

Calculation of sensor surface and insertion depth

E (install length) when using seamless steel tubes for DIN2448					E for probe 250 [mm]	probe surface A [mm ²]	E for probe 120 [mm]	probe surface A [mm ²]	max. volume flow at 60m/s [Nm ³ /h]
nominal diameter	outer-Ø [mm]	inner-Ø D [mm]	wall S [mm]	x * [mm]					
DN50	60,3	54,5	2,9	6,3	235	45	105	45	494
DN65	76,1	70,3	2,9	8,1	234	52	104	52	827
DN80	88,9	82,5	3,2	9,5	232	57	102	57	1142
DN100	114,3	107,1	3,6	12,3	229	69	99	69	1930
DN125	139,7	131,7	4,0	15,1	225	81	--	--	2924
DN150	165,1	156,1	4,5	18,0	222	115	--	--	4108
DN200	219,1	206,4	6,3	23,7	214	184	--	--	7187
DN250	273,0	260,4	6,3	30,0	208	259	--	--	11447
DN300	323,9	309,7	7,1	35,6	202	327	--	--	16200

* Measure x shows the Aichelen point (position of the averaged flow velocity) at turbulent flow.

For calculating the following dimensions must be known:

- D** = inner pipe diameter [mm]
- S** = wall thickness of the pipe [mm]
- L** = sensor length [mm]

For the Aichelen point is valid:

$$Z = (0,115 \times D) - 15$$

inner length of the sensor housing [mm]

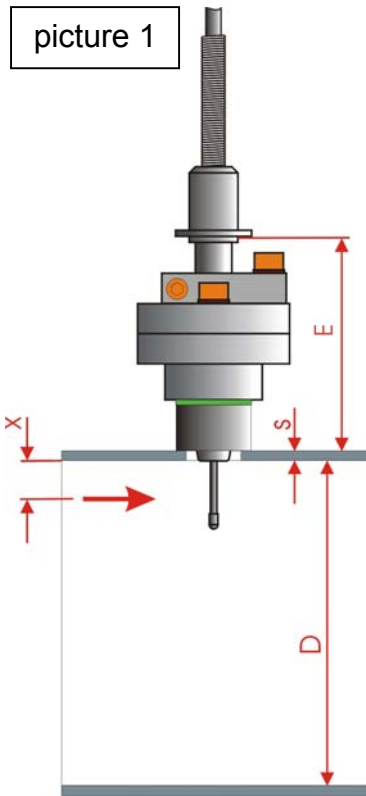
if $Z \geq 0$ then $A = 80 + (12 \times Z)$ surface of housing and both sensors [mm²]
 if $Z < 0$ then $A = 80 + (4 \times Z)$ surface only of both sensors [mm²]

$$E = L - Z - S - 20$$

install length according to the drawing [mm]



With [http:// Homepage\softflow.html\englisch\mounting.html](http://Homepage\softflow.html\englisch\mounting.html) the calculation can be realized automatically.



Description of the dimesions with samples:
 [picture 1] 120mm probe in DN100
 [picture 2] 250mm probe in DN300
 [picture 3] 250mm probe in DN300 with ball valve

D = inner pipe diameter
 S = wall thickness of the pipe
 E = install length
 X = Aichelen point

