

aeris

AE2041U
TRACE LEVEL
NITROGEN OXIDES
ANALYSER



- **ADVANCED SIGNAL HANDLING PRODUCING CLASS LEADING PERFORMANCE**
- **MCERTS APPROVED IN ACCORDANCE WITH EN14211:2012**
- **EXTENSIVE INTERNAL AND REMOVABLE STORAGE CAPACITY**



The **aeris® AE2041U** Trace Level NO/NO₂/NO_x chemiluminescence analyser incorporates a single-channel design measuring NO and NO_x from the same sample volume for simplified operation, reduced NO₂ artifact and maximum reliability. The unique combination of a wide dynamic range, the sample passing through a permeation drier, optimised reaction cell and a PMT that is an order of magnitude more sensitive than the standard model makes the AE2041U ideal for roadside, background and city applications.

NO_x, NO, NO₂ concentrations are corrected for temperature, pressure and flow changes and can be displayed in volumetric or mass concentrations.

The easy access drop down front panel includes a clear, colourful and easy to read built-in data display for trends, averages, status and historical information in numerical and graphical formats. Intuitive menu screens provide clear access to all available options and instrument setup.

The optimum measuring range is automatically selected for the display and RS232 outputs for each parameter. Values are reported as floating point numbers with parts per trillion resolution avoiding range selection and maximising resolution. Internal and external memory provides for recorded data to be downloaded on site or remotely.

THE **AERIS 2041U** IS A PERFORMANCE OPTIMISED VERSION OF THE **AERIS 2010** ANALYSER WHICH HAS THE FOLLOWING APPROVALS:
MCERTS: CERTIFICATE NO: SIRA MC 170299/00 AND US-EPA:RFNA-1292-090 – UPDATE PENDING.

FEATURES & BENEFITS

- **FULL COLOUR TFT GRAPHICAL DISPLAY. WITH INTUITIVE USER INTERFACE.**
- **LINUX BASED PROCESSOR FOR IMPROVED SYSTEM VERSATILITY.**
- **LATEST FIRMWARE UPDATES CAN EASILY BE INSTALLED USING THE USB FLASH MEMORY DRIVE**
- **NO AND NO₂ MEASUREMENTS FROM THE SAME SAMPLE STREAM. NO MISLEADING ARTEFACTS DUE TO STREAM SWITCHING.**
- **BUILT-IN PERMA PURE DRIER ELIMINATES REPLACEMENT OF DRYING AGENTS.**
- **SYSTEM DESIGNED AROUND LOW POWER 12VDC OPERATION TO OPTIMISE RUNNING COSTS AND OPERATOR SAFETY**
- **ON-BOARD DATA STORAGE PROVIDES DATA BACKUP AND REMOTE ANALYSER DATA DOWNLOAD FOR ANALYSIS, REPORTS AND ARCHIVES.**
- **MULTI-DROP RS232 ALLOWS CONNECTION OF SEVERAL ANALYSERS TO LOGGER OR DIRECT TO REMOTE P.C./SOFTWARE VIA MODEM.**
- **ADVANCED DIAGNOSTICS AND FULL REMOTE OPERATION VIA MULTI POINT RS232.**
 - **DROP DOWN FRONT PANEL FOR IMPROVED SERVICE ACCESS.**
 - **INTERNAL OR EXTERNAL PUMP FOR ON-SITE FLEXIBILITY.**

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Optional components	50 pin I/O PCA, sample pump, particulate filter, charcoal scrubber (not 9830), external zero span valves, rack slides & handles.
Optional zero and span (i.z.s) modules	Type:- Internal Permeation Oven. Output:- Single span point based on permeation tube selected. Repeatability:- span is typical $\pm 3\%$ of previous reading.
Range	<ul style="list-style-type: none"> Display & digital output: Auto-ranging 0 to 20ppm. Display resolution = 1 ppb. Serial output resolution = 1ppt Analogue output: zero-full scale from 0-0.05 ppm to 0-20 ppm with 0, 5, and 10% offset (with optional 50-pin I/O board). Auto-ranging Analogue output: 2 user-specified zero-full scale range values. USEPA designated range: Any full scale range between 0-0.05 ppm and 0-1ppm.
Noise	<ul style="list-style-type: none"> Measurement Process: ≤ 10 ppt, with Kalman filter algorithm active. Analogue interface: ≤ 10 ppt or 0.1% of analogue output full scale with Kalman filter algorithm active, whichever is greater.
Sensitivity. Lower detectable limit	<ul style="list-style-type: none"> Measurement Process: < 50 ppt, with Kalman filter algorithm active. Analogue interface: < 50 ppt or 0.2% of analogue output full scale with Kalman filter algorithm active, whichever is greater.
Zero Drift	Temperature dependent: < 0.1 ppb per $^{\circ}\text{C}$ Time dependent (fixed temperature): < 0.1 ppb / 12hrs, < 1 ppb / 30 days.
Span Drift	Temperature dependent: < 0.1 ppb per $^{\circ}\text{C}$ Time dependent (fixed temperature): < 0.1 ppb / 12hrs, $< 1\%$ / 30 days.
Response time	Lag time: < 25 seconds. Rise/Fall time, T95: < 30 seconds (Kalman filter algorithm active).
Linearity Error	$\leq 1\%$ of full scale or $< 2\%$ measured value (from best straight-line fit)
Precision	≤ 0.4 ppb
Sample Flow Rate	Approx. 0.6 l/min
Ambient Temperature Range	+5 $^{\circ}\text{C}$ to +40 $^{\circ}\text{C}$ (41 $^{\circ}\text{F}$ to 104 $^{\circ}\text{F}$) USEPA designated range: +15 $^{\circ}\text{C}$ to +35 $^{\circ}\text{C}$ (59 $^{\circ}\text{F}$ to 95 $^{\circ}\text{F}$) Relative humidity 10 % to 80 %
Mains Power	99 to 132 VAC, or 198 to 264 VAC, 47 to 63 Hz
Weight	24.1 kg (complete analyser without internal pump option)
Dimensions	W43.2cm x H17.8cm x D64.8cm
User interface. Analogue Output	Menu selectable current output of 0-, 2- and 4- 20mA (on DB50 at back panel). Optional jumper selectable voltage output with 50 pin connector board of 100 mV, 1V, 5V, and 10V, with menu selectable zero offset of 0, 5%, or 10%.
User interface. Digital output	Multi-drop RS232 port shared between analysers for data, status, and control. DB50 with discrete status, user control and analogue output, LAN and USB
Extended Memory	USB based storage with over 1 years capacity.
CE MARK	All aeris [®] analysers have CE Mark approval.
Approvals	Performance approval No: US-EPA:RFNA-1292-090 - update pending MCERTS: Certificate No: Sira MC 170299/00 Tested compliant with BS EN14211:2012
Warranty	All aeris [®] analysers come with a 2 year manufacturer's warranty. Extended warranty available.

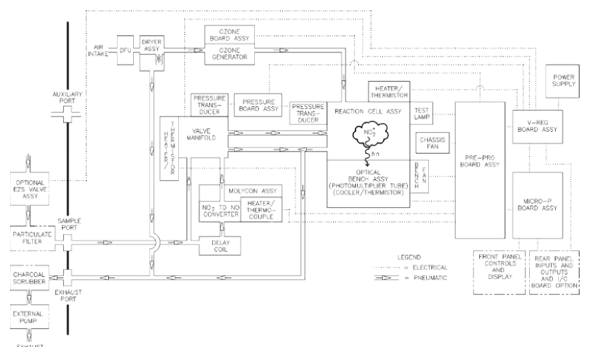
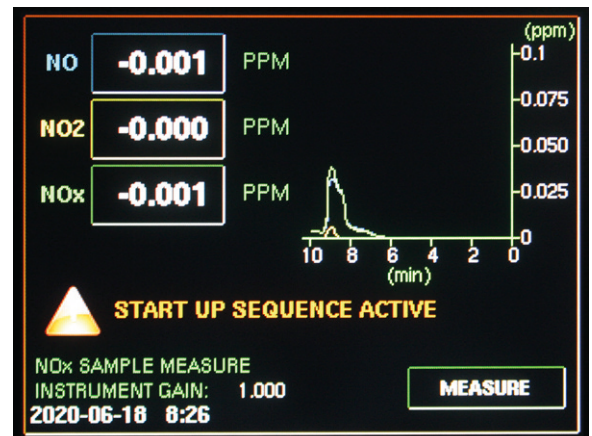
SYSTEM INTEGRATION

ANALOGUE OUTPUT:

Providing both 0-, 2-, 4-20mA as well as selectable voltage output, stand alone as well as multi analyser rack systems, interface with both data logger and recorder acquisition units.

DIGITAL OUTPUT:

Utilising RS 232 port, data-status-controls are utilised either as Multi-drop shared between analysers or directly with external acquisition systems. Various software packages facilitate ease of data manipulation.



ISO 9001 / CE / US EPA /
MCERTS SIRA MC 170299/00

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