

SRS T series

Portable Soil Respiration Systems



SRS1000 T



SRS2000 T

Soil respiration measurement systems designed for field portability

Portable

Both the **SRS1000 T** and **SRS2000 T** can be carried either in the hard shell case, or whilst wearing on a shoulder or waist strap. A single infrared gas analyser makes the systems both lightweight and compact.

Reliable battery life

Powered by a 12V rechargeable battery and incorporating the latest in low power consumption components, the **SRS1000 T** will function continuously for up to 10 hours on a single charge, whilst **SRS2000 T** will operate for up to 16 hours on a full charge.

Robust and reliable

Full functionality, chamber flow control, live data display and storage are contained within the consoles.

With colour, real time graphic display, instant, touch screen data entry and 360° screen visibility.

Even in harsh field conditions

Designed for prolonged, reliable operation in harsh field conditions, both systems maintain optimal performance even in highly humid and dusty climates.

Spatial and Temporal Distribution Studies

The SRS series are applied to soil flux spatial distribution studies over a field site, or multiple sites. Additional soil collars allow multiple soil flux measurements over a large study site, with each collar being used to define a separate analysis area. The stainless steel collars can also be left in the soil, or the SRS set to automatically log data at regular intervals, enabling long-term comparative studies to be performed.

GPS to pinpoint your data

Both systems are fitted with a GPS unit to record the exact position of every measurement taken outdoors. Latitude, longitude and altitude data are all recorded, displayed on a GPS menu screen, and integrated into the data file for review upon download of data.

Rapid measurements

Install the soil collar(s) and allow surrounding soil to settle (eg. overnight)

Lock the upper soil chamber in place and set up your SRS at a chosen site.

By viewing the display, allow gas readings to stabilise.

Record a measurement using either the record button, record key on screen or setting automatic, timed logging.

Measurements are now safely stored.

1000s of measurements can be stored on the SD card and transferred to your computer.

Remove the upper chamber and leave the collar in place if you wish to return to this site, or move on to another, pre-installed collar.

Instantly calculated parameters

The most widely used parameters for soil gas exchange determination are calculated:

Soil water vapour flux, **Wflux** ($\text{mmol m}^{-2} \text{s}^{-1}$)

Soil respiration, **Ce** ($\mu\text{mol s}^{-1}$)

Net Carbon Exchange Rate, **NCER** ($\mu\text{mol m}^{-2} \text{s}^{-1}$).

Parameters are presented in labelled columns in standard spreadsheet format.

Full chamber climate control with SRS2000 T

The advanced **SRS2000 T** also provides full and automatic chamber environmental control:

Elevate and control chamber CO_2 concentration

Adjust H_2O above and below ambient

Regulate temperature above or below ambient.

SRS Technical Specifications

Gas Exchange CO_2 : **SRS1000 T** 0-2000ppm
SRS2000 T 0-3000ppm
1ppm resolution
Infrared gas analysis; differential open system, auto zero, automatic atmospheric pressure and temperature compensation

H_2O : 0-75mbar, 0.1mbar resolution
Two laser-trimmed, fast response water vapour sensors

PAR: 0-3000 $\mu\text{mol m}^{-2} \text{sec}^{-1}$
Silicon photocell

Soil Temperature: -5°C to 50°C Manually positioned soil thermistor probe

Automated environmental control

SRS2000 T only: Internal **LCpro T** menu driven software. Automatic and independent control of environmental conditions within the leaf chamber. For automatic response curves, sequential control levels and dwell times may be set.

CO_2 : Up to 2000ppm CO_2 by integral elevated CO_2 supply system

H_2O : Above and below ambient (dependent on ambient conditions), by on-board self-indicating conditioning chemicals

Flow rate to soil chamber: 68 to 340 $\mu\text{mol m}^{-2} \text{sec}^{-1}$

Gas connections: 3mm barbed

Warm up time: 5 minutes @ 20°C

Display: Colour WQVGA touch sensitive LCD

Recorded Data: Removable SD cards. 32Gb supported.

Battery:

SRS1000 T: 2.8Ah 12V lead acid battery
Up to 10 hours between charges

SRS2000 T: 7.5Ah 12V Lithium-ion battery
Up to 16 hours between charges

Battery Charger: Universal input voltage 13.8V output

Electrical Outputs: Mini-B

USB connection: Function as a mass storage device

RS232 output: 9 Pin "D" type
User-selectable rates of up to 230400 baud for computer or printer connection

Operating temperature range: 5°C to 45°C

Dimensions W X D X H of console: **SRS1000 T** 125 x 140 x 240mm
SRS2000 T 230 x 110 x 170mm

Weight of Console: **SRS1000 T** 2.4kg
SRS2000 T 4.1kg

Soil Chamber Construction: Stainless steel collar, cast Acrylic upper

Volume: 1L

Diameter: 130mm

Height: Collar 75mm, Upper chamber 70mm

Weight: Collar 325g, Upper chamber 320g