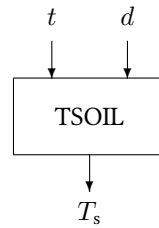


Block TSOIL

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 $h = 0$)

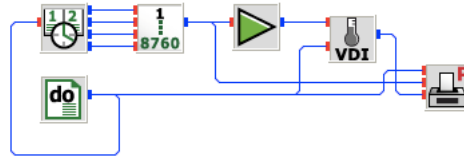
8 Annual mean temperature T_{rm} / °C
9 Maximum monthly mean temperature T_{max} / °C
10 Region select switch
 0 Bremerhaven
 1 Rostock
 2 Hamburg
 3 Potsdam
 4 Essen
 5 Bad Marienberg
 6 Kassel
 7 Braunlage
 8 Chemnitz
 9 Hof
 10 Fichtelberg
 11 Mannheim
 12 Passau
 13 Stötten
 14 Garmisch-Partenkirchen

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 multiplied 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 **PLOT** block.

