

Differential Pressure Calculation for SDF-Sensors

Date February,02 2012
 Customer Airlitec
 Project D2012RH0211
 Tag-No. A 3500
 Ref. procedure

Pipe and sensor data

Cross section shape round
 SDF sensor type no. SDF22
 Internal diameter (cold) 250 mm
 Wall thickness 6.3 mm
 Insulation 0 mm
 Pipe material Carbon steel
 k-factor (cold) 0.6522

Calculation base

Medium Air
 Calculation according to standard volume flow statement
 Density calculation procedure Ideal gas

Process and state quantities

				Units
Standard density	1.2930			kg/Nm ³
Standard temperature	0.0			°C
Temperature	20	20	20	°C
Absolute pressure	130	130	130	kPa abs.
Kinem. viscosity	1.2e-05	1.2e-05	1.2e-05	m ² /s
Standard volume flow	3500			Nm ³ /h
Actual density	1.5457	1.5457	1.5457	kg/m ³
k-factor (warm)	0.6522	0.6522	0.6522	
Internal diameter (warm)	250.0	250.0	250.0	mm
Expansion factor	0.9996	1.0000	1.0000	
flow velocity	16.57	0.00	0.00	m/s
Reynoldsnumber	350057	0	0	

Results

Calculated diff.pressure	4.99	0.00	0.00	mbar
Remaining pressure drop	0.58	0.00	0.00	mbar