

Methane/Non Methane Hydrocarbon Determination

External NMHC Cutter 900

J.U.M.'s External Non Methane Hydrocarbon Cutter allows the added capability to measure alternately only Methane or THC with just one heated total hydrocarbon analyzer (HFID).

Sample can be from ambient air, indoor air, from a stack or from other industrial emission sources.



The model 900 external NMHC Cutter complies with VDI 3481(DE) and EN ISO 25140:2010 (EU).

The catalyst efficiency from Methane to Propane and higher Hydrocarbons typically is >98%. The catalyst efficiency from Methane to Ethane is >96%, The maximum inlet concentration of Propane equivalent total hydrocarbons is 500 ppm (approx. 1'500 ppm Methane equivalent. Sample filter back purge cleaning allows uninterrupted operation.

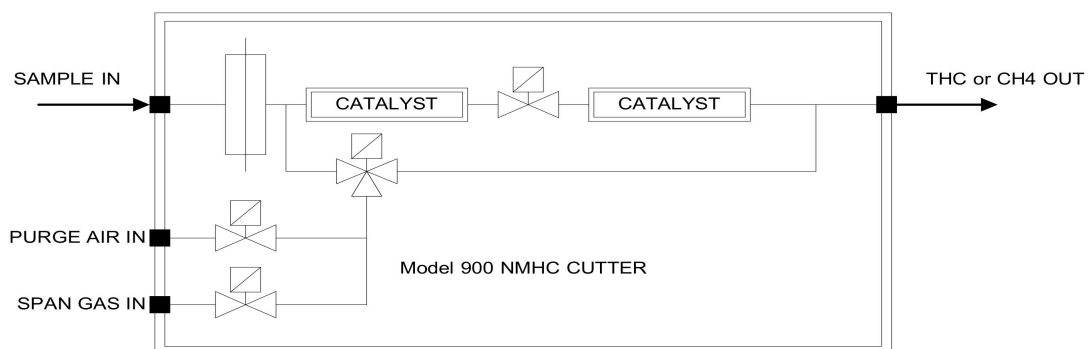
General Description

Quite often studies made in outdoor air pollution monitoring, indoor air quality monitoring, as well as in stack emissions monitoring require measurements of non methane hydrocarbons and total hydrocarbons, because results of ambient hydrocarbon emissions must be correlated with ozone and NOx. These correlations are of a great need in the determination of the geographical spread of smog, acid rain, and other similar atmospheric conditions.

Methane is a naturally occurring non reactive hydrocarbon which is found in the atmosphere of the earth. Because of this reason, the analysis of reactive and non reactive hydrocarbons is very important. Our Model 900 External Non-Methane Hydrocarbon Cutter allows the added capability to measure alternately methane only and total hydrocarbons with any heated total hydrocarbon analyzer (HFID).

J.U.M.'s Model 900 External NMHC Cutter in combination with a FID Analyzer is the low cost alternative when compared to "all in one" heated non methane hydrocarbon analyzers or gas chromatographs. The Cutter 900, which uses a tuned, temperature controlled catalytic device which is housed in a 19 inch rack mount case and is to be added in series to the sample inlet of a FID total hydrocarbon analyzer. The external cutter allows alternately only methane or total hydrocarbons to reach the FID analyzer. A stainless steel assembly (pat. pend.) which contains a proprietary catalyst is housed inside of the heated oven in the rack mount case. The heated oven is maintained at a stable temperature by means of digital temperature control. The Model 900 includes all necessary plumbing, a permanently installed heated sample filter to be cleaned by back purging with compressed air or nitrogen and all solenoid valves. The switching valves allow the catalytic converter to be switched into and out of the sample stream to provide either a continuous total hydrocarbon or methane only sample.

The connected heated FID analyzer will consequently measure either total hydrocarbons (THC) or Methane only CH₄. Non methane hydrocarbons are calculated by using the the difference between total hydrocarbons and Methane. All connectors are on the rear panel. All controls are activated by front panel switches. Remote control capabilities are optional.



Features

- x *Made in Germany*
- x All components in contact with sample stainless steel fully heated and accurately controlled at reaction temperature
- x Standard, permanent installed 2 μ sample filter to be cleaned by back purge with hydrocarbon free compressed air or nitrogen
- x Calibration valves for span calibration. Standard manual and remote operation
- x Fast response

Applications

- x Stack gas hydrocarbon emissions monitoring @ moderate sampling conditions
- x European and USA-EPA Method compliance monitoring
- x Ambient air monitoring of NMHC concentrations
- x Indoor air monitoring of NMHC concentrations
- x Process gas monitoring of NMHC concentrations

Technical Specifications

Method	Alternating sampling by extractive FID Analyzer via catalytic NMHC reactor, or bypassing the reactor
Warm up time	120 Minutes
Catalyst efficiency @ Ethane	> 96%
Catalyst efficiency @ Propane	>98%
Max. C _n H _m inlet concentration	< 500 ppm Propane equivalent
Sample flow through	Approx. 2,5 liter/min (Requires fine tuning with Analyzer)
Sample Filter Back Purge	Standard 2 micron stainless steel mesh low pressure drop. Back purge pressure max. 4 bar
Ambient temperature	5°C - 43°C (41°F - 110°F)
Voltage	230 VAC/50 Hz, or 115 VAC/60 Hz, 800 Watt
Dimensions	Width: 483mm (19"). Depth 460 mm. Height 132 mm
Weight	Approx. 18 kg

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