NR8000-v3 – Option coolant monitor

Fig.: NR8024-v2 for 24 zones

Fig.: NR7048 for 48 zones

Fig.: NR8008-v3 mini for 8 zones

Fig.: Bolt-on controller NR8016 SGM

Intelligent coolant distributor system ORCA

- **Detail coolant monitoring of all cooling circuits in the mould**
- **Flow in ltr./min and temperature at inlet and outlet are shown**
- **Flow sensor absolutely immune against contamination (ultrasonic)**
- **Numerous alarms and monitoring functions**
- **Available for all hotrunner controllers 8000 and 8000 mini, can also be retrofitted**

Application :

Hotrunner diagnosis and process devices series NR8000 and NR8000mini with touch-screen operation can be fitted with integrated coolant monitoring as an option. Herewith, coolant flow and temperature of every single circuit in the mould are being monitored, in case of a deviation of the desired operation range, an alarm is given. In addition to that, connected systems such as an injection press can be alerted via alarm interface, which comes standard.

Coolant distributor and sensors :

For a precise measurement of the coolant flow in every circuit, high technology digital sensors are used. The applied measurement principle works with 2 ultrasonic transducers, which are clamped on a blank stainless steel tube, that's why those sensors are absolutely immune to any kind of contamination coming from impurities of the coolant such as limescale or rust.

Fig.: Flow measurement with 2 ultrasonic sensors

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NR8000-v3 – Option coolant monitor

In addition to the coolant flow, outlet temperature is measured in every circuit, furthermore, inlet temperature is measured once per distributor. Those measurements are made by Pt100 sensors, thus, also very precise. Therefore even small changes of the cooling situation in the mould can be determined quickly and action can be taken immediately. One ballvalve at the entry as well as at the outlet of every circuit permits to isolate each circuit if needed.

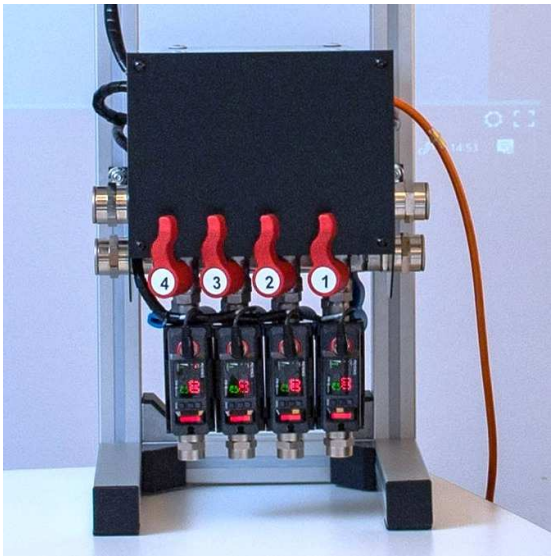

Fig.: ORCA-distributor for 4 circuits as demo

The control system :

All required control components are integrated into the NOLDEN system, the cable of the coolant distributor is simply connected at the back of the controller. All operation menus of the touchscreen system follow a similar logic, this makes work with the system intuitive and easy to learn. Common functions such as loading the mould data from the memory only need to be done once.

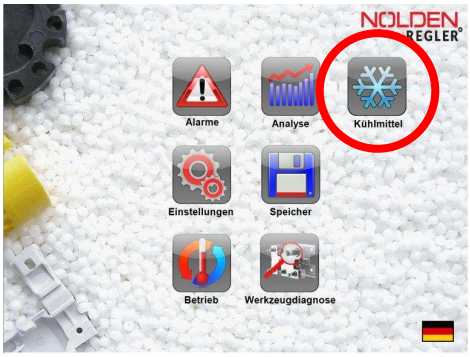

Fig.: Coolant surveillance app at the „Homescreen“ of the control system

The following coolant monitoring screens can be selected :

- Overview all coolant circuits with display of all flow and temperature values (example see below)
- Bar diagram view all circuits with ACTUAL / SETPOINT comparison
- Detailed plots for every circuit (history)
- Toolfitter mode for every circuit for programming of setpoints and alarm values

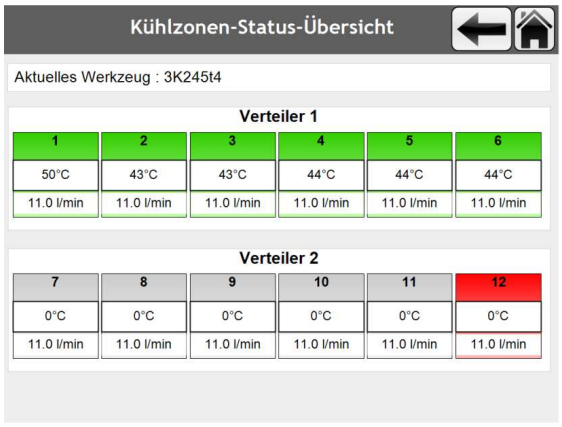

Fig.: Coolant situation overview all circuits

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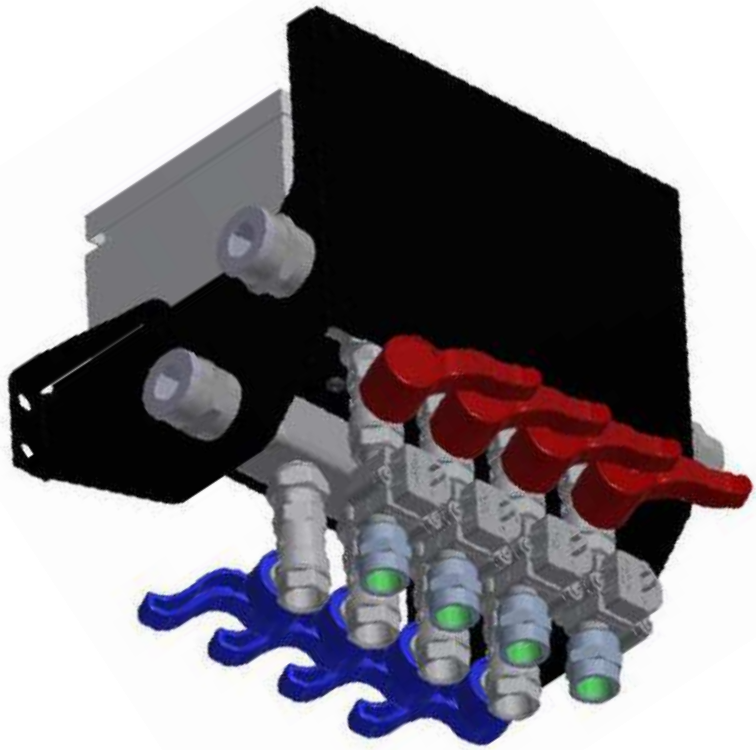
NR8000-v3 – Option coolant monitor

Economic alternative „Classic“ with turbine-sensor :

For cold water cooling systems as well as media temperatures up to 100°C with low impurity rate, an economic alternative with turbine flow sensors is now available. Herefore, high quality sensors of a well reputed Swiss precision manufacturer are being used, proven since decades in the laboratory field. Nevertheless, one condition for a flawless operation of those turbines is a good water quality with low impurity rate. Many injection moulding plants have invested in new closed loop cooling systems that meet these quality requirements.

- **Rugged turbine-flowsensor**
- **Alarm- and monitoring-functions identical with ultrason system**
- **For cooling water systems up to 100°C with low impurity rate**

Principle scheme ORCA-manifold with turbine-flowsensors



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NR8000-v3 – Option coolant monitor

Specification :

Flow sensors :
- Flow rate 1…30 ltr. /min, others on request
- Precision 0,1 ltr./min
- Protection level IP67
- Digital output 24V DC

- Ultrason sensors :
  + No contact with cooling media, thus all low viscosity liquids can be used
  + Digital flow display also directly on the Sensor
  + Media temperature max. 120°C

- Turbine sensor :
  + PPS-casing with Viton-sealing, turbine weel Inox, bearing pin zirconia
  + Media temperature max. 100°C

Temperature sensor :
- Pt100, precision 0,1°C

Alarm signal interface :
See technical specification of the used hotrunner controller

Product overview

Product designation:	*Art.-number :*
- Option coolant monitoring NR8000 4 channels	838xx.x1x.4
- Option coolant monitoring NR8000 6 channels	838xx.x1x.6
- Option coolant monitoring NR8000 8 channels	838xx.x1x.8
- Option coolant monitoring “Classic” NR8000 6 channels	838xx.x1x.6cl
- Option coolant monitoring “Classic” NR8000 8 channels	838xx.x1x.8cl

Other number of circuits are avaliable

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