

 **POLLUTION**

Lightweight, compact, ergonomic, safe



POLARIS FID

Portable TOC Analyser for Stack Emissions



The Portable FID for Stack Emissions: lightweight, compact, ergonomic, safe

“POLARIS FID” analyser realized by POLLUTION is an on-site monitor for the detection of total organic carbon (TOC) in compliance with **EN 12619:2013 and EPA METHOD 25A**.

It is a **fully portable instrument** because it incorporates everything needed for the analysis; for that reason it is useful for environmental screening as well.

FID POLARIS RUNS WITH BATTERIES THANKS TO THE EXCLUSIVE DESIGN WITH LOW POWER CONSUMPTION

The miniaturization of the flame ionization detector (FID) and heated volumetric sampling system result in outstanding energy savings and thus allows the use of built-in rechargeable batteries. It also ensures the highest accuracy and repeatability of sequences of analysis.



FID POLARIS IS BUILT TO RESIST TO THE MOST DIFFICULT OPERATING CONDITIONS

The instrument is designed to be resistant to samples with high temperature and humidity: this is a typical working condition with hot samples during stack monitoring.

The detector manifold, the sampling lines and all the valves are integrated into a single block and uniformly heated, in order to eliminate all possible cold spots and avoiding local sample condensation.

KEY FEATURES

- **Rechargeable battery operations**
fully portable
- **Integrated hydrogen cartridge**
safe and compact
- **Zero Air and Span Gas integrated into the chassis**
ergonomic and lightweight
- **Heated volumetric sampling system**
accurate and precise
- **Alphanumeric display and USB port for uploading methods and downloading data analysis**
easy and advanced
- **Docking station for Methane/NMHC and optional controller for heated lines**
effective and flexible
- **TÜV Approval**
certified and guaranteed

APPLICATIONS

- **On-site analysis of TOC (Total Organic Carbon) in Stack Emissions, in compliance with EN12619:2013 and EPA Method 25A**
- **Methane/NMHC Automatic analysis**
- **Environmental screening**

FID POLARIS OPERATES IN COMPLETE AUTONOMY, AND CONTROLS THE ENTIRE ANALYTICAL PROCESS

The integrated microprocessor automatically controls several parameters: ignition and flame monitoring, setup of parameters chosen by the user according to the analytical method, diagnostic checks, life monitoring of the gas cans and energy reserves, sampling lines cleaning cycles, calibration procedures.



FID POLARIS IS COMPACT, LIGHTWEIGHT AND ERGONOMIC FOR EASY USE

The instrument incorporates everything you need for analysis: batteries, hydrogen storage cartridge, pump and Activated Charcoal filter for the flame air, span gas cylinder for the calibration and technical air cylinder for high accuracy and precision.

The sample inlet, with double filter, is compatible with all sampling lines on the market. It is equipped with comfortable shoulder strap for field use.



FID POLARIS FEEDS THE FLAME THROUGH AN INTEGRATED AND SAFE HYDROGEN STORAGE

The compact hydrogen storage cartridge (using an innovative metal-hydride technology) is integrated into the instrument and self-desorbs the hydrogen fuel to the flame detector at appropriate pressure and flow. It is very safe and it does not require pressure regulators; it is a very handy instrument because it allows to perform analysis for many hours.

Because of its peculiarities, it can be carried by car and by plane without any restriction. It can be easily recharged in less than one hour in the laboratory using a standard hydrogen cylinder with regulator or with an hydrogen generator at high output pressure.

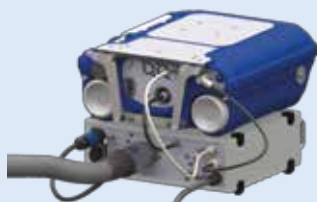


ACCESSORIES



POLARIS - NMHC Docking Station

External Catalyst for automatic Methane/NMHCs analysis. POLARIS FID controls the Docking Station to measure sequentially total hydrocarbons and/or methane only. Automatically it calculates the difference between them reporting the NMHC value.



The Docking Station also powers POLARIS FID and heated lines. Optional internal temperature controller for the heated line, range 80°C – 200°C.



POLARIS - H2 Recharging Station

High pressure Hydrogen generator designed for the fast recharge of the Hydrogen cartridges thanks to a very high purity and pressure output. It only requires electric power and demineralized water.

Dimensions: 230 (W) x 430 (H) x 353 (D). Weight: 17Kg.



POLARIS - H2 Recharging Interface

Connection Kit for the recharge of the Hydrogen cartridges through external pressurized cylinder. It is equipped with safety valves.

FULL RANGE OF ACCESSORIES AND CONSUMABLES



POLARIS - Calibration Gas

- Kit of 12 disposable cylinders:
- Span Gas 16/40/120/320 mg/Nm³
 - Zero Air
 - Combo: 9 Zero + 3 Span



POLARIS - H2 Cartridge

Compact hydrogen storage cartridge based on metal hydride technology, can be easily recharged with an external pressurised hydrogen source in less than 1 hour. 50L Capacity. Dimensions: 200 (L) x 30 (D) mm.



POLARIS - Activated Charcoal filter for comburent air

Dimensions: 220 (L) x 28 (D) mm.

Many other accessories and consumables are available for best results with POLARIS FID, e.g. external battery charger, carrying cases and filters.



POLARIS PROBE

HEATED SAMPLING PROBE FOR TOC

POLARIS PROBE is the sampling probe for TOC analysis: it is lightweight, compact and robust, the best accessory that matches Polaris FID portability.



POLARIS PROBE is EN12619:2013 compliant, comes equipped with a specially designed heated sampling line self-regulated at 180°C. A separate inlet port placed before the heated filter allows the injection of span gas for calibration or zero air for zero check.

POLARIS PROBE sampling line integrates a special support that prevents any cold spots and maximizes the sturdiness of the junction between the heated line and probe. Standard Swagelok fitting simplifies the connection between these two parts.

Standard Configuration

- 70 cm Stainless steel Sampling Probe Tip
- Power 240VAC

FEATURES AT A GLANCE


- Lightweight, compact and robust
- Built-in self-regulating elements at 180°C
- Control light indicates when the probe reaches the set point temperature
- Glass microfiber filter easily replaced
- Quick fitting inlet port for calibration and zero check
- Carrying handle mounted on the heat-isolated housing
- Standard Swagelok fitting and high strength special support protection



Optional Accessories

- Lines are available at different lengths: 3, 5, 10 meters
- Stainless steel Sampling Probe Tip at 30 cm
- Titanium Sampling Probe Tip at 30 cm or 70 cm
- Power 115VAC
- Anti shock Carrying Case for safe transport of the probe

SPECIFICATIONS

Size and Weight	355(W) x 155(H) x 426(D) mm, 10 Kg (with batteries 13,4 Kg)
Power Supply	<ul style="list-style-type: none"> External Power Adapter 110 - 240VAC - 24VDC @ 8,2A 2 batteries 9Ah (running-time 3h @ 140°C detector)
Sampling	Heated head system
Environmental Operating Ranges	+5°C < T < +40°C - 0% < RH < 95%
Sample conditions	Temperature 0 – 170°C / pressure 90 – 110kPa
Max detector body temperature	190°C
Max temperature Sample Inlet	180°C
Materials in contact with the sample	Steel AISI316 and high performance polymers
Sample flow	Approximately 800 ml/min
Sample pressure	atm ± 100 mbar
Measuring Range	0-20/50/150/500/5000/10000 mgC/Nm ³ (other on request) 0-10/100/1000/5000 ppm relative to Propane
Detection limit (LDL)	0,3 mg/Nm ³
Accuracy	1% of the F.S. or 0.4 mgC/Nm ³ , whichever is greater
Setting Methods and Data Analysis	<ul style="list-style-type: none"> Internal memory flash (30 days of continuous measurements) Upload/download via USB
Flame management	Electronic, with diagnostic and "flame off" visual alarm, automatic system to restart the flame
Hydrogen storage cartridge	<ul style="list-style-type: none"> Metal hydrides technology (running-time about 30 hours) Rechargeable via external source of hydrogen under moderate pressure No restrictions on transport
Zero Air	<ul style="list-style-type: none"> 1L Cylinder (non-rechargeable): technical air @ 12bar / 20°C (running time approximately 10h) Quick connectors for external Zero Air cylinder
Span Gas	<ul style="list-style-type: none"> 1L Cylinder (non-rechargeable): propane in air @ 12bar / 20°C (Concentration of total carbon equivalent : 16/40/120/320mg/Nm³, other on request) Quick connectors for external Span Gas cylinder
Certifications	 <p>Issues by TUV Rheinland (ID 000039773) according to MCERTS performance standards</p> <ul style="list-style-type: none"> EN12619:1999, EN13526:2002
POLARIS - NMHC Docking Station	
Size and Weight	330 (W) x 110 (H) x 330 (D) mm, 7 Kg
Power Supply	110 - 240VAC
Measurement	Automatic: Methane, Total Hydrocarbons, NMHC (calculated)
Optional	Temperature controller (80-200°) and power for sampling line
POLARIS - H2 Recharging Station	
Size and Weight	230 (W) x 430 (H) x 353 (D) mm, 17 Kg
Power Supply	110 - 240VAC
Hydrogen Output	Pressure: 11bar - Flow: 350cc/min - Purity: 99,99996%



POLLUTION



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تلفن: ۰۲۱-۶۶۰۲۸۱۷۲-۵
 فکس: ۰۲۱-۶۶۰۲۰۵۰۹
 E-mail: info@apm-co.ir
 Website: www.apm-co.ir

POLLUTION S.r.l.
 Via Guizzardi, 52 - 40054 Budrio (BO) ITALY
 tel. +39 051 6931840 pollution@pollution.it
 fax +39 051 6931818 www.pollution.it