Convert ELPROCAD drawings

If you have ELPROCAD drawings it's possible to convert them to elMaster design drawings. Bothe single and multiple sheet drawings are handled.

The drawing remains unchanged and new elMaster drawings are created in a sub directory MC.

You can improve the ELPROCAD conversion by adding missing symbols to the elMaster symbol library.

It's possible to convert multiple ELPROCAD drawings using batch functions.

1.1 The convert function

- ELPROCAD lines will be converted to polylines. A specific case here will be handling T cross lines. Also dashdot lines from ELPROCAD specifying mechanical links is converted into dashdot elMaster lines.
- ELPROCAD bounding frames will be converted into polylines so the frames will not look the same as in an ELRPOCAD drawing. Bounding frames in Master Concept is defined by a closed polyline.
- ELPROCAD forms will not be converted because forms are specific for each customer. The form will be moved to layer SOSED_DOCFRAME so that it is recognized by Master Concept and can be replaced with an Master Concept form later to get the form to automatically update information from the MC-database.
- Cross-references are converted so that you will get automatic sheet references if used with Master Concept database.
- Connection control, cables and wires will also not be converted.
- Article information is stored in the MC symbols but not used to connect objects to MC articles.
- ELPROCAD multiple sheet drawing and single sheet drawings are handled. Multiple sheet drawings are converted into several MC dwg files.
- Attribute properties from an ELPROCAD symbol is transferred to the attributes for the elMaster symbols, that is rotation, visibility, height and so on. If you want to keep the original color set the lisp variable g:convsetting_KeepColorSettings to T before converting the drawing.
- Symbols that do not exist in the database are moved to SOSED_DESIGNERROR layer. After conversion this layer will be turned on so the user can see all the symbols in the converted drawing.
- Elprocad attributes that are not elMaster attributes are converted to text so these are going to get a white color after converting.
- The mechanical links from Elprocad are converted into elMaster mechanical links.
- If the Elprocad symbols are in standard IEC1082 or IEC113 after converting the drawing will be set to the same standard as the symbols had before conversion.
- The MTEXT entities from Elprocad are also converted in the same way as TEXT entities.
- The last entities that still are in the Elprocad drawing after converting everything else will be moved to the elMaster SOSED_DECORATIVE layer.

- The handling of the dialog box “Choose structure”. This dialog is controlled by a variable named ITEM_REF. As a default value the ITEM_REF variable is empty. In this case the “Choose structure” dialog box will appear where the user can choose if the designation will be location or product. If the user is choosing to run “Batch”-functions, to skip the “Choose structure” dialog box the variable ITEM_REF must be changed in the EP_DEFLT.CFG file. The user can access this file to edit the ITEM_REF variable and instead of empty string the user can write + for location designation or – for product designation. In this case when the user will run Batch no dialog box will be shown and the symbols will get the value for the designation that the user wrote in the EP_DEFLT.CFG file. Or set the lisp variable g:convsetting to "rbLoc" for Location or “rbPro” for product

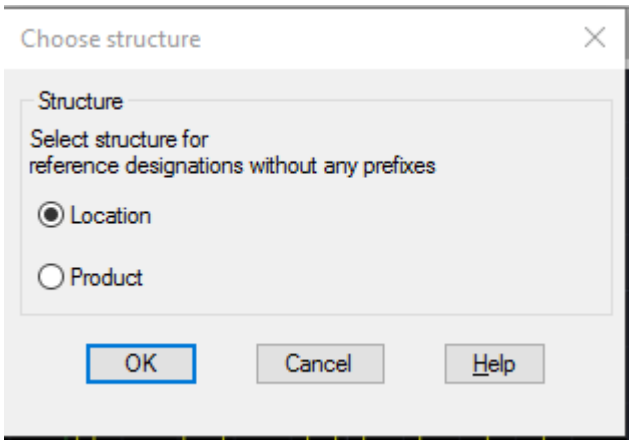
1.2 Limitations

- Converting terminal blocks. Some of the symbols in ELPROCAD, including terminal blocks have a PLAC designation. This designation decides which is the external (EXT) side for the terminal block.
- Handling the ELPROCAD block EPCB022. The difference between this block and other ELPROCAD blocks is that only the block’s text field will be shown, all other attributes are invisible.
- Elprocad convert module does not handle symbols that have multiple attributes with the same tag name e g multiple attributes named TEXT. The tag name EGET3 is also not handled in any particular way.
- Elprocad convert function does not handle if a layer exists in the layer list when opening a drawing but when getting the whole layer list for the drawing this layer is not included, e g if layer “0” exists in the layer list and the frame is drawn on layer “0” but this layer is not included in any drawing when convert module begins.

1.3 Basic workflow

Convert one drawing at a time using the convert elprocad drawing function located in the MC Manage tab in the drawing panel.

Select which structure designations without prefix should use:



It is possible to use the batch function convertELPROCADtoelMaster.lsp converting multiple drawing.

The convertELPROCADtoelMaster.lsp lispfile:

(setq g:convsetting_noUndo T) ;; No undo on drawings

(setq g:convsetting_KeepColorSettings nil) ;; Keep color settings

(setq g:convsetting "rbLoc") ;; Designation with no prefix -> Location

(setq g:convsetting_DocConfig '(("ITEM_REF" "+"))) ;; Default reference signal structure

(c:ConvElprocadToelMaster)

The convert function creates a subfolder MC where the new drawings are stored.

- If the ELPROCAD drawing name is a single sheet drawing than the converted drawing name will be name-name.

  Example: ELPROCAD drawing name 01.dwg

  Converted drawing .\MC\name 01.dwg

- If the ELPROCAD drawing name is a multiple sheet drawing then the converted drawing name will be name-sheet no.

  Example: ELPROCAD drawing name 2025 -143.dwg

  Converted drawing name .\MC\2025 –143 -143.dwg

For each converted drawing it will be available a drawing name.log file that will content errors and status that come up during the converting. Also check the SOSED_DESIGNERROR layer for symbols was not converted. Create new symbols in the ELP1082 library (your own symbol group) and add the elprocad symbol name to the USERTEXT1 field. Run the convert function again. Doing so will improve the convert function to handle more and more symbols.

2 Line and Layers

Below is a table that explains what linetype and layer the elprocad lines are converted to

Elprocad Layer	**Elprocad Line type**	**Master Concept Layer**	**Master Concept Line type**
*	DASHED	SOSED_CIRCUIT	SOSED_MLINK
20	DASHED2 HIDDEN *	SOSED_CIRCUIT	DASHED2 HIDDEN CONTINUOUS
10-19	DASHED2 HIDDEN *	SOSED_DECORATIVE	DASHED2 HIDDEN CONTINUOUS
21-29	DASHED2 HIDDEN *	SOSED_CIRCUIT	DASHED2 HIDDEN CONTINUOUS
30-39	*	SOSED_CIRCUIT	DASHED
40-49	*	SOSED_CIRCUIT	DASHED
50	*	SOSED_CIRCUIT	SOSED_FRAMEDOT
100-110	DASHED2	SOSED_DECORATIVE	DASHED2

	HIDDEN OMK PTS PS1 *		HIDDEN OMK PTS PS1 CONTINUOUS
*	DASHED2 HIDDEN OMK PTS PS1 *	SOSED_CIRCUIT	DASHED2 HIDDEN OMK PTS PS1 CONTINUOUS

3 Symbols

The elprocad symbols are replaced with MC symbols defined in the ELP1082 symbollibrary. The convert program searches for a row in the library where the elprocad blockname matches USERTEXT1 in the symbollibrary and replace the elprocadsymbol with the corresponding MC symbol.

If no symbol is found the elprocad block is moved to SOSED_DESIGNERROR replaced symbols layers 10-50 are inserted on SOSED_CIRCUIT and 100-110 are inserted on SOSED_DECORATIVE.

Attributedata are transferred between the symbols using the mapping bellow

Designation attributes ID1-ID4 is on layer SOSED_CIRCUIT for visible designations and layer SOSED_CIRCUITOFF for invisible designations.

Attribute mapping:

elprocad attribute	**MC attribute**
BET1	LOC.1, PRO.1 Location or Product designation depending on setting.
BET2	FUN.1, PRO.1 Function or Product designation depending on prefix. If '-' exist in the designation then it is a product designation
UTTAG#	TRM.# Terminal number
EGET1	REM1 Remark1
EGET2	REM2 Remark2
XREF	CREF, Sheet reference
BENÄMNING	ARTDES1 Article attribute
FABRIKAT	ARTDES2 Article attribute
TYP/NR	ARTDES3 Article attribute
ELDATA	ARTDES4 Article attribute
PLAC,TBH,LIB,TYP	Is ignored
*	Text is created on SOSED_CIRCUIT if the elMaster symbol does not have an attribute with

	the same name

3.1 Special symbols

Node symbols

Elprocad symbol EPCB001 is replaced with MC ADOT symbol

Bounding frame symbols

Elprocad symbol EPCBBOX8,EPCBPAR8,EPCBBXS8,EPCBBXN8 are replaced with frame lines.

EPCB015, designation symbol. Is converted to a new symbol with only a designation, but if it is on a frame line it is converted to a ED_FRAME symbol aniv. And if it has a coordinate where X < 10 or Y < 30 it is considered to be a common item designation and is converted to a AIDG symbol.

Terminal symbol with external side

The attribute UTTAG2 specifies where the external side is, So the replace symbol the system is looking for is the name + the value in UTTAG2, if it does not exist then it will look for the symbol name only.

Form symbol

Elprocad symbol EPCB000 is moved to SOSED_DOCFRAME layer

4 Text

Text is moved from elprocad layers 10-50 to SOSED_CIRCUIT layer and layer 100-110 to SOSED_DECORATIVE.