Serinus® 31

Carbon Dioxide Analyzer

The Acoem Serinus 31* carbon dioxide (CO_2) analyzer uses non–dispersive infrared (IR) gas correlation spectroscopy to provide accurate, stable & repeatable measurements of gaseous CO_2.

It can be configured to operate in absolute or differential mode providing flexibility within the analyzer, making it well suited for ambient CO_2 measurements in addition to applications such as dilution extractive stack monitoring.

* Acoem Serinus 31 formerly known as Ecotech Serinus 31.

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Approvals

Based on the Serinus 30 which has the following approvals:

- US EPA approval (RFCA-0509-174)
- EN approval TÜV (0000040203-02)
- Australian Standard (AS 3580.7.1-2011)
- Russian approval (56262-14)

- French approval LSCQA
- Ukraine approval (12/3/B/24/295-17)
- Chinese Pattern Approval (JJF1364-2012)
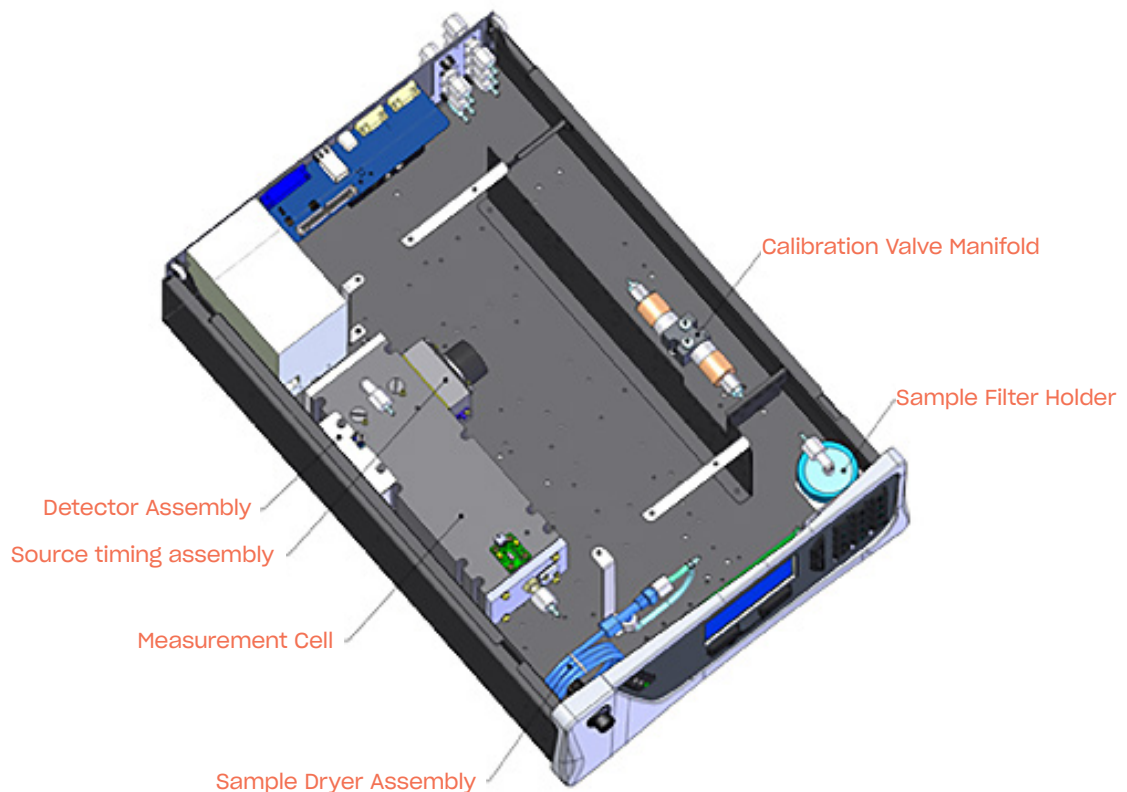- Korean approval NIER (AACMS-2017-02)

Benefits

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

- Reliable performance complemented with a two year warranty

- 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, USB, analog & digital I/O & optional TCP/IP & Bluetooth

- 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

- 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 & removing the analyzer from a rack cabinet easy

- Sample pump versatility – choose either an external sample pump suitable for use by multiple analyzers or the optional low power internal pump

- AQMS power usage can be reduced due to the instrument's low power demand & its ability to operate over a wide temperature range.

Specifications

Range:	0 – 3000 ppm (autoranging)
Concentration units:	User selectable mg/m^3, µg/m^3 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 VA (max at start-up) 150 VA (nominal)
Dimensions:	429 x 175 x 638 mm
Rack spacing:	4 RU
Weight:	21.3 kg

Calibration Valve Manifold

Sample Filter Holder

Detector Assembly

Source timing assembly

Measurement Cell

Sample Dryer Assembly

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, Bavarian,
  EC9800, Advanced.

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.

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 two 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.

Options & accessories

· Extended measurement ranges
· External AC powered pump (capable of operating
  3 analyzers, excluding NO_x)
· 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
· Bluetooth
· Printed manual (soft copy of the user manual is
  supplied with analyzer).

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