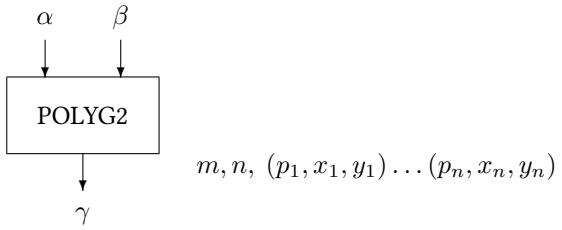
Block POLYG2

The POLYG2 block interpolates on a two dimensional polygon of points as defined by parameters.





Name	POLYG2
Function	fb0049
Inputs	2
Outputs	1
Parameters	8 . . . [1502]
Strings	0
Group	S

Inputs

1 Any signal α
2 Any signal β

Outputs

1 Interpolated value γ

Parameters

1 Interpolation mode m, determines which of the parameters defining the polygon is interpreted as dependant variable γ
- 0 $\gamma = y(p, x) = y(\alpha, \beta)$
- 1 $\gamma = p(x, y) = p(\alpha, \beta)$
- 2 $\gamma = x(p, y) = x(\alpha, \beta)$

2 Number n of given data triples, $2 \leq n \leq 200$
3 Parameter p_1 of 1^{st} point
4 x-coordinate x_1 of 1^{st} point
5 y-coordinate y_1 of 1^{st} point
6 Parameter p_2 of 2^{nd} point
7 x-coordinate x_2 of 2^{nd} point

8	y-coordinate y_2 of 2nd point
...	
$3n$	Parameter p_n of n^{th} point
$3n$+1	x-coordinate x_n of n^{th} point
$3n$+2	y-coordinate y_n of n^{th} point

Strings

None

Remarks

The parameters p_{i} and x_{i} must be given in rising order, i.e.

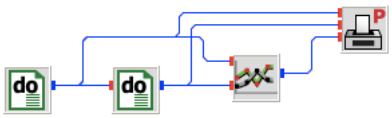
$$p_1 \leq p_2 \leq \ldots \leq p_{\text{n}}$$
$$x_1 \leq x_2 \leq \ldots \leq x_{\text{n}}$$

Description

The block performs a two-dimensional linear interpolation on a set of polygons containing n triples $(p_{\text{i}}, x_{\text{i}}, y_{\text{i}})$ where γ is calculated as the output value for given input values (α, β)

In a first step, the block searches four polygon-points neighboured to the input point characterized by (α, β). These points lie on the neighboured polygons which are characterized by the parameters p_{k} and p_{k+1}. Now the block computes (β, y_{A}) and (β, y_{B}) for the points A and B with the linear interpolation used also in block POLYG. Now the required γ value is given by linear interpolation as $\gamma = ((\alpha - p_{\text{k}})/\Delta p_{\text{k,k+1}})\Delta y_{\text{P}}$.

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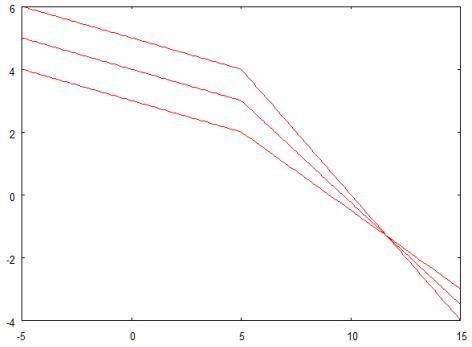


Two nested DO block deliver values between 100 and 200 in steps of 50 (outer DO block) and from -5 to 15 in steps of 0.1 (inner DO block). The POLYG2 block interpolates as specified by the parameters

```
100  0 5
100  5 4
100 10 0
200  0 3
200  5 2
200  9 0
```

The mode is set to $y(p, x) = y(a, b)$ (mode zero) and the number of nodes is equal to six.

The PLOTP block displays the graph.



Please observe that – in contrast to the POLYG block – the POLYG2 block extrapolates for data out of the specified parameter range.

See also Block POLYG