

THERMONOM

ADVANCED TECHNOLOGY. INTUITIVE. EFFECTIVE.

thermonom.com

Contents

03

Advantages/Short Profile

04

Technical Data

06

Characteristics

08

Configuration possibilities

10

Specifications

12

User Interface

14

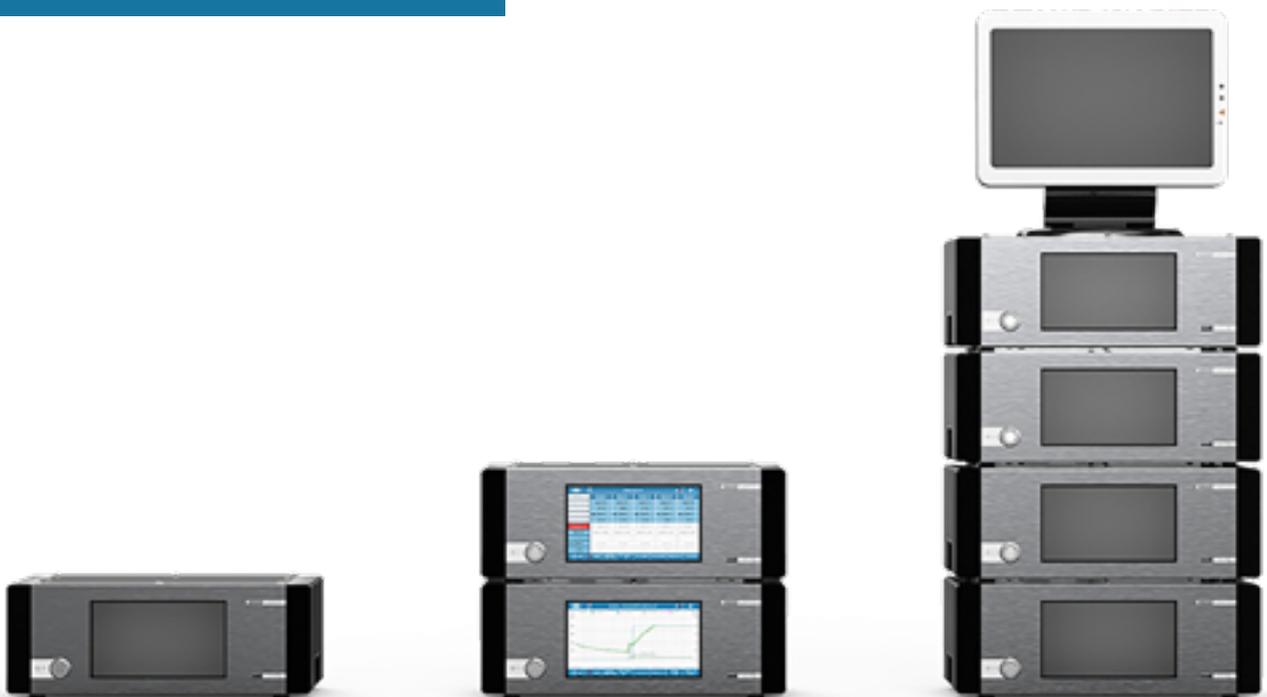
Data sheet/Notes

Advanced technology. Intuitive. Effective.

Intronik GmbH is a specialist for circuit and software development, embedded systems and microprocessor controls. This **know-how** in combination with the more than **25 years of experience** of Kunststofftechnik Nadler GmbH & Co.KG is incorporated in the development of the Thermonom hot runner controller.

The **new and innovative device concept** guarantees precise temperature detection, rapid switching processes, predictive control and several protective functions for hot runner moulds. Each channel forms an independent, microprocessor-controlled unit, which communicates with other channels via CAN bus or Ethernet.

On the basis of this network approach, several devices can be interconnected and operated like a single unit. Operation is possible from each interconnected device, from an industrial PC or from a process control station.





A new cost-effective approach

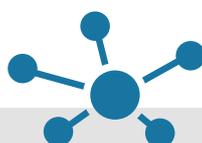
Current hot runner controllers for plastics processing must be able to cover applications with only one to more than 100 channels, which usually requires the development of different device sizes.

The Thermonom hot runner controller is available in only one package size in two configurations with 6 and 12 channels, but can reach any number of channels by interconnecting several units. Due to optimal component utilization, our hot runner controller cannot be beaten in terms of compactness and weight.



The Advantages

- Attractive unit price due to production of high quantities
- Stock of new equipment, short delivery times
- Rental equipment service
- Non-recurring development costs
- Replacement devices available at any time for servicing purposes



The Network

- Remote support
- Each channel has its own microprocessor, current and temperature measuring point
- Individual channels communicate via CAN-Bus and Ethernet
- Up to 16 devices can be coupled and operated as one functional unit, either from one device, from an industrial PC or from the process control station.



Flexible Numbers of Channels

- Channels are activated via licenses
- Enter a license code to activate additional channels
- Per device 4 to 12 activated channels can be provided according to customer demands, by coupling several devices up to 192



ADVANCED TECHNOLOGY.

Interfaces

RS485/232, CAN,
Ethernet, potential-free
inputs and outputs

Dimensions

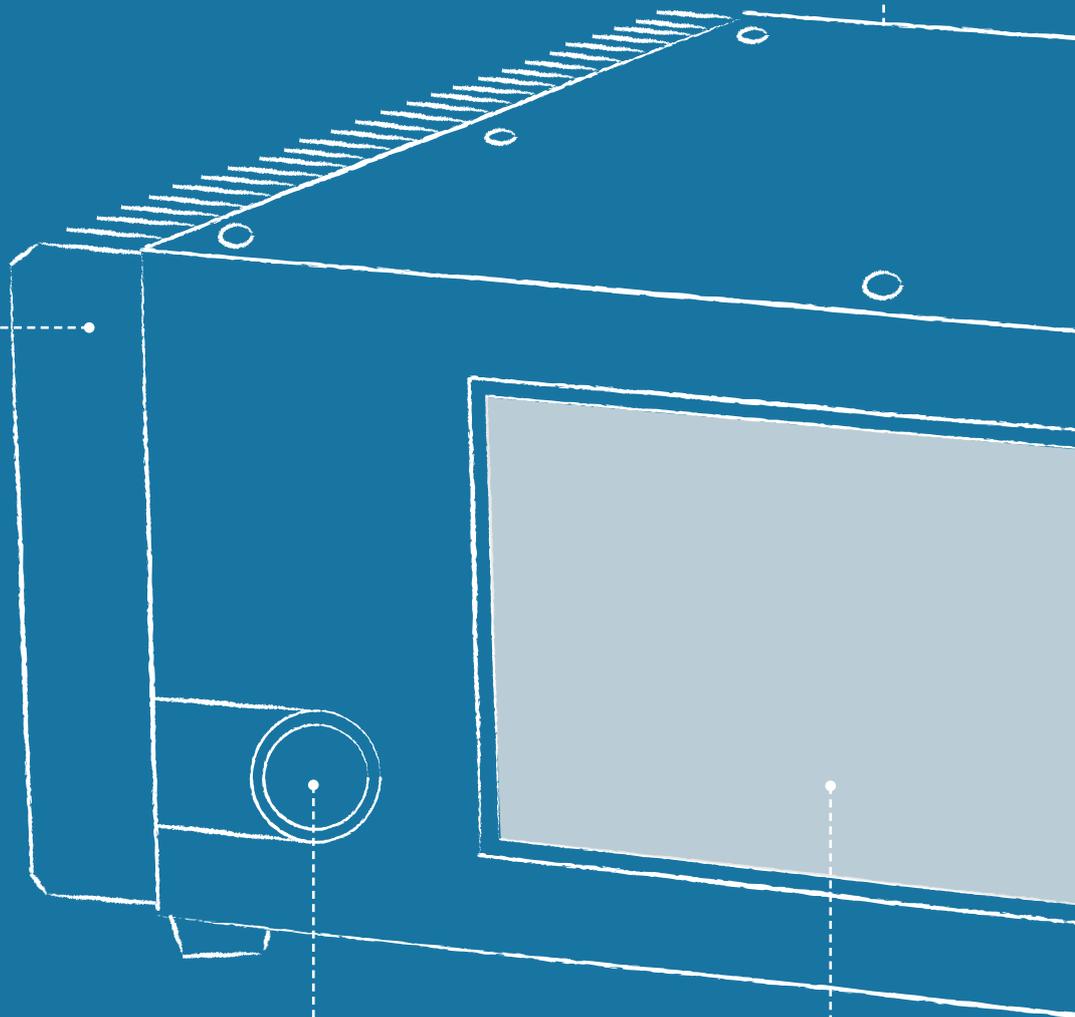
Width: 360 mm
Height: 137 mm
Depth: 307 mm

Power switch

with status display

Display

7" Touch screen
(800 x 480 px)



INTUITIVE. EFFECTIVE.

Power

400 V +10 % (3~, N, PE) 50 Hz,
power output 22 kW,
max current consumption parameterisable up to 32 A,
max current per channel 16 A

Fanless housing

passive cooling up to 40 °C
ambient temperature
(60 °C heat sink temperature)

Design

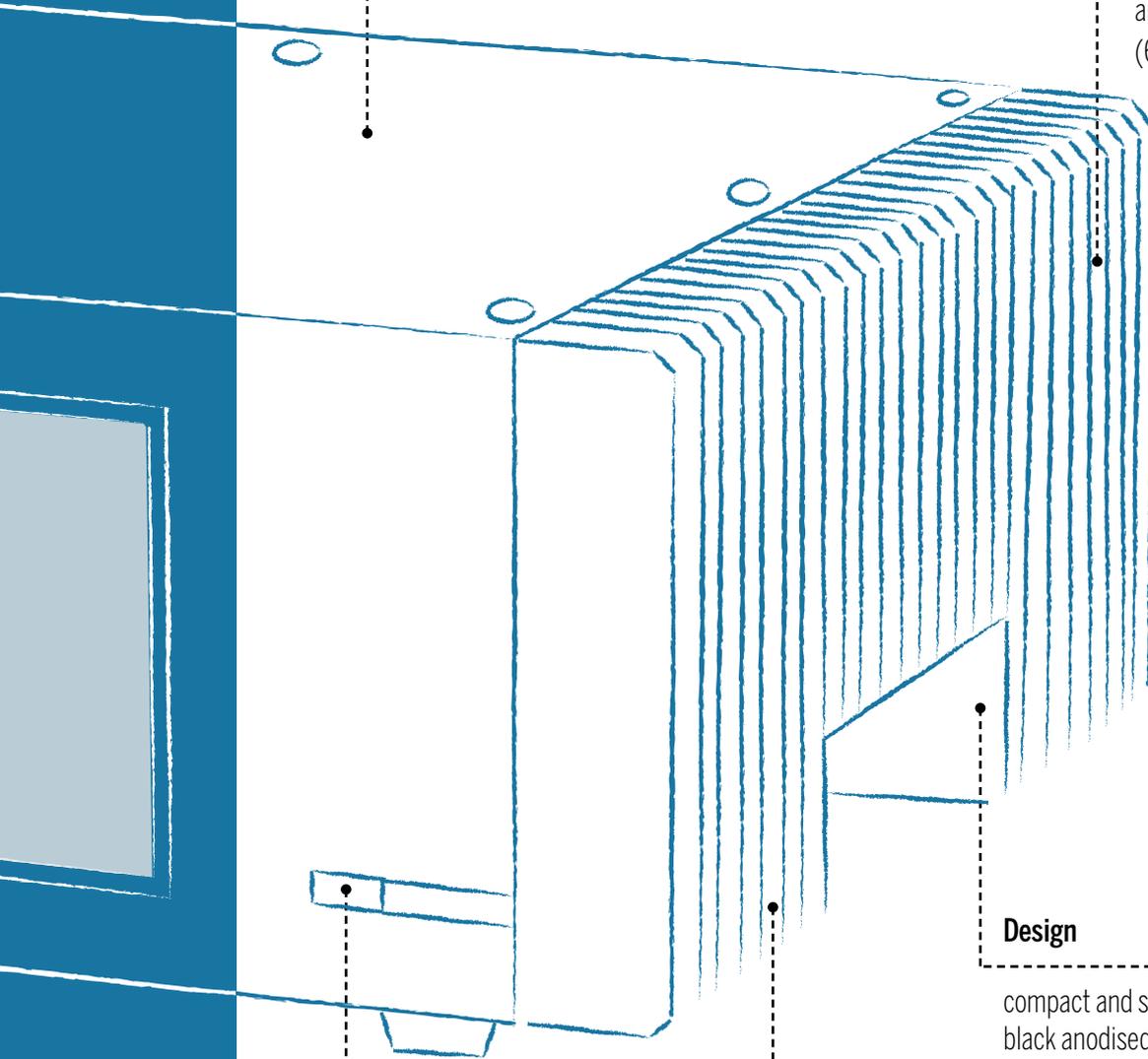
compact and stackable housing design made of
black anodised aluminium and steel

USB port

for storage device, mouse
and smartphones

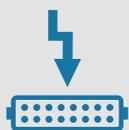
Weight

6,5 kg



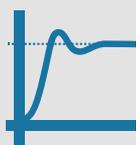
Characteristics of the device





Reverse polarity protection

- Detection of incorrectly connected temperature sensors
- Non-destructive short-circuit detection before each switch-on
- Temperature measuring point voltage resistant up to 230 V
- Reverse polarity: Sensors can be corrected by software, automatic correction



PID Controller

- Optimised algorithm for lower overshoot and rapid achievement of the setpoint temperature in slow controlled systems
- Adaptation for automatic characterization of the controlled system
- Standard setting of the PID controller can be used without adaptation for common hot runner nozzles and bars



Fanless design with convective cooling of power electronics

- Generously dimensioned heat sink with integrated channel board
- No moving parts, no wear, no air filters
- Suitable for dusty environments or clean rooms



Extremely compact size - barely larger than US standard letter size

- Robust housing construction, anodised aluminium and stainless steel 1.4301 (V2A)
- Dimensions 360 x 137 x 307 mm (width x height x depth)
- Weight 6.5 kg



Intuitive user interface on a 7" touch screen

- 7" capacitive touch screen
- Resolution 800 x 480 pixels



Fast configuration for mould changes

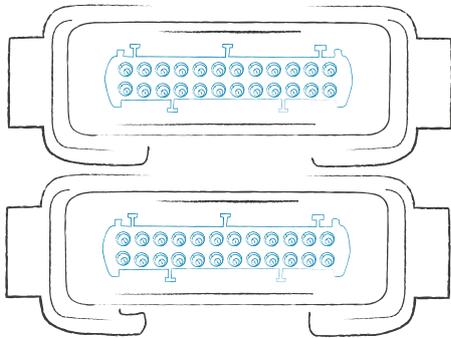
- Wizard - step-by-step guide to detecting and setting up new hot runners
- Diagnostic function for mould maker and operator

Configuration options

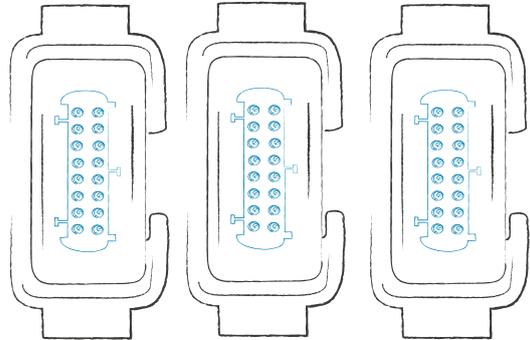
HAN E socket

with colour-coded cables for faster change of pin assignment
Other special arrangements are also possible on request.

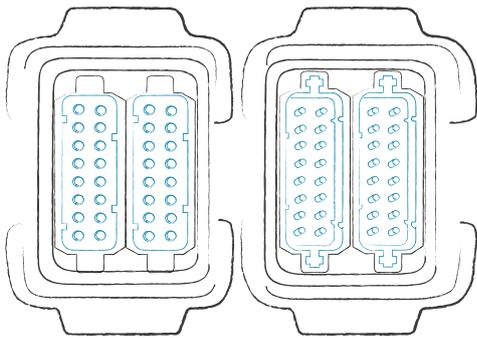
two 24-pin connectors horizontally arranged



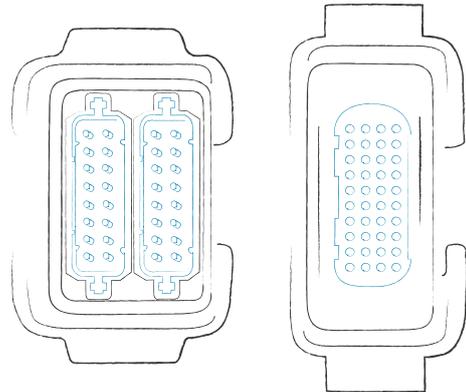
three 16-pin connectors vertically arranged



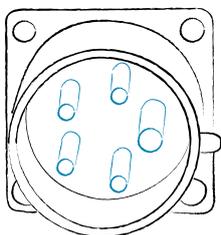
two 32-pin connectors vertically arranged



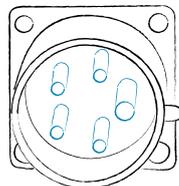
one 32-pin and one 40-pin connector



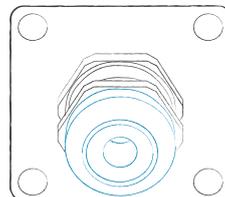
CEE plug 32 A



CEE plug 16 A



Cable gland M32



Individual configuration - tailored to your needs



Specifications



Interfaces

- **USB (front panel)** for data exchange via USB storage medium, operation via mouse, USB-T
- **Ethernet** for device coupling, software update and remote access
- **RS485/232** and **CAN** interface for integration into the control of the injection moulding machine
- **HAN D socket, 8-pin**, two or three programmable, potential-free inputs and outputs

Controller functions

- **Channel overview:** Switching channels on and off, special functions, operating modes
- **Groups:** Functional range of the channel overview applied to grouped channels
- **Diagram:** Configurable data logger, data export, relative and absolute presentation
- **Log:** Error messages, warnings, diagnostics with export function
- **Wizard:** Quick start after mould change, step-by-step configuration
- **Channel settings:** Sensor types, current limits, error handling, settings for special functions, control parameters, adaptation

Device functions

- **Access:** User administration, access levels, login and logout of users
- **Software:** Display of firmware version, network status, update function
- **Device settings:** Device temperature, behaviour at restart, screen saver, network settings, device coupling, etc.
- **Formulas:** Saving and restoring channel settings, data export
- **Input/output:** Activation and programming of customizable input/outputs

Special functions

- **Boost:** Activation of frozen channels, time and temperature configurable
- **Lower:** Temperature reduction during interruptions, temperature configurable
- **Synchronisation:** Synchronised heating of grouped channels
- **Softstart:** Evaporation of residual moisture in the sensor insulation

Monitoring

- **Sensor break**
- **Sensor polarity reversal**
- **Protection of the sensor input against overvoltage**
- **Detection of sensors connected to the power output**
- **Short-circuit test of the power outputs before activation**
- **Heater open (no load)**
- **Heater short circuit**
- **Heating outside the current limits**
- **Insulation faults**



The User Interface

The user interface has been developed with many customer suggestions in mind and will continue to be improved and adapted to current requirements in the future. Software updates are generally freely available and can be imported either via an existing network connection or via a USB storage device.

Main Menu

Direct access to all functions.
Critical device settings can be reserved using user access rights management.

Channel overview

The start screen shows an overview of all the channels and allows for programming with just a few clicks.

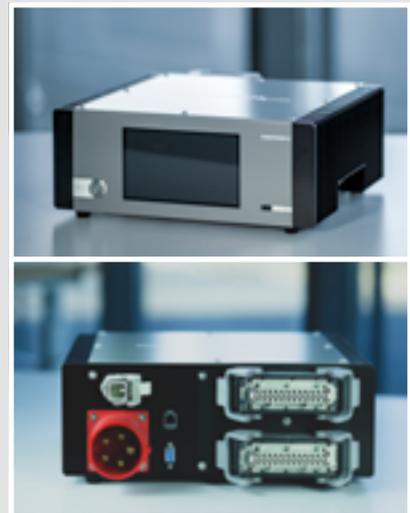
Data Logger

Measured temperatures, degree of operation and deviations from the setpoint can be prepared and exported in an intuitively adaptable diagram.



Technical data

CHARACTERISTIC	VALUE
Dimensions	(W x H x D) 360 x 137 x 307 mm
Weight	6,5 kg
Heat sink	Aluminium, black anodised
Lower housing shell	Aluminium, black anodised
Upper housing shell	Steel RAL 9016
Installation	Horizontal standing
Display	7" touch screen, 800 x 480 pixels
Internal memory	3 GB
Number of controllable channels per device	max 12
Channels for device coupling	192
Type of temperature sensors	J and K
Control range	20 - 800 °C
Display accuracy	1 K
Number of inputs	2 (potential-free)
Number of outputs	3 (potential-free)
Supply voltage	400 V + - 10 % (3~, N, PE)
Mains frequency	50 Hz
Maximum power output	22 kW
Maximum current consumption	32 A
Maximum current per channel	16 A
Inrush current	< 1 A
Protection class	IP 30
Maximum heat sink temperature	60 °C
Ambient temperature	40 °C
Maximum relative humidity	90 %

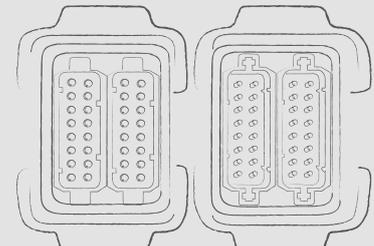
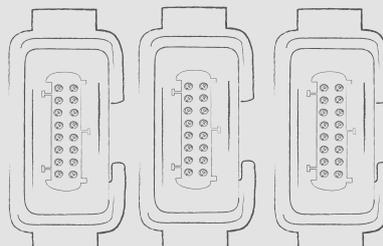
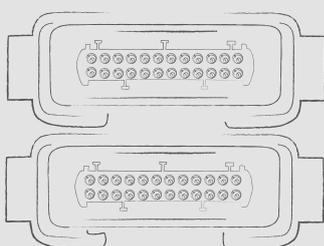


Interfaces

- 1x USB
- 1x Ethernet
- 1x RS-232 | 485
- 1x CEE plug 32 A
- 1x 8-pin HAN D (E/A)
- 2 x 24-pin HAN E or 3 x 16-pin HAN E

Monitoring

- Sensor break
- Sensor polarity reversal
- Protection of the sensor input against overvoltage
- Sensor protection against burn-out
- Heater open (no load), short circuit, or outside current limits





Contact details

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