

SOLAR CEMNEX

Compliant FID System for VOC & THC Monitoring



The SOLAR CEMNEX is Signal Group's flagship turnkey solution for measuring Total Hydrocarbons (THC) and Volatile Organic Compounds (VOCs) in compliance-critical applications.

Key Features

- Fully integrated FID analyser, pre-filter, and heated line control
- Real-time VOC monitoring down to ppb levels

- Optional wireless tablet interface for remote operation
- Rack-mounted format for easy installation in cabinets or shelters

- Designed for CEMS, combustion studies, and VOC abatement systems
- Independently tested by TÜV to meet EN 14181 requirements



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Independently tested by TÜV for ranges 15 mg/m³, 30 mg/m³, and 500 mg/m³, it delivers precision, compliance, and flexibility in a single, rack-mounted system — from probe to data output.

Built around Signal's industry-trusted S4 SOLAR FID, and fully equipped with a heated filter (363SM), heated sample lines, and an automated calibration system, the SOLAR CEMNEX is designed for completely unmanned, continuous operation.

NO EJECTOR REQUIRED

Unlike many systems that rely on an ejector/eductor pump, the SOLAR CEMNEX:

- Requires no pump when using a pressurised sample
- Only needs the compact internal pump for lines up to 20m
- Avoids ambient pressure sensitivity and complex pressure balancing
- Simplifies system architecture — fewer components, more reliability

This makes the CEMNEX more versatile, energy efficient, and robust in real-world conditions where pressure can vary and space is limited.

END-TO-END COMPLIANCE

With robust performance, intelligent automation, and comprehensive integration, the SOLAR CEMNEX is the ideal solution for organisations requiring continuous VOC/THC measurement, regulatory compliance, and long-term reliability — with minimal human intervention.



Heated/Non-heated Multipoint Sampler

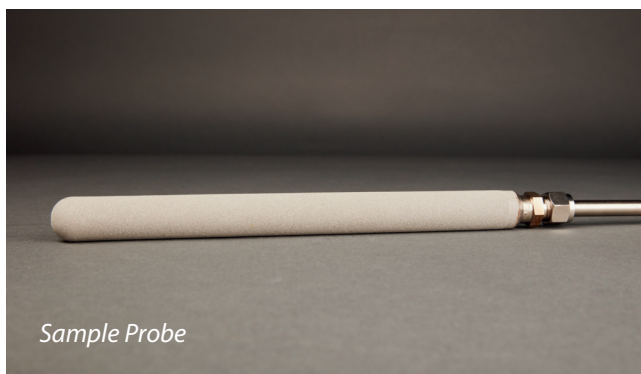
These units are designed to give the user easy selection of measurement from various sampling points, for example from multiple gas cylinders, exhaust stacks or engine test cells.

Available as heated or non-heated, 4, 6, 8 or 10 inlets can be chosen along with a single outlet as standard. With up to 30 inlets and 3 outlets, and backpurge, boost pump, integrated line control, and various automation options also available, these versatile units can provide excellent value for money for mid-to-large scale gas analysis projects.

SOLAR CEMNEX

HEATED SAMPLE HANDLING

- Pre-Filter (363SM): Stainless steel housing, 191°C oven, 0.4 µm PTFE filter
- Heated Line: Maintains sample temperature up to 200°C
- Temperature Controller: Integrated 530 unit with safety interlocks
- Heated Line Length Support: Up to 20 metres with internal pump



SYSTEM CONFIGURATION

- 19" Rack-mounted system
- Dimensions: 133.5 mm (H) x 530 mm (D) x 19" (W)
- Weight: Approx. 50-80kg depending on configuration
- Power: 100–250 VAC
- Outputs: 0–10 VDC, RS232, Ethernet, TCP/IP, optional 4–20 mA

Pre-Filter (363SM)



OPTIONAL CONFIGURATIONS

Installation & Mounting Options:

- Outdoor weatherproof enclosure
- Wall-mount configuration
- Rollers for portability or static plinth for fixed installation
- 19" rack or custom mounting solutions

Sample Handling Flexibility:

- Multiple heated sample lines
- Heated line lengths up to 20m (standard); custom lengths available on request
- Multiple sample points
- Automated sample point switching
- Filter/probe with blow-back/purge capability for reduced maintenance

System Control & Integration:

- Fully automated calibration system (line or direct to analyser)
- Integrated catalytic FID and zero air generation
- Complete remote control & monitoring
- Configurable alarms: beacons, sounders, and remote alerting
- Compliant Data Acquisition & Handling System (DAHS) integration
- 4–20 mA or 0–10 VDC analogue outputs

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SPECIFICATIONS

MEASUREMENT TECHNIQUE

Flame Ionisation Detector

RANGE

0–1 ppm to 0–100,000 ppm (user-selectable)
Resolutions: 0.01 ppm, 0.1 ppm, or 1 ppm depending on range

RESPONSE TIME

THC <1.5s

REPEATABILITY

<1% FSD

LINEARITY

±0.5% FSD or 2% of point

DRIFT

±0.2 ppm or 2% of range/week

OXYGEN EFFECT

<2% of reading from 0% to 21% O₂ (H₂He)

NOISE

+/-0.1 ppm or 1% range, whichever greater

TEMPERATURE EFFECT ON ZERO

<0.15% per °C

TEMPERATURE EFFECT ON SPAN

<0.3% per °C

SAMPLE INLET PRESSURE

With internal sample pump: -0.6 to +0.4bar
Without internal sample pump: +0.2 to +0.5bar

ACCURACY

<0.2% FSD

PRECISION

<1%

DETECTION LIMIT

0.05 mgC/m³

BYPASS FLOW SENSITIVITY

Less than 2% from 1 to 3 L/min

SAMPLE TEMP (HEATED)

Up to 200°C

SAMPLE FILTER

0.4 µm PTFE (removable)

FUEL CONSUMPTION

35ml/min H₂ or 180ml/min H₂He

AIR SUPPLY

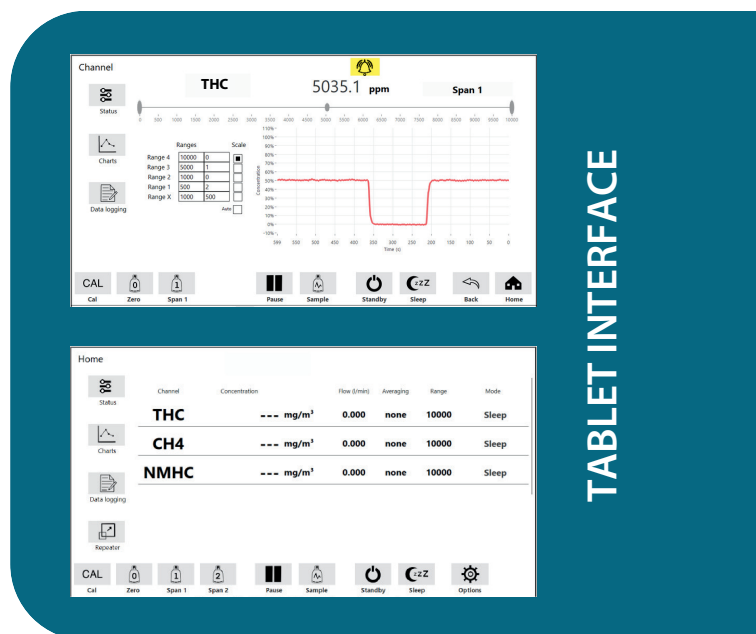
>1.1L/min

OPERATING CONDITIONS

5-40°C ambient temperature

COMPLIANCE

- EN 12619
- EN 13526
- EN15276-2
- EN15276-3
- BlmSchV, 13. BlmSchV & 17. BlmSchV
- USEPA Method 25
- USEPA Method 25A
- USEPA CFR40 part 86 & 1065
- USEPA Performance Specification 8A
- ISO 25140
- ISO 8178
- NIER Notification No. 2023-70
- ASTM D7675-22



Authorised Representative: