

# Serinus<sup>®</sup> 31

## Carbon Dioxide Analyser



The Acoem Serinus 31 carbon dioxide (CO<sub>2</sub>) analyser (previously known as the Ecotech Serinus 31) uses non-dispersive infrared (IR) gas correlation spectroscopy to provide accurate, stable & repeatable measurements of gaseous CO<sub>2</sub>.

The Serinus 31 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

Similar in design to the Serinus 30 Carbon Monoxide analyser, this instrument has the following approvals:

- US EPA 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 'Serinus Remote' app from the Google Play store
- 12 VDC 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

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

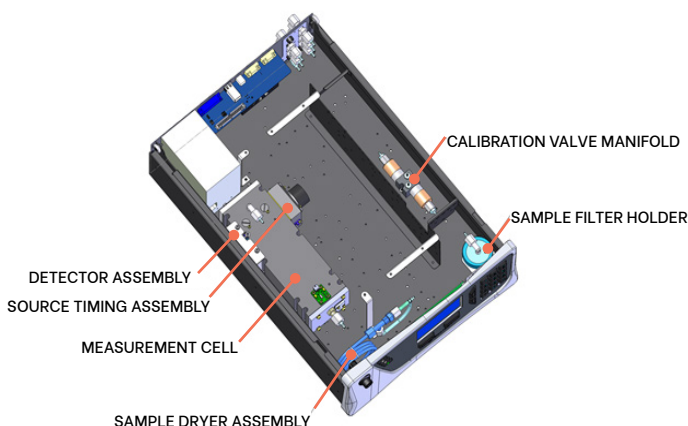
## DATA LOGGING

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)



1492 Ferntree Gully Road Knoxfield VIC 3180 Melbourne Australia  
+61 3 9730 7800 email@acoem.com acoem.com

Specifications subject to change without notice. All images used are for illustrative purposes only.  
All trademarks and registered trademarks are the property of their respective owners.  
© 2022 Acoem and all related entities. All rights reserved. 20220303

