| <b>Power:</b>                  | 100 - 240 VAC, 50 - 60 Hz (autoranging)                        |
| <b>Power consumption:</b>      | 190W max (typical at start-up)<br>150VA after warm-up          |
| <b>Dimensions:</b>             | 429 x 175 x 638 mm (W x H x L)                                 |
| <b>Rack spacing:</b>           | 4 RU   |
| <b>Weight:</b>                 | 21.3 kg  |

## COMMUNICATION

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

## INPUTS & OUTPUTS

- 3 x analog outputs, menu selectable, current or voltage
- Menu selectable current output of 0 - 20 mA, 2 - 20 mA or 4 - 20 mA
- Voltage output of 0 - 5 V, with menu selectable zero offset of 0 V, 0.25 V or 0.5 V
- Voltage output of 0 - 10 V configured using jumpers (JP3) on rear panel PCA
- Autoranging from 0 - 50 ppb to 0 - 3000 ppm (between 2 user specified full scale values)
- 3 x analog inputs (scalable), 0 - 5 V, 16 bit resolution
- 8 x logic level digital control inputs
- 8 x open collector digital status outputs.

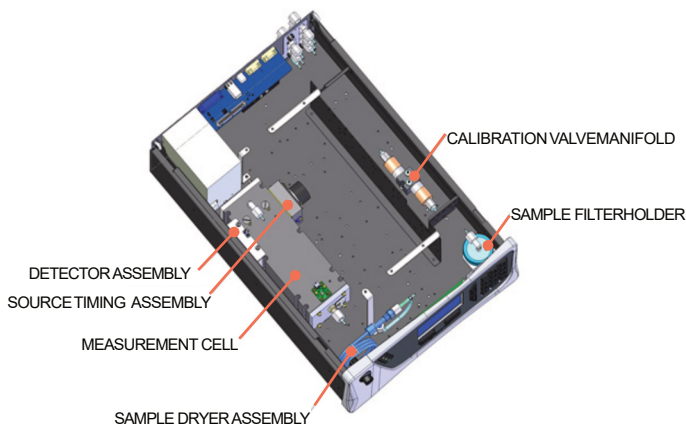
## DATA LOGGING

Removable USB flash memory drive 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

- Extended measurement ranges
- External AC powered pump (capable of operating 3 analysers, excluding NO<sub>x</sub>)
- Internal long-life, low power maintenance-free pump (Max 6 watts)
- Dual filter (particulate)
- High pressure zero/span valves
- Rack slides
- TCP/IP network port
- Printed manual (electronic manual supplied)



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