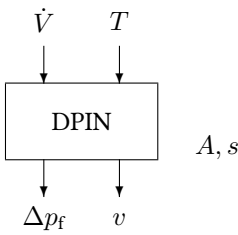


Block DPIN

The DPIN block calculates the pressure drop from free space into a channel or tube.



Name	DPIN
Function	st0019
Inputs	2
Outputs	2
Parameters	2
Strings	0
Group	S

Inputs

- 1

Volume flow $\dot{V}$ / $\text{m}^3 \text{h}^{-1}$
- 2

Air temperature T / $^{\circ}\text{C}$

Outputs

- 1

Pressure drop Δp_f / Pa
- 2

Flow velocity v / m s^{-1}

Parameters

- 1

Channel area A / m^2
- 2

Edge sharpness s

0

Sharp edge

1

Broken edge

2

Round edge

3

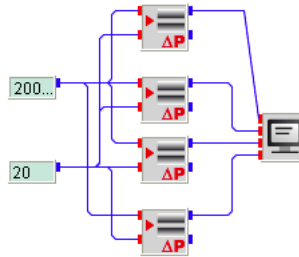
Smooth, round edge

Strings

None

Description The ζ value of sharp-edged inlets is assumed to depend on the shape of the inlet only. For sharp edges ζ is set to 0.35, for broken edges $\zeta = 0.11$, round edges $\zeta = 0.01$, for smooth, round edges ζ is set to zero.

dpin.vseit



Four **DPIN** blocks with different edge sharpnesses are simulated at an air volume flow of 20 000 m³/h at 20 °C as defined through two **CONST** blocks.

The **SCREEN** block displays the resulting pressure drops in Pascal.

6.41756 2.01695 0.18336 0.00183