

TALYS ASP420

Simple cost-effective FT-NIR analyzer for process measurement in the HF alkylation unit



The TALYS ASP420 is well suited to the monitoring of HF acid catalyst purity in a refinery HF alkylation unit.

Measurement made easy.

Overview

The TALYS ASP420 is a single-point fibre-optics-based industrial FT-NIR analyzer designed for in-line monitoring and control of continuous processes. Its seamless installation enables real-time process monitoring, determination of stream qualities, process characterization, and early troubleshooting.

This new generation of analyzer is the culmination of more than 35 years of expertise in process spectroscopy implementation by ABB in close partnership with chemical and refinery customers. TALYS was designed around the following key concepts:

- Ease of implementation
- Ease of use
- State-of-the-art analytical performance
- Industrial robustness

The TALYS single-point FT-NIR analyzer is ideally suited to the monitoring of HF acid catalyst purity in a refinery HF alkylation unit. In this case, the analyzer is required in this case to be located in a remote, safe area location outside of the protected HF acid area. TALYS is easy to install, requiring very limited space and utilities. An EX-certified version is also available if required.

Customer benefits

TALYS uses all of the new FT-NIR analyzer features introduced with ABB's latest series of products, including the VECSL solid-state laser, 24-bit ADC conversion, active power-management of the NIR source, all leading to a service interval of 5 years or more.

To partner the new TALYS single-point analyzer in this application, the field-proven ABB acid-area sample flow cell system for interfacing to the HF acid catalyst sample has been used as before, ensuring that the performance, reliability and low cost of ownership of the entire system is maintained. TALYS operates in direct communication with the Plant DCS using modern TCP-IP or OPC communications (ModBUS RTU with optional Converter).

—
01 Alkylation unit
—
02 TALYS ASP420
touchscreen

Key features

FT-NIR pre-calibrated process analyzer for optimization of the HF alkylation unit suitable for monitoring HF catalyst quality.

Includes:

- TALYS single-channel FT-NIR for near (ZnSe Optics) for general purpose area electrical classification
- One room temperature InGaAs detector with 2.6 micron cutoff
- Embedded analyzer controller with HMI for display of analyzer status and stream qualities
- External I/Os for alarm and concentration values
- Application configuration and embedded precalibrations for HF%, ASO% and water% under UOP license
- HF acid sampling system (one-stream)
- Temperature controlled insulated cabinet for sample cell
- Cell temperature controlled at $30^{\circ}\text{C} \pm 1.7^{\circ}\text{C}$

- Sample system designed for field-mount ambient temperatures of -0°C to $+45^{\circ}\text{C}$ (requires protection from direct sunlight and precipitation, and the recommended instrument air pressure)
- Cabinet-mounted welded sub-assembly process fast loop with Swirlclean filter (60 micrometer filter element), requires 1-2 gal/m (3.8 - 7.6 l/m) fast loop flow, bypass sampling loop set at 30-50 cc/m, via metering valves adjustment and flow meter
- Zellweger 4-wire HF safety sensor c/w 4-20mA output and beacon light (requires 24VDC supply)
- Recommended pressure differential required for fast loop 25-35 PSIG
- Sample has to be delivered to the sample system (sample cell) in a liquid state (without bubbles)
- Maximal inlet pressure is 21 bar (305 PSI).
- Sample system isolation valve remotely actuated via customer ESS (emergencies shut down system)
- Sample shut-off valve, remotely actuated via I/O in analyzer

Note: A freeze protection heater may be ordered as an option when lower ambient temperature installation is required (down to -20°C).



01



02

ABB Inc.
Measurement & Analytics
3400, rue Pierre-Ardouin, Québec, Québec
G1P 0B2 Canada

1 800 858-3847 (North America)
Tel.: +1 418-877-2944 (other countries)
Fax: +1 418-877-2834
Email: ftirsupport@ca.abb.com

abb.com/analytical

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB.
Copyright © 2022 ABB. All rights reserved