

# Differential Pressure Calculation for SDF-Sensors

Date September,13 2012  
 Customer Airlitec Mr. Houllier  
 Project D2012RH0965 cel  
 Tag-No.  
 Ref. procedure AN120629

## Pipe and sensor data

Cross section shape round  
 SDF sensor type no. SDF22  
 Internal diameter (cold) 750 mm  
 Wall thickness 8.8 mm  
 Insulation 0 mm  
 Pipe material Carbon steel  
 k-factor (cold) 0.6664

## Calculation base

Medium Air  
 Calculation acc. to aktual volume flow

## Process and state quantities

				Units
Temperature	15	15	15	°C
Absolute pressure	105,15	105,15	105,15	kPa abs.
Kinem. viscosity	1.4e-05	1.4e-05	1.4e-05	m2/s
Actual volume flow	30000			m3/h
Actual density	1.2720	1.2720	1.2720	kg/m3
k-factor (warm)	0.6664	0.6664	0.6664	
Internal diameter (warm)	750.0	750.0	750.0	mm
Expansion factor	0.9993	1.0000	1.0000	
flow velocity	18.87	0.00	0.00	m/s
Reynoldsnumber	995523	0	0	

## Results

<b>Calculated diff.pressure</b>	<b>5.10</b>	<b>0.00</b>	<b>0.00</b>	<b>mbar</b>
Remaining pressure drop	0.20	0.00	0.00	mbar