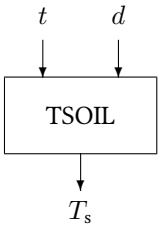
Block TSOIL

The TSOIL block calculates the undisturbed soil temperature according to the German VDI 4640





Name	TSOIL
Function	em0028
Inputs	2
Outputs	1
Parameters	7 . . . [10]
Strings	0 . . . [2]
Group	S

Inputs

1 Time t / s
2 Depth below ground d_T / m

Outputs

1 Undisturbed soil temperature T_{s0} / °C

Parameters

1 Input mode
  0 Read from file
  1 Enter values
  2 Select region after DIN 4710
2 Ground temperature phase delay δd / d
3 Gain factor
4 Heat capacity of the soil c_s / J kg^{-1} K^{-1}
5 Soil density ρ_s / kg m^{-3}
6 Heat conductivity of the soil λ / W m^{-1} K^{-1}
7 Number h of records to be skipped on the first call (file header, the default is $h = 0$)

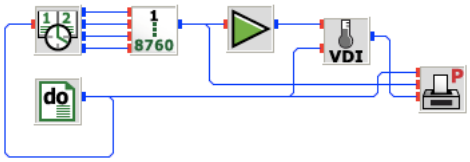
8 Annual mean temperature T_{rm} / °C
9 Maximum monthly mean temperature T_{max} / °C
10 Region select switch
- 0 Bremerhaven
- 1 Rostock
- 2 Hamburg
- 3 Potsdam
- 4 Essen
- 5 Bad Marienberg
- 6 Kassel
- 7 Braunlage
- 8 Chemnitz
- 9 Hof
- 10 Fichtelberg
- 11 Mannheim
- 12 Passau
- 13 Stötten
- 14 Garmisch-Partenkirchen

Strings

1 File name fn
2 Fortran Format

Remarks The final design of the block is not yet fixed.

tsoil.vseit



A DO block varies the depth below ground between zero and twenty meters in steps of five. The connected CLOCK block runs through the hours of the year 2010, converted to the hour of the year by the HOY block and multipled by a factor 3600 to yield the seconds of the year which are expected as input of the TSOIL block. The second input to the TSOIL block is the depth below ground which comes from the DO block.

The five curves for the soil temperature are plotted by a PLOTP block.

