

Model 1000

TRS/H₂S, H₂S, NO₂, NH₃/NO_x Thermal Oxidizer Converters



Models

- Model 1000 TRS/H₂S: Total Reduced Sulfur Converter
- Model 1000 NO_x: Nitrogen Dioxide Converter
- Model 1000 TRS: Total Reduced Sulfur Converter
- Model 1000 NH₃/NO_x: Ammonia and Nitrogen Dioxide Converter

Standard Features

- Temperature Controller: microprocessor-based with PID control
- Typical conversion efficiency of a Model 1000 for TRS/H₂S, H₂S, NO_x, NH₃ conversion efficiency is 95-99%
- Oxidizer tube life span five (5) years for TRS/H₂S thermal oxidizers
- SO_x scrubber life span 500 PPM hours typical
- Catalyst lifespan for H₂S and NO_x oxidizer tubes with catalyst material about three (3) years
- Enclosure Size: 5.25" H x 19" W x 19" D or 15.5" D, 133mm H x 483 mm W x 483 mm D or 381 mm D as ordered
- Weight: approximately 25 lbs., 11.34 kg.
- Power Requirements: Model 1000 TRS/H₂S 300 VA, H₂S & NO_x 100 VA, NH₃/NO_x 250 VA, 120/230 VAC 50/60 HZ as ordered

Options

- SO_x Scrubber with Humidifier
- Sample Gas Dilution Module
- Micro-Controller with Display mounted in Model 1000 to connect to gas analyzer with switching valve to allow multiple measurements of gases of interest
- Model 1000 mounted in NEMA enclosure
- Model 1006 SO_x Scrubber Panel for TRS applications in the pulp and paper industry
- Temperature alarm relay and analog retransmit of temperature

Specifications subject to change without notice

Overview

The Model 1000 Thermal Oxidizers are available in four configurations to thermal oxidize or convert different gases. The four configurations of the Model 1000 Thermal Oxidizers are: TRS/H₂S, H₂S, NO_x and NH₃/NO_x.

The TRS/H₂S, Model 1000 TRS/H₂S thermally strips the sulfur present in sulfur gases and combine those molecules with oxygen (O₂) present in the gas to sulfur dioxide (SO₂) at a temperature of 725 - 850 degrees centigrade in a high temperature oxidizer tube. The oxidizer tube is placed inside a high temperature ceramic fiber oven. If sulfur dioxide (SO₂) is present in the sample gas is not of interest, a SO₂ (SO_x) scrubber is placed in front of the high temperature oxidizer tube to remove that gas (SO₂). For total sulfur (TS) measurement, no SO_x scrubber is provided and any SO₂ present will not be converted or affected in the oxidizer tube.

The H₂S, Model 1000 H₂S is a low temperature thermal oxidizer that uses a catalyst material packed in a stainless-steel tube installed in a heated oven block. The gases pass through the heated catalyst tube to convert hydrogen sulfide (H₂S) gas to SO₂. Again, any SO₂ present in the gas passes through the catalyst tube unaffected. Likewise, if SO₂ gas is present and not of interest, a SO_x scrubber is placed in front of the catalyst tube to remove that gas. The low temperature oven operates at about 325 degrees centigrade.

The NO_x, Model 1000 NO_x is a low temperature thermal oxidizer that uses a catalyst material packed in a stainless-steel tube installed in a heated oven block. The gases pass through the heated catalyst tube to convert nitrogen dioxide (NO₂) to nitric oxide (NO) gas. The oven operates at about 325 degrees centigrade to convert the NO₂ gas. Any NO gas present is not affected by the catalyst material in the oxidizer tube. The NO₂ and NO gas combined is called oxides of nitrogen (NO_x) typically. This NO₂ thermal oxidizer can be ordered in a higher capacity two pass unit.

The NH₃, Model 1000 NH₃/NO_x is a proprietary specially designed thermal oxidizer that converts ammonia gas (NH₃), nitrogen dioxide gas (NO₂) and NO_y gases to nitric oxide (NO) gas. This thermal oxidizer used a thermal core to efficiently convert the gases at between 500 - 700 degree C to NO gas. Any NO gas that passes through the thermal oxidizer core are not affected. This NH₃/NO_x thermal oxidizer can be used for converting high concentrations of gas with NO and NO₂ present.