Solus Multipoint ^{NH_3}

For a complete transportable measurement solution of up to 10 sample points, the Solus Multipoint analyser is ideal for ambient air and livestock monitoring applications of Ammonia (NH). Ammonia is a primary measurement parameter under the Verification of Environmental Technologies for Agricultural Production (VERA) Test Protocol for Livestock Housing and Management Systems.

Protea's experience in industrial gas emissions monitoring and analyser manufacture has enabled the development of the Solus analyser platform to give easy-to-use and direct NH_3 readings by test organisations or farms adhering to the VERA protocol. Using a proven TDLAS sensor, the Solus Multipoint is combined with integrated sampling system for 10 sample points within the one transportable case. A 10-way valve manifold using non-corroding sampling parts can allow for automatic sequenced sampling for multiple points on-site. The built-in sample pump draws the sample through the currently selected stream, and the option for external by-pass pump means the samples can be on constant purge to give quick response times.

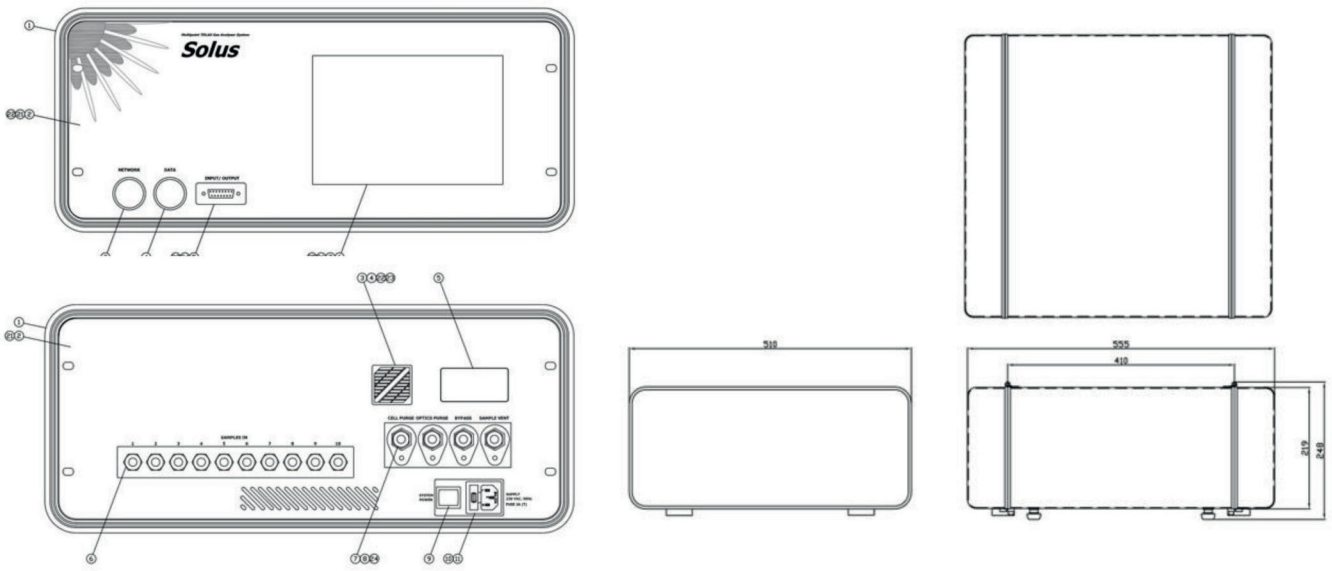
The Solus Multipoint is provided with embedded touchscreen controller, giving live measurement values of gas concentration and sampling system status. The on-screen trend enables process or operational peaks of emissions to be identified. Solus is a continuous measurement system, so 24 hour measurement periods are easily possible, as well as shorter batch runs. The on-screen controller allows for collection of separate "test data" for ease of reporting. Data is recorded to local .csv file for USB download, or the Solus analyser can be networked via the built-in Ethernet port for OPC or Modbus control and reading. With the on-board I/O, auxiliary inputs can be made for temperature, humidity, dust, pressure or flow measurements, allowing Solus to act as a complete measurement hub for site studies.

Solus Multipoint contains an embedded PC controller and complete 10-way multipoint sampling system for automated, continuous measurement of NH^3 is ambient air environments for VERA Test Protocol.

- Livestock Monitoring
- Ambient Air Testing
- Process Monitoring
- Abatement and Ventilation Control

Hardware Specifications

Gases measured	NH_3 Options for Solus versions for HCl, CO2 and CH4 also available
Tuning Range and Resolution	2 - 2.5nm ; 0.1nm
Optics	ZnSe windows and Photodiode detector
Pathlength	0.4 metres
Sample Cell Volume	15ml
Cell Temperature	Ambient (<40°C)
Flow rate	Primary sample: 0 – 5 $lmin^{-1}$
On-board Sampling system	10-way sampling manifold, 1 sample stream active, 9 on by-pass Sample pump Flow Control orifice, with ΔP measurement for flow confirmation Automated zero purge valve
Sample Connections	PVDF gas connections 6mm or 8mm OD as standard
Sequence	Variable programmable sequence, including automated purge and/or span
Weight	18kg 22kg with lids for transport
Dimensions	410 x 510 x 248 555 x 510 x 248, with lids for transport
Power	110VAC or 220VAC 400W



Data System

Data System	Embedded Controller: Windows 7 Embedded running PAS-Pro 8.4" LED backlight touchscreen panel. 800 x 600 resolution Connectivity: RJ45 Ethernet; RS232 Serial; Wi-Fi (optional)
Measurement Units	ppb, ppm, mg/m^3; OU
Ethernet	OPC Server, Modbus TCP/IP, Modbus RTU/ASCII via Serial, 4-20mA Analogue
Manual data retrieval	Download via USB (.csv file). Separate log file for each measurement stream.

Solus NH_3 Measurements

Standard measurement range	0 - l0ppm; 0 - S0ppm
Standard detection limit NH_3	<0.lppm (variable with integration time)
Maximum detection limit NH_3	>500ppm
Max. Response Time (T90, direct) NH_3	10 secs (integration time dependent)
Linearity	<2% range
Repeatablility	<1% range