

# Touchscreen hotrunner diagnosis- and process device NR8000-v3 tower casing

**evoControl<sup>®</sup>**

Fig.: NR8048 for  
48 zones



Fig.: NR8144 for  
144 zones

- Multifunctional hotrunner process control and diagnosis device from 16 up to 144 zones
- Comfortable, easy to understand touch-screen operation
- Precise temperature control with all necessary hotrunner and diagnosis functions – now with evoControl<sup>®</sup>
- Interface to injection moulding machine OPC-UA, TTY as an option
- NEW: Cloud connection with CLARA and NOAH

### Available options :

- Integrated mould cavity pressure measurement with switching of the press to holding pressure
- Mould coolant monitoring
- Integrated servocontrol for rotatory or linear movements
- Integrated valve gate control with fluid cylinders

### Application :

All needed functions for a precise temperature control and process monitoring of hotrunner injection moulds in one device : Temperature control and complete mould diagnosis functions come standard, optionally with integrated mould cavity pressure measurement, valve gate control and / or mould coolant monitoring. Existing devices can be upgraded at any time. For all mentioned options, separate data sheets are available. Cloud connection with automatic intermediate data buffering CLARA standard, ready for NOLDEN cloud portal NOAH for process data archive and retrieving. All units are usable regardless to the mould manufacturer.

### Design :

Control computer, signal processing electronics and heating power supply all combined in one rugged metal casing, 2 sizes for different

numbers of zones. Load-fuses are mounted on the side and thus provide an easy access in case of failure. Touch-screen for comfortable and simple control and operation of all zones plus dedicated keys for the most common functions.

### Function :

#### **Temperature control**

Adaptive, process computer based temperature control with automatic adaptation to the controlled system assures very precise temperature control for quick hot-tips as well as for slow manifold heaters. Unique NOLDEN technology evoControl<sup>®</sup> based on artificial intelligence avoids any overshoot and delivers unmatched precision. Many control parameters can be set-up specifically, this makes the controller an ideal unit for complex and difficult moulds.

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## Touch-panel operation

The bright, large touch-screen permits an easy, quick overview on all important functions and control parameters. On request, it shows all zones together, groups of zones of every zone in detail. In any situation, only relevant information is shown to avoid a cluttered screen overload.

## Specific hotrunner functions

Beside the very precise temperature control of every zone, numerous hotrunner program functions can be chosen, for all zones together or for every single zone as appropriate. The most important ones are :

Soft-start During soft-start, the controller unit works with reduced temperature and power setting (factory-defaults: 50% / 80°C / 5min). Cold heaters are gently pre-heated, moisture is expelled.

### Guided heat-up :

All zones can be heated-up together - avoids hot-tips being at set-point temperature before the slower manifold zones and prevents stress inside the mould during start-up.

### Stand-by operation :

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

Boost: Single-time override of the desired temperature-value melts „frozen“ nozzles.

Autogrouping / Autonaming: Several zones can freely be combined to a group, automatically by intensity or manually, also automatically numbered.

## Direct access keys

The 2 most common hotrunner functions „Boost“ and „Stand-by“ can be started independently from the touch-screen with a dedicated key on the front panel.

## Process survey functions

Load current monitoring for every zone independently, 3 programmable alarms per zone, sensor and heater breakage are detected automatically and will be displayed on the screen. In case of sensor failure, feeding with manual output (%) can be set. Coupling of this zone to any other zone with working thermocouple is also possible. Beside those alarms, many other process parameters can be set-up and surveyed as well.

As a protection of mould and hotrunner against overheating, a overtemperature cut-off switch (50°C above the highest set-point) is build in.

## External alarm output

The 3 alarms on every zone are combined by a floating contact as common alarm output for the whole unit and wired to an external alarm connector on the back side. This permits a connection with external units such as an injection moulding machine or central production alarm system. The external stand-by input is wired on this connector as well.

## Mould analysis function

The unit comes standard with a mould wiring analysis to check the correct assignment of heater and sensor cables to the same zone. Beside this, comfortable and detailed tracing of curves to follow the evolution of selected control-parameters with time.

## Mould memory

Management of all configuration data of every zone in a comfortable mould memory system, this eases start-up after a die-change. Also external back-up and data transfer to other units.

## USB-Data export

Diagnosis result and mould memory data can easily be downloaded as a csv-file on a USB-stick and further worked out or printed with any usual spreadsheet-PC software.

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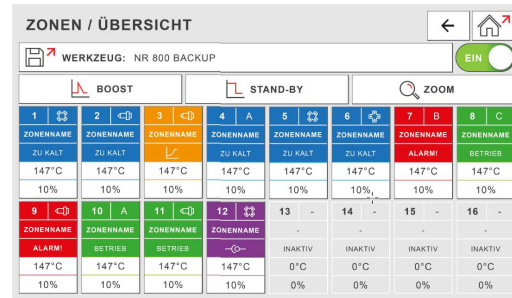
## Interface to IMM

Standard with OPC-UA interface to injection moulding machines or other process controll servers, protocol according to EUROMAP 82.2 . Alternatively, the proven TTY-interface 20mA available as an option, eg. to Arburg IMM.

## Examples touch-screen NOLDEN SmartTouchSystem STS

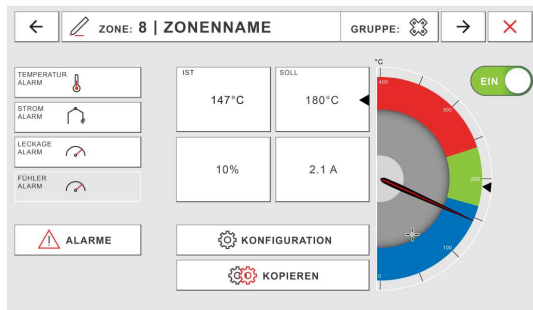


Choose main functions in the **"Homescreen"**

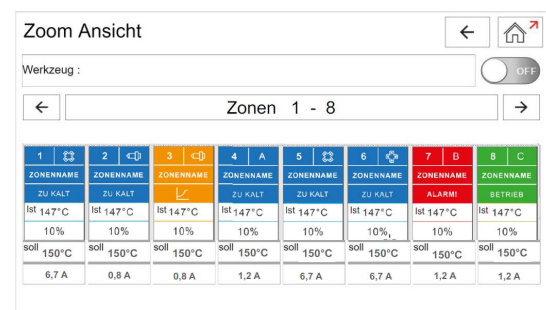


Most important screen for operation : **Overview all zones**

Know everything about one zone? **Zone detail view**



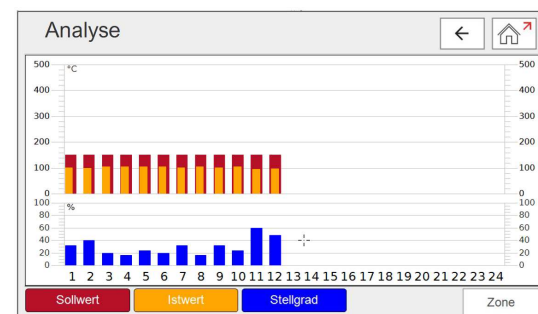
More details? **Group of zones** for a selected area



Hands-on data entry features, where needed....

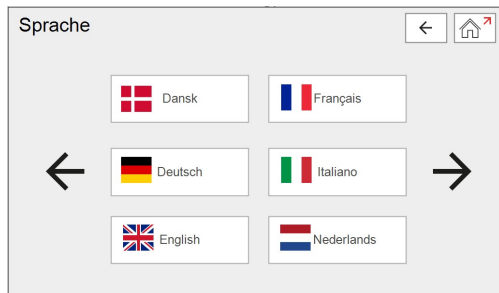


... and comfortable program- and diagnosis functions



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Easy language set-up to adapt to every user...



and clear warnings against errors !



## Specification :

### Mains voltage

230/400V +/-10%, 3~, 48...63Hz

### Nominal rating / nominal current

43,5kW / 3 x 63A total (depending on the total number of zones)

### Heating load per zone

Max. 3,6kW/16A

### Fuses

16AFF, 6,3x32mm, heaters  
5AmT, 5x20mm, controller

### Power control

0 - 100% proportional,  
zero-voltage switching

### Automatic soft-start

(factory default settings)  
Power-setting 50% / temperature 80°C / time 5 min

### Touch-screen

Sensitive (projected capacitive) touch-screen with pollution-resistant glass-surface, displays actual values and set-points, load-current, alarms, mould memory and configuration parameters.

### External stand-by/

#### Alarm exit:

7 pin connector:  
2 floating relay contacts for alarms, max. 230V, 3A, floating input for external stand-by, works on all zones together, wired in parallel with internal „Stand-by“-key on the front panel.

### Process-high-alarm

0...400/ 800°C programmable, default value +50°C

### Low current-alarm

0,0 ... 19,9A programmable,  
default value 0,5A minimum current

### Sensor input

Fe-CuNi type (J) 0...400 / 800°C  
Other types on request

### Sensor and heater connection

24-pin industrial heavy duty standard-connector 16A/400V, pin assignment following NR-norm, other pin assignments available

### Precision

0,25% FS

### Insulation voltage

2,5kV mains / controller

### Dimensions

400 x 485 x 840mm (WxDxH, up to 48 zones)  
464 x 548 x 1040mm (WxDxH up to 120 zones)  
508 x 550 x 1237mm (WxDxH up to 144zones)  
In addition ca. 350 mm height for touch-screen (adjustable)

### Colour

StructuredRAL7026 Side doors  
Silk gloss RAL9000 Frame, cover, back

### Weight

NR8048 : ca. 56 kg  
NR8080 : ca. 90 kg

Designation	Art.-Nr.
NR 8048-v3	83848.600
NR 8064-v3	83864.600
NR 8096-v3	83896.600

Further models available up to 144 zones available