

# SINETZ

Steady State Calculation of Flow Distribution, Pressure Drop and Heat Loss in Branched and Intermeshed Piping Networks for compressible and incompressible media

SINETZfluid - Flow Distribution and Pressure Drop of incompressible Media

## SINETZ Update 4.1 February 2021 New Features and Improvements

The program system SINETZ with its additional modules is checked and modified continuously within the scope of the maintenance agreement.

The program release SINETZ 4.1 replaces the SINETZ 4.0/2019.

This document shows the improvements and enhancements of the program release SINETZ 4.1.

### Overview

- Extension of input options for pumps
- New components 3-way/4-way valve
- The tooltip window can be customized individually
- An isometric grid can be selected for 2D models
- The select function has been extended
- In 2D models, "bridges" are displayed at points where two segments cross but are not connected
- Difference results of any two nodes can be displayed
- SINETZ 4.1 supports Software license keys (SL License) without USB key

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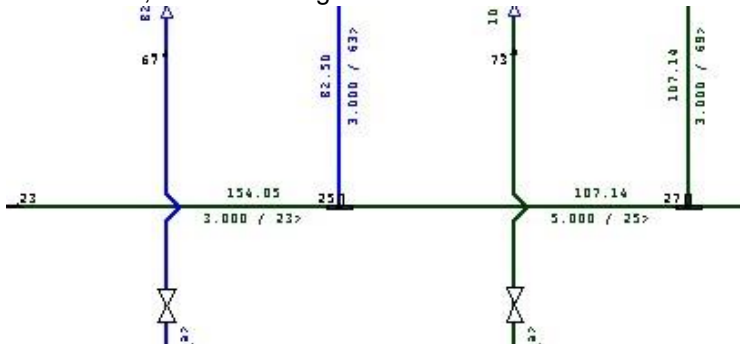
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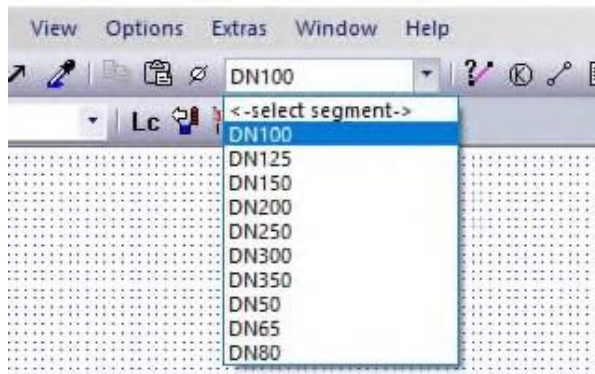
## SINETZ 4.1, Changes and Improvements, detailed

### SINETZ user interface

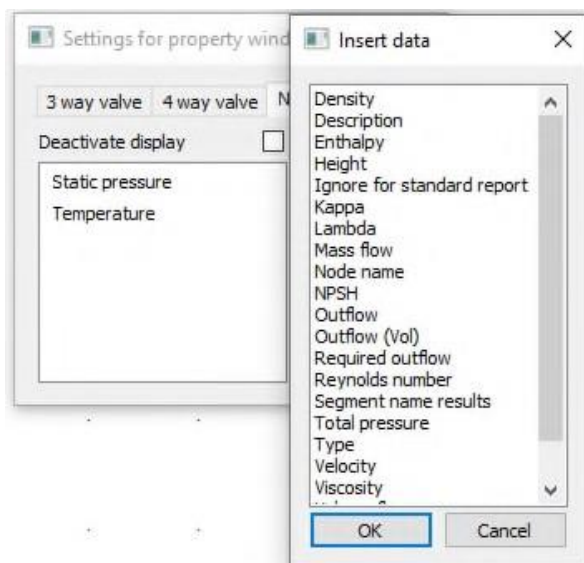
- For 2D models an isometric grid can be displayed
- In 2D mode, where two segments cross but are not connected, "bridges" are now displayed



- The select function has been extended to include "select lines". A "line" consists of connected segments without branches. This allows you to quickly mark parts of a model.
- Dimension selection: there is now an additional entry in the toolbar to select a section whose dimensions are to be set as current dimensions



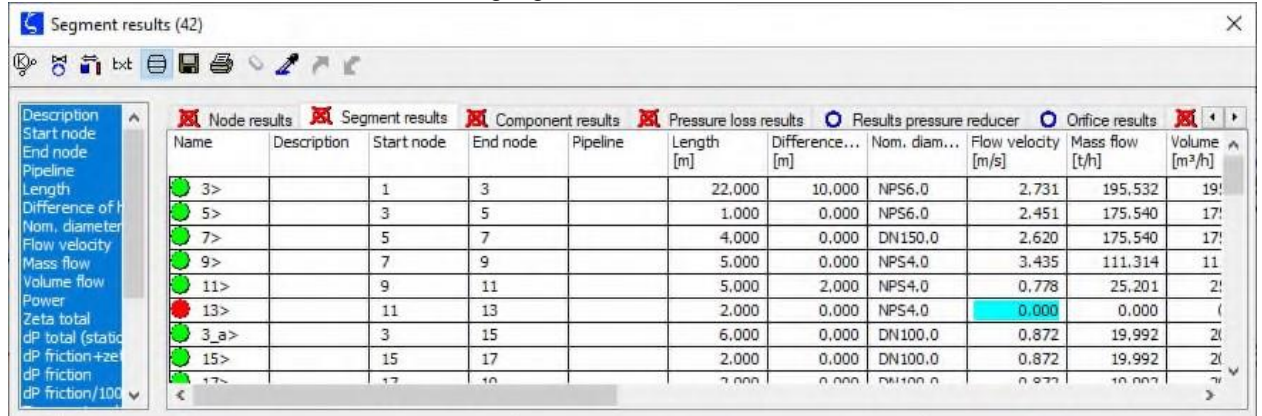
- When pasting system parts from the clipboard, nodes can now be inserted into the existing model
- The font sizes of the additional texts are no longer scaled with the model
- The tooltip window can be customized individually



- new key commands for scaling the model were added
  - with [Shift] + [+] the model is enlarged
  - with [Shift] + [-] the model is scaled down
- A new function for subsequent scaling of a model on a background image has been implemented (Edit - Scale by node positions)

### List function

- Table cells with critical results are now highlighted in color

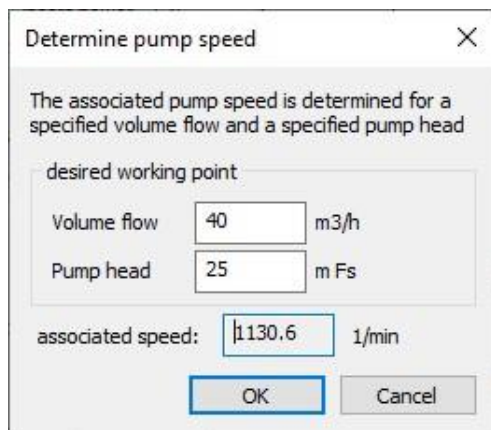


Name	Description	Start node	End node	Pipeline	Length [m]	Difference... [m]	Nom. diam...	Flow velocity [m/s]	Mass flow [t/h]	Volume [m³/h]
3>		1	3		22,000	10,000	NPS6.0	2.731	195.532	19!
5>		3	5		1,000	0,000	NPS6.0	2.451	175.540	17!
7>		5	7		4,000	0,000	DN150.0	2.620	175.540	17!
9>		7	9		5,000	0,000	NPS4.0	3.435	111.314	11!
11>		9	11		5,000	2,000	NPS4.0	0.778	25.201	2!
13>		11	13		2,000	0,000	NPS4.0	0.000	0.000	(
3_a>		3	15		6,000	0,000	DN100.0	0.872	19.992	2!
15>		15	17		2,000	0,000	DN100.0	0.872	19.992	2!
17>		17	19		2,000	0,000	DN100.0	0.872	19.992	2!

- The listing of pressure loss components has been expanded to include the associated mass flow rate, the associated density, and the resulting zeta value
- Segment results: the volume flow is now additionally displayed

### Components

- New symbols for 3-way/4-way valves have been added
- Pumps
  - the characteristic curve can be pasted from the clipboard via CTRL+V. This allows it to be defined in Excel, for example.
  - the input of a characteristic curve for power and efficiency is now optionally possible
  - For speed-controlled pumps, the required pump speed can be determined by specifying the desired operating point.



Determine pump speed

The associated pump speed is determined for a specified volume flow and a specified pump head

desired working point

Volume flow: 40 m³/h

Pump head: 25 m Fs

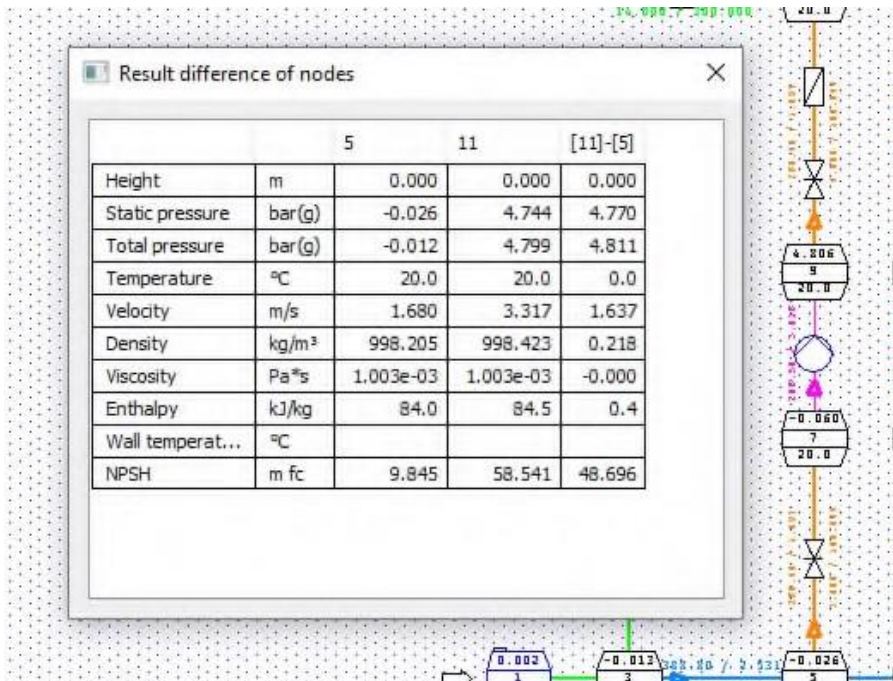
associated speed: 1130.6 1/min

OK Cancel

- Resistance and back pressure can now be specified for nozzles (sprinklers) as an alternative to the sprinkler constant

### Results representation

- Heat exchanger with determination of the required mass flow: the resulting zeta value is additionally displayed as result
- for control valves, the pressure loss is now also displayed in the results
- for temperature-dependent liquids, NPSH is now also displayed as a result
- The difference results of any two nodes can be displayed. Both nodes are clicked with the mouse, then their results and the difference results are displayed



### SL License key

- SINETZ 4.1 supports Software license keys (SL License) without USB key.
- SL Licenses are available for network licenses
- SL Licenses allows to „Borrow licenses“, I.E. taking a network license access/ user off the network for a specified time period
- For details please refer to the document *SINETZlicense* or contact the SINETZ sales team

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