

# CGO-9 Tubular Furnace

## Application and description

The tubular furnace is used to convert a non-measurable gas component into a measurable compound which can be measured by a gas analyzer. This is for example necessary with certain carbon, sulfur and halogen (such as chlorine) compounds. The conversion is performed in a reaction tube which is filled with a catalyst and heated by the tubular furnace. A further application of the tubular furnace is to remove interfering components without the other gas components being affected.

## Technical data

Sample gas pressure  
 $p_{\text{abs}} \leq 120 \text{ kPa (1.2 bar)}$

### Operating data

	Dead time in s at		90% time in s at		Pressure drop in hPa/mbar at	
	30 l/h	60 l/h	30 l/h	60 l/h	30 l/h	60 l/h
Without filling	1.5	0.5	2	0.75	1.5	3.6
With filling	2	0.7	4.5	2.5	6	12

### Reaction tube

Material quartz, volume 20 ml, filling volume 8 ml

### Thermocouple

Chromel-Alumel (corresponds to NiCr-Ni)

### Furnace temperature

max. 800 °C

The intermediate temperatures are set using an external on/off controller.

### Heat-up time

approx. 120 min.

### Power supply

AC voltage 220 V +10...-12 %, 48...62 Hz  
 Power consumption 150 W

### Case material

Steel sheet

### Degree of protection of housing

IP 50 to EN 60529

A protective cap (accessory) is required if the tubular furnace is not protected against touching by design measures such as installation in a cabinet or a case.

### Weight

approx. 1.0 kg

### Mounting

Wall fastening

### Sample gas connection

Glass tube 5 mm outside diameter for hose with 4 mm inside diameter

### Electrical connections

Terminals via cable gland PG 9

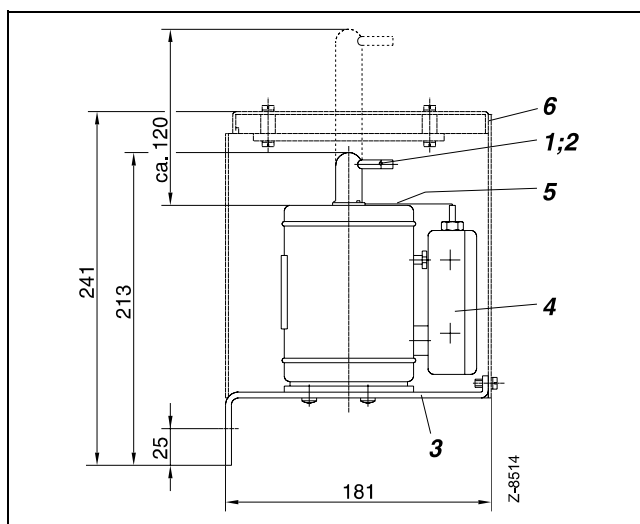
### Ambient temperature

Operation: +5...+50 °C,

Storage and transport: -25...+65 °C



## Dimensional drawing (dimensions in mm)



- 1 Gas inlet
- 2 Gas outlet (offset by 60°)
- 3 Mounting bracket or strap
- 4 Terminal box
- 5 Thermocouple
- 6 Protective cap

## Ordering information

CGO-9 with reaction tube,  
with thermocouple

### Catalog No.

**23092-4-0806560**

CGO-9 with reaction tube,  
with catalyst LF 316, with thermocouple

**23092-4-0856545**

### Accessories

CGO-9 reaction tube, quartz

**23005-4-0806559**

CGO-9 reaction tube, stainless steel with  
catalyst LF 316

**23004-4-0856544**

CGO-9 stainless steel catalyst LF 316

**23004-4-0801715**

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### Examples of applications

Application	Furnace temperature	Temperature controller	Reagent	Sample gas throughput	Mounting
Oxidation of sulfur compounds	800 °C	no	none	60 l/h	arbitrary
Combustion of organic chlorine compounds	800 °C	yes	none	60 l/h	arbitrary
Conversion of H <sub>2</sub> to HCl using Cl <sub>2</sub> , where Cl <sub>2</sub> concentration ≥ H <sub>2</sub> concentration (O <sub>2</sub> concentration > 4 Vol.-%, otherwise use reaction element, see page 33)	800 °C	yes	none	60 l/h	arbitrary
NO <sub>2</sub> /NO conversion in the exhaust air of nitric acid or pickling plants Combustion of NH <sub>3</sub> in air Combustion of organic nitrogen compounds, such as emissions from animal keeping or carcass incineration Application range: 100...3000 ppm NO <sub>2</sub>	750 °C	yes	Stainless steel catalyst LF 316 Service life: change catalyst every 6 months as a preventative measure. The stainless steel catalyst is not suitable for SO <sub>2</sub> -containing combustion gases	60 l/h	vertical