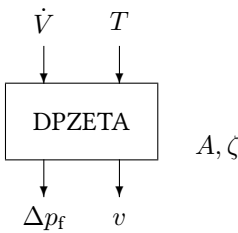


Block DPZETA

The DPZETA block calculates the pressure drop for a given zeta value.



Name	DPZETA
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

Zeta value ζ

Strings

None

Description For a given ζ value the pressure drop is given by

$$\Delta p_f = \zeta \frac{\rho_{\text{air}}}{2v^2}$$

where v is the flow velocity.

dpzeta.vseit



The **DPZETA** block calculates the pressure drop for a channel with an area of 1 m^2 and a zeta value of 0.3. The volume flow is set to $10\,000 \text{ m}^3/\text{h}$ for air at a temperature of 20°C as set by two **CONST** blocks.

The **SCREEN** block displays the pressure drop in Pa and the flow velocity in m/s..

1.3751915 2.7777777