

Instrumentation solutions for Sulfur recovery units (SRU)



Smart in sensing

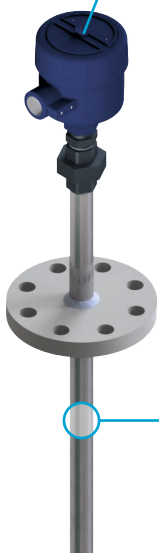
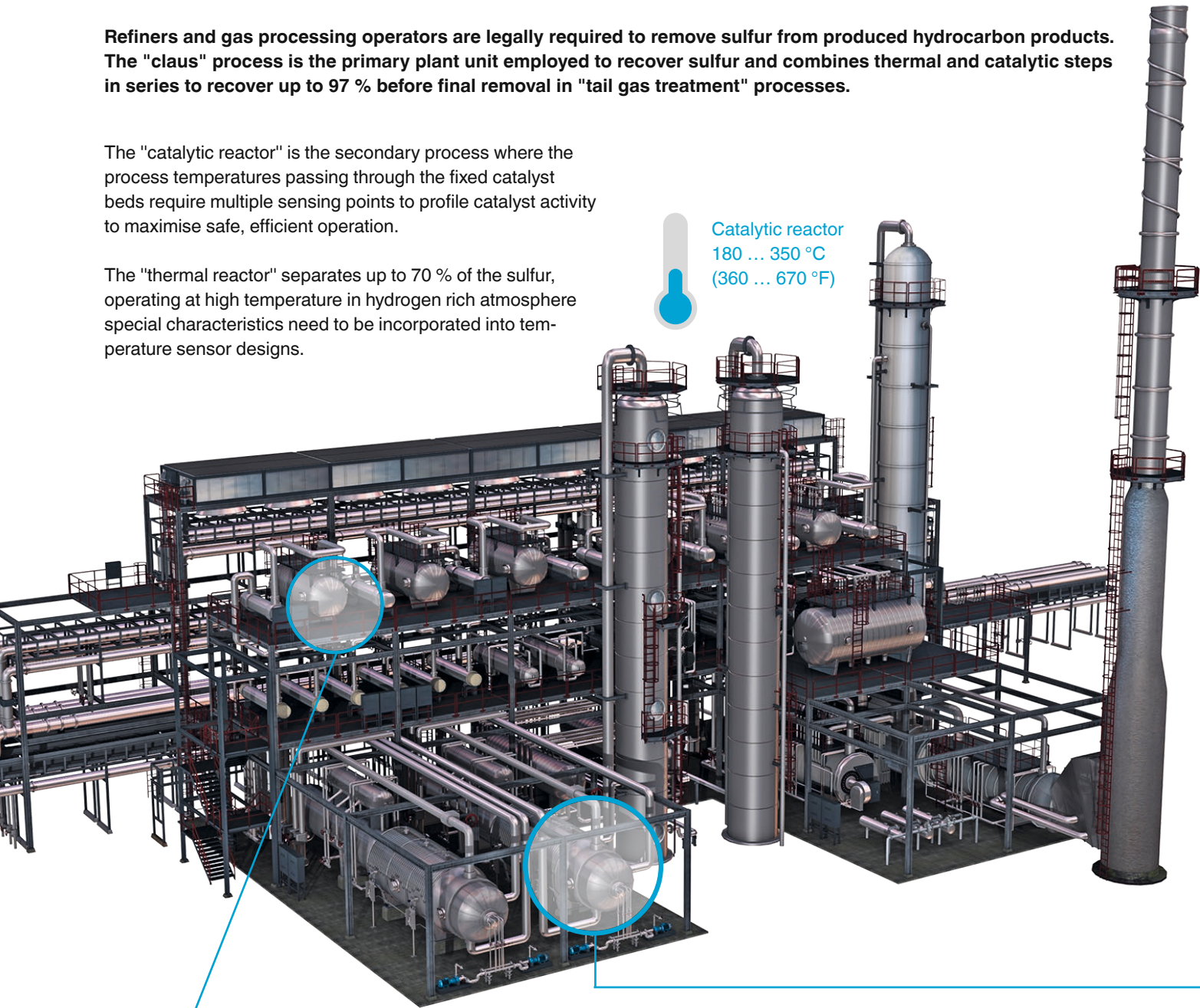
Sulfur recovery units (SRU)

Refiners and gas processing operators are legally required to remove sulfur from produced hydrocarbon products. The "claus" process is the primary plant unit employed to recover sulfur and combines thermal and catalytic steps in series to recover up to 97 % before final removal in "tail gas treatment" processes.

The "catalytic reactor" is the secondary process where the process temperatures passing through the fixed catalyst beds require multiple sensing points to profile catalyst activity to maximise safe, efficient operation.

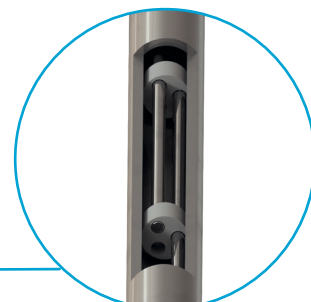
The "thermal reactor" separates up to 70 % of the sulfur, operating at high temperature in hydrogen rich atmosphere special characteristics need to be incorporated into temperature sensor designs.

Catalytic reactor
180 ... 350 °C
(360 ... 670 °F)



Multipoint Thermocouple TC95-S

- Fast response time
- Sensor replacement during operation
- Designs available in ATEX / IECEx Ex i or Ex d versions



Sensor layout

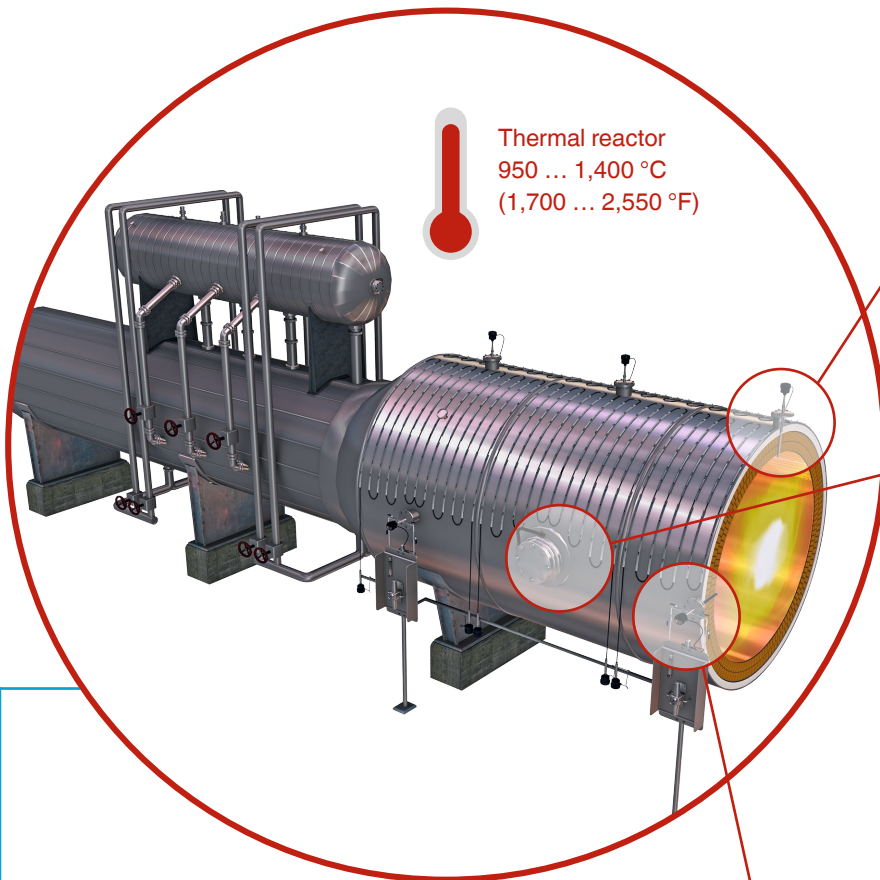
TC83 Calitum® High temperature thermocouple, Sapphire design

- Reduction of unplanned downtime
- Increased safety through double sealing system against escape of toxic media
- Designs available in ATEX, IEC Ex d and Ex i versions
- Cost savings through the elimination of a purge system and the reparability of the sensor
- Refractory nozzle insulation available

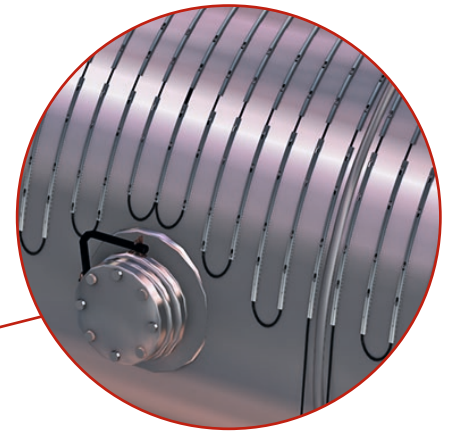
The high temperature thermocouple TC83 Calitum® in Sapphire design, is built on a legacy of more than 25 years of successful deployment of sapphire technology in high temperature applications with presence of hydrogen.

Secondary sealing prevents the escape of toxic process gases

Sapphire protection tube



Thermal reactor
950 ... 1,400 °C
(1,700 ... 2,550 °F)



Refractory health monitoring with model TCC

- Reads hottest temperature at any point along sensor sheath
- Provides ability to detect internal damage to refractory lining
- Utilizes standard type K thermocouple signal

High temperature thermocouple TC82

- Increased safety through double sealing system against escape of toxic media
- Designs available in ATEX, IEC Ex d and Ex i versions
- Purge gas system incl. control panel available

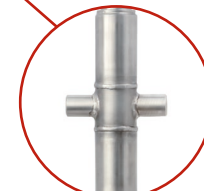
Accessories



Refractory nozzle insulation, model SD83



Purge-gas control panel, model PP82



Purge gas connection (optional)

The model TCC utilizes a mobile hot junction to measure temperature. This mobile hot junction provides a measure of the hottest spot anywhere along the length of the string, even if the location or temperature of the hot spot changes. Having this hot spot detection allows for quick indication of rising surface temperature, which is an indication of a refractory problem.

WIKA field service

WIKA's qualified field service experts provide on-site installation and commissioning that is tailored around the instrumentation requirements of our customers. As well as being a competent and available service partner, we ensure process safety with our list of installations.

Whether we're installing a TCC string on the outer wall of a sulfur recovery unit, or installing a high-temperature thermocouple, you can be assured the product will be installed properly.

Our experienced service team ensures that your processes can be operated safely and efficiently, allowing you to be back up and running from a shut down as quickly as possible. Through our local experts, we can be reached worldwide, are quickly available and tuned to individual circumstances.

- Short downtimes
- Fast commissioning
- Ensuring process safety
- Compliance with local safety instructions
- Environmentally conscious handling



Complementing advanced SRU instrumentation

WIKA is your competent partner to identify and provide the best suited solutions and services for optimising your sulfur recovery unit's processes. Find some examples here.



Bypass level indicator, BNA



Venturi tube and wedge flow meter, VT and WG



Process transmitters, IPT and DPT



Pressure gauges and diaphragm seals, 232 and 990



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