

## Solar HFID-THC Heated Flame Ionisation Detector — Total Hydrocarbon Analyser



- Internal catalytic air purifier
- User configurable range
- Fast response
- Flexible outputs and alarms
- Internet connectivity
- On-board data logging

### Overview

Heated flame ionisation is the reference method detector for measuring total hydrocarbons (THC, VOC, TOC). The advantages of this method are that it can be used for hot, wet samples. Maintaining an elevated temperature prevents the dropout of heavy hydrocarbons along the sample line. This detection method is continuous with a fast response time making it very effective for alarm status monitoring applications and other real time reporting.

The Solar HFID is unique in the market with its precision machined, monobloc arrangement of ceramic isolated flame jet tip cylindrical collector and veneturi effect air/fuel/sample design. The need of uniformity is important when measuring hydrocarbons as there are many different species in the measurement mix and barometric changes can be a problem. The monobloc design encompasses the hot oven, the heated filter, span&zero cal valves and the sample pump, thus a very compact and leak proof design is provided. The optional sample pump uses a brushless DC motor for total reliability.

The HFID-THC is suitable for a wide range of applications from incinerators to high concentration solvent users. With good carbon correlation for aliphatics, alcohols, esters, ketones, and aromatics it provides a reliable determination of total hydrocarbon levels.

### Operation

This model features an optional catalytic air purifier to provide clean air for FID flame and calibration. In addition, there is an input for zero grade air to provide extra stability on low ranges. We recommend the use of hydrogen/helium mixture as fuel for applications where oxygen levels are unpredictable to minimise the effects of oxygen synergism. The HFID-THC is also available with hydrogen fuel option for ambient or solvent applications where oxygen levels are stable.

### Communication

The analyser has the facility to accept an SD memory card or USB stick for data logging. There are up to 35 user configurable contact closure outputs and 10 analogue/chart outputs of which are typically assigned as five concentration outputs and five range outputs. However, these can be easily reprogrammed to give other outputs such as temperature, flow or pressure measurements as a percentage of FSD for that measurement. Additional communications include a remote control via free issued remote interface software S4i which offers a whole host of new and exciting features such as remote control and diagnostic capabilities, allowing end user and/or service engineers to dial in and identify faults from remote offices. It has a fully automated zero and span function for straightforward calibration, pump control and global alarm checks. Additional features include range configuration and changeable display units (ppm, %, mg/m<sup>3</sup>) to suit application.

### Options

Built-in sample pump and zero air generator. Built-in heated catalyst air purifier. Built-in 7" LCD touch screen colour display  
 Single CFID CH4 90°C  
 Single CFID THC 90°C  
 Dual HFID-NMHC 191°C

### Specifications

Measurement technique	Flame Ionisation Detector
Available Measuring range	0 -1000ppm FSD or 0 -10,000ppm FSD or 0 - 40,000ppm FSD or 0 -100,000 FSD
Response time	THC <1.5s to T90
Repeatability	<1% FSD
Oxygen effect	0.3% from 0-10% O2 in sample
Linearity	+/- 0.5% FSD or 2% of point  EN14181 - dc rel : <0.5 R <sup>2</sup> : >0.99
Zero Drift	< 2% FS/24hrs
Temperature effect on zero	<0.15% per °C
Temperature effect on span	<0.3% per °C
Zero noise	Euro IV — <0.05% FSD EPA1065 — THC <2.5% FSD
Span noise	<0.5% FSD
Accuracy	<0.2% FSD
Detection Limit	0.05mgC/m <sup>3</sup>
Bypass flow sensitivity	Less than 2% from 1 to 3 L/min
Sample Filter	Removable 0.4 micron PTFE
Display	Blank panel or 7" colour display
Sample Condition	0-200°C
Inlet Pressure	-0.5barg—1barg
Fuel Consumption	Hydrogen 45ml/min Hydrogen/Helium 180ml/min
Air Supply	1.1L/min minimum
Operating conditions	5-40°C ambient temperature
Outputs	0-10 Vdc
Power requirements	100-240Vac 50/60Hz or 24Vdc
Remote control	AK protocol via RS232 port, Ethernet
Size and Weight	19" (w) x 133.5 (h) x 530 mm (d) Apx. 30Kg

