

FOR THE PLANNING OF ELECTRIC HEATERS

Company:	<input type="text"/>	Project:	<input type="text"/>
Inquiry no.:	<input type="text"/>	Plant:	<input type="text"/>
Cont. pers.:	<input type="text"/>	Phone:	<input type="text"/>
eMail:	<input type="text"/>	Fax:	<input type="text"/>

1.00 Process Data

1.01 Medium *)	[-]	<input type="text"/>
1.02 Flow Rate *)	[kg/s]	<input type="text"/> (minimum)
		<input type="text"/> (maximum)
		<input type="text"/> (constant)
1.03 Temperature *)	[°C]	<input type="text"/> (inlet)
		<input type="text"/> (outlet)
1.04 Pressure at inlet *)	[bar]	<input type="text"/>
1.05 Permitted heating element sheath temperature	[°C]	<input type="text"/>
1.06 Permitted loss of pressure *)	[bar]	<input type="text"/>
1.07 Heating power (heat requirements)	[kW]	<input type="text"/>

2.00 Properties of Fluid

2.01 Specific heating capacity at $T_{in} / T_{out} / T_{out+300^{\circ}C}$	[kJ/kg K]	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.02 Dynamic viscosity at $T_{in} / T_{out} / T_{out+300^{\circ}C}$	[Pas]	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.03 Thermal conductivity at $T_{in} / T_{out} / T_{out+300^{\circ}C}$	[W/m K]	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.04 Density at $T_{in} / T_{out} / T_{out+300^{\circ}C}$	[kg/m ³]	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.05 Molecular weight	[kg/mol]	<input type="text"/>		

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3.00 Design Data

- 3.01** Standard [-] calculation manufacture inspection
- 3.02** Pressure [bar]
- 3.03** Temperature [°C]
- 3.04** Corrosion allowance [mm]
- 3.05** Inspection [-] pre-inspection construction and pressure inspection

4.00 Nozzle Table

- 4.01** Inlet [DN/PN/standard]
- 4.02** Outlet [DN/PN/standard]
- 4.03** Vent [DN/PN/standard]
- 4.04** Drain [DN/PN/standard]
- 4.05** Others [DN/PN/standard]
- 4.06** Others [DN/PN/standard]

5.00 Material of Construction

- 5.01** Jacket pipe (pressure vessel)
- 5.02** Flanges
- 5.03** Tubesheet
- 5.04** Bolts and nuts
- 5.05** Gasket
- 5.06** Heating element sheath

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6.00 Electrical Data

6.01 Voltage/frequency *)

[V/Hz] /

6.02 Installation *)

in hazardous area

in non-hazardous area

6.03 Hazardous area (zone) *)

0 1 2

6.04 Explosion / gas group

IIA IIB IIC

6.05 Temperature class

T1 T2 T3 T4 T5 T6

6.06 Explosion protection

6.07 Degree of protection (IP)

7.00 Temperature Sensors

7.01 Temperature sensor

thermoelement Pt 100 thermostate

7.02 Measuring of heating element sheath temp. (limiter)

7.03 Measuring of fluid temperature (controller)

8.00 Control Cabinet

8.01 Control signal from PLS

contact 4-20mA 0-10V others

8.02 Stepwise control (number of switching groups)

8.03 Thyristor control (stepless control)

Remarks:

*) This is the minimum data we need for a detailed offer.