# 700 LX Series HFID Analyzer



- New Electronics

- User-Friendly Operation

- New, More Powerful Operating System

- Proven Analytical Components

- Remote Emulation/Control Software TCP/IP

## Features

- Measures From 30 ppm up to 30,000 ppm Full Scale as Methane or 0-10 to 10,000 ppm as Propane
- Auto Calibration and Ranging
- Fast Response Time
- Electronic Flow Control
- Temperature Stabilized Detector
- Automatic Fuel/Air Shut-off
- Comprehensive Diagnostics

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- Standard Outputs: Voltage, Current, AK Protocols,RS-232 AK Protocol, TCP/IP MODBUS
- CE Mark and ETL Listed—Conforms to UL STD 61010-1,     Certified to CAN/CSA C22.2 STD No. 610610.1
- Meets 1065 Requirements

## Applications

- Combustion Efficiency
- Process Gas Analysis
- Fuel Cell Analysis

- Turbine/Generator Feedback Control
- Personnel Safety
- Vehicle Emissions

## Options

- Internal Sample Pump
- Internal Calibration Solenoid Valves

- 19 Inch Rack Mount Slides

## Method of Operation

The California Analytical Instruments' 700LX Series HFID Analyzer is designed to continuously measure the total concentration of hydrocarbons within a gaseous sample. The analyzer exhibits superior sensitivity and response time. The Analyzer utilizes the principle of Flame Ionization Detection (FID) to determine the total hydrocarbons within a gaseous sample. The HFID analyzer has a heated oven ($191^\circ C$) which contains a burner and an optional heated pump. The small flame of the burner is elevated and sustained by the regulated flows of air and either pure hydrogen or a 40/60 mixture of hydrogen and (helium or nitrogen).

The split ring detector contains 2 electrodes. One electrode is negatively polarized using a precision power supply and the other electrode, known as the "collector" is connected to a high impedance, low noise electronic amplifier. The two electrodes establish an electrostatic field. When a gaseous sample is introduced to the burner, it is ionized in the flame and the electrostatic field causes the charged particles (ions) to migrate to their respective electrodes. The migration creates a small current between the electrodes. This current is measured by the precision electrometer amplifier and is directly proportional to the hydrocarbon concentration of the sample.

## Specifications

Detector: Flame Ionization Detection
THC Ranges: Four User Definable ranges from 0-30 to 30,000 ppm as Methane or 0-10 to 10,000 ppm as Propane
(Contact Factory for Lower Ranges)
Response Time: 90% Full Scale in 3 Seconds
Resolution Detection Limit: 10 ppb Carbon
Repeatability: Better than 0.5% of Full Scale
Linearity: Better than 1% of Full Scale
Accuracy: Better than 1% Full Scale
Precision: Better than 0.5% Full Scale
Noise: Less than 1% of Full Scale
Zero & Span Drift: Less than 1% of Full Scale per 24 Hours
Zero & Span Adjustment: Via front panel, TCP/IP, RS-232 or Digital Input
$O_2$ Effect: Less than 2% with $H_2$ / He Fuel
$CH_4$ Effect: Less than 1.2%
Flow Control: Electronic Proportional Pressure Controller
Sample Flow Rate: Typically 1.5 to 2.5 LPM
(Consult factory for other flow rates)
Fuel Requirements: 40% $H_2$ 60% He (124CC/min) or 100% $H_2$ (60cc/min) Specify at time of order
Fuel Inlet Pressure: 25 psig
Air Requirements: Less than 1ppm Carbon purified or Synthetic air (300cc/min for $H_2$/He; 400 cc/min for $H_2$)

Air Inlet Pressure: 25 psig
Fuel & Air Control: Electronic Proportional Pressure Controller
Readout: As ppm $CH_4$ or $C_3H_8$
Standard Outputs: Voltage, Current, RS-232 AK Protocol, TCP/IP MODBUS and AK Protocol
Assignable Contact Alarms and Statuses: 15 assignable contact closures
Digital Diagnostics: Temperature, Pressure, EPC Volt %, and Flow
Special Features: Auto Ranging, Auto Calibration
Display: 3" x 5" LED LCD
Sample Temperature: Up to 191°C, Non-condensing
Oven Temperature: 191°C
Ambient Temperature: 5 to 40°C
Ambient Humidity: Less than 90% RH (Non-condensing)
Warm-Up Time: 1 Hour (Typical)
Fittings: 1/4 Inch Tube
Power Requirements: 115/230 (±10%) VAC; 50/60 Hz, 750 Watts max.
Dimensions: 5¼ H x 19 W x 23 D (Inches)
Weight: 50 lbs.

Specifications subject to change without notice.