Questionnaire for calculation of a primary differential pressure device to DIN EN ISO 5167-1

SIEMENS

Tag (e.g. measuring-point number): _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Company: _ _ _ _ _ _ _ _ _ _ _ _ _

Measured medium: _

Design fluid acc. to PED ☐ **Group 1** ☐ **Group 2**

Design pressure (PS): _ _ _ _ _ ☐ **bar** ☐ **psi;** **Design temperature (TS):** _ _ _ _ _ _ ☐ **°C** ☐ **°F**

Only for liquids: **steam pressure** _____ ☐ **bar** ☐ **psi** **at TS**

When manufacturing without the pressure equipment directive, it is essential to specify the reason:

☐ Use outside the scope of the pressure equipment directive

☐ Customer with users' testing agency

☐ Liquid
☐ Vapor ⇒ ☐ overheated; ☐ saturated ρ_1; ☐ saturated t_1; ☐ steam
☐ Gas ⇒ ☐ dry ☐ moist

Absolute pressure p_1: _____ ☐ **bar** ☐ **psi**   Design pressure (PS):_____ ☐ bar ☐ psi
(gauge pressure on upstream side plus atmospheric pressure at location)

Operating temperature t_1: _____ ☐ **°C** ☐ **°F**   Design temperature (TS): _____ ☐ °C ☐ °F

Density: _____ ☐ **kg/m³** ☐ **.......**   ☐ standard cond. ☐ operating cond.

Dynamic viscosity: _____ ☐ **Pa · s** ☐ **cp**

Boiling pressure (p_1) : _____ ☐ **bar** ☐ **psi**
Boiling temperature (t_1) :_____ ☐ **°C** ☐ **°F**
Isentropic exponent (only for gas and vapor): _____

Specific gas constant Z_n: _____ Z_1: _____   (without data: $Z_{n,1} = 1$)

Relative humidity: φ _____ %

Material of primary device: _____   Material no.: _ _ _ _ _ _ _ _ _ _ _ _

Material of pipeline: _____   Material no.: _ _ _ _ _ _ _ _ _ _ _ _

Pipe roughness: _____   ☐ **mm** ☐ Inch

Internal pipe diameter: _____   ☐ **mm** ☐ Inch

Primary device: Kind of tapping/kind of device
☐ Orifice ⇒ ☐ Corner tap ☐ D, D/2 tap ☐ Flange tap ☐ Segmental dev.
☐ Nozzle ⇒ ☐ ISA 1932 ☐ Long radius ☐ Quarter circle ☐ Venturi
☐ Venturi tube ⇒ ☐ Raw cast ☐ Machined ☐ Sheet welded
☐ other ⇒ _____ C: _____ ; ε:_____

Calculation of: ☐ **"d";** ☐ diff. pressure; ☐ flow

Design: ☐ **2/3 max. flow;** ☐ max. flow

Max. flow: _____   ☐ q_m ☐ kg/h ☐ .... (mass flow for all media)
  ☐ q_v ☐ m³/h ☐ .... (volume flow for liquids and gases)
  ☐ q_n ☐ m³/h ☐ .... (volume flow for gases at standard cond.)

Differential pressure: _____ ☐ **mbar** ☐ **........**

Orifice hole "d": _____ ☐ **mm** ☐ Inch

Max. permanent pressure loss: _____ ☐ **mbar** ☐ **........**

Uncertainties to be allowed for calculation in % (without data: 0 %)
Operating temp. _____ ; abs. pressure _____ ; diff. pressure_____ ;
operating density _____ ; additional uncer. _____

For clarification of any questions:
Name: _____ ☎ _____ **Fax:** _____

Note: The delivery time will be delayed if the data are incomplete.