

# Serinus<sup>®</sup> Cal 2000

## OZONE TRANSFER STANDARD



Ecotech's reputation is built on air quality monitoring, and is based on keeping workforces, communities, businesses and the environment safe.

We know how important measuring ground-level ozone accurately can be. With all the features of its Serinus<sup>®</sup> Cal 1000 stablemate, the Serinus<sup>®</sup> Cal 2000 adds features essential for calibration of NO<sub>x</sub> and O<sub>3</sub> analysis equipment. An internal ozone generator enables regular ozone checks and gas phase titrations (GPT).

### FEATURES

- All the calibration ability and ease of use found in the Serinus<sup>®</sup> Cal 1000
- Internal ozone generator produces 3 ppm to 5 ppm of ozone
- Ability to premix ozone and source gas before dilution to perform gas phase titrations (GPT).

### DILUTION & SPAN FLOWS

<b>Dilution Gas Inputs:</b>	1 standard 100 - 200 kPa (g) (2 optional)
<b>Source Gas Inputs:</b>	4 standard 100 - 200 kPa (g) (8 optional)
<b>Dilution Mass Flow Controller:</b>	10 SLPM, 0 Deg, 1 ATM (std), 1 SLPM, 2 SLPM, 5 SLPM or 20 SLPM (optional), 2nd MFC (optional)
<b>Source Mass Flow Controller:</b>	50 SCCM, 0 Deg, 1 ATM (std), 10 SCCM, 20 SCCM, 100 SCCM, 500 SCCM or 1 SLPM, 2 SLPM (optional), 2nd MFC (optional)
<b>Flow Accuracy (Constant Temp):</b>	Within 1 % of full scale
<b>Flow Repeatability:</b>	Within 0.15 % of full scale
<b>Linearity:</b>	Within 0.15 % of full scale
<b>Operating Gas Pressure:</b>	100 - 200 kPa
<b>Zero Drift:</b>	< 0.6 % per year
<b>Response Time:</b>	< 5 seconds
<b>Output Manifold:</b>	4 output ports standard
<b>Dilution Ratio:</b>	Variable 10:1 to 2000:1 (std configuration)

### Case Dimensions

<b>Rack length:</b>	597 mm (23.5") (front to rear)
<b>Total length (with latch release):</b>	638 mm (25.1")
<b>Chassis width:</b>	418 mm (16.5")
<b>Front panel width:</b>	429 mm (16.9")
<b>Chassis height:</b>	163 mm / uses 4RU (6.4")
<b>Front panel height:</b>	175 mm (6.9")
<b>Weight:</b>	20.5 kg

## COMMUNICATION

### User Interface

- Via front panel keypad or computer

### Programmable calibrations:

- 16 separate programmable sequences
- 32 separate programmable points

### Analog Input

- Three analog voltage inputs (0 - 5 VDC) CAT I rated

### Digital Output

- RS232 port #1: Normal digital communication
- RS232 port #2: Multidrop port used for multiple analyser connections on a single RS232
- USB port connection on rear panel
- 25 pin connector with discrete status and user control
- USB stick memory (front panel) for data logging, event logging and parameter storage
- 8 Digital Outputs, open collector max 400 mA each at 12 VDC (max total output 2A)
- 8 Digital Inputs, 0 - 5 VDC,
- CAT I rated
- 1 Diluent Control, + 12 V output

## POWER

### Operating Voltage

- 100 - 240 V VAC 50 / 60 Hz (autoranging)

### Power Consumption

- 165 VA maximum (typical at start-up) 95 VA after warm-up

### Operating Conditions Ambient Temperature Range

- 0 - 45 °C (32 - 104 °F), 20 - 35 °C for optimum performance

### Pressure

- Maximum altitude: 3000 m above sea level

## OZONE GENERATOR

### Output Concentration:

- 3 ppb to 5000 ppb

### Flow Rate:

- Variable dependent on Dilution Mass Flow Controller installed

### Repeatability:

- < 1 % short term (24 hours) 5 % long term at constant temperature and humidity

