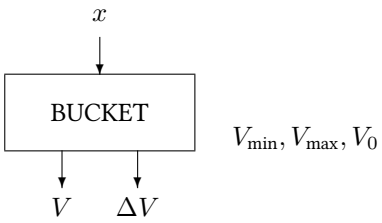
Block BUCKET

The BUCKET block cumulates its input signal within given limits.





Name	BUCKET
Function	se0016
Inputs	1
Outputs	2
Parameters	3
Strings	0
Group	S

Inputs

1 Any signal x, which is cumulated unless the contents V reaches or exceeds a predefined threshold

Outputs

1 Actual contents of bucket V
2 Actual overflow / deficit of bucket ΔV

Parameters

1 Minimum contents $V_{\min}$
2 Maximum contents $V_{\max}$
3 Initial contents V_0

Strings

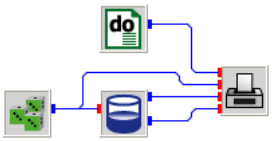
None

Description

The outputs $V_{t+\boxtimes t}$ and ΔV are calculated as

$$V_{t+\Delta t} = \begin{cases} V_{\text{min}} & \text{if} \quad V_t \leq V_{\text{min}} \\ V_t + x; & \text{if} \quad V_t + x < V_{\text{max}} \\ V_{max}; & \text{if} \quad V_t + x > V_{\text{max}} \end{cases}$$

bucket.vseit



A bucket is filled with normally distributed random numbers by a GASDEV block 200 times as specified in the DO block.

The random numbers (red), contents of the bucket (green) and overflow or deficite (blue) are plotted by a PLOT block.

