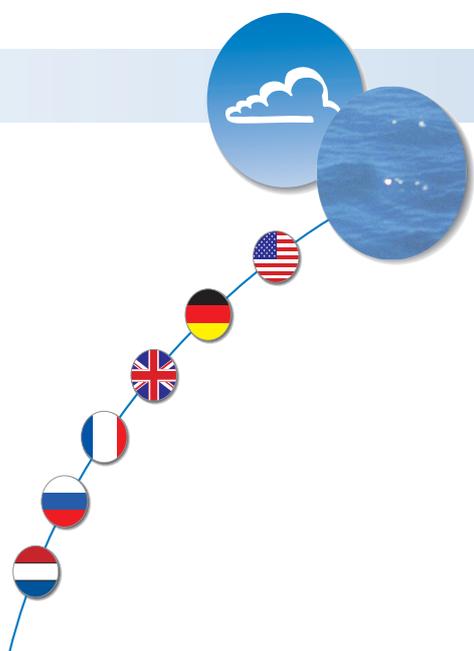


Total Hydrocarbons Analyzer in Water Model HC 9010

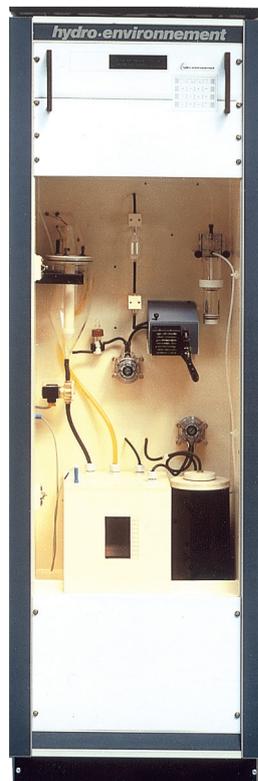


Water Quality Monitoring

Method in compliance with
NF T 90-114 standard

Hydrocarbons extraction &
infra-red spectrometry
measurement

Regeneration of the solvent
used



Main applications:

- Surface water quality monitoring
- Industrial wastewater monitoring
-

Exclusive features:

- Real measurement of total dissolved hydrocarbons
- Fully automated measuring, calibration and cleaning sequences
- Solvent recycling
- Electronic compensation of all variations in the measurement process
- Modular design for easy maintenance
- Real measurement of total dissolved hydrocarbons
- Use of a special spectrophotometer especially designed for this application



Warning station



Total Hydrocarbons Analyzer in Water - Model HC 9010

Specifications:

- Measurement ranges: programmable from 0.1-10 to 0.3-30 mg/l according to the method used (methods 1 to 6)
- Noise: 0.05 mg/l
- Lower detectable limit: 0.1 mg/l
- Display resolution: 0.01 mg/l
- Average response time: 30 minutes
- Minimum sample flow rate: 100 l/h
- Sample volume: 1 l
- Maximum hydrocarbon concentration in the tap water used: < 10 µg/l
- Display: 2-line alphanumeric
- Control keyboard: 16 keys
- Power supply: 220 VAC +/-10 %, 4 A , 50 Hz
- Power consumption: 100Wh
- Operating conditions:
 - ambient temperature: + 5 to + 20°C
 - sample temperature: +20°C max
- Dimensions: 600 x 600 x 1870 mm (W x D x H)
- Weight: 120 kg

Utilities

- Tap water consumption: 1 to 2 l per cycle
- Compressed air: 0.15 Nm³/h, 5 bars

Communication

- Serial: 1 RS 232 (mode J BUS possible)
- Analog output: 4-20 mA (option)
- Dry contacts: default, alarm

Principle of operation:

Model HC 9010 is designed for the determination of the total concentration of hydrocarbon present in a sample. The operating principle lies on the adaptation of AFNOR T90-114 french standard.

In a first stage, total dissolved hydrocarbons are extracted from the sample using tetrachloroethylene. This consists in the liquid phase extraction process.

In this type of extraction, an organic solvent (tetrachloroethylene) is added to the homogeneous water-hydrocarbon mixture to be separated. Tetrachloroethylene selectively dissolves hydrocarbon compounds from the aqueous phase.

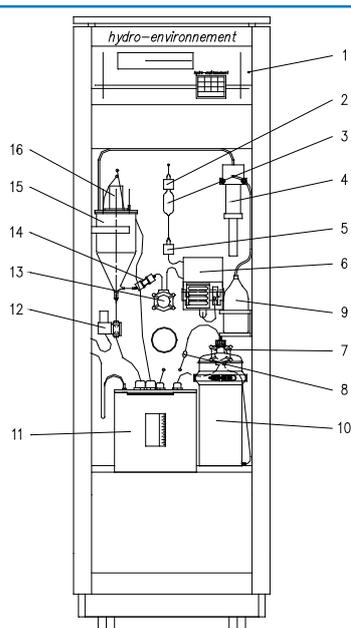
In a second stage, a spectrophotometric measurement is performed in the tetrachloroethylene, using an interferential filter focused on the 3400 nm pass band, corresponding to the most important valency vibrations for:

- CH links of aromatic hydrocarbons (3290 nm,)
- CH₃ links of aliphatic hydrocarbons (3380 nm)
- CH₂ links of aliphatic hydrocarbons (3420 nm and 3510 nm)

The solvent and the measuring vessel are selected to be transparent to the wavelengths used.

The final result is obtained by applying the Beer-Lambert absorption law and the C concentration is expressed as a «hydrocarbon index» in mg/l eq CH₂.

A calibration factor (K) is introduced in the analyzer from laboratory calibrations, and it remains adjustable in case the user would like to focus on specific hydrocarbons (aliphatic or aromatic hydrocarbons etc...) or would like to work with a particular standard.



- | | |
|----|----------------------|
| 1 | Electronic rack |
| 2 | Level sensor 3 |
| 3 | 50 ml dosing vessel |
| 4 | Dozer 1 ml |
| 5 | Level sensor 2 |
| 6 | Spectrophotometer |
| 7 | Recycling pump |
| 8 | Sintered glass |
| 9 | Doping solution |
| 10 | Regeneration column |
| 11 | Decanting tank |
| 12 | Drain solenoid valve |
| 13 | Transfer pump |
| 14 | Trap filter |
| 15 | Extraction cell |
| 16 | Extraction turbine |