



testo 350 M/XL

CO₂ measurement module for flue gas analysis

Highly accurate NDIR sensor for testo 350 M/XL

NEW!

Vol % CO₂
direct



Can be upgraded
in all
testo 350 M/XL!

CO₂ measurement module for testo 350 M/XL

Suggested applications and associated measurement problems

The CO₂ level is of major importance for optimum adjustments and combustion evaluations in many combustion processes.

Suggested applications

		Changing, unknown fuels and mixed fuels	CO ₂ loss from process material	CO ₂ ⇒ important process material	Instead of air: liquid O ₂ ⇒ CO ₂ calculation incorrect	Highly accurate O ₂ analysis without CO ₂ cross-sensitivity	Very wide CO ₂ concentration range (up to 45%)	High CO ₂ accuracy (for adjustments and evaluation)	Highly accurate velocity measurement (density analysis)
Lime and cement production		●	●	●		●	●		●
Steel furnaces		●		●	●	●			
Coal and refuse-fired furnaces		●		●		●		●	●
Stationary motors running on bio-gas or heavy oil		●		●		●		●	
Glass melting furnaces				●	●	●	●		
Official emission measurement (public authorities, institutes)		●		●				●	●

● Direct CO₂ analysis necessary or advisable!

Optional CO₂ measurement module based on infrared technology is used in testo 350 M/XL for all these applications.

CO₂ measurement module for testo 350 M/XL

Direct CO₂ measurement in flue gas

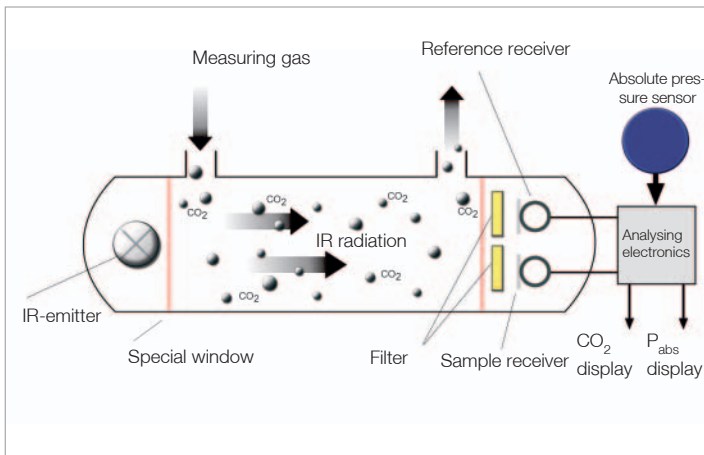


A CO₂ infrared sensor was designed especially for CO₂ measurement. The dimensions of this sensor are identical to the testo electrochemical measurement modules. Like the other measurement modules, the CO₂ infrared sensor can be very easily installed in the sensor slot of the testo 350 M/XL.

Lasting value:

Even measuring units already in use can be easily upgraded. Special attention was paid to the lasting value of testo 350 M/XL in this respect.

Diagram of the CO₂ infrared sensor



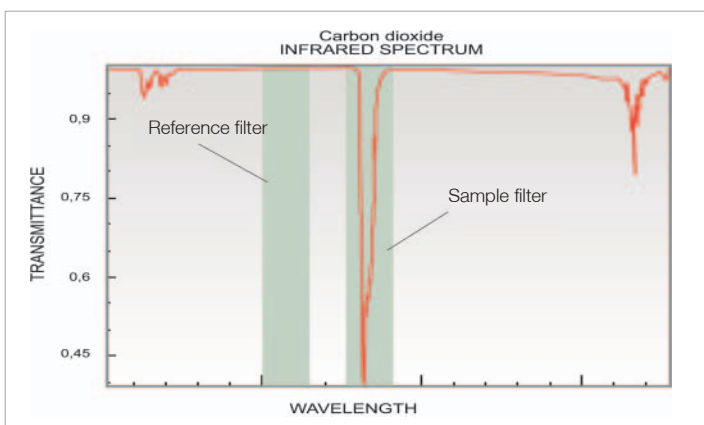
One sensor for all applications:

A non-dispersive infrared-sensor (NDIR) is used in testo 350 M/XL for direct CO₂ measurement. This sensor is a Testo development with a complete measuring range from 0 to 50 Vol.% CO₂.

The sensor works according to the one channel-double beam process: two infrared-receivers with two different optical filters are built in a miniature cuvette (sample and reference filter).

Only app. 4.27 µm radiation can pass through the sample filter. This wavelength is absorbed by CO₂. The reference filter on the other hand is permeable for a radiation of app. 4.0 µm. No radiation-absorption by gases takes place in this radiation range.

Details



Safety:

Reliable functioning and accurate measurements are guaranteed by self-diagnosis with the reference channel. Possible drifts caused by beamer wear or dirt are corrected automatically by the sensor.

Additional checks or adjustments of this automatic drift correction can be carried out very easily by the user using the enclosed absorption filter.

For very high demands on accuracy, special calibration in a limited measuring range can be made by the user with the cal gas.

Availability:

Two special windows are used for protecting the IR emitter, filter and receiver against corrosive gas components.

All advantages at a glance:

- Highly accurate measuring range of 0 to 50Vol.%
- Not affected by absolute pressure influence and temperature fluctuations
- Robust and long term stability
- Reliable measurement results by automatic monitoring function
- Highly accurate due to easy reset and adjustment for special measuring ranges
- Highly accurate O₂ measurement with testo 350 by eliminating CO₂ influence at high concentrations
- Convenient Pitot tube measurement with automatic gas density analysis using testo 350

