

Block FIT3PC

The FIT3PC block approximates the input data by a three-parameter model typically used for cooling demand calculations of buildings.



FIT3PC

Name	FIT3PC
Function	bs0031
Inputs	2
Outputs	4
Parameters	0
Strings	0
Group	I

Inputs

- 1 Temperature T_a / °C
- 2 Demand / kWh

Outputs

- 1 Cooling base load Q_{cb} / kWh
- 2 Cooling change-point temperature T_c / °C
- 3 Slope α_c / kWh K⁻¹
- 4 Regression coefficient r^2

Parameters

None

Strings

None

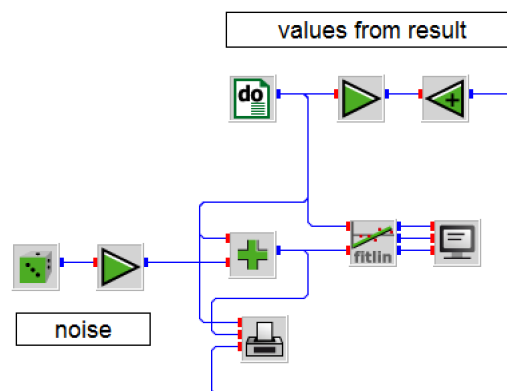
Description The blocks input data are approximated by the linear equation

$$Q_c = Q_{cb} + \alpha_c(T_a - T_c)^+$$

With the notation $(T_1 - T_2)^+$ where temperature differences are only accounted for if positive and zero otherwise The successors of this block are executed only at the end of the simulation run.

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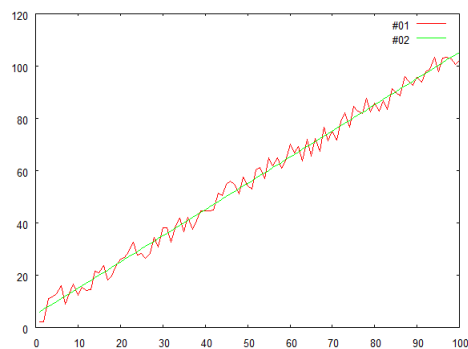
fitlin.vseit



A **DO** block delivers 100 clicks, i. e., counts from 1 to 100. A **RAN1** block generates one uniformly distributed random number for each step multiplied by 10 by a **GAIN** block. A **SUM** block adds the **DO** block's output and the output of the **GAIN** block giving the variable to be fitted as a function of the **DO** block's output by the **FITLIN** block. The outputs a , b , and r^2 are then displayed numerically by a **SCREEN** block.

4.8319 1.0039 0.9903

Assuming that the result is already known ($a = 4.8319$ and $b = 1.0039$) the linear equation $y' = a + bx$ is calculated. A **PLOT** block displays the data and the fit on screen.



Remarks The [FITLIN](#) block is a typical example for an I-block: Its successors are executed (once) only when a certain condition is fulfilled—here the end of the main simulation loop. Compare this behavior with a typical example for a T-block like block [FDIST](#), for example.