



AI-60 Process Analyzer

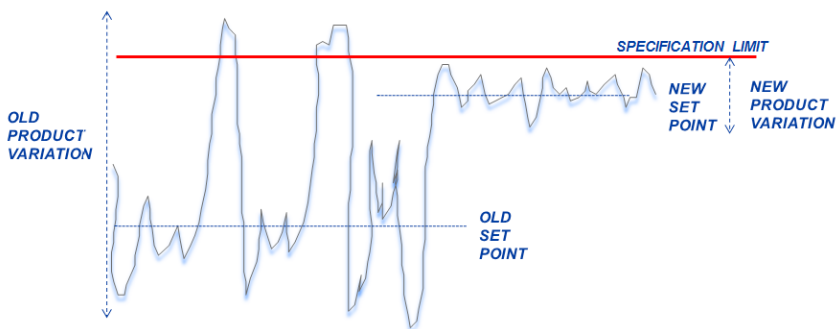
Refinery Process Control Applications

AUTOMATION OBJECTIVES

- Stabilize operation
- Maintain product quality within specs
- Optimize Unit (Production, Energy, Raw Materials)
- Integration with offline systems
- Provide operational tool

AI-60 PROCESS ANALYZER ADVANTAGES

- Real time, continuous flow-through stream analysis
- Provides analysis in dense and opaque materials
- Linear spectral response across broad range
- Minimal maintenance required (no moving parts in sensor)
- Direct and multi-property analysis



ROI: ONE MONTH TO SIX MONTHS

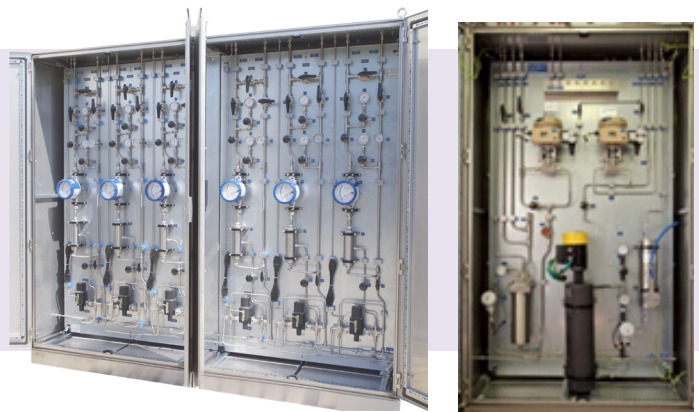
**customer testimonial*

ASPECT AI-60 PROCESS ANALYZER SOLUTION

- Complies with ATEX requirements
- Sample switching and conditioning system
 - Flow through cell
 - Up to 120°C
 - Up to 24 bar g
- Alarming
 - Digital inputs for alarms
 - Built in user configurable alarm logic
- Communications
 - Modbus (rs485 or tcp/ip)
 - Ethernet to remote interface
- Engineering services
 - Models
 - Systems validation
 - Models maintained for one year after validation
 - Round the clock remote support
 - All hardware under warranty for one year after start-up
- Stream switching
 - Up to 8 streams (including reference stream)
 - Built in user configurable stream switching logic

SAMPLE HANDLING SYSTEM

- Flow control
- Filtering
- Temperature control
- Stream switching

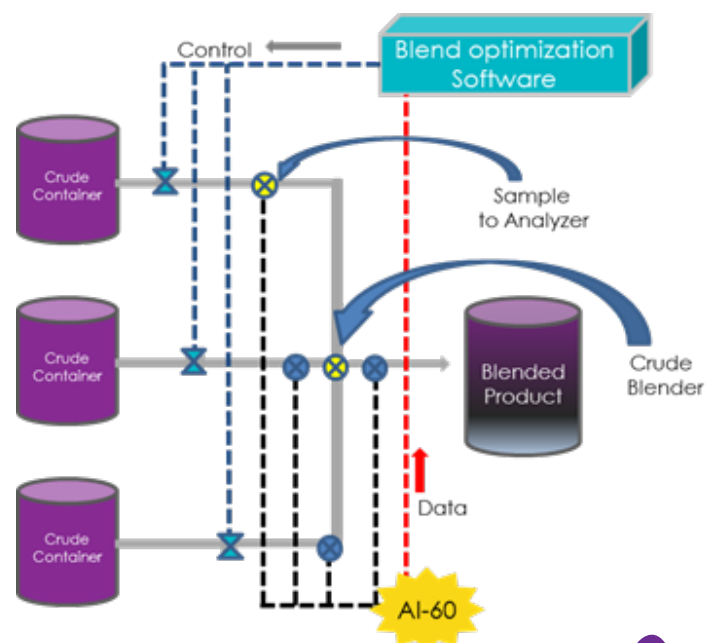


PROVEN APPLICATIONS

1. Case study: crude oil blending

Measurements:

- API
- Sulfur
- Water
- TAN
- TBP wt% 38°C
- TBP wt% 105°C
- TBP wt% 165°C
- TBP wt% 365°C
- TBP wt% 565°C



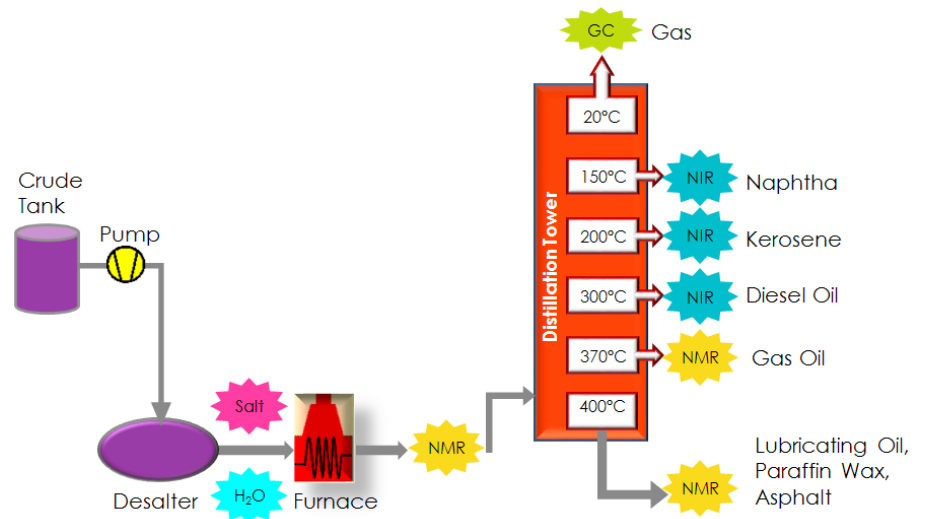
2. Case study: crude distillation unit

Measurements:

AGO - API
 AGO -Sulfur
 AGO -T10%
 AGO -T50%
 AGO -T90%

Light Cycle Gas Oil – API
 Light Cycle Gas Oil - IBP
 Light Cycle Gas Oil -T10%
 Light Cycle Gas Oil -T50%
 Light Cycle Gas Oil -T90%
 Light Cycle Gas Oil - FBP
 Light Cycle Gas Oil – Cloud Point
 Light Cycle Gas Oil -Freeze Point
 Light Cycle Gas Oil – Flash Point
 Light Cycle Gas Oil – Viscosity

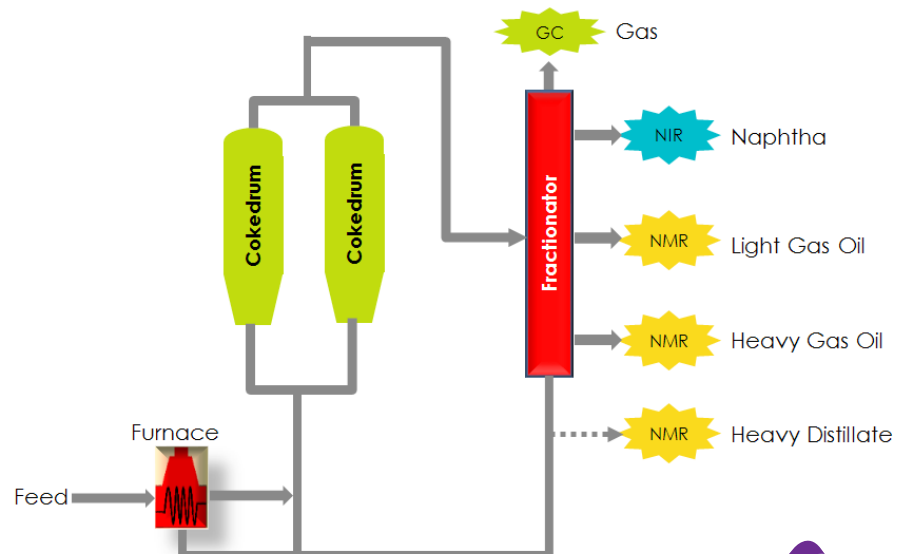
Kerosene - IBP
 Kerosene –T10%
 Kerosene -T50%
 Kerosene -T90%
 Kerosene - FBP
 Kerosene – Cloud Point
 Kerosene – Freeze Point
 Kerosene – Flash Point



3. Case study: delayed coker

Measurements:

HVGO - API
 HVGO -Sulfur
 HVGO -T10%
 HVGO -T50%
 HVGO -T90%



4. Case study: FCC feed

Measurements:

FCC Feed - API
 FCC Feed -Sulfur
 FCC Feed -T10%
 FCC Feed -T50%
 FCC Feed -T90%
 FCC Feed - IBP
 FCC Feed - FBP
 FCC Feed - Viscosity

Gasoline Blending -T10%
 Gasoline Blending -T50%
 Gasoline Blending -T90%
 Gasoline Blending - FBP
 Gasoline Blending - Aromatics
 Gasoline Blending - Benzene
 Gasoline Blending - RVP
 Gasoline Blending - MON
 Gasoline Blending - RON

Diesel Blending -T10%
 Diesel Blending -T50%
 Diesel Blending -T90%
 Diesel Blending - FBP
 Diesel Blending - IBP
 Diesel Blending - Viscosity
 Diesel Blending - Cetane Index
 Diesel Blending - Pour Point
 Diesel Blending - Cloud Point
 Diesel Blending - API

