

HB-Therm[®]

THERMO-5

Temperature Control Units

Product Catalogue 2025-12



Temperature Control Units Thermo-5

Regulated mould temperatures are essential for plastics injection moulding.

Temperature control units regulate mould temperatures through a liquid heat carrier by controlled inducing or dissipating of heat.

Thermo-5 units provide efficient and reliable operation and are used to control temperatures in injection moulding or similar processes.

...precise, powerful and efficient

Highly accurate temperature control


- $\pm 0,1$ Kelvin with self-optimizing regulation
- Calibration of temperature, pressure and flow rate measurement
- Quality inspection certificate

Short heating and cooling times

- The tankless system tempers only as much heat carrier as necessary

Uses lower heating and cooling energy

- Minimal circulation volume requires less power
- Clever cooling concept reduces losses

Energy efficient pump – Eco-pump  *

- Energy savings by variable speed pump

...easy, intelligent and convenient

Simple operation

- Well-arranged menus in 21 languages
- Intuitive navigation
- On-the-spot instructions at the push of a button

Bright display

- Easily legible with high contrast
- Free choice of display windows and values

Convenient functions

- Fully automated mould cooling and evacuation *
- Recording of data via USB and analysis in Excel
- Store function for mould specific parameters
- Control also via the machine



...safe, reliable and low on maintenance

Fully automated process monitoring

- Continuous monitoring of temperature, flow and pressure
- Highly accurate ultrasonic flow rate measurement
- Detection of hose ruptures and leaks
- Pump status is monitored *

Durable construction

- Solely non-corroding materials in the hydraulic circuit
- Heating elements without direct contact to the heat transfer medium
 - ▶ Lifetime warranty on the heater
- Bypass and proportional valve result in vaporisation-free cooling and low-scaling *
- Sealless pump in stainless steel

Improved protection for the mould

- Closed system without oxygen contact
- Completely automatic purging of air
- Active regulation of pressure – only as much as necessary *

...small, clean and quiet

Squeezes into almost everywhere

- Made possible by ingenious hydraulic modules and a tankless system

Can also be used in a clean room *

- Fibre-free insulation, abrasion resistant castors and high-gloss finish

Draws attention only when necessary

- Intelligent monitoring of all processes

* Some features may not apply, depending on the model

Most models in the Thermo-5 temperature control unit series have already been replaced by the successor generation Thermo-6.



Standard Equipment

Hydraulics	Closed system without oxygen contact, with efficient automatic deaeration, automatic filling Temperature measurement in main line and return line with sensor Pt 1000 Continuous maintenance-free ultrasonic flow meter Low-scaling and pressure shock-free cooling with cooling water filter and proportional valve Proportionally controlled cooler bypass (on units over 100 °C) Sealless pump in stainless steel Hydraulic circuit made of non-corroding materials Heating elements without direct contact to the heat transfer medium Easy to modify for separate supply of system water (on water units) Booster pump for system filling (on water units over 100 °C) Controlled superimposed system pressure (on water units) Bypass and return line filter Heat transfer circuit with superimposed cold oil (on oil units) Tank with level measuring for expansion and mould evacuation (on oil units)
Functions	Mould emptying by pump reversal (not possible with: 8R) Even load distribution at all heating stages with solid-state relays Auto-tuning cascade control Control on either main line or return line (or external sensor ZE) Cooling with automatic switch-off programme Changeover to 2nd nominal value Nominal value ramp and ramp programme Cyclical system water exchange (selectable)
Monitoring / Safety	Automatic limit value setting Monitoring of various process parameters Hose rupture and leakage monitor Sensor failure monitor Pump and heater current monitor Dry-running protection Triple safety cut-out for heating Pressure enabling with device OFF (not possible with: 8R) Safety relief valve and pressure gauge on rear of unit Automatic phase direction adaptation and phase monitor Lockable and abrasion resistant castors (PUR)
Command / Display	TFT-Colour display 3,5" with interactive user guidance in 21 languages Help button with context sensitive information Display of flow rate, pump pressure, process power and energie savings Large choice of display windows and values Temperature display in 0,1 °C Units of measurement for temperature, flow rate and pressure can be set Visual and acoustic alarms; volume adjustable Store function for mould specific parameters Display of date and time Timer Operating hours counter and service interval display Logbook for alarms Data input password protected
Interfaces	USB Connection (Host/Device) for software updates, parameter transfer and data recording HB HB-Therm data interface CAN to connect modular units, flow meters Flow-5 and switching units Vario-5 (1 socket Sub-D 15 pin, female)

Note: Modular units do not have a proper command

Additional Equipment

ZL Leak stopper	With automatic vacuum optimisation (up to 70 °C; not possible with: B2)
ZB Connection for alarm and external control	Alarm using potential-free contact (rating max. 250 VAC, 4 A) Unit ON/OFF, ramp programme ON/OFF and switching nominal value 1 or 2 using potential-free contact 1 socket Harting Han 7D (male), connecting cable 6 m with plug included
ZE Connection for external sensor	Thermocouple type J, K, T or Pt 100 in 3-wire system, with selectable production detector 1 socket Audio 5 pin (female), connector 90° (male) included
ZD Interface DIGITAL	Serial data interface 20 mA, RS-232 or RS-422/485 Various protocols selectable: Arburg, Billion, Bühler, Dr. Boy, Engel, Ferromatik Milacron, Haitian, KraussMaffei, MODBUS (RTU-Mode), Negri Bossi, SPI (Fanuc, etc.), Stork, Sumitomo Demag, Wittmann Battenfeld, Zhafir 2 sockets Sub-D 25 pin (female)
ZC Interface CAN	Serial data interface CAN-bus (Sumitomo Demag) and CANopen (EUROMAP 66; Netstal, etc.) To remotely control singular units 2 sockets Sub-D 9 pin (1 male and 1 female)
ZO Interface OPC UA	Ethernet interface (EUROMAP 82.1) 1 socket RJ-45 (female)
ZP Interface PROFIBUS-DP	Serial data interface PROFIBUS-DP 1 Sub-D 9-pin socket (not possible with: ZC)
ZU Pump status monitor	Additional pressure sensor in main line
ZK Keyboard-protection	Transparent flap over display and controls
ZR Clean room package	Clean room capable version: 'At Rest' < ISO class 6 (class 1 000) 'In Operation' ISO class 7 (class 10 000) Fibre-free insulation
ZG Mould evacuation with compressed air	Replaces mould evacuation by pump reversal Connection, compressed air (P. 16, Fig. 5) Pressure: 2–8 bar; Thread: G¼; Resistance: 10 bar, 100 °C

Singular unit



Modular unit





Temperature control units Thermo-5 are available as singular or modular units. Contrary to singular units, modular units do not have a proper command and display. They can only be controlled via a singular unit or a control module Panel-5 but thus enable a common changing of parameters as well as a remote control. The units are linked to the master and among each other always via the interface HB. Further, modular units have a cost advantage over the singular units and are distinguished from the latter by adding the letter M to the unit designation (e. g. HB-140ZM4).

Communication (P. 13, Fig. 1)

100 °C

Single units
Water, direct cooling

Temperature control unit		Heat transfer medium		Water												
		Cooling		Direct												
Type	with maximum main line temperature in °C	Housing size (P. 16, Fig. 5)							HB-100X							
		1	1L	2	2L	3	4									
Heating (P. 14, Fig. 2)	kW	8	●	●												
		16			●	●	●	●								
		32					○	○								
Pump (P. 14, Fig. 3)	sealless, stainless; 0,5 kW; 30 L/min, 52 m sealless, stainless; 1,0 kW; 50 L/min, 70 m Eco-pump  , sealless, stainless; 1,1 kW; 60 L/min, 70 m stainless; 2,8 kW; 110 L/min, 70 m sealless, stainless; 2,8 kW; 110 L/min, 70 m stainless; 3,5 kW; 160 L/min, 70 m sealless, stainless; 3,5 kW; 160 L/min, 70 m Eco-pump  , sealless, stainless; 2,2 kW; 220 L/min, 65 m	2M	●		●											
		4M	○		○ ¹⁾		○									
		4S		●		●										
		6G					●									
		6M					○									
		8G					○									
		8M					○									
		8R							●							
Cooling (P. 15, Fig. 4)	38 kW @ 60 K 110 kW @ 60 K	B1	●	●	●	●										
		E1					●	●								
Additional Equipment				ZB	○	○	○	○	○	○	○					
Connection for alarm and external control				ZE	○	○	○	○	○	○	○					
Connection for external sensor				ZD	○	○	○	○	○	○	○					
Interface DIGITAL				ZC	○	○	○	○	○	○	○					
Interface CAN				ZO	○	○	○	○	○	○	○					
Interface OPC UA				ZP	○	○	○	○	○	○	○					
Interface PROFIBUS-DP				ZU	○	●	○	●	○	●						
Pump status monitor				ZK	○	○	○	○	○	○	○					
Keyboard-protection				ZR	○	○	○	○	○	○	○					
Clean room package				ZG	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾	○ ²⁾					
Mould evacuation with compressed air																
Mains voltage	400 V (380–415 V), 50 Hz; 3LPE 400 V (380–415 V), 60 Hz (50/60 Hz); 3LPE 210 V (200–220 V), 50 Hz; 3LPE 210 V (200–220 V), 60 Hz (50/60 Hz); 3LPE 460 V (440–480 V), 60 Hz; 3LPE	405	●	●	●	●	●	●								
		406	○	○	○	○	○	○	○							
		215	○	○	○	○	○	○	○							
		216	○	○	○	○	○	○	○							
		466	○	○	○	○	○	○	○							



Ordering example: HB-100X4-16-8R-E1-ZD, 405, English

● Standard specification ○ Optional ¹⁾ Typical specification
²⁾ Only possible through the cooling water outlet
□ replaced by Thermo-6

Maximum main line temperature	°C	100	100	100	100	100	100	
Flow rate measurement	Measuring range	L/min	0,4–40	0,4–40	0,4–40	0,4–40	2–160	2–200
Circulating volume in unit	approx.	L	1,0	1,0	1,6	1,6	6,5	6,5
Dimensions (P. 16, Fig. 5)	Height	mm	510	510	700	700	850	650
	Width	mm	180	180	240	240	300	400
	Depth	mm	661	731	661	731	982	1065
Weight max.	kg	50	55	62	68	136	140	
Connection, main line and return line	Thread		G¾	G¾	G¾	G¾	G1 ¼	G1 ¼
	Resistance	bar, °C	20, 120	20, 120	20, 120	20, 120	20, 120	20, 120
Connection, cooling water	Pressure	bar	2–5	2–5	2–5	2–5	2–5	2–5
	Thread		G¾	G¾	G¾	G¾	G¾	G¾
	Resistance	bar, °C	10, 100	10, 100	10, 100	10, 100	10, 100	10, 100
Connection, drain	Thread		G¾	G¾	G¾	G¾	G½	G½

100 °C

Single units
Water, indirect cooling

Temperature control unit		Heat transfer medium		Water												
		Cooling		Indirect												
Type	with maximum main line temperature in °C	Housing size (P. 16, Fig. 5)							HB-100Z							
		1	1L	2	2L	3	4									
Heating (P. 14, Fig. 2)	kW	8	●	●												
		16			●	●	●	●								
		32					○	○								
Pump (P. 14, Fig. 3)	sealless, stainless; 0,5 kW; 30 L/min, 52 m sealless, stainless; 1,0 kW; 50 L/min, 70 m Eco-pump  , sealless, stainless; 1,1 kW; 60 L/min, 70 m stainless; 2,8 kW; 110 L/min, 70 m sealless, stainless; 2,8 kW; 110 L/min, 70 m stainless; 3,5 kW; 160 L/min, 70 m sealless, stainless; 3,5 kW; 160 L/min, 70 m Eco-pump  , sealless, stainless; 2,2 kW; 220 L/min, 65 m	2M	●		●											
		4M	○		○ ¹⁾		○									
		4S		●		●										
		6G					●									
		6M					○									
		8G					○									
		8M					○									
		8R							●							
Cooling (P. 15, Fig. 4)	30 kW @ 60 K 50 kW @ 60 K 90 kW @ 60 K	A2	●	●	●	●										
		B2	○	○	○	○										
		C2					●	●								
Additional Equipment		Leak stopper		ZL	○ ³⁾	○ ³⁾	○ ³⁾	○ ³⁾								
Connection for alarm and external control				ZB	○	○	○	○	○	○						
Connection for external sensor				ZE	○	○	○	○	○	○						
Interface DIGITAL				ZD	○	○	○	○	○	○						
Interface CAN				ZC	○	○	○	○	○	○						
Interface OPC UA				ZO	○	○	○	○	○	○						
Interface PROFIBUS-DP				ZP	○	○	○	○	○	○						
Pump status monitor				ZU	○	●	○	●	○	●						
Keyboard-protection				ZK	○	○	○	○	○	○						
Clean room package				ZR	○	○	○	○	○	○						
Mould evacuation with compressed air				ZG	○	○	○	○	○	○						
Mains voltage	400 V (380–415 V), 50 Hz; 3LPE 400 V (380–415 V), 60 Hz (50/60 Hz); 3LPE 210 V (200–220 V), 50 Hz; 3LPE 210 V (200–220 V), 60 Hz (50/60 Hz); 3LPE 460 V (440–480 V), 60 Hz; 3LPE	405	●	●	●	●	●	●								
		406	○	○	○	○	○	○	○							
		215	○	○	○	○	○	○	○							
		216	○	○	○	○	○	○	○							
		466	○	○	○	○	○	○	○							

Ordering example: HB-100Z4-32-8R-C2-ZE, 405, English

● Standard specification ○ Optional ¹⁾ Typical specification
³⁾ Not possible with: B2 □ replaced by Thermo-6

Maximum main line temperature	°C	100	100	100	100	100	100	
Flow rate measurement	Measuring range	L/min	0,4–40	0,4–40	0,4–40	0,4–40	2–160	2–200
Circulating volume in unit	approx.	L	1,2	1,2	1,8	1,8	6,5	6,5
Dimensions (P. 16, Fig. 5)	Height	mm	510	510	700	700	850	650
	Width	mm	180	180	240	240	300	400
	Depth	mm	661	731	661	731	982	1065
Weight max.	kg	52	57	64	70	147	150	
Connection, main line and return line	Thread		G¾	G¾	G¾	G¾	G1 ¼	G1 ¼
	Resistance	bar, °C	20, 120	20, 120	20, 120	20, 120	20, 120	20, 120
Connection, cooling water	Pressure	bar	2–5	2–5	2–5	2–5	2–5	2–5
	Thread		G¾	G¾	G¾	G¾	G¾	G¾
	Resistance	bar, °C	10, 100	10, 100	10, 100	10, 100	10, 100	10, 100
Connection, separate system water	Pressure	bar	2–5	2–5	2–5	2–5	2–5	2–5
	Thread		G¾	G¾	G¾	G¾	G½	G½
	Resistance	bar, °C	10, 100	10, 100	10, 100	10, 100	10, 100	10, 100
Connection, drain	Thread		G¾	G¾	G¾	G¾	G½	G½

140 °C

Single units
Water, indirect cooling

Temperature control unit		Heat transfer medium		Water													
		Cooling		Indirect													
Type	with maximum main line temperature in °C	Housing size (P. 16, Fig. 5)							HB-140Z								
		1	1L	2	2L	3	4										
Heating (P. 14, Fig. 2)	kW	8	●	●													
		16			●	●	●	●									
		32					○	○									
Pump (P. 14, Fig. 3)	sealless, stainless; 0,5 kW; 30 L/min, 52 m sealless, stainless; 1,0 kW; 50 L/min, 70 m Eco-pump , sealless, stainless; 1,1 kW; 60 L/min, 70 m stainless; 2,8 kW; 110 L/min, 70 m sealless, stainless; 2,8 kW; 110 L/min, 70 m stainless; 3,5 kW; 160 L/min, 70 m sealless, stainless; 3,5 kW; 160 L/min, 70 m Eco-pump , sealless, stainless; 2,2 kW; 220 L/min, 65 m	2M	●		●												
		4M	○		○ ¹⁾		○										
		4S		●		●											
		6G					●										
		6M					○										
		8G					○										
		8M					○										
		8R							●								
Cooling (P. 15, Fig. 4)	30 kW @ 60 K 50 kW @ 60 K 90 kW @ 60 K	A2	●	●	●	●	●	●									
		B2			○	○	○	○	●								
		C2					○	○	○								
Additional Equipment	Leak stopper Connection for alarm and external control Connection for external sensor Interface DIGITAL Interface CAN Interface OPC UA Interface PROFIBUS-DP Pump status monitor Keyboard-protection Clean room package Mould evacuation with compressed air	ZL	○	○	○ ³⁾	○ ³⁾											
		ZB	○	○	○	○	○	○									
		ZE	○	○	○	○	○	○									
		ZD	○	○	○	○	○	○									
		ZC	○	○	○	○	○	○									
		ZO	○	○	○	○	○	○									
		ZP	○	○	○	○	○	○									
		ZU	○	●	○	●	○	●									
		ZK	○	○	○	○	○	○									
		ZR	○	○	○	○	○	○									
		ZG	○	○	○	○	○	○									
		Mains voltage	400 V (380–415 V), 50 Hz; 3LPE 400 V (380–415 V), 60 Hz (50/60 Hz); 3LPE 210 V (200–220 V), 50 Hz; 3LPE 210 V (200–220 V), 60 Hz (50/60 Hz); 3LPE 460 V (440–480 V), 60 Hz; 3LPE	405	●	●	●	●	●	●							
				406	○	○	○	○	○	○							
				215	○	○	○	○	○	○							
				216	○	○	○	○	○	○							
466	○			○	○	○	○	○									

Ordering example: HB-140Z4-32-8R-B2-ZD, 405, 405, English

● Standard specification ○ Optional ¹⁾ Typical specification
³⁾ Not possible with: B2 □ replaced by Thermo-6

Maximum main line temperature	°C	140	140	140	140	140	140	
Flow rate measurement	Measuring range	L/min	0,4–40	0,4–40	0,4–40	0,4–40	2–160	2–200
Circulating volume in unit	approx.	L	1,5	1,5	2,1	2,1	6,5	6,5
Dimensions (P. 16, Fig. 5)	Height	mm	510	510	700	700	850	650
	Width	mm	180	180	240	240	300	400
	Depth	mm	661	731	661	731	982	1065
Weight max.	kg	55	60	67	73	155	160	
Connection, main line and return line	Thread		G¾	G¾	G¾	G¾	G1 ¼	G1 ¼
	Resistance	bar, °C	20, 160	20, 160	20, 160	20, 160	20, 160	20, 160
Connection, cooling water	Pressure	bar	2–5	2–5	2–5	2–5	2–5	2–5
	Thread		G¾	G¾	G¾	G¾	G¾	G¾
Connection, separate system water	Pressure	bar, °C	10, 100	10, 100	10, 100	10, 100	10, 100	10, 100
	Thread		G¾	G¾	G¾	G¾	G½	G½
Connection, drain	Pressure	bar, °C	10, 100	10, 100	10, 100	10, 100	10, 100	10, 100
	Thread		G¾	G¾	G¾	G¾	G½	G½

160 °C

Single units
Water, indirect cooling

Temperature control unit		Heat transfer medium		Water													
		Cooling		Indirect													
Type	with maximum main line temperature in °C	Housing size (P. 16, Fig. 5)							HB-160Z								
		1	1L	2	2L	3	4										
Heating (P. 14, Fig. 2)	kW	8	●	●													
		16			●	●	●	●									
		32					○	○									
Pump (P. 14, Fig. 3)	sealless, stainless; 0,5 kW; 30 L/min, 52 m sealless, stainless; 1,0 kW; 50 L/min, 70 m Eco-pump , sealless, stainless; 1,1 kW; 60 L/min, 70 m sealless, stainless; 2,8 kW; 110 L/min, 70 m sealless, stainless; 2,8 kW; 110 L/min, 70 m sealless, stainless; 3,5 kW; 160 L/min, 70 m Eco-pump , sealless, stainless; 2,2 kW; 220 L/min, 65 m	2M	●		●												
		4M	○		○ ¹⁾		○										
		4S		●		●											
		6M					○ ¹⁾										
		8M					○										
		8R							●								
		Cooling (P. 15, Fig. 4)	30 kW @ 60 K 50 kW @ 60 K 90 kW @ 60 K	A2	●	●	●	●	●	●							
				B2			○	○	○	○	○						
C2							○	○	○								
Additional Equipment	Leak stopper Connection for alarm and external control Connection for external sensor Interface DIGITAL Interface CAN Interface OPC UA Interface PROFIBUS-DP Pump status monitor Keyboard-protection Clean room package Mould evacuation with compressed air	ZL	○	○	○ ³⁾	○ ³⁾											
		ZB	○	○	○	○	○	○									
		ZE	○	○	○	○	○	○									
		ZD	○	○	○	○	○	○									
		ZC	○	○	○	○	○	○									
		ZO	○	○	○	○	○	○									
		ZP	○	○	○	○	○	○									
		ZU	○	●	○	●	○	●									
		ZK	○	○	○	○	○	○									
		ZR	○	○	○	○	○	○									
		ZG	○	○	○	○	○	○									
		Mains voltage	400 V (380–415 V), 50 Hz; 3LPE 400 V (380–415 V), 60 Hz (50/60 Hz); 3LPE 210 V (200–220 V), 50 Hz; 3LPE 210 V (200–220 V), 60 Hz (50/60 Hz); 3LPE 460 V (440–480 V), 60 Hz; 3LPE	405	●	●	●	●	●	●							
				406	○	○	○	○	○	○							
				215	○	○	○	○	○	○							
				216	○	○	○	○	○	○							
466	○			○	○	○	○	○									

Ordering example: HB-160Z4-16-8R-B2-ZE-ZD, 405, English

● Standard specification ○ Optional ¹⁾ Typical specification
³⁾ Not possible with: B2 □ replaced by Thermo-6

Maximum main line temperature	°C	160	160	160	160	160	160	
Flow rate measurement	Measuring range	L/min	0,4–40	0,4–40	0,4–40	0,4–40	2–160	2–200
Circulating volume in unit	approx.	L	1,5	1,5	2,1	2,1	6,5	6,5
Dimensions (P. 16, Fig. 5)	Height	mm	510	510	700	700	850	650
	Width	mm	180	180	240	240	300	400
	Depth	mm	661	731	661	731	982	1065
Weight max.	kg	57	62	69	75	155	160	
Connection, main line and return line	Thread		G¾	G¾	G¾	G¾	G1 ¼	G1 ¼
	Resistance	bar, °C	20, 180	20, 180	20, 180	20, 180	20, 180	20, 180
Connection, cooling water	Pressure	bar	2–5	2–5	2–5	2–5	2–5	2–5
	Thread		G¾	G¾	G¾	G¾	G¾	G¾
Connection, separate system water	Pressure	bar, °C	10, 100	10, 100	10, 100	10, 100	10, 100	10, 100
	Thread		G¾	G¾	G¾	G¾	G½	G½
Connection, drain	Pressure	bar, °C	10, 100	10, 100	10, 100	10, 100	10, 100	10, 100
	Thread		G¾	G¾	G¾	G¾	G½	G½

180 °C

Single units
Water, indirect cooling

Temperature control unit	Heat transfer medium	Water		
	Cooling	Indirect		
Type	with maximum main line temperature in °C	HB-180Z		
	Housing size (P. 16, Fig. 5)	2	2L	3
Heating (P. 14, Fig. 2)	kW	8	●	●
		16	○ ¹⁾	○ ¹⁾
		32		●
Pump	sealless, stainless; 0,5 kW; 30 L/min, 52 m	2M	●	
(P. 14, Fig. 3)	sealless, stainless; 1,0 kW; 50 L/min, 70 m	4M	○ ¹⁾	●
	Eco-pump , sealless, stainless; 1,1 kW; 60 L/min, 70 m	4S		●
	sealless, stainless; 2,8 kW; 110 L/min, 70 m	6M		○ ¹⁾
	sealless, stainless; 3,5 kW; 160 L/min, 70 m	8M		○
Cooling (P. 15, Fig. 4)	30 kW @ 60 K	A2	●	●
	50 kW @ 60 K	B2	○	○
	90 kW @ 60 K	C2		○
Additional Equipment				
	Connection for alarm and external control	ZB	○	○
	Connection for external sensor	ZE	○	○
	Interface DIGITAL	ZD	○	○
	Interface CAN	ZC	○	○
	Interface OPC UA	ZO	○	○
	Interface PROFIBUS-DP	ZP	○	○
	Pump status monitor	ZU	○	●
	Keyboard-protection	ZK	○	○
	Clean room package	ZR	○	○
	Mould evacuation with compressed air	ZG	○	○
Mains voltage	400 V (380–415 V), 50 Hz; 3LPE	405	●	●
	400 V (380–415 V), 60 Hz (50/60 Hz); 3LPE	406	○	○
	210 V (200–220 V), 50 Hz; 3LPE	215	○	○
	210 V (200–220 V), 60 Hz (50/60 Hz); 3LPE	216	○	○
	460 V (440–480 V), 60 Hz; 3LPE	466	○	○

Ordering example: HB-180Z3-32-6M-A2-ZD-ZU, 405, English

● Standard specification ○ Optional ¹⁾ Typical specification
□ replaced by Thermo-6

Maximum main line temperature	°C	180	180	180
Flow rate measurement	Measuring range	L/min	0,4–40	0,4–40
Circulating volume in unit	approx.	L	2,1	2,1
Dimensions (P. 16, Fig. 5)	Height	mm	700	700
	Width	mm	240	240
	Depth	mm	661	731
Weight max.	kg	69	75	154
Connection, main line and return line	Thread		G¾	G¾
	Resistance	bar, °C	25, 200	25, 200
Connection, cooling water	Pressure	bar	2–5	2–5
	Thread		G¾	G¾
	Resistance	bar, °C	10, 100	10, 100
Connection, separate system water	Pressure	bar	2–5	2–5
	Thread		G¾	G¾
	Resistance	bar, °C	10, 100	10, 100
Connection, drain	Thread		G¾	G¾

200/230 °C

Single units
Water, indirect cooling

Temperature control unit	Heat transfer medium	Water	
	Cooling	Indirect	
Type	with maximum main line temperature in °C	HB-200Z	HB-230Z
	Housing size (P. 16, Fig. 5)	2B	2B
Heating (P. 14, Fig. 2)	kW	16	●
Pump	sealless, stainless; 0,5 kW; 30 L/min, 52 m	2M	●
(P. 14, Fig. 3)	sealless, stainless; 1,0 kW; 50 L/min, 70 m	4M	○ ¹⁾
	Eco-pump , sealless, stainless; 1,1 kW; 60 L/min, 70 m	4S	○
Cooling (P. 15, Fig. 4)	30 kW @ 60 K	A2	●
	50 kW @ 60 K	B2	○
Additional Equipment			
	Connection for alarm and external control	ZB	○
	Connection for external sensor	ZE	○
	Interface DIGITAL	ZD	○
	Interface CAN	ZC	○
	Interface OPC UA	ZO	○
	Interface PROFIBUS-DP	ZP	○
	Pump status monitor	ZU	○ ⁴⁾
	Keyboard-protection	ZK	○
	Clean room package	ZR	○
	Mould evacuation with compressed air	ZG	○
Mains voltage	400 V (380–415 V), 50 Hz; 3LPE	405	●
	400 V (380–415 V), 60 Hz (50/60 Hz); 3LPE	406	○
	210 V (200–220 V), 50 Hz; 3LPE	215	○
	210 V (200–220 V), 60 Hz (50/60 Hz); 3LPE	216	○
	460 V (440–480 V), 60 Hz; 3LPE	466	○

Ordering example: HB-230Z2B-16-4M-A2-ZE-ZD, 405, English

● Standard specification ○ Optional
¹⁾ Typical specification
⁴⁾ Included with: 4S

Maximum main line temperature	°C	200	230
Flow rate measurement	Measuring range	L/min	0,4–40
Circulating volume in unit	approx.	L	1,6
Dimensions (P. 16, Fig. 5)	Height	mm	700
	Width	mm	300
	Depth	mm	962
Weight max.	kg	115	115
Connection, main line and return line	Thread		G¾
	Resistance	bar, °C	31, 220
Connection, cooling water	Pressure	bar	2–5
	Thread		G¾
	Resistance	bar, °C	10, 100
Connection, separate system water	Pressure	bar	2–5
	Thread		G¾
	Resistance	bar, °C	10, 100
Connection, drain	Thread		G¾

Temperature control unit	Heat transfer medium		Oil
	Cooling		Indirect
Type	with maximum main line temperature in °C		HB-200T
	Housing size (P. 16, Fig. 5)		HB-250T
Heating (P. 14, Fig. 2)	kW	8	●
		16	○
Pump	sealless, stainless; 0,5 kW; 30 L/min, 52 m	2M	●
(P. 14, Fig. 3)	sealless, stainless; 1,0 kW; 50 L/min, 70 m	4M	○
Cooling (P. 15, Fig. 4)	34 kW @ 120 K	A3	●
	60 kW @ 120 K	C3	○
Additional Equipment			
	Connection for alarm and external control	ZB	○
	Connection for external sensor	ZE	○
	Interface DIGITAL	ZD	○
	Interface CAN	ZC	○
	Interface OPC UA	ZO	○
	Interface PROFIBUS-DP	ZP	○
	Pump status monitor	ZU	○
	Keyboard-protection	ZK	○
Mains voltage	400 V (380–415 V), 50 Hz; 3LPE	405	●
	400 V (380–415 V), 60 Hz (50/60 Hz); 3LPE	406	○
	210 V (200–220 V), 50 Hz; 3LPE	215	○
	210 V (200–220 V), 60 Hz (50/60 Hz); 3LPE	216	○
	460 V (440–480 V), 60 Hz; 3LPE	466	○

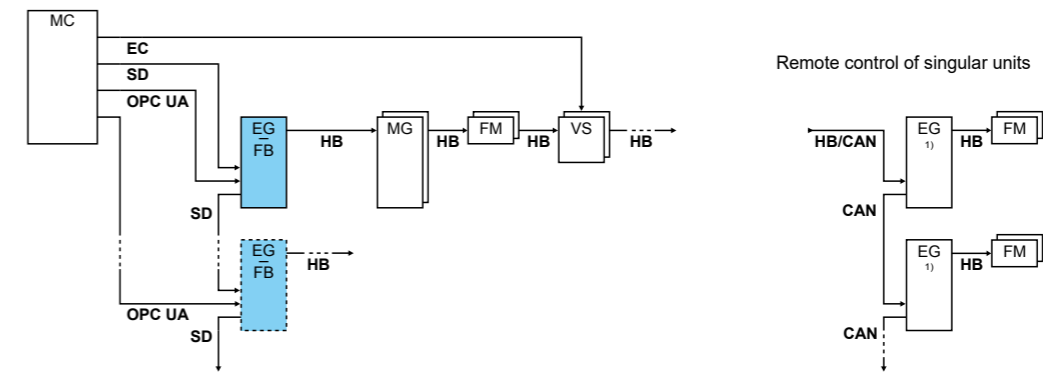
Ordering example: HB-250T3-8-2M-A3-ZE-ZD-ZU, 405, English

● Standard specification ○ Optional

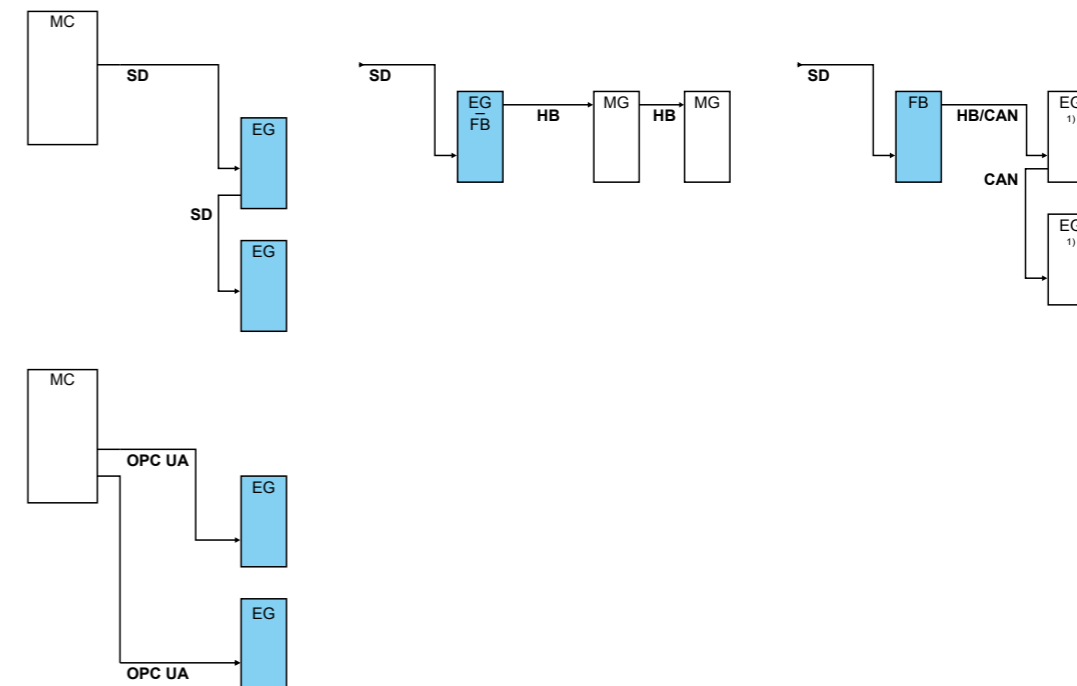
Maximum main line temperature	°C	200	250
Flow rate measurement	Measuring range	L/min	0,4–40
Circulating volume in unit	approx.	L	1,6
Volume of internal expansion tank	approx.	L	5,5
Dimensions (P. 16, Fig. 5)	Height	mm	700
	Width	mm	240
	Depth	mm	684
Weight max.	kg	59	101
Connection, main line and return line	Thread		G $\frac{3}{4}$
	Resistance	bar, °C	10, 220
Connection, cooling water	Pressure	bar	2–5
	Thread		G $\frac{3}{8}$
	Resistance	bar, °C	10, 100
Connection, drain	Thread		G $\frac{3}{8}$

Communication (Fig. 1)

Basic circuit diagram



Examples



Legend	Description	Note
MC	Machine control	max. 1
FB	Control modul Panel-5	max. 1
EG	Temperature control unit Thermo-5, singular unit	max. 16 (per command)
MG	Temperature control unit Thermo-5, modular unit	
FM	Flow meter Flow-5	max. 32 (at 4 circuits each)
VS	Switching unit Vario-5	max. 8
SD	Communication via serial data interface DIGITAL (ZD), CAN (ZC), PROFIBUS-DP (ZP)	Maximum number of units, operating range and transfer of flow rate values depend on machine control and protocol
OPC UA	Communication OPC UA via Ethernet (ZO)	
HB ²⁾	Communication interface HB	Order of connection is not relevant
HB/CAN ²⁾	Communication interface HB/CAN	To remotely control singular units
CAN	Communication interface CAN (ZC)	
EC	External control	Assignment dependent on machine control unit

■ Command ¹⁾ Command deactivated ²⁾ max. length cable HB: Total 50 m

Heating Capacity, Electricity Supply (Fig. 2)

For temperature control units equipped with a frequency converter, we recommend using a Type B Residual Current Device (RCD). Type A RCDs are not suitable for this. The leakage current is a maximum of 5 mA per unit.

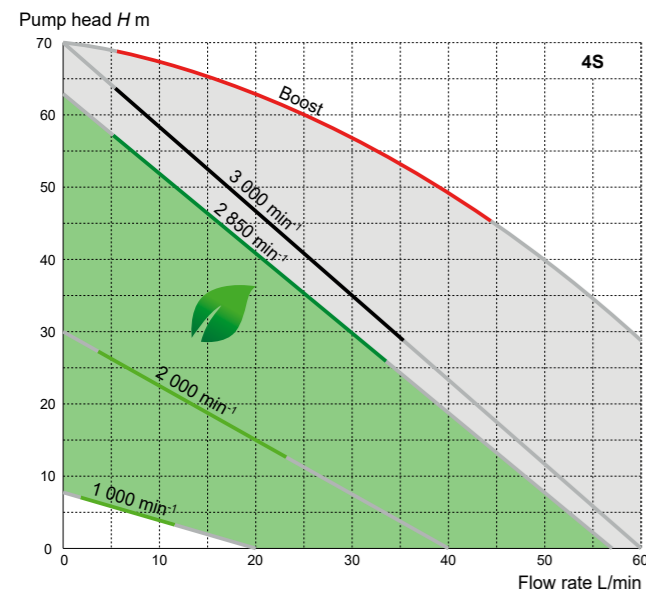
The heating capacity applies at rated voltage (400 V, 460 V or 210 V) and varies max. ±10 % within the range indicated.

Maximum fusing; Cross-section through unit mains cable (with mains voltage)

Heating	400 V or 460 V	210 V
8 kW	3x20 A; 2,5 mm ²	3x32 A; 6 mm ²
16 kW	3x32 A; 6 mm ²	3x63 A; 16 mm ²
32 kW	3x63 A; 16 mm ²	3x125 A; 50 mm ²

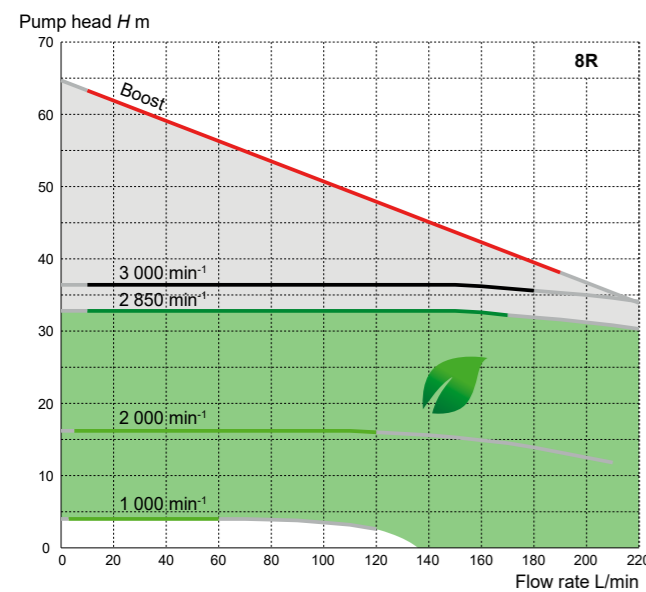
Pump Capacity Curve (Fig. 3)

Eco-pump Variable speed Eco-pump (Energy efficiency class IE4)



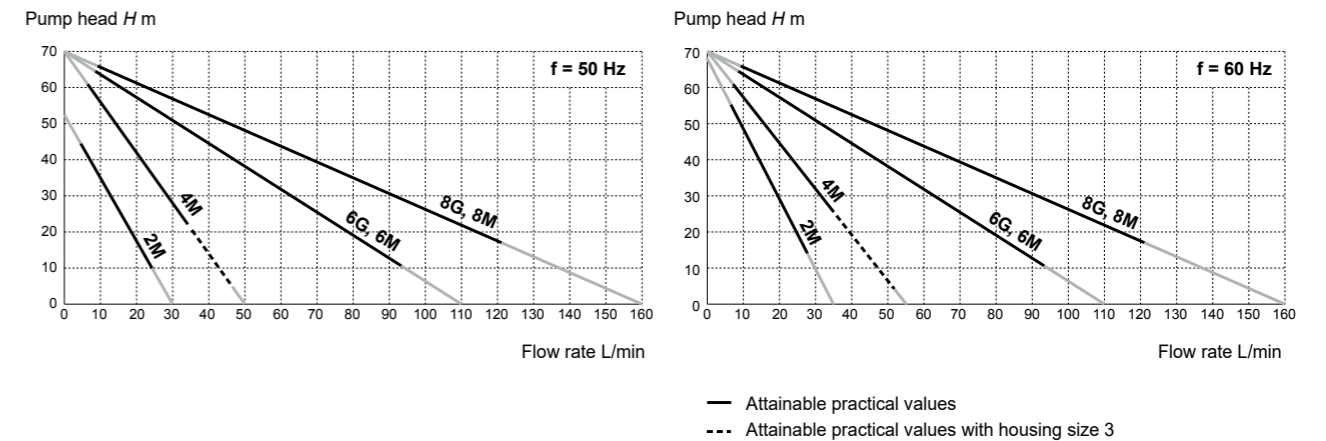
In Eco-mode the unit will control the speed depending on either actual speed or flow rate or pump pressure or temperature difference between main- and return line. Energy savings are announced and registered.

- Energy savings range
- High power range
- Boost-mode (max. speed)
- Normal operation 2 850 min⁻¹



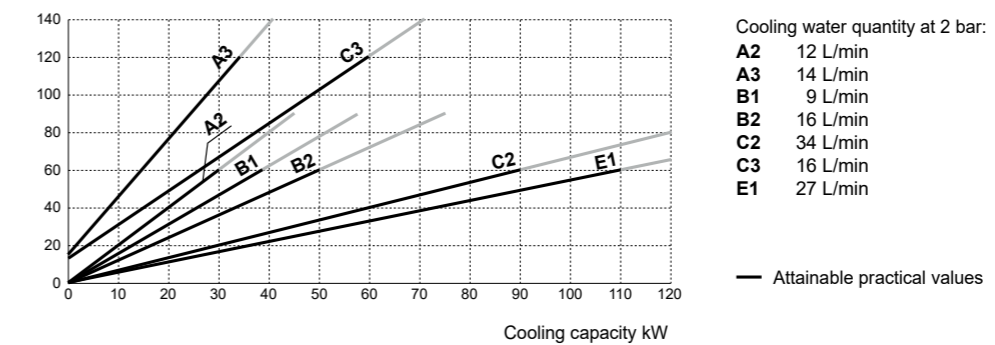
Note: Pressure p in bar = 0,1 · Pump head H in m · density ρ in kg/dm³

Fixed speed pumps



Cooling Capacity (Fig. 4)

Temperature difference between heat transfer medium and cooling water K (Kelvin)



General Technical Data

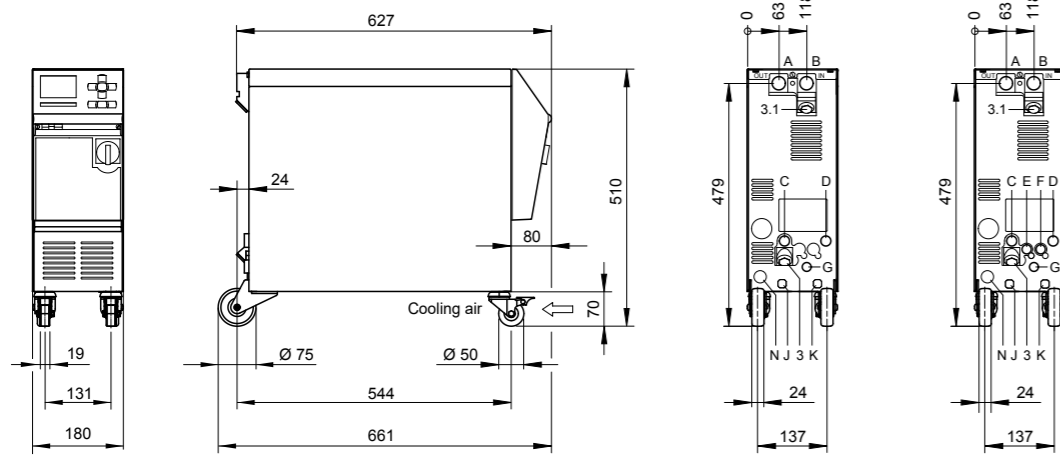
Mains cable to unit	3LPE, 4 m (plug on request)
Environment	Temperature range 5–40 °C Relative humidity 35–85 % RH (non-condensing)
Colour	Cover RAL 7035 (glossy light grey), RAL 5012 (glossy light blue) Control panel RAL 7012 (basalt grey) Access cover RAL 7021 (glossy black grey)
Continuous sound pressure level	<67 dB(A)
Protection class	IP 44
Standards (depending on unit type)	EN 12828, EN 12953-6, EN 60204-1, EN IEC 60730-2-9, EN IEC 61000-6-2, EN IEC 61000-6-4, EN ISO 12100, EN IEC 63000, EN ISO 13732-1, DIN 4754
Certification/Approval	CE, UKCA
Temperature measurement	Resolution 0,1 °C Control accuracy ±0,1 K Tolerance ±0,8 K
Flow rate measurement	Resolution 0,1 L/min Tolerance: Housing size 1, 1L, 2, 2L, 2B ±(5 % of measured value + 0,1 L/min) Tolerance: Housing size 3, 4 ±(5 % of measured value + 0,5 L/min)
Pump pressure indicator	Tolerance ±10 % of rated value

Dimensions (Fig. 5)

Housing size 1, scale 1:15

HB-100X1

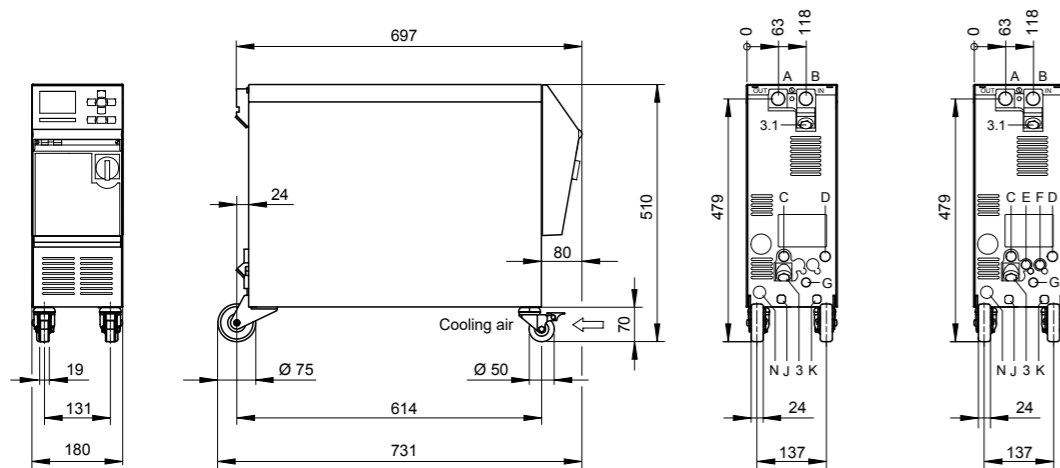
HB-__Z1



Housing size 1L, scale 1:15

HB-100X1L

HB-__Z1L



- A Main line
- B Return line
- C Cooling water inlet
- D Cooling water outlet
- E System water inlet
- F System water outlet

- G Drain
- H Filling (on oil units)
- J Compressed air inlet (ZG)
- K Compressed air outlet (ZG)
- N Mains connection cable

- 3 Filter cooling water inlet
- 3.1 Filter return line

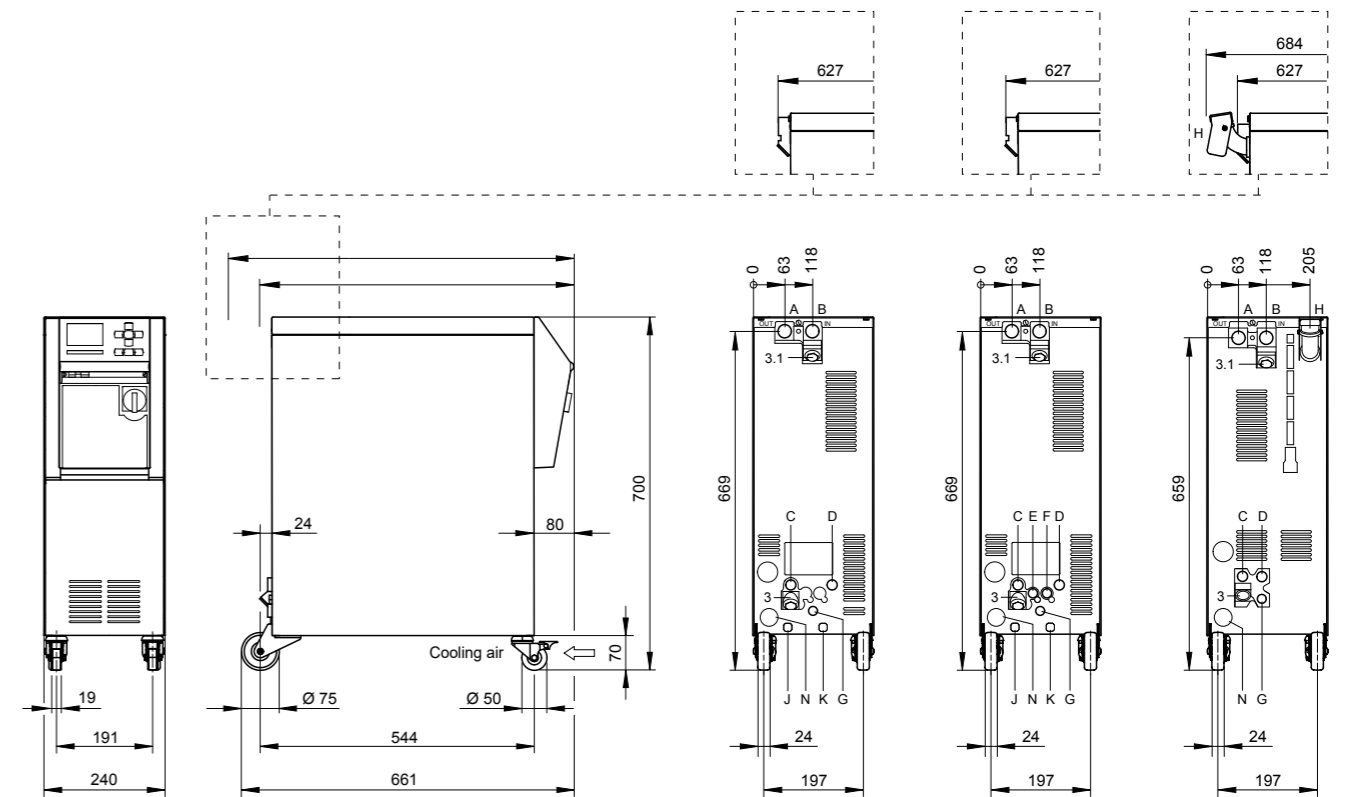
Note: 3D data available

Housing size 2, scale 1:15

HB-100X2

HB-__Z2

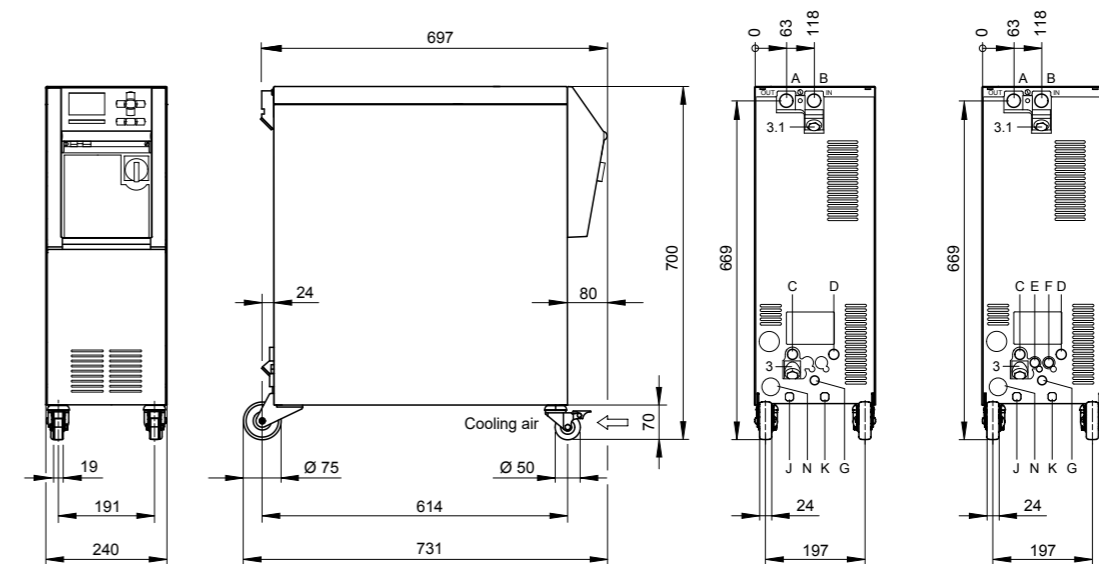
HB-200T2



Housing size 2L, scale 1:15

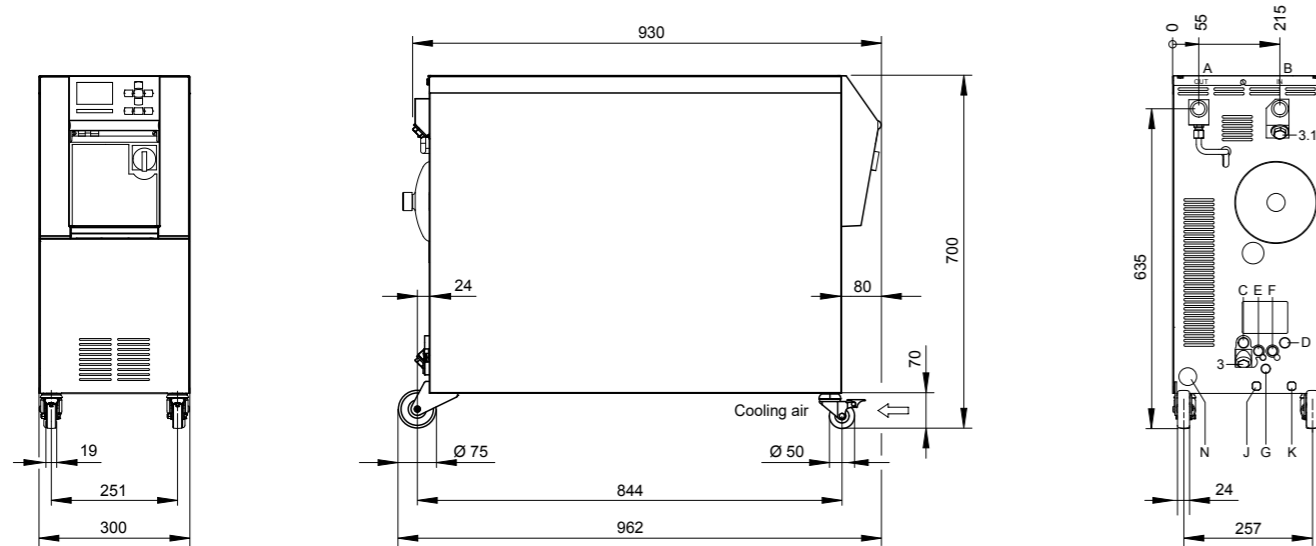
HB-100X2L

HB-__Z2L



Housing size 2B, scale 1:15

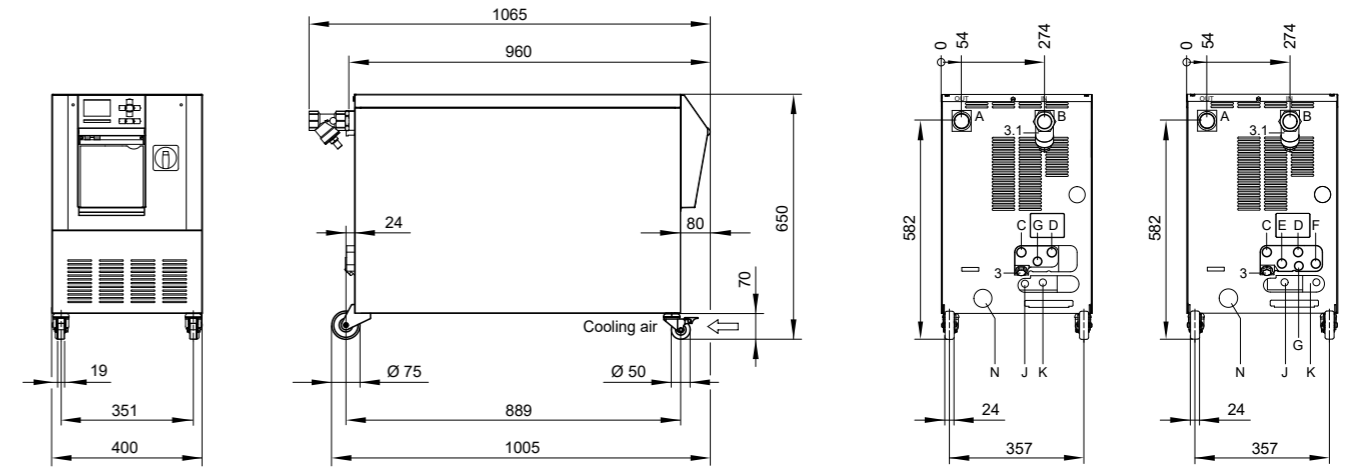
HB-__Z2B



Housing size 4, scale 1:20

HB-100X4

HB-__Z4

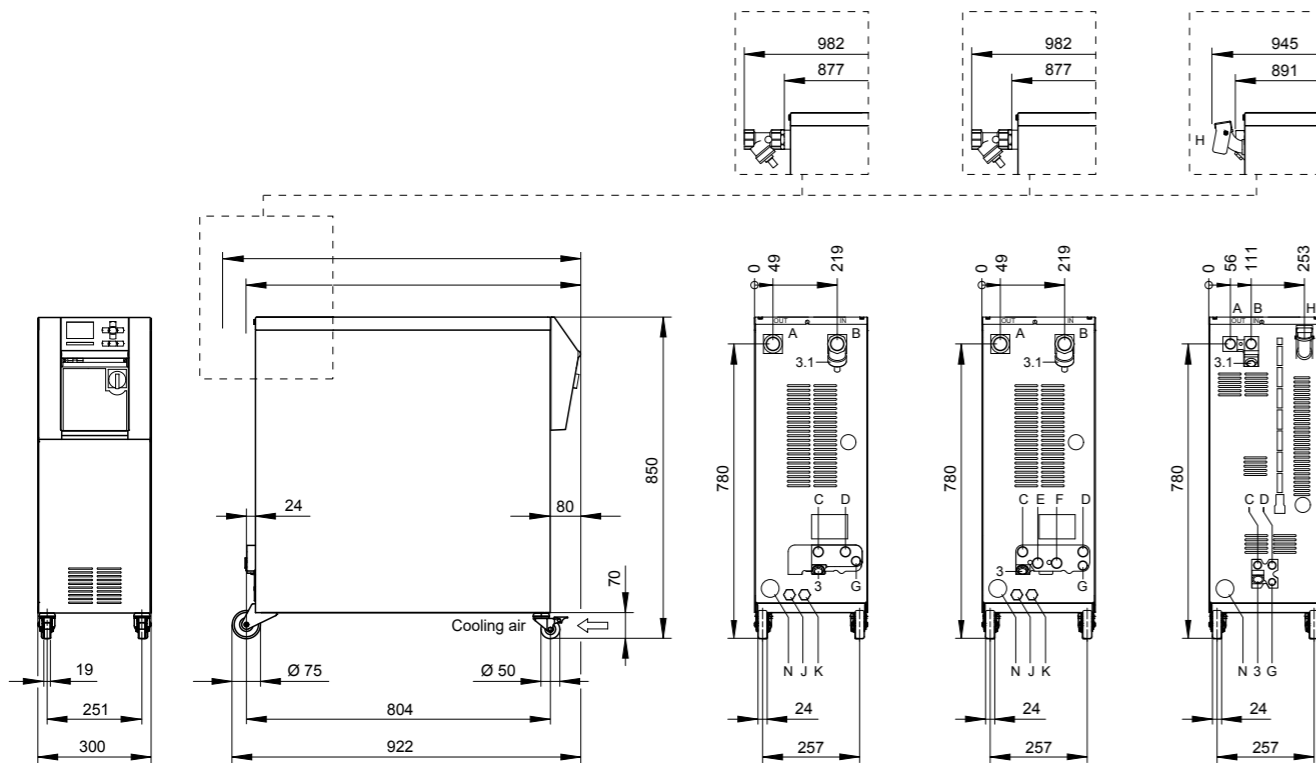


Housing size 3, scale 1:20

HB-100X3

HB-__Z3

HB-250T3



- A Main line
- B Return line
- C Cooling water inlet
- D Cooling water outlet
- E System water inlet
- F System water outlet
- G Drain
- H Filling (on oil units)
- J Compressed air inlet (ZG)
- K Compressed air outlet (ZG)
- N Mains connection cable

- 3 Filter cooling water inlet
- 3.1 Filter return line

Note: 3D data available

Accessories

Electrical and hydraulic connections and other accessories.



Knowledge (Knowledge Database)

An online portal with many useful documents available for free download, including operating manuals, 3D models, device software, and much more.



hb-therm.com

Website with information about the company, products, and services.



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