mesa electronic

3.02

C Level- and Temperature Controller Carbo-M

Special features:

- **Menu-guided operation**
- **Foil keyboard**
- **Exact control for C level and temperature**
- **Soot limit monitoring**
- **Universal application by virture of optional connection of O_2, O_2+CO_2, CO detectors and two thermocouples (type S or K)**
- **O_2 probe monitoring (checking Ri and EMF, purging)**
- **Simultaneous measurement with two probes for super version**
- **Automatic change to spare probe**
- **Program memory with 99 set point programs for C level and temperature**
- **Analog output, for example, for recorder connection**
- **C level correction (for example, by means of foil specimens)**
- **Options:**
  - **Serial interface for example, for visualization software" CARBOVIS"**

Function:

The **Carbo-M** is a dual-channel measuring and control system for C level calculation and C level and temperature control in the furnace atmosphere of heattreatment plants.

By means of switch settings on the rear panel of the instrument, **Carbo-M** can be easily adapted to match existing facilities. Alterations in the data acquisition scheme, for example, change of gas analyzers to oxygen probes, can be effected without difficulty.

A currently available analytical method for determining the carbon content in furnace atmospheres is the indirect measurement of the oxygen content in the furnace with zirconiumoxide probes. **Carbo-M** provides special support for these methods. Data sheets on probes and other equipment are available on request.

messen - steuern - automatisieren - messen - steuern - automatisieren - messen - steuern - automatisieren

MESA Electronic GmbH, D-82538 Geretsried-Gelting, Leitenstr. 26, Tel.: 0049 (0)8171 / 7693-0, Fax: 0049 (0)8171 / 7693-33
E-Mail: info@mesa-gmbh.com, Homepage: www.mesa-gmbh.com

Z.Nr:530-2015*701A
06.04.2004/CARBO-MENG

Technical Data:

Construction:
Metal housing for mounting in control panels, in conformance with DIN 40050
Type of protection IP 54 (front), as specified in DIN 50050

Dimensions:
144 x 144 x 300 mm (l x w x h)

Auxiliary voltage:
230 Vac ± 10 % 50/60 Hz

Power consumption:
About 15 VA

Input signals (selected by means of switch setting):

Analog (in following combinations):
- O_2 measuring probe, cell voltage directly or through amplifier
- O_2 measuring probe and CO analyzer
- CO_2 analyzer
- CO_2 analyzer and CO analyzer
- O_2 probe and L-probe
- O_2 probe, L-probe and CO analyzer
- L-probe and CO analyzer
- L-probe and CO_2 analyzer
- L-probe, CO_2 analyzer and CO analyzer
- L-probe and L-probe
- O_2 probe and O_2 probe
- CO_2 analyzer and O_2 probe

Attention:
If you use L-probe and O_2 -probe you cann´t connect an additional Reference junction.

- Thermocouple, type K or S
- Reference junction, type K or S (also mixed)
- Terminal temperature (Pt 100)
- External set value: **serial interface**

Digital:
- IN 0: program release with set point
  program in progress: otherwise, controller locked
- IN 1: program continuation in succession
- IN 2: input disable

Measuring range:
0,15...1,5 % C, or as specified by customer

Analog:
- C potential actual value, selected, 0 to 20 mA, 4 to 20 mA or 0 to 10 Vdc (in three scale divisions: 0...1,5 %; 0,15...1,5 %; 0...2,0 %)

Option:
- Control variable temperatur controller

Output signals:

Switching outputs:
- 3 control tracks freely available
- 2 switching outputs for 1 motor valve for gas or solenoid valves for gas and air
- 2 switching outputs for temperature heat + cool
- Signal gas release
- Signal probe purging
- Signal actual values in tolerance range
- Signal program active
- Signal Alarm indication

(all outputs "open collector" 24 V / 100 mA)

Serial interface (option):
- RS 232
- RS 422 / RS 485

Display:
Graphical LCD display with 160 x 128 pixels

Operation:
Five keys (soft keys) with user guidance (menu guidance);
respective function of the keys indicated on display

Set point:
- 4 preset points for C level
- 99 set point programs for C level and temperature profiles,internally storable and recallable;
  (program travel time per program: up to 100 h)
- 23 segments / program

Climate:
Storage: -10...+60 °C
Operation: 0...+50 °C
5...95 % relative humidity, non-condensing

Impedance for cell voltage:
> 100 MOhm

Needed Accessories:
-

Optional Accessories:
- Auxiliary unit REL.., PRL...
- Adapter for terminal strips

All spezifications subject to change without prior notice.

MESA Electronic GmbH, D-82538 Geretsried-Gelting, Leitenstr. 26, Tel.: 0049 (0)8171 / 7693-0, Fax: 0049 (0)8171 / 7693-33
E-Mail: info@mesa-gmbh.com, Homepage: www.mesa-gmbh.com