

MODEL TGA 942 CE

TAIL GAS ANALYZER
FOR CLAUS SULPHUR RECOVERY UNITS
TO ANALYZE THE H₂S/SO₂-CONCENTRATION



UV-spectrophotometer

Ideal for:

- Process feed back control
- H₂S, SO₂, S or COS measurement
- All Claus Plant configurations including Coke Oven Plants
- All Tail Gas Clean-up Processes
- All possible sample points anywhere down-stream of the Reaction Furnace
- H₂S/SO₂ ratios from 1:20 to 20:1 and greater

General:

- Low installation cost
- No expansive shelter required
- User and service friendly modular design

Sample System:

- Reliable and trouble free due to controlled sulphur condensation prior to sample extraction
- No Sample Lines, close coupled mounting and low volume
→ extreme fast response (3...5 sec. typical)
- Hermetically separated from electronics/ optics (fibre coupled)

Spectrophotometer:

- Full spectrum analyses with high wavelength resolution
- Excellent cross-interference compensation for high accuracy measurements under real process conditions
- High linearity; Wide dynamic range
- Extreme over range capability
- Interference free from CS₂
- Active measurement and compensation of COS and S_x background
- No moving parts, no optical filters
- Easy handling due to self explaining display
- Extensive self diagnostic built in

Technical Data

Electrical Classification	EEx p ib (ia) m e IIB T3 Cert.No.: TÜV 00 ATEX 1616 or	
	General Purpose according IEC/VDE	
Power Supply	1/N/PE ~ 50/60 Hz 230 V or 115 V	
Power Consumption	1200 Watt	
Protection	IP 65 according IEC 529 DIN 40 050	
Instrument air or another inert gas	Pressure: 5.5 ... 7 barg 550 ... 700 kPa	Flow: 3,4 m ³ /h normal 25 m ³ /h at short intervals
Dew point -40 °C (-40 °F)	To comply with ANSI/ISA S7 – 3 – 1975 R/1981	
Steam Supply	8.0 ... 12.0 barg for the analyzer Oven heater 3.5 ... 4.5 barg for the Analyzer Nozzle	
SIGNAL OUTPUTS		
Analog	4 ... 20 mA per measuring channel, updated once per second, isolated to 250 V _{rms} , self- or loop powered, load < 1000 Ω, Available live or track and hold	
	Output signals linear to concentration:	
	1. Hydrogen Sulphide H ₂ S	0 ... 0,5 to 0 ... 10 vol %
	2. Sulphur Dioxide SO ₂	0...0,25 to 0 ... 5 vol %
	Calculated output signals:	
	3. Air Demand according to	-5 ... 0 ... +5 % Combustion Air 4 ... 12 ... 20 mA
	4. Sigma Sulphur	0 ... 3 vol %
Digital	Potential free SPDT relay contacts. Isolated to 250 V _{rms} The operational status outputs: STATUS (Fault/Normal) SERVICE (Warning/Normal) MODE (Calibrate/Run) CONTROL (Manual/Auto)	
Display	Flat Paned Industrial PC c/w 12" TFT screen	
Material in sample contact	Stainless steel, high purity aluminum or PTFE	
Source	Highly stable deuterium broad band lamp	
Detector	Spectrometer with a 2048 element CCD array detector	
Accuracy	Measurement at the Tail Gas Stream:	± 1 % H ₂ S F.S. ± 1 % SO ₂ F.S.
	Presentation of the "Air Demand"	Calculated from H ₂ S and SO ₂
Speed of response T ₉₀	Typical 5 seconds	
Warm up time	< 90 minutes, stable after 2 hours	
Repeatability	± 1.0 % F.S.	
Sensitivity	H ₂ S – reading ± 2.0 % F. S.	SO ₂ – reading ± 2.0 % F.S.
Zero drift	0.25 % F.S. in 24 hours Based on Auto Zero every four hours.	
Calibration	H ₂ S, SO ₂ and COS outputs factory calibrated. Air Demand Signal calculated from H ₂ S and SO ₂	
Sample flow	80 Liter/h	
Sample transport	Air – or Nitrogen aspiration	
Weight	150 kg	

This Analyzer is based on BRIMSTONE Technology.