

# Differential Pressure Calculation for SDF-Sensors

Date October,16 2012  
 Customer Airlitec / Mr. Houllier  
 Project  
 Tag-No.  
 Ref. procedure

## Pipe and sensor data

Cross section shape round  
 SDF sensor type no. SDF22  
 Internal diameter (cold) 159.3 mm  
 Wall thickness 4.5 mm  
 Insulation 100 mm  
 Pipe material 316SS  
 k-factor (cold) 0.6239

## Calculation base

Medium Steam  
 Calculation acc. to mass flow statement

## Process and state quantities

				Units
Temperature	150,5	150	150,5	°C
Absolute pressure	482,51	600	482,51	kPa abs.
Kinem. viscosity	5.4e-06	2.0e-07	5.4e-06	m <sup>2</sup> /s
Mass flow	4500			kg/h
Actual density	2.5800	-9999.9999	2.5800	kg/m <sup>3</sup>
k-factor (warm)	0.6239	0.6239	0.6239	
Internal diameter (warm)	159.7	159.7	159.7	mm
Expansion factor	0.9997	1.0000	1.0000	
flow velocity	24.20	0.00	0.00	m/s
Reynoldsnumber	706616	0	0	

## Results

<b>Calculated diff.pressure</b>	<b>19.40</b>	<b>0.00</b>	<b>0.00</b>	<b>mbar</b>
Remaining pressure drop	3.55	0.00	0.00	mbar