

# Differential Pressure Calculation for SDF-Sensors

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 Project  
 Tag-No.  
 Ref. procedure

## Pipe and sensor data

Cross section shape round  
 SDF sensor type no. SDF22  
 Internal diameter (cold) 592.4 mm  
 Wall thickness 8.8 mm  
 Insulation 0 mm  
 Pipe material 316SS  
 k-factor (cold) 0.6655

## Calculation base

Medium CO2 1,977 kg/Nm<sup>3</sup>  
 Calculation acc. to mass flow statement

## Process and state quantities

				Units
Temperature		45	100	°C
Absolute pressure		136,3	151,3	kPa abs.
Kinem. viscosity	0.0e+00	0.0e+00	0.0e+00	m <sup>2</sup> /s
Mass flow		40000	40000	kg/h
Actual density		2.2831	2.1606	kg/m <sup>3</sup>
k-factor (warm)	0.6655	0.6655	0.6655	
Internal diameter (warm)	592.2	592.7	593.2	mm
Expansion factor	1.0000	0.9992	0.9992	
flow velocity	0.00	17.64	18.61	m/s
Reynoldsnumber	0	0	0	

## Results

<b>Calculated diff.pressure</b>	<b>0.00</b>	<b>8.03</b>	<b>8.45</b>	<b>mbar</b>
Remaining pressure drop	0.00	0.39	0.42	mbar