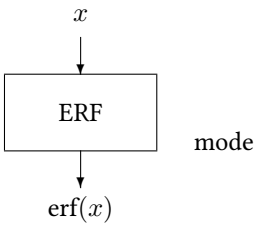
Block ERF

The ERF block calculates the error function.





Name	ERF
Function	fb0040
Inputs	1
Outputs	1
Parameters	1
Strings	0
Group	S

Inputs

1 Any input signal x.

Outputs

1 Error function erf(x).

Parameters

1 Mode
- 0 Polynom of order three
- 1 Polynom of order five

Strings

None

Description

In mode 0 the ERF block uses the third order polynom

$$\begin{aligned} z &= \frac{1.0}{1.0 + 0.47047\,x} \\ \mathrm{erf}(x) &= 1.0 - (0.3480242\,z - 0.0958798\,z^2 \\ &\quad + 0.7478556\,z^3)\exp(-x^2) \end{aligned}$$

In mode 1 the ERF block uses the fifth order polynom

$$\begin{aligned} z &= \frac{1.0}{1.0 + 0.3275911x} \\ \mathrm{erf}(x) &= 1.0 - (0.254829592\,z - 0.284496736\,z^2 \\ &\quad + 1.421413741\,z^3 - 1.453152027\,z^4 \\ &\quad + 1.061405429\,z^5)\exp(-x^2) \end{aligned}$$

erf.vseit



A DO block varies x from -1 to 1 in steps of 0.1. The first ERF block calculates the error function by a polynom of order three (mode 0) and the second one by a polynom of order five (mode 1). The PLOT block displays both graphs on screen with mode 0 in red.

