

## Technical Data CarboSen HT



Fig. 1 CarboSen HT

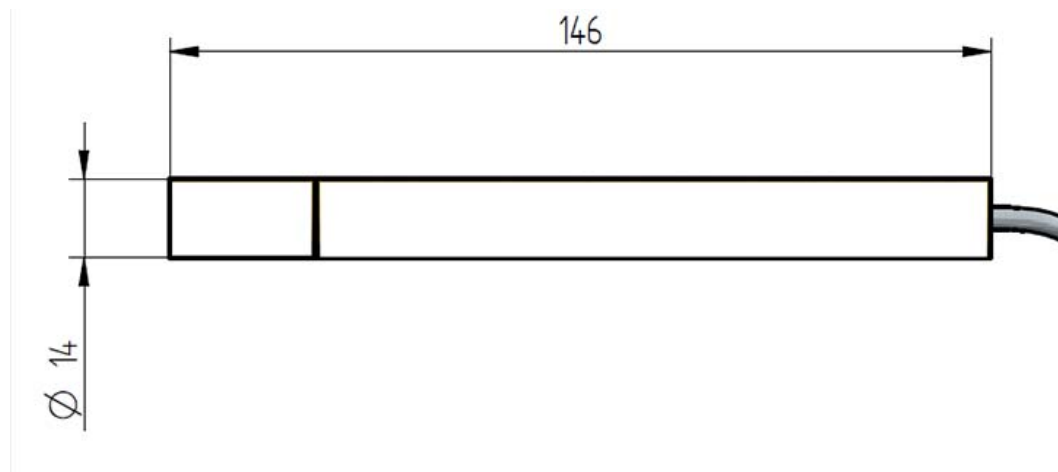


Fig. 2 Dimensions CarboSen HT

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Dimension (L x D)	146 x 14 mm / 5.75 x 0.55" in.
Weight	165 g (with free cable ends, without plug)
Material	stainless steel dip pipe (1.4571)
Measurement range	CarboSen1.000HT: 0 ... 1,000 ppm CarboSen10.000HT: 0 ... 10,000 ppm
Measurement accuracy	CarboSen1.000HT: ±25 % of the measured value - not better than ±20 ppm  CarboSen10.000HT: ±30 % of the measured value - not better than ±40 ppm  - after previous calibration with operating conditions, - with almost constant fuel composition - after external compensation of the oxygen cross-sensitivity
Sensor signal	-750 ... +50 mV (signal is inverted within the device)
Response time $t_{60}$	< 3 s
Relaxation time (measurement readiness after over- load)	< 9 s
Offset to environment	< 5 ppm
Hysteresis	-
Linearity	-
Repeating precision	-
Ambient pressure dependency	-
Differential pressure dependency	-
Drift	-
Cross sensitivity	to CO <sub>2</sub> : - none to O <sub>2</sub> : - present
Influence of humidity	insignificant

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Influence of installation position	none, if installed according to operating instructions
Influence of main voltage	none, if installed according to operating instructions
Influence of leakage	none, if installed according to operating instructions
Pressure influence of measuring gas	-
Power supply voltage for heating	12 V PWM with sign change
Sensor temperature	approx. 630 °C / 1,166 °F with temperature factor $t_f = 2.6$
Heating power consumption	approx. 3.5 W with temperature factor $t_f = 2.6$ (max. 6 W)
Heating current	approx. 350 mA with temperature factor $t_f = 2.6$
Heating resistance	approx. $9.5 \pm 1 \Omega$ with temperature factor $t_f = 1.0$ (room temperature) approx. $25 \Omega$ with temperature $t_f = 2.6$
Internal sensor resistance	approx. $300 \pm 150 \Omega$ with temperature $t_f = 2.6$
Lifetime	> 3 years (in case of light fuel oil and natural gas)
Heating-up time	> 30 s
Measurement principle	mixed potential-solid electrolyte sensor

## Conditions of Use

Mounting/measuring gas extraction	directly in exhaust gas channel/in situ
Leakage	$qL^* \leq 100 \text{ cm}^3/\text{h}$
Mounting position	up to 85° against vertical
Permissible fuels	residue-free, gaseous hydrocarbons, natural gas, light fuel oil***
Permissible measuring gas humidity	100 % relativ humidity, condensing**
Permissible measuring gas temperature	at sensor head: -20 ... +400 °C / -4 ... +752 °F
Permissible measuring gas speed	< 2 m/s / 6.56 ft/s (measured at measuring gas temperature of 25 °C / 77 °F). In case of smaller measuring gas temperatures it might be necessary to protect the probe from the incident flow.

\* According to DIN V 18160-1:2006-01, leakage towards environment through housing and fastening

\*\* Protect from drops/splash water/water

\*\*\* Direct measurement in combustion gases is not possible.

## Environmental Conditions

<b>Operation</b>	permissible temperature range	on cable bushing	-20 ... +150 °C / -4 ... +302 °F
<b>Transport</b>	permissible temperature range		-40 ... +60 °C / -40 ... +140 °F
<b>Storage</b>	permissible temperature range		-20 ... +40 °C / -4 ... -40 °F
<b>Degree of protection</b>	DIN EN 60529	IP64 (in mounting condition)	

## NOTICE

The limits of the technical data must be strictly adhered to.

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## Order Information

### CarboSen HT in high temperature housing, Ø 14 mm / 0.55" in, length 150 mm / 5.91" in, connecting cable 1.5 m / 4.92 ft

For detection of combustible gases (CO<sub>e</sub>), flue gas temperature up to 400 °C, 100 % relative humidity, condensing. Optionally with/without installation fitting, or with/without connector.

Description/Type	Order no.
CarboSen1.000HT Ø 14 mm / 0.55" in, length 150 mm / 5.91" in, connecting cable 1.5 m / 4.92 ft, Stainless steel, recommended detection range up to 1,000 ppm CO <sub>e</sub>	658R0002
CarboSen10.000HT Ø 14 mm, / 0.55" in, length 150 mm / 5.91" in, connecting cable 1.5 m / 4.92 ft, Stainless steel, recommended detection range up to 1,000 ppm CO <sub>e</sub>	658R0005

Additional required::            Electronic evaluation unit CarboSen Transmitter CT1, probe connection to DIN-connector  
   or  
   electronic evaluation unit CarboSen Transmitter CT2-F, probe connection to terminals

A10 'Installation Fitting'	Selection
Without	00
For screwing M18 x 1.5, steel, incl. galvanised steel sealing ring	03

A10 'Electrical Connection'	Selection
Connection cable with cable end sleeves	01
Connection cable with DIN connector	02

Description / Type	Order no.
Probe installation fitting for screwing M18x1.5, steel, incl. galvanised steel sealing ring	658R0322



The information in this publication is subject to technical changes.

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