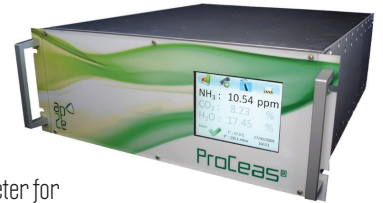


# ProCeas<sup>®</sup> N<sub>2</sub>O Trace analyzer

## Low level N<sub>2</sub>O Detection in Pure Gas

### ProCeas<sup>®</sup>

No sample pre-treatment  
No Heated Lines\*  
Multi-Components  
Pre-Calibrated  
No interference  
No Drift



- ▶ **The ProCeas<sup>®</sup> N<sub>2</sub>O** is a complete pre-calibrated laser infrared spectrometer for measurement of low level of the greenhouse gas N<sub>2</sub>O in combustion process and pure gas.
- ▶ **The ProCeas<sup>®</sup> N<sub>2</sub>O** uses the patented OFCEAS (WO 03031949) IR Laser technology for enhanced specificity, selectivity, accuracy and stability (no instrumental response drift.)
- ▶ **The ProCeas<sup>®</sup> N<sub>2</sub>O** uses a patented low-pressure sampling system (WO 2010058107) enabling low-cost installation thank to non-heated lines\* and reduced maintenance.
- ▶ **The ProCeas<sup>®</sup> N<sub>2</sub>O** is a complete, reliable, robust, low-cost and easy-to-use solution for the N<sub>2</sub>O analysis in combustion process and pure gas.

## ProCeas<sup>®</sup> Advantages & Benefits

### ▶ DIRECT MEASUREMENT

#### No sample pre-treatment.

OFCEAS technology associated with low pressure sampling enables direct measurement. The low pressure in the sampling system removes any risk for chemicals adsorption/desorption and condensation in the line.

### ▶ NO INTERFERENCE

OFCEAS technology associated with low pressure sampling provides exceptional selectivity, enabling simultaneous multi-component measurement without interferences, regardless of the matrix.

### ▶ NO RE-ZERO; NO DRIFT

The zero information is contained in the signal, enabling automated and intrinsic re-zero of the analyzer.

### ▶ EASE-OF-USE

The ProCeas<sup>®</sup> is pre-calibrated for your application. Initially packaged in a standard 19" rack, it includes a touch screen interface and on-board PC for local / remote control and real time display / recording of results.

### ▶ EASE-OF-INTEGRATION

The ProCeas<sup>®</sup> allows digital (Ethernet, RS485, RS232, ModBus), analog and TDR I/O's.

### ▶ ROBUSTNESS

The ProCeas<sup>®</sup> contains no optical moving parts and was designed and built strictly for industrial and on-board mobile applications.

### ▶ LOW MAINTENANCE

#### High MTBF.

In addition to containing no moving optical components, the IR sources (telecom type laser) are characterized by MTBF's of 5 years.

### ▶ CLEAN LINES / FILTERS

The low pressure sampling system enables low flow rates (3-9 L/h) without degrading response time. Accumulation of contaminants lines and filters is greatly reduced.

### ▶ SAFE

ATEX compliant configuration available.

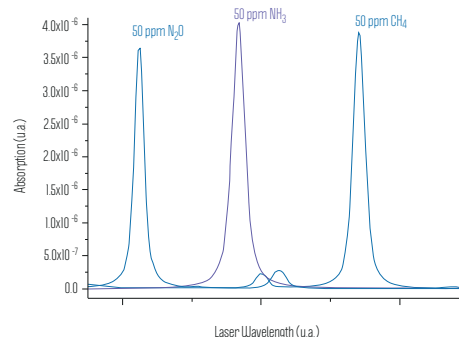
\* Requires ambient temperature > 10°C and H<sub>2</sub>O < 65 % vol

SAMPLING	
Flow Rate :	3-9 L/h
Max. Temp. :	600°C
Max. Humidity :	H <sub>2</sub> O(g) < 65% vol. - Standard H <sub>2</sub> O(g) > 65% vol. - Study Required
Pressure :	1 atm. ± 100 mbar @ sampling point
Sampling Line :	Ambient Temp. > 10°C et H <sub>2</sub> O < 65% vol. > Simple polytube (no heating)  Ambient Temp. < 10°C et H <sub>2</sub> O > 65% vol. > 80°C heated line
DIMENSIONS	
Size :	standard 19", 4U rack.  550 mm depth.
Weight :	20kg
Options :	Wall mounted ATEX compliant integration
ELECTRONICS	
Display/Control :	5.7" diagonal color touch screen
PC OS :	Windows® XP®
Software :	WinProceas ©
INSTALLATION REQUIREMENTS	
Operating Temp. :	15-35°C - Standard 10-40°C - Optional
Power supply :	200 W - 110-220VAC - 50-60Hz
Compressed Air :	1-6 bar (oil free). Not provided.

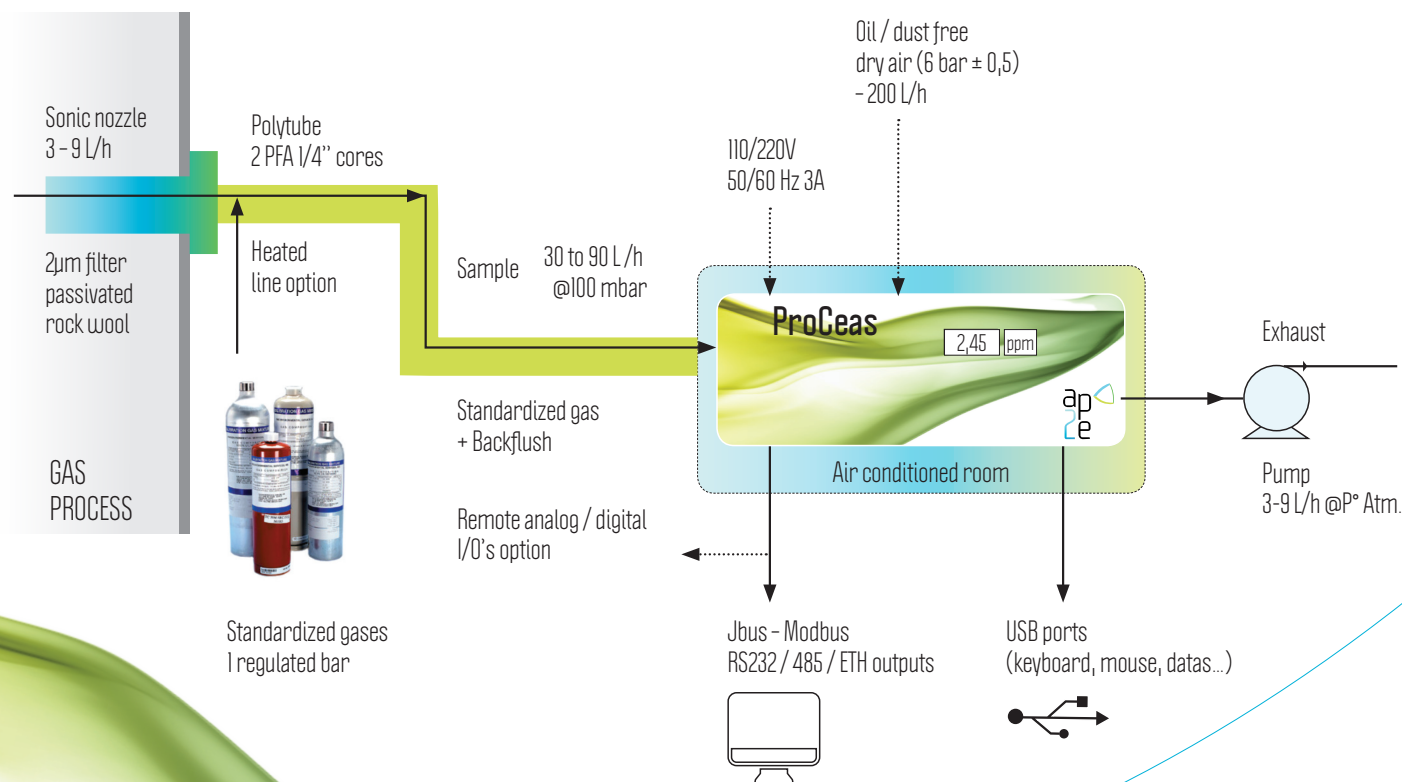
I / O's				
Standard :	Ethernet Protocol; RS 485 RS 232; ModBus.			
Optional :	Analog I/O; TDR I/O. Other I/O's on request			
ANALYTICAL SPÉCIFICATIONS				
Gas	Range <sup>a</sup>		LOD <sup>b</sup>	
	min	max	min	max
N <sub>2</sub> O	50ppm	100%	2ppb	1000ppm
Optional				
CH <sub>4</sub>	50ppm	100%	1ppb	1000ppm
NH <sub>3</sub>	50ppm	100%	1ppb	1000ppm
Response Time	<2 seconds.			
Zero Drift :	none			

<sup>a</sup> adjustable range on request  
<sup>b</sup> limit of detection 3 Sigma

SPECTRA (Examples) - 200 equidistant data points over 0,2 nm



## LAYOUT FROM SONIC NOZZLE TO ProCeas ANALYZER



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