Control system Nitromat-M

Special features:

· **Menu-guided operation**
· **Foil keyboard**
· **Exact control**
· **Connections of two thermocouples by choise**
· **Input for MESA H_2-measuring system**
· **Program memory with 99 set point-programs for H_2- and process temperature (time synchronous)**
· **Program tracks, free eligible**
· **Position-proportional control**
· **ON/Off-PID-control**
· **Transfer outputs**
· **Options:**
    · **Set point generator for process temperature**
    · **Serial interfaces (RS422/RS485)**

Function:

The **Nitromat-M** is a single-channel measuring and control system for furnace atmosphere-control in Nitriding- or Nitrocarburizing processes.

By switch settings on the backside of the instrument, **Nitromat-M** can be easily adapted to different sensor connections.

The program controls of temperature and hydrogen, with program tracks for NH_3 - N_2 - Endogas - CO_2, etc. eligible, is a propitious possibility for control Nitriding- or Nitrocarburizing atmospheres in furnaces.

Technical Data:

Construction:
Type of protection of the front is IP 43

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):
- H_2 analyzer
- Thermocouple, type K or S
- Terminal temperature (Pt 100)
- External set value: analog or through **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...80 % H_2

Output signals:

Analog:
- selected, 0 to 20 mA,
  4 to 20 mA or 0 to 10 Vdc
- for the H_2-Value

Option:
- Output for the set point generator for process temperature, 0 to 20 mA or 4 to 20 mA

Switching outputs:
- 5 control tracks freely available
- 2 switching outputs for 1 motor valve for gas or solenoid valves for ammonia and H_2
- 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 H_2-profiles,
  internally storable and recallable;
  (program travel time per program: up to 100 h)
- 23 segments / program
- External entry by means of program generator,
  for example, 0...20 mA, 4...20 mA, 0...10 V.

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

Needed Accessories:

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

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