

# Refining and petrochemical industry monitoring solutions

Faced with unprecedented demands to meet increasing customer process expectations, as well as clean air regulations while optimizing plant performance...you need a partner that understands the challenges you face and offers instrument and service solutions that work.



## Refining

- Fuel Products Analysis
- Stack Gas / Emissions Monitoring
- Process Gas Analysis
- Particulate Measurement
- Flow Measurement and Control
- Leak Detection
- Field Service & Application Expertise



## Petrochemical manufacturing

- Liquid & Gas Flow Measurement
- Field Service & Application Expertise

## Common applications

- Opacity Monitoring
- Gas Analysis for Reaction Kinetics/Catalytic Cracking
- Sulfur Recovery Units
- Total Sulfur Analysis
- Flare Gas Monitoring
- Fence Line Ambient Air Quality Monitoring
- Fugitive Emissions Detection (EPA Method 21)
- SO<sub>2</sub>, NO<sub>x</sub>, CO & Acid Measurement
- Olefins (Ethylene) & Poly Olefins (PE, PP)
- Ethylene Oxide (EO/EG)
- Fuel Gas Processing
- Ammonia & Methanol Measurement
- Fischer Tropsch (gas-to-liquid)
- Coal Gasification/Coal Chemical
- Catalyst Cracking & Research
- Process Development & Catalyst Research
- Distillation Units
- Chemical Rearrangement Units
- Alkylation
- Continuous Platformers
- Purification Units
- Knock Out Drum Pump Out Vessels
- High Density Polyethylene Loop Reactor
- And many more!



Thermo Scientific AutoXP

## Additional Thermo Scientific Solutions

- Sulfur Analyzers
- X-Ray Fluorescence
- Electron & Infrared Microscopes
- Gas Chromatographs for Hydrocarbons
- Laboratory Equipment & Consumables
- Lab Information Management System (LIMS)
- Unity Lab Services™
- Furniture and Fume Hoods
- Water Analyzer, Monitors & Sensors
- Handheld X-Ray Fluorescence



Thermo Scientific Prima BT Analyzer



Thermo Scientific Prima PRO Process Analyzer

### Process monitoring Density Measurement

- Sarasota Series of Gas Density Gauges

### Mass Spectrometry

- Sentinel PRO Environmental Analyzer
- Prima PRO Process Analyzer

### Flow Measurement and Control

- AutoPILOT PRO
- AutoEXEC
- AutoXP

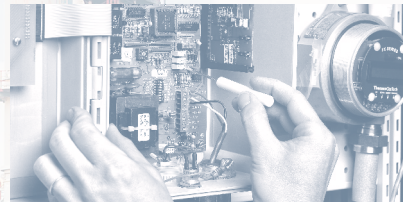
### Systems

#### Total Sulfur

- SOLA iQ Sulfur On-line Analyzer
- SOLA iQ Trace Sulfur On-line Analyzer
- SOLA iQ Flare Sulfur On-line Analyzer

#### Continuous Emissions Monitoring Systems (CEMS)

- Dilution CEMS
- Extractive CEMS
- Particulate Matter CEMS



### Service and support On-Site

- Preventive Maintenance
- Emergency Repair
- Startup and Recommissioning

### Technical Training Courses

- Factory Training Centers
- Customer Site
- E-learning

### In the Factory

- Depot Repair Service
- Factory Acceptance Testing (FAT)
- Extended Warranty
- Calibration and Certification



Thermo Scientific SOLA iQ Sulfur On-line Analyzer



### Gas & Particulate Analyzers

#### Nitrogen Oxide (NO<sub>x</sub>)

42iQ Gas Analyzers

#### Sulfur Dioxide (SO<sub>2</sub>)

43iQ Gas Analyzers

#### Carbon Monoxide (CO)

48iQ Gas Analyzers

#### Carbon Dioxide (CO<sub>2</sub>)

410iQ Gas Analyzers

#### Hydrogen Sulfide/ Sulfur Dioxide Analyzer (H<sub>2</sub>S/SO<sub>2</sub>)

450iQ Gas Analyzers

#### Total Hydrocarbon

51i Gas Analyzer

#### Methane (NMHC)

55i Gas Analyzer

#### Toxic Vapor Leak Detection

TVA2020 Toxic Vapor Analyzer  
MIC-6 (Multi-Instrument Calibrator)

#### Continuous Ambient Particulate

5014i Beta Monitor



Thermo Scientific TVA2020 Toxic Vapor Analyzer

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