

## 4-, 6-, 8-zone-temperature controller



- **Microprocessor multi zone controller with LED-Display**
- **Optimized for use in the plastic moulding industry**
- **Clearly arranged overview of all relevant parameters : All in one sight**
- **Available as 2- or 3-point controller**
- **Automatic self-tuning - adapts to different controlled systems**
- **Graphical tracing-function for the actual parameters**

### Application

This temperature controller unit was specially designed to fit the demands of the plastic moulding industry. It comes up with a clear design and provides easy operation, good overview on all zones and various self-monitoring features.

The controller is mainly used for hot-runners, but also for extruders and presses.

### Design

Multi zone controller (4, 6, 8 zones) in norm format 96 x 96mm for cabinet front panel integration.

### Function

#### Closed loop control

Microprocessor-controller with automatic self-tuning:  
Automatically determines the

characteristics of each heating-zone and adapts the control-parameters accordingly.

#### Operation:

Easily understandable operation panel in German or English with menus and soft-keys.  
Simple programming of the controller by different menu levels, easy and safe.

#### Alarm output

Each heating zone provides 2 separated alarm functions, which are wired to 2 floating contacts and operate as a common alarm output. One alarm is pre-defined as process-high- and one as cable-breakage-warning.

#### Graphic tracing-function

For every zone, the development of the real values can be indicated.



Picture: Tracing function

#### Safeguard in case of sensor-breakage

Sensor-breakage is signalled at the zones corresponding display. The concerned zone switches-over to manual power-control and takes over the last assigned value, which may be adjusted manually.

#### Manual power-control

Each heating zone may be changed to manual power control even if the sensor is working.

### Limitation of desired temperature value

To prevent misuse or faulty entries, minimum- as well as maximum- temperature-values can be programmed.

### Soft-start

The controller starts-up (if desired) with a soft-start to preserve cold heating elements.

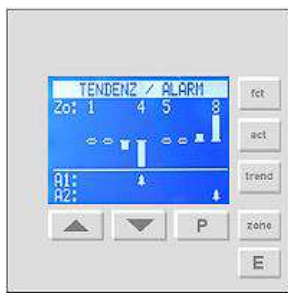
Time, power-setting and temperature during this phase are variable and can be set-up for every zone as needed.

### Automatic self-tuning

Analysis of characteristics of the controlled systems at start-up, can also be triggered manually during operation.



Picture: Overview all zones



Picture: Tendency visualisation



Picture: Detailed info per zone (effective control parameters)

## Specification

### Mains voltage

230V~ ±10%, 48...62Hz

### Control zones

NT2404 4 zones (2/3-point)

NT2406 6 zones (2/3-point)

NT2408 8 zones (2-point)

### Control output

- Heating:

18V DC, max. 10mA, short-circuit proof for the control of a solid state relay (SSR)

- Cooling:

floating relay contact (only 3-point-operation)

### Alarm output

Relay, floating, max. 250V~, 3A

### TC-input

Configurable

- Pt100 DIN IEC 751
  - Fe-CuNi Typ J DIN IEC 584
  - NiCr-Ni Typ K DIN IEC 584
- internal zero point correction

Thermocouple is monitored for cable breakage and short-circuit.

### Second set-point

Each heating-zone is equipped with a second temperature set-point. By closing an external contact, all zones simultaneously are switched-over to the second set-point, which may be used for standby-operation.

### Display

High contrast graphic LCD-display, blue

### Operation

Language selection German or English. Menu plain language with control- and configuration-parameters

### Control mode

P-, PD-, PI-, PD/I (programmable)

Self-tuning (automatically or manually triggered)

### Monitoring of heater current (option)

With current transformer M2000 for mounting on 35mm rails

Monitoring range:

0...60,0A with 1~ AC

0...99,9A with 3~ AC

### Interface (option)

RS485, RS232, TTY 0/20mA, CANopen, CiA Device Profile DS-404

### Electrical connection

Terminal strip following DIN 40050

### Dimensions

Housing 96 x 96mm for cabinet front-panel integration following DIN 43700, depth 122mm

Protection : : IP20; Front: IP50

### Operation conditions

Environmental temperature 0... 50°C

Description	Art.-Nr. 2-Pkt	Art.-Nr. 2/ 3-Pkt
NT 2404	82204	82204.3
NT 2406	82206	82206.3
NT 2408	82208	