

## SFDS

# Analyzer system for reliable monitoring of smoldering fires

### Reliable monitoring of smoldering fires

- Risk minimization thanks to early detection of smoldering fires with continuous gas analysis – protects your investment
- Extended plant uptime thanks to high-quality gas sampling with integrated backflush
- Uninterrupted gas sampling possible in ATEX Zones 21 and 22, and optionally in Zone 20
- Low operating costs due to long service and test gas intervals and low consumption
- Cost efficient with only one analyzer for up to four measurement points
- Industry-proven S700 analyzers are the heart of the system



# SFDS: Smoldering Fire Detection System

Efficient standard analyzer system for CO monitoring  
in plants with high levels of dust

Smoldering fires can develop in a variety of areas – for example in households, in industry, and in the environment. Smoldering fires in silos and spray dryers are difficult to detect because they are fires without flames. The SFDS Smoldering Fire Detection System continuously monitors carbon monoxide (CO) in the plant. This makes it possible to detect smoldering fires early and initiate fire prevention and fire fighting measures in a timely manner. Because smoldering fires can also occur in the deeper-lying hot spots in a bunker mound, the continuous CO

monitoring by the SFDS enables it to detect these fire sources early. The ATEX-certified components of the sampling system allow reliable monitoring in dust Ex areas (ATEX zones 21 and 22, optionally in zone 20). The SFDS allows the user to simultaneously monitor up to 4 sampling points using only one analyzer system, which significantly reduces the investment and operating costs



## Your benefits



### Save time and effort

Easy to install and commission thanks to pre-configured complete analysis system for up to 4 sampling points



### Increase work and production safety

Minimize the risk of smoldering fires in applications with high levels of dust.



### Avoid costs resulting from fire damage and downtimes

Prevent damage, material loss, and costly downtime through early CO detection.



### Cost-effective

Long system uptime thanks to high gas sampling quality due to integrated backflush



#### Early detection of smoldering fires (CO monitoring)



Bulk materials such as coal, flour, malt, starch, sawdust, cocoa powder, milk powder or grain are potentially flammable substances. They are often stored in silos. When these materials are ignited, or spontaneously ignite at low temperatures, a slow, flameless fire can quickly develop. If these bulk materials are dusty or contain a certain amount of dust, this can also lead to the formation of an explosive atmosphere.

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### Product description

The SFDS (Smoldering Fire Detection System) is a continuous measurement analyzer system for monitoring carbon monoxide (CO) in applications with high dust content. The cold/dry extractive measurement of the components CO and O<sub>2</sub> enables early detection of smoldering fires and timely initiation of fire-fighting measures. The ATEX-certified system

components allow for reliable monitoring in dust Ex areas (ATEX zones 21 and 22, optionally in zone 20), such as in coal mills or bunkers. Unlike with optical systems that measure the surface, deeper-lying embers can also be detected. The SFDS offers simultaneous monitoring of up to four sampling points using only one analyzer system.

### At a glance

- Early CO detection thanks to continuous monitoring
- Application-specific gas sampling with integrated backflush
- Measurement point switchover for up to 4 measurement points
- Pre-configured overall system for easy commissioning
- Gas sampling using heated sample gas line for ATEX zones 21/22 and also gas sampling unit for ATEX zones 21/22 (gas sampling for zone 20 is possible upon request). Setup of analyzer cabinet in Ex-free areas

### Your benefits

- Risk minimization thanks to early detection of smoldering fires with continuous gas analysis – protects your investment good
- Long plant uptime thanks to high gas sampling quality due to integrated backflush
- Uninterrupted gas sampling possible in ATEX zones 21 and 22 (optionally in zone 20)
- Low operating costs due to long service and test gas intervals and low consumption
- Cost efficient with only one analyzer for up to four measurement points
- Industry-proven S700 analyzers are the heart of the system

### Fields of application

- Early detection of smoldering fires (CO monitoring) in coal mills
- Early detection of smoldering fires (CO monitoring) in coal bunkers



### More Information online

For more information, enter the link or scan the QR code to get direct access to technical data, operating instructions, software, application examples, and much more.

[www.endress.com/sfds](http://www.endress.com/sfds)



- Early detection of smoldering fires (CO monitoring) in grinding plants and with drying processes such as in spray dryers, dryers or silos

## Technical data

The precise device specifications and product performance data may vary and are dependent on the respective application and customer specifications.

### SFDS

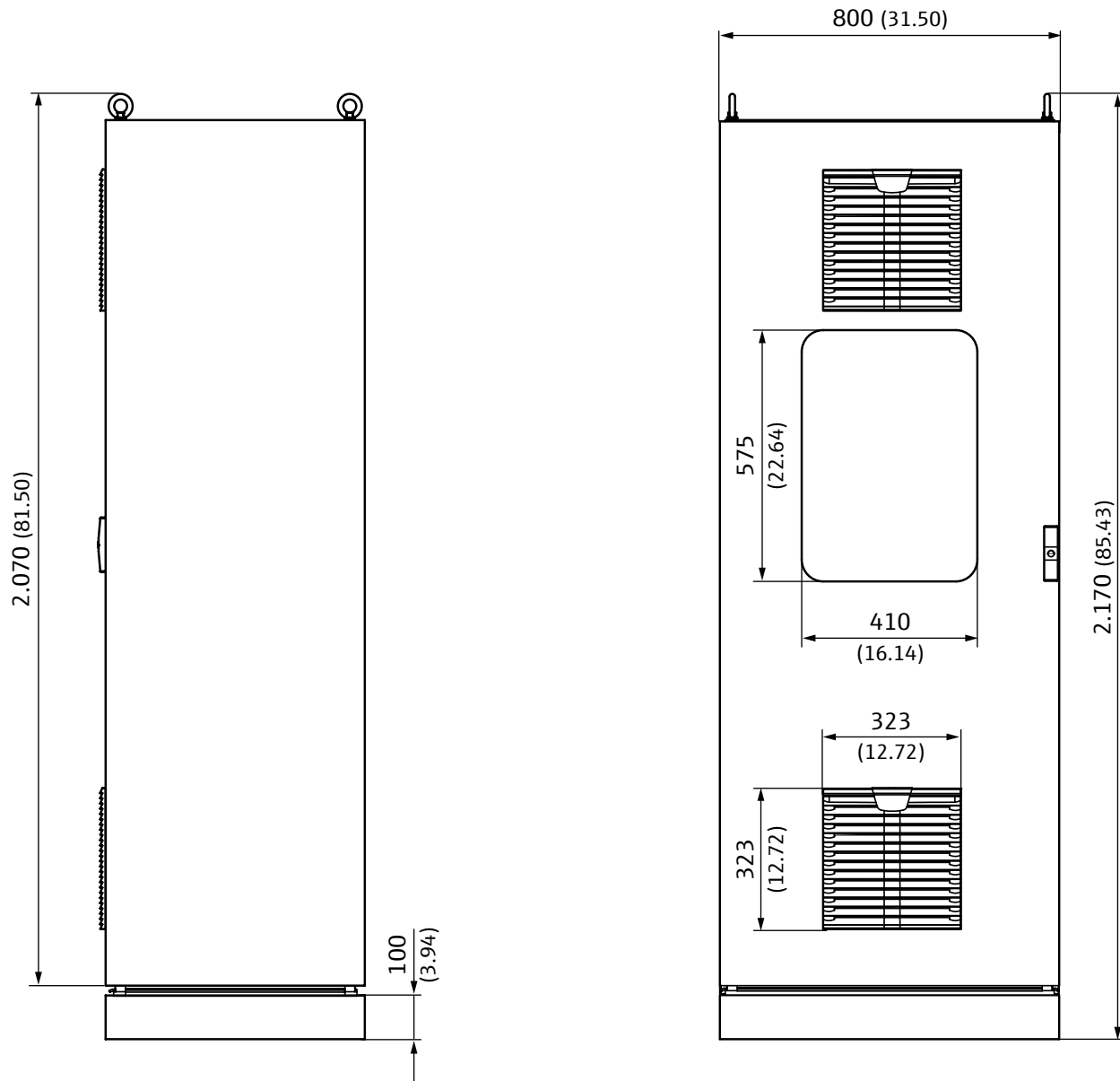
Measured values	CO, O <sub>2</sub>
Measurement principles	Cold extractive, NDIR-spectroscopy, paramagnetic dumbbell principle, electromagnetic cell
Measuring ranges	CO 0 ... 60 ppm / O <sub>2</sub> 0 ... 25 % by vol.
Response time (t <sub>90</sub> )	≤ 200 s
Sample gas temperature	≤ +120 °C (248 °F)
Ambient temperature	+5 °C ... +40 °C (+41 °F ... +104 °F) +5 °C ... +50 °C (+41 °F ... +122 °F) (with integrated air conditioner)
Storage temperature	-20 °C ... +55 °C (-4 °F ... +131 °F)
Ambient humidity	75 % annual average, 95 % short-term, non-condensing, class F (DIN 40040)
Ex approvals	ATEX Zone 21, IIIC, 120 °C (248 °F) Zone 20 (option) Gas sampling unit: zone 21, IIIC, 100 °C (212 °F) Sample gas line: zone 21, IIIC, 100 °C (212 °F) Analyzer cabinet: Non-explosion-proof areas
Electrical safety	CE
Enclosure rating	IP54 IP34: with cooling unit
Analog outputs	0/4 ... 22 mA, 500 Ω Galvanically isolated, number depends on system configuration
Dimensions (W x H x D)	800 mm x 2,100 mm x 600 mm (31.5" x 82.7" x 23.6") (see dimensional drawings for details)
Weight	Approx. 250 ... 350 kg (551 ... 772 lbs)
Material	Sheet metal housing, GRP housing
Power supply	Voltage ≤ 400 V Frequency 50 Hz / 60 Hz
Sample gas connections	1 sample gas inlet: optional up to 4
Test functions	Automatic check cycle for zero and reference point
Integrated components	Gas sampling unit Sample gas line
Options	Integrated backflush (gas sampling unit)

# Ordering information

Our regional sales organization will help you to select the optimum device configuration.

## Dimensional drawings

SFDS system (Dimensions in mm (inch))





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