

# Safety instructions and quick guide




## Temperature control units Thermo-6 (Water)


EN (Translation of original instructions)

### 1 General

Read these instructions carefully before starting any work. The basic prerequisites for working safely are compliance with all safety instructions and prudent action by qualified personnel in order to avoid accidents that lead to personal injury / property damage.

Safety instructions are marked by symbols:

-  **Danger! / Warning! / Caution!**  
... indicates a hazardous situation which, if disregarded, may result in injury (Caution!) or serious or fatal injury (Warning!, Danger!).
-  **Danger due to electric shock!**  
... if disregarded, there is a risk of serious or fatal injury.
-  **Hot surface!**  
... if disregarded, there is a danger of mild to severe burns.

-  **Attention!**  
... indicates a potentially hazardous situation which, if disregarded, may result in property damage.

Make sure that these instructions are accessible at all times in the immediate vicinity of the unit.














Further instruction information is available via the help system on the unit, and in detail via the «e-cockpit» app or <http://knowledge.hb-therm.eu>. If you have any questions or if anything is unclear, please contact your country representative (see type plate) or our customer service [www.hb-therm.com](http://www.hb-therm.com).

### 1.1 Designated use

The temperature control unit is used to heat or cool a connected consumer (e.g. mould) to a specified temperature by means of a heat transfer medium (water) and to maintain this temperature. The unit is designed and constructed exclusively for the specified values in accordance with its type plate.






Claims of any kind due to improper use are excluded.

### 1.2 General safety instructions

-  Observe local, legal and company safety regulations and requirements.
-  Always wear the legally and operationally prescribed protective equipment for the respective work.
-  Operating materials can reach high temperatures and high pressures during operation and cause burns on contact.
-  Do not touch hot surfaces without protective gloves.
-  Regularly check the entire system for leaks or damage. Check the hose lines and screw connections for tightness. Remedy any defects immediately.
-  Always keep these instructions and all information on the unit clearly legible. Replace damaged or illegible information immediately.
-  Never override safety devices.
-  In the event of uncontrolled faults, set the main switch to the **O** position to trigger an emergency stop.
-  Disconnect the unit from the power supply when opening it. Secure the disconnection against switching on. Owing to charged capacitors, wait 5 minutes after switching off the power supply to work on the frequency converter.
-  Carry out the requested maintenance work. Maintenance work may only be carried out by qualified personnel.
-  Cool down, depressurise and switch off the unit before carrying out maintenance, repair or cleaning work. Check that it is pressure-free.
-  Maintenance work on the magnetic coupling of the pump is prohibited for people wearing a pacemaker.
-  Only use original spare parts from the manufacturer.

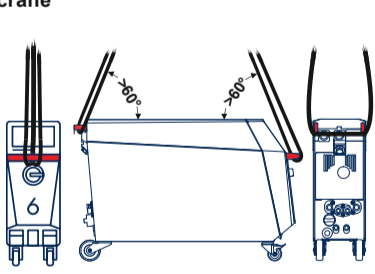
### 2 Transport and packaging

Check the delivery immediately on receipt for completeness and for any transport damage.





-  Transporting, crane and lifting equipment must be suitable and operated by qualified personnel.
-  For transportation purposes, the unit must be completely empty (cooling and system circuit).
-  For careful handling and in-plant transport, observe the symbols and instructions on the packaging.
-  To protect the unit, do not remove the packaging until shortly before installation.
-  When shipping a unit, use only the original or equivalent packaging. Only transport the unit upright.

### 2.1 Procedure for carrying by crane

1. Pull out the lifting device at the rear of the unit.
2. Attach lifting straps to the lifting device and to the front handle.




### 3 Installation


-  Electrical installation and initial commissioning must be carried out by qualified electricians.
-  Hydraulic installation and initial commissioning must be carried out by hydraulics specialists.
-  To protect the entire system, the guide values for water quality must be observed. Detailed information is available at <http://knowledge.hb-therm.eu>.
-  Remove the protective film from the display.


### 3.1 Installation conditions


Unit location	water-protected indoor area sufficiently good ventilation
Max. installation altitude	3000 m above sea level
Installation area	horizontal, stable and low-vibration surface
Permissible ambient temperature	5–40 °C
Relative humidity	35–85 % RH (non-condensing)
Main switch and emergency stop	Access at any time
Secure unit	Lock the brake on the front castors. Secure units on elevations to prevent them from falling.
External cables	Cables must not touch hydraulic lines or parts whose surface temperatures are above 50 °C.

### 3.2 Connections

 Use only suitable pressure- and temperature-resistant connections, screw connections and hose lines.




 Use assembly pastes for all screw connections, as these tend to seize up (especially stainless steel on stainless steel).

 The use of a type B residual current device (RCD) is recommended. A type A RCD is not suitable as the unit is equipped with a frequency converter. The leakage current is a maximum of 5 mA per unit.


 The heating capacity is applicable to mains voltage (220 V, 400 V, 460 V) with internal heating capacity limitation, and it changes within the specified voltage range by a maximum of  $\pm 10\%$ .

Main line, return line	Thread	G $\frac{3}{4}$
	Resistance	$p_{\max}$ (see type plate), $\vartheta = 20 + \vartheta_{\max}$ (see type plate)
Cooling water, separate system water	Thread	Cooling <b>A2</b> : G $\frac{3}{4}$ (cooling water) Cooling <b>B2</b> : G $\frac{1}{2}$ (cooling water) G $\frac{1}{4}$ (separate system water)
	Pressure	$p = 2\text{--}5$ bar
	Resistance	$p = 10$ bar, $\vartheta = 100^\circ\text{C}$
Compressed air ( <b>ZG</b> )	Thread	G $\frac{3}{4}$
	Pressure	$p = 2\text{--}8$ bar
	Resistance	$p = 10$ bar, $\vartheta = 100^\circ\text{C}$
Electrical mains connection	Mains voltage $U$ (see type plate)	
	Maximum pre-fuse $I_{\max}$ (see type plate)	


### 3.3 Procedure



1. Connect the cooling water inlet  and outlet  to the cooling water supply.
2. Connect the main line (OUT) and return line (IN) to the mould circuit.
3. Optionally connect the system water inlet (S1) and outlet (S2) to a separate system water supply.
4. Connect the compressed air inlet (AIR IN) to the compressed air supply and the outlet (AIR OUT) to a pressure-free tank or discharge water outlet (**ZG**).
5. Connect to the electrical mains.
6. Connect the optional OPC UA data interface.
7. Connect the optional HB data interface.
8. Connect the optional external control (**ZB**).
9. Connect the optional external sensor (**ZE**).  
→ Press the menu button  → press 'Setting' → press 'External sensor' → press 'External sensor type' and select type

### 4 Commissioning

 When initially starting-up, all electrical connections must be checked.

#### 4.1 Main switch and emergency stop

 Before switching on again after an emergency stop, make sure that the cause of the emergency stop has been eliminated and all safety devices are functioning.


 As a rule, switch the unit off using the On/Off button  and only in an emergency use the main switch.


The main switch switches the power supply in the unit to all poles and is also an emergency stop switch. In position I (mains ON), the unit initialisation starts and during the initial start-up, the setup-assistent starts automatically. «Ready to operate» appears on the display.

After an emergency stop due to a hazardous situation, the following applies:

1. Disconnect the unit from the power supply. Secure the disconnection against switching on.
2. Follow local and company safety instructions and emergency procedures.
3. It is essential to engage qualified personnel for troubleshooting and functional testing.

#### 4.2 Switching On/Off

By pressing the On/Off button , the unit starts in the defined operating mode. If necessary, it is filled and vented.

The unit switches off by pressing the On/Off button  again. If necessary, it is cooled, emptied and depressurised.

#### 4.3 Changing the set temperature

The input keyboard is displayed by pressing 'Set temperature' on the basic screen. Enter the desired set value and confirm with Enter.



Go to Knowledge home page for general information.

→ <http://hb.click/6-Knowledge-EN>

Type of unit power cable	CE		H07RN-F/H07BQ-F	
	UL/CSA		SO/SOW/SOOW	
Cross-section Mains cable to unit	$U = 400/460$ V	8 kW	4x2,5 mm <sup>2</sup>	4xAWG 12
		16 kW	4x6,0 mm <sup>2</sup>	4xAWG 10
	$U = 220$ V	8 kW	4x6,0 mm <sup>2</sup>	4xAWG 10
		16 kW	4x16,0 mm <sup>2</sup>	4xAWG 4
Rated short-circuit current	6 kA			
Power grid	TN (power grid with protective conductor)			
Overvoltage category	II			
Degree of contamination	2			

The type plate is located on the rear panel of the unit and on the inside of the door.

The following information can be taken from the type plate:

- Type
- Unit number
- Performance values
- Additional
- Connected values
- Year of manufacture
- Protection class
- Manufacturer
- Service point