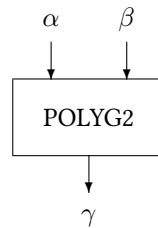


Block POLYG2

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



$m, n, (p_1, x_1, y_1) \dots (p_n, x_n, y_n)$

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

Inputs

- Any signal α
- Any signal β

Outputs

- Interpolated value γ

Parameters

- Interpolation mode m , determines which of the parameters defining the polygon is interpreted as dependant variable γ
 - $\gamma = y(p, x) = y(\alpha, \beta)$
 - $\gamma = p(x, y) = p(\alpha, \beta)$
 - $\gamma = x(p, y) = x(\alpha, \beta)$
- Number n of given data triples, $2 \leq n \leq 200$
- Parameter p_1 of 1st point
- x -coordinate x_1 of 1st point
- y -coordinate y_1 of 1st point
- Parameter p_2 of 2nd point
- x -coordinate x_2 of 2nd 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.

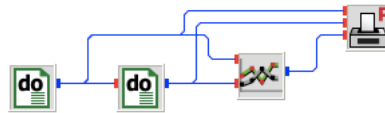
$$\begin{aligned} p_1 &\leq p_2 \leq \dots \leq p_n \\ x_1 &\leq x_2 \leq \dots \leq x_n \end{aligned}$$

Description

The block performs a two-dimensional linear interpolation on a set of polygons containing n triples (p_i, x_i, y_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 $\gamma = ((\alpha - p_k) / \Delta p_{k,k+1}) \Delta y_P$.

polyg2.vseit

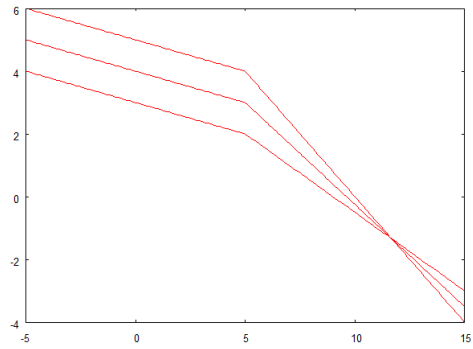


Two nested **DO** block deliver values between 100 and 200 in steps of 50 (outer **DO** block) and from -5 to 15 in steps of 0.1 (inner **DO** block). The **POLYG2** block interpolates as specified by the parameters

```
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 **PLOT** 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](#)