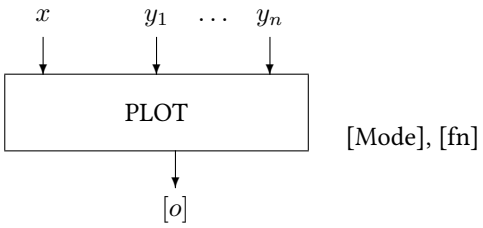
Block PLOT

The PLOT block generates graphical output of its connected input data via gnuplot.





Name	PLOT
Function	fb0044
Inputs	$2 \ldots [20]$
Outputs	$0 \ldots [1]$
Parameters	$0 \ldots [1]$
Strings	$0 \ldots [1]$
Group	S

Inputs

1	Any signal x
2	Any signal y_1
n	Any signal y_{n-1}

Outputs

1	User defined block number (if available)

Parameters

1	Sort descending. If set to 1, each y column is sorted independently in descending order and the x axis is replaced by rank (0, 1, 2, ...). Useful for load duration curves.

Strings

1	File name fn of a gnuplot command file. If no file name is provided, a default file `insel.gnu` is generated with default gnuplot commands.

Description

The PLOT block uses the open-source software gnuplot to generate graphical output of x-y data. As long as a model is executed the block collects all connected data and writes them to a temporary file named `insel.gpl` (gnuplot data).

Many parameters can be set in the graphical interface, e.g. title, labels, ranges, units, axis (y1 or y2), colors. By default, the plot will be displayed in a window, but it can also be exported to PNG, PDF, SVG, ...

Once the plot is displayed, it is possible to zoom and pan with arrows, mouse or + - keys. The window can be closed with the mouse or by pressing q.

According to the Gnuplot documentation, here are the available commands:

```
<B1> doubleclick   send mouse coordinates to clipboard (pm win wxt x11)
<B2>               annotate the graph using ‘mouseformat‘ (see keys ’1’, ’2’)
                   or draw labels if ‘set mouse labels is on‘
<Ctrl-B2>          remove label close to pointer if ‘set mouse labels‘ is on
<B3>               mark zoom region (only for 2d-plots and maps)
<B1-Motion>        change view (rotation); use <Ctrl> to rotate the axes only
<B2-Motion>        change view (scaling); use <Ctrl> to scale the axes only
<Shift-B2-Motion>  vertical motion -- change xyplane
<B3-Motion>        change view (azimuth)
<wheel-up>           scroll up (in +Y direction)
<wheel-down>         scroll down
<shift-wheel-up>     scroll left (in -X direction)
<shift-wheel-down>   scroll right
<Control-WheelUp>    zoom in on mouse position
<Control-WheelDown>  zoom out on mouse position
<Shift-Control-WheelUp>    pinch on x
<Shift-Control-WheelDown>  expand on x

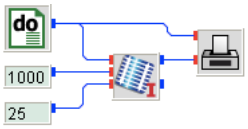
q            * close this plot window

a               ‘builtin-autoscale‘ (set autoscale keepfix; replot)
b               ‘builtin-toggle-border‘
e               ‘builtin-replot‘
g               ‘builtin-toggle-grid‘
h               ‘builtin-help‘
i               ‘builtin-invert-plot-visibilities‘
l               ‘builtin-toggle-log‘ y logscale for plots, z and cb for splots
L               ‘builtin-nearest-log‘ toggle logscale of axis nearest cursor
m               ‘builtin-toggle-mouse‘
r               ‘builtin-toggle-ruler‘
V               ‘builtin-set-plots-invisible‘
v               ‘builtin-set-plots-visible‘
1               ‘builtin-previous-mouse-format‘
2               ‘builtin-next-mouse-format‘
5               ‘builtin-toggle-polardistance‘
6               ‘builtin-toggle-verbose‘
7               ‘builtin-toggle-ratio‘
n               ‘builtin-zoom-next‘ go to next zoom in the zoom stack
p               ‘builtin-zoom-previous‘ go to previous zoom in the zoom stack
u               ‘builtin-unzoom‘
```

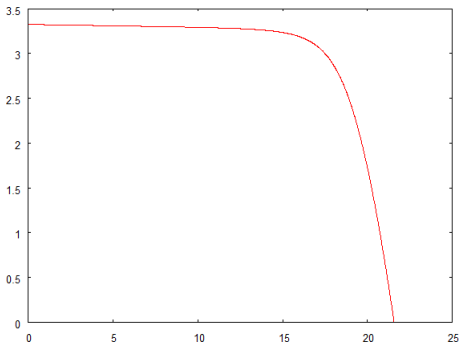
```
+               ‘builtin-zoom-in‘ zoom in
=               ‘builtin-zoom-in‘ zoom in
-               ‘builtin-zoom-out‘ zoom out
Right           ‘scroll right in 2d, rotate right in 3d‘; <Shift> faster
Up              ‘scroll up in 2d, rotate up in 3d‘; <Shift> faster
Left            ‘scroll left in 2d, rotate left in 3d‘; <Shift> faster
Down            ‘scroll down in 2d, rotate down in 3d‘; <Shift> faster
<               ‘rotate azimuth left in 3d‘; <ctrl> faster
>               ‘rotate azimuth right in 3d‘; <ctrl> faster
Escape          ‘builtin-cancel-zoom‘ cancel zoom region
```

Limitations Only one PLOT or PLOTP block can be used per INSEL model.

plot.vseit



A DO block varies the voltage of a PV module between 0 and 25 Volt in steps of 0.01 Volt. Two CONST blocks provide solar radiation of 1000 Watt per square meter and a module temperature of 25 degrees Celsius, i. e., Standard Test Conditions. A PVI block caluculates the module current. Finally, the PLOT block dispays the I-V characteristic on screen.



See also Block PLOTP.