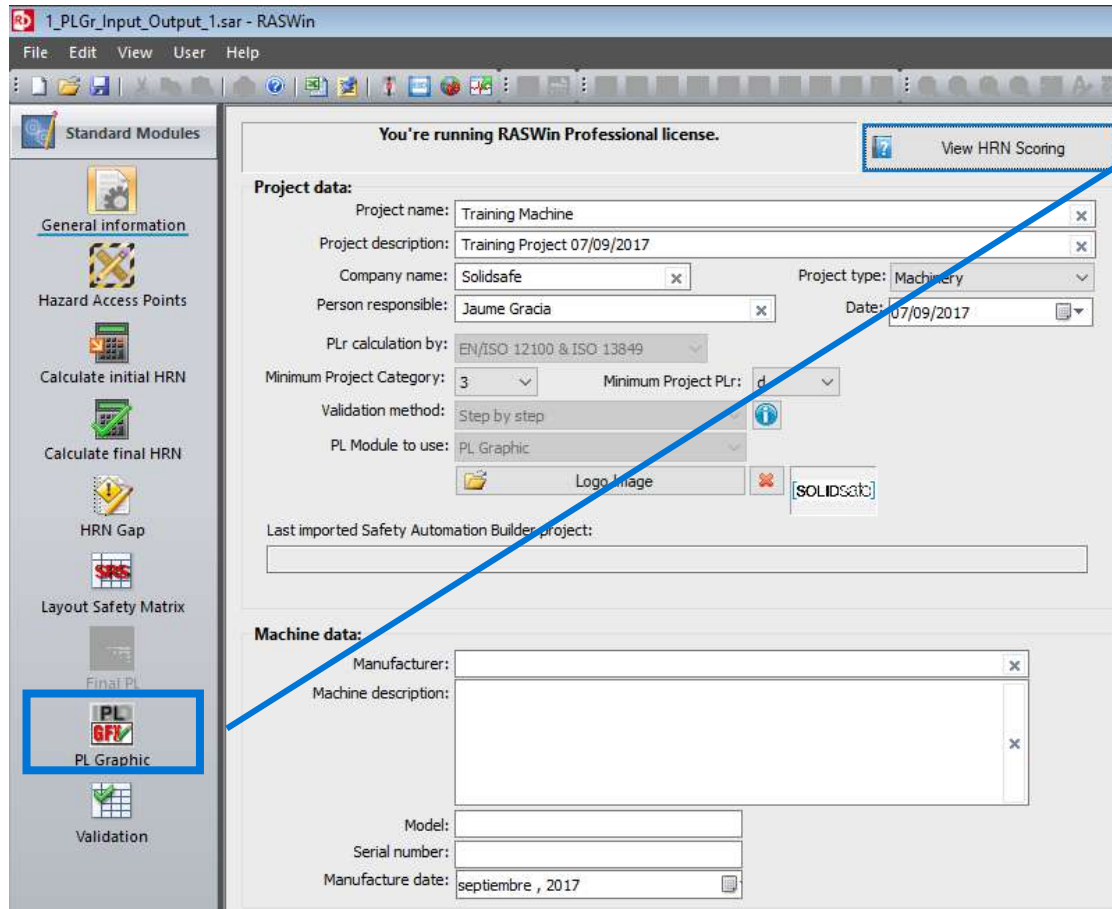


RASWIN Module SRS PL Calculation of ESD elements

How to calculate the PL in RASWin?

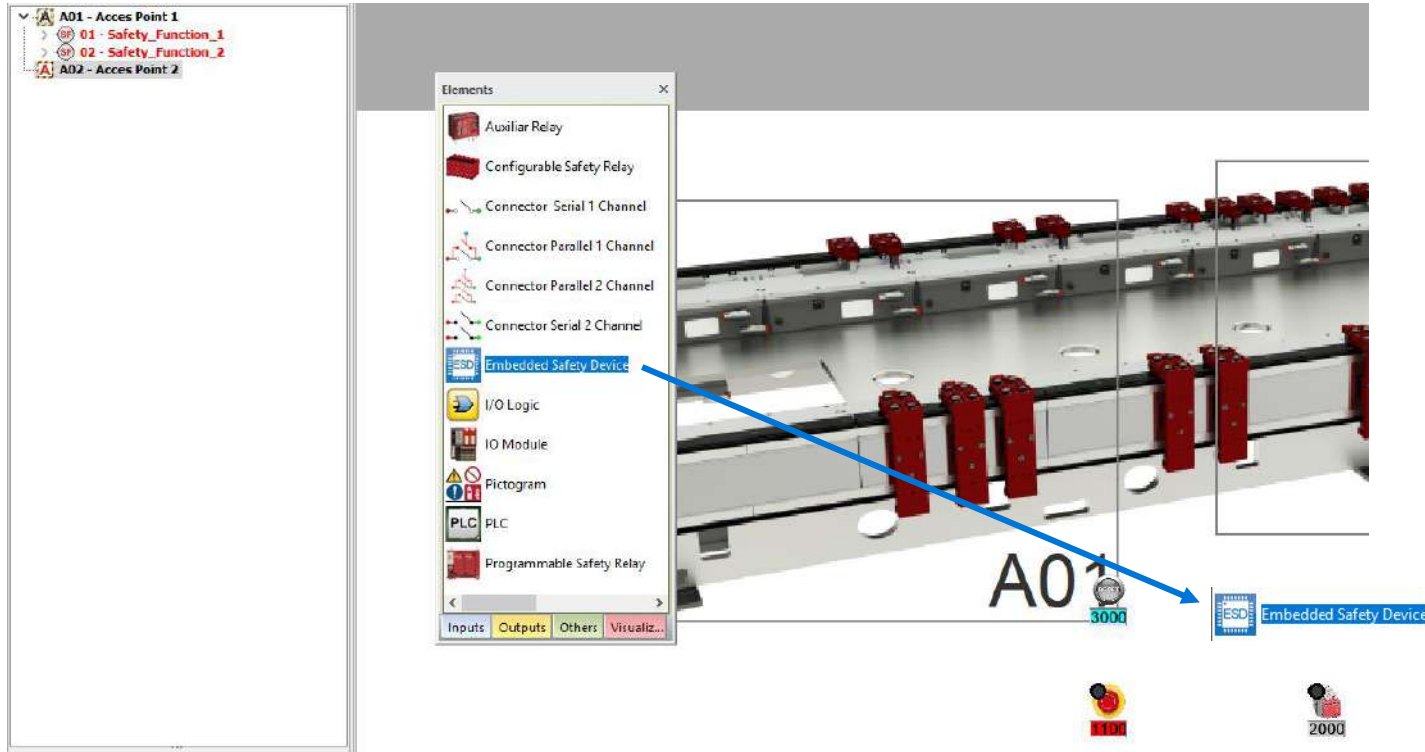
PL Gfx Module



1. Click on PL Gfx Module icon.

How to calculate the PL in RASWin?

PL Gfx Module



1. Add a ESD element to the layout

Step 1: Add a ESD element

How to calculate the PL in RASWin?

PL Gfx Module

Embedded Safety Device

Matrix Code: 12500

Description: Drive

Manufacturer: Rocwell Automation

Reference: XXX-XXXX

Location: End of line

Access Point: A01 - Acces Point 1

Contained Embedded Inputs and Outputs:

Matrix Code	Type	Description	Test Validations #	#SFs

Contained Embedded Safety Functions:

SB	Cat.	PL	PFHd	#SFs

Validation configuration

Ok

1. Select the Access Point of the Embedded Safety Device.

2. Click on "Catalog"

Step 2: Loading a catalog

How to calculate the PL in RASWin?

PL Gfx Module

Step 2: Loading a catalog

ESD Catalog Browser

Catalog: Fanuc_DCS_Safety_Catalog.esc

Normative: Fanuc_DCS_Safety_Catalog.esc

Device: R-30+B/R-30+B Mate CONTROLLER - Q

Manufacturer: Fanuc

Select information to load:

Input Output Embedded Safety Function

#	Description	Type	Cat.	PL	PFHd	Test Validations #
<input checked="" type="checkbox"/>	1 External Emergency Stop (EES)	Input	4	e	9e-08	0
<input checked="" type="checkbox"/>	2 Fence Input (EAS)	Input	4	e	9e-08	0
<input checked="" type="checkbox"/>	3 SVOFF input (EGS)	Input	4	e	9e-08	0
<input checked="" type="checkbox"/>	4 NTDE input	Input	4	e	9e-08	0
<input checked="" type="checkbox"/>	5 Robot disable switch	Input	4	e	9e-08	0
<input checked="" type="checkbox"/>	6 Joint Position Check funtion. Axis 1	Input	3	d	9e-07	0
<input checked="" type="checkbox"/>	7 Joint Position Check funtion. Axis 2	Input	3	d	9e-07	0
<input checked="" type="checkbox"/>	8 Joint Position Check funtion. Axis 3	Input	3	d	9e-07	0
<input checked="" type="checkbox"/>	9 Joint Position Check funtion. Axis 4	Input	3	d	9e-07	0
<input checked="" type="checkbox"/>	10 Joint Position Check funtion. Axis 5	Input	3	d	9e-07	0
<input checked="" type="checkbox"/>	11 Joint Position Check funtion. Axis 6	Input	3	d	9e-07	0
<input checked="" type="checkbox"/>	12 Joint Position Check funtion. Axis 7	Input	3	d	9e-07	0
<input checked="" type="checkbox"/>	13 Joint Speed Check funtion. Axis 1	Input	3	d	9e-07	0
<input checked="" type="checkbox"/>	14 Joint Speed Check funtion. Axis 2	Input	3	d	9e-07	0
<input checked="" type="checkbox"/>	15 Joint Speed Check funtion. Axis 3	Input	3	d	9e-07	0

Cancel Ok

ESD Catalog Browser

Catalog: TestCatalog2.esc

Normative: ISO EN-13849

devices on Catalog: 1

Device: Device 1 -

Manufacturer: Solidsafe

Select information to load:

Input Output Embedded Safety Function

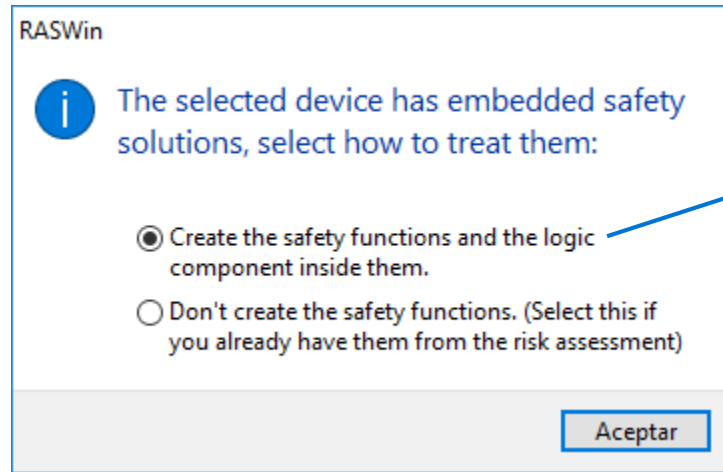
#	Description	Type	Cat.	PL	PFHd	Test Validations #
<input checked="" type="checkbox"/>	1 Safety Input	Input	3	d	2.01e-07	0
<input checked="" type="checkbox"/>	2 Safety Output	Output	3	d	2.01e-07	0
<input checked="" type="checkbox"/>	3 Emergency Stop	eSF	4	e	2.47e-08	0

Cancel Ok

1. Select the Catalog of the used device.
2. Select the device of the catalog.
3. The device information will appear
4. Click "Ok"

How to calculate the PL in RASWin?

PL Gfx Module



Select a option:

1. Create SF inside them: Used when the SF's of the device has not been created. They will be created
2. Don't create the SF: Used when the SF's of the device has been created.

How to calculate the PL in RASWin?

PL Gfx Module

Matrix Code	Type	Description	Test Validations #	#SFs
12500.12501	Input	Safety Input	0	0
12500.12502	Output	Safety Output	0	0

SB	Cat.	PL	PFHd	#SFs
SB11 - Emergency Stop	4	e	2.47e-08	1

All the inputs and Outputs has ben created and appear on the ESD element

All the Safety Functions has ben created and appear on the ESD element

Step 4: ESD Element has been created

How to calculate the PL in RASWin?

PL Gfx Module

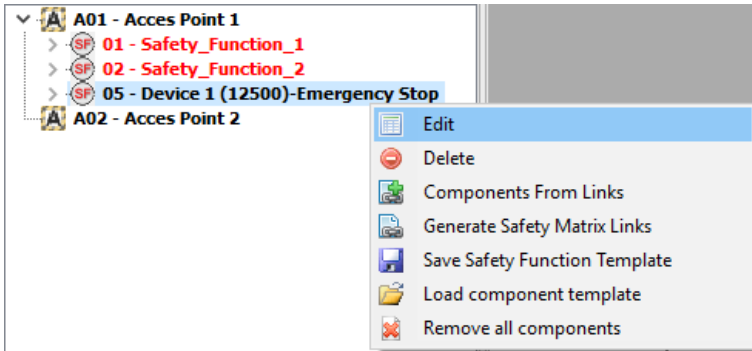


All the Safety Functions of the device appear on PL Tree.

Step 5: New Safety Function has been created

How to calculate the PL in RASWin?

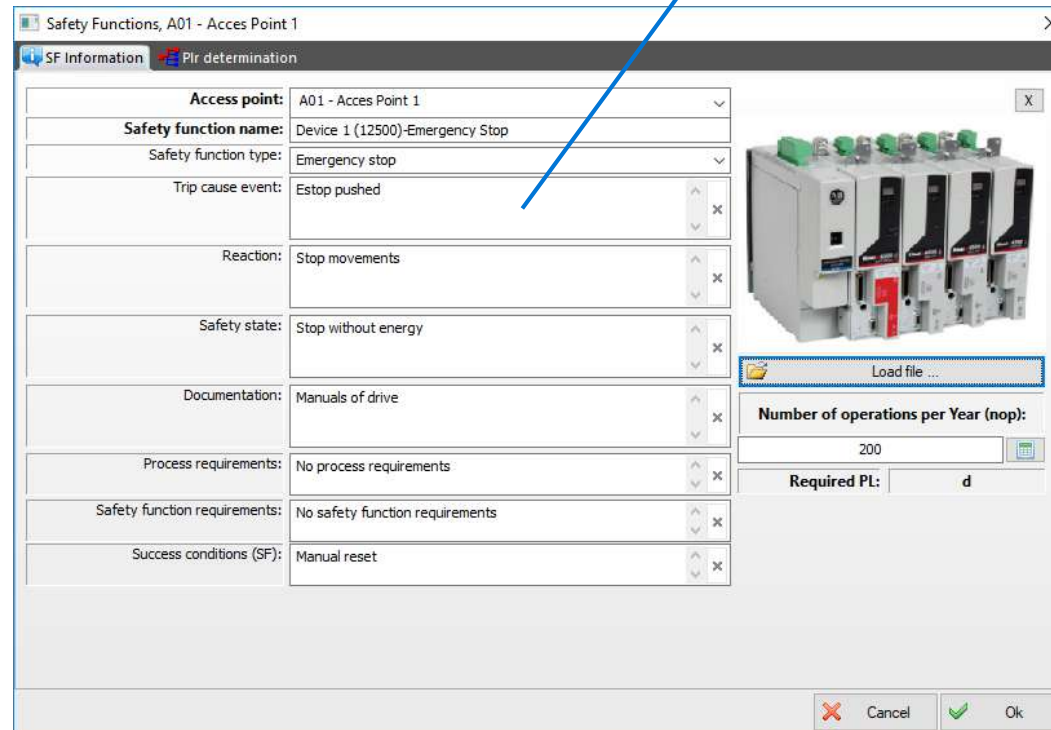
PL Gfx Module



1. Click on new Safety Function.

2. Click on "Edit".

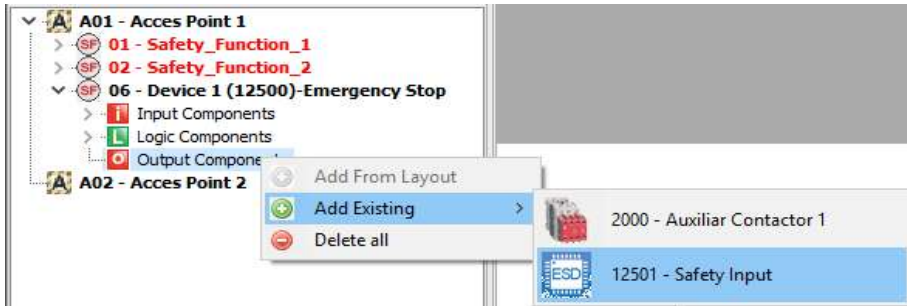
3. Edit the new Safety function, adding the SF information, the PLr and the NOP. *(follow the steps described on "1_PLGfx_Creating_new_SF.pptx" file)*



Step 6: Add the new Safety Function information

How to calculate the PL in RASWin?

PL Gfx Module



1. Add the Input elements to the Safety Function using the Manual Mode

2. Add the Output elements to the Safety Function using the Manual Mode

3. The PL of ESD Safety Function has been calculated

