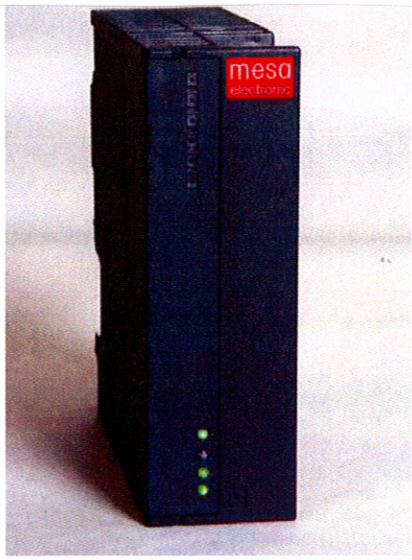
messen-steuern-automatisieren



Over 25 years of experience in measuring and process automation technology.
Reliable and competent service !

Smart Measurement Transducer Carbo 1000

Special Features:

- **Direct communication using the Siemens Simatic Backplane Protocol for the S7-300 product family.**
- **Measuring, parameterization and error correction occurs via predefined or symbolized data blocks.**
- **The Carbo 1000 is a stand-alone module and requires no additional Siemens modules, such as the communications module.**
- **Excellent reliability based on the galvanic isolation of all input and output circuits.**
- **Determination of the residual oxygen content for oxygen-sensitive processes.**
- **Calculation of the C-level based on the residual oxygen content or the CO_2 content when refining steel.**
- **Conversion of the L-sensor voltage to match the voltage curve of the zirconium oxide sensor.**
- **The thermocouple can be switched between the types "K" and "S".**
- **An additional inlet to directly connect a CO analyzer is available.**
- **Extensible by up to five modules in a longer housing.**

Functions:

The Carbo 1000 performs as a measurement transducer for use with a wide range of sensors to determine the residual oxygen and calculate the C-level at the L-sensor, the O_2-sensor and the CO_2 analyzer.

The Carbo 1000 processes the incoming signals from all sensors in the system, calculates the desired baseline value, and stores these data in a predefined or symbolized data block in the PLC (programmable logic controller). Data blocks are used to set the configuration and error processing for the Carbo 1000. This makes it easy to integrate the Carbo 1000 into existing programs and to further process the obtained data.

The Carbo 1000 communicates directly via the "Siemens Backplane Bus Protocol", thus allowing the use of the PLC from the Siemens Simatic S7-300 family of products. There is no need for additional components!

Despite the compact design of the Carbo 1000, we have still been able to achieve galvanic isolation between all input and output circuits.

The Carbo 1000 is ready for use in an oven zone or it may be extended by up to five modules inside a longer housing.

measure – control – automate -- measure – control – automate -- measure – control – automate

– measuring – controlling – automation - measuring – controlling – automation -

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Options at a Glance:

Type	Input
1:	L-Sensor, Thermocouple type "K" or "S"
2:	L-Sensor, Thermocouple type "K" or "S"
3:	ZrO_2 Thermocouple Type "K" or "S"
4:	CO_2 Analyzer, Thermocouple type "K" or "S"
5:	L-Sensor for residual oxygen
6:	O_2-Sensor

Selectable Parameters (Fixed Value, Thermocouple):

- CO content (in the absence of a CO analyzer)
- Actual value correction data (e.g. derived from using a foil probe)
- L-sensor correction factors
- Temperature correction factor
- Actual value correction of the calculated O_2-sensor voltage

The customer directly feeds in the parameters for the calculation of the measurement values using predefined data blocks.

Actual Value Correction: C-Level

The calculated C-level can be corrected to eliminate measuring errors and deviations due to special conditions in the oven. Especially the so-called foil sampling backs up the determination of the C-level. The Carbo 1000 E executes this function directly so that there is no need to program the function in the PLC.

Actual value correction $\%O_2$

Connections:
Wiring: 32-pin Adapter Connectors with screw-in connections

Specifications (Basic Unit):

Housing:
Siemens S7 compatible DIN rail housing (top-hat housing)

Dimensions:
40 x 125 x 120 mm (W x H x D)
1.58" x 4.92" x 4.72" (W x H x D)

Weight:
approx. 0.4 kg / 0.88 lbs

Protection Class:
IP 32 according to DIN 40050

Climate Conditions:
Storage: -10...+70 °C (14…158 °F)
Operation: 0...+50 °C (32…122 °F)
5...95 % relative humidity, condensation-free storage

Auxiliary Supply:
24 V

Input:
approx. 15 VA

Fuse:
200 mA

Analog Inputs:
for Type 1:
- Thermocouple, type "K" or "S"
- L-Sensor

for Type 2:
- Thermocouple, type "K" or "S"
- L-Sensor
- CO Analyzer

for Type 3:
- Thermocouple, type "K" or "S"
- CO-Analyzer 0…3 % log. or 0…5 % linear

for Type 4:
- Thermocouple, type "K" or "S"
- ZrO_2-Sensor
- CO Analyzer

for Type 5:
- L-Sensor

for Type 6:
- O_2-Sensor
- Thermocouple, type "K" or "S"