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## Industrial Heating / Cooling Systems

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### Details for the determination of an optimal temperature control system

Company:	
Department	
Name:	
Adress:	
Phone no:	
Fax no:	
e-mail:	

#### 1. Please give a short description of the application

##### Place of installation?

▷ outside

▷ inside

▷ others  \_\_\_\_\_

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##### Available energies for the temperatur control process?

▷ electricity

▷ steam

▷ central supply hot water

▷ central supply thermal oil

▷ cooling water

▷ cooling brine

▷ others \_\_\_\_\_

What do you like to control?▷ similar to water ▷ similar to oil 

▷ others \_\_\_\_\_

Characteristics of reactor or equipment where the temperature has to be controlled?

type of reactor:	material of reactor:	filling volume:	agitator:
double jacket <input type="checkbox"/>	steel <input type="checkbox"/>	liter	yes <input type="checkbox"/>
half-pipe coil <input type="checkbox"/>	glas <input type="checkbox"/>	heat transfer surface	no <input type="checkbox"/>
other <input type="checkbox"/>	other <input type="checkbox"/>	m <sup>2</sup>	

**2. Temperatures that have to be realised by the temperature control system?**T max \_\_\_\_\_ Outflow temperature T min \_\_\_\_\_ Product temperature **3. Which heat transfer fluid can / shall be used?**Water Water/Glycol Thermal oil  special requirements \_\_\_\_\_others  \_\_\_\_\_

**4. Heating / cooling capacity minimum required for the process / heating cooling system?**

▷ Heating capacity \_\_\_\_\_ kW

▷ Cooling capacity \_\_\_\_\_ kW at \_\_\_\_\_ °C temperature

if no answer possible:

▷ mass of product		kg
▷ weight of reactor		kg
▷ volume of heat transfer circuit		liter
▷ requested time for heating		hours
▷ requested time for cooling down		hours

**5. Volume flow and pressure requested for the pump (minimum)?**

▷ V \_\_\_\_\_

▷ P \_\_\_\_\_

if no answer is possible:

temperatur difference between outlet and inlet temperature? \_\_\_\_\_ °C

**6. Pump that can/shall be used?**▷ mechanical seal ▷ magnetic coupling ▷ canned motor ▷ others  \_\_\_\_\_

**7. Which power supply is available?**

- ▷ 400 V/3/PE/50 Hz
- ▷ 500 V/3/PE/50Hz
- ▷ others  \_\_\_\_\_

**8. Which electrical degree of protection is required?**

- ▷ IP 54
- ▷ Eex de [ib] II C T3
- ▷ others  \_\_\_\_\_

**9. Which control is requested?**

- ▷ outflow temperatur control
- ▷ product temperature control
- ▷ others  \_\_\_\_\_

**10. Which electrical interfaces are requested?**

- ▷ temperature setpoint given externally
- ▷ read-out the temperature values / which signals are requested?
- ▷ 10mV / °C (0 mV == °C)
- ▷ 0...10V = \_\_\_\_\_ °C until \_\_\_\_\_ °C
- ▷ 4...20mA = \_\_\_\_\_ °C until \_\_\_\_\_ °C
- ▷ others  \_\_\_\_\_

Please send the answer to:

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