DESCRIPTION OF NEW FUNCTIONS IN AUTOMATION VER. 22



This release document describes the new functions in Automation version 22. PCSCHEMATIC Automation has its own manual, which is included in the program. The Panelrouter, the Component Wizard and PCSCHEMATIC Automation Service (the Mounting Assistant) have their own dedicated manuals describing their functions, and those manuals are also included in the Automation program.

Last edit: Julyl 2020

CONTENTS

1	New logos	7
2	Preparing for a new Component database	8
3	Changes in symbols and con. points	9 9 9
3	.2 Symbol states on component symbols cannot be changed	10
3	.4 A simpler definition of terminals	10
3	.5 Terminals are ALWAYS through terminals	10
	3.5.1 Conversion of connection points	11
3	.6 Overview of changes to connection points	12
3	.7 Indication for parked lines	15
3	.8 Symbol editor will check for inconsistencies	15
1		10
4	4.1.1 Do it this way – create your own database	16
4	.2 Component Wizard	17
	4.2.1 Warning for non-mapped fields in database setup	17
	4.2.2 Letter codes from 81346-2 are also in the Component Wizard	17
	4.2.4 Changes regarding connection points	18
	4.2.5 Mechanical symbols in the Component Wizard	18
	4.2.6 You can change table codes on components in the database4.2.7 Adjustable Help pane	18
	4.2.8 Automec and prices are now longer mapped in new installations	18
5	Usage of subnames - Clarification	19
5	.1 Naming convention of cards in a plc	19
6	How to work with accessories?	21
6	.1 Purpose of changing work process and method	21
	6.1.1 Better overview	21
	6.1.3 Mechanical accessories	21
	6.1.4 Fixed accessories	22
	6.1.5 Copy a component with mechanical accessories	22
6	.2 The accessory tab is configurable	23
6	.3 Any pictures can be viewed on the tab	23
6	.4 Support symbols and accessory	24
	6.4.1 Support symbols in existing projects	24
	Tarreitada in acres group 0 and Accessories *	24
/	7.1.1 A little history	25 25
	7.1.2 Terminals with accessories and they are not placed mechanically	25
	7.1.3 Terminals with accessories and they are placed mechanically	26
	due to component group 0	26

8.1.1 Branches are closed 27 8.1.2 Propup on optional accessories 27 8.1.3 Popup on optional accessories 27 8.1.4 Select columns in the symbol window 27 8.2 Placing mechanical symbols 28 8.3 Changed shortcut 28 9 Linked data sheets can be zipped. 29 10 Something about lists – import and export 30 10.1 Load parts and component lists using a format file 30 10.2 Assign data from an imported component list to the project 30 10.3 List export to Excel can write to an existing template or file 31 10.4 The Table of Contents can show pages changed after date 32 10.5 Active hyperlinks to specific lines from a parts or components list 32 10.6 Number of repetitions and replacements are extended. 33 10.7 New data field in parts and component lists 33 10.8 PCL list includes plc subname in the sorting * 34 10.9 Export to Cablemanager 34 10.10 PDF-export with command line 35	8 Sm	all changes to the Component menu	27
8.1.2 The menu stays closed	8.1.	1 Branches are closed	27
8.1.3 Folup in plutinal accessiones 27 8.1.4 Placing mechanical symbols 28 8.3 Changed shortcut. 28 9 Linked data sheets can be zipped. 29 10 Something about lists – import and export 30 10.1 Load parts and component list using a format file 30 10.2 Assign data from an imported component list to the project. 30 10.3 List export to Excel can write to an existing template or file 31 10.4 The Table of Contents can show pages changed after date. 32 10.5 Active hyperlinks to specific lines from a parts or component lists 33 10.7 New data field in parts and component lists 33 10.8 PLC list includes plc subname in the sorting * 34 10.10 PDF-export with command line 35 10.11 The onner users on the same project. 36 11.2 The connection can be selected in the list or in the diagram 36 11.4 The Overview window has a big Mounted button. 36 11.5 Wire numbers in the wire list 36 11.4 The Overview window has a big	8.1.	2 The menu stays closed	
8.2 Placing mechanical symbols 28 8.3 Changed shortcut. 28 9 Linked data sheets can be zipped. 29 10 Something about lists – import and export 30 10.1 Load parts and component list using a format file 30 10.2 Assign data from an imported component list to the project 30 10.3 List export to Excel can write to an existing template or file 31 10.4 The Table of Contents can show pages changed after date 32 10.5 Active hyperlinks to specific lines from a parts or components list 33 10.4 The Table of Contents can show pages changed after date 33 10.5 New data field in parts and component lists 33 10.6 Number of repetitions and replacements are extended 33 10.7 New data field nip arts and component lists 34 10.9 Export to Cablemanager. 34 10.10 PDF-export with command line 35 11.1 Two or more users on the same project. 36 11.2 The connection can be selected in the list or in the diagram 36 11.4 The Overvie	8.1. 8.1	 Popup on optional accessories Select columns in the symbol window. 	∠7 27
8.3 Changed shortcut. 28 9 Linked data sheets can be zipped. 29 10 Something about lists – import and export 30 10.1 Load parts and component list using a format file 30 10.2 Assign data from an imported component list to the project 30 10.3 List export to Excel can write to an existing template or file 31 10.4 The Table of Contents can show pages changed after date. 32 10.5 Active hyperlinks to specific lines from a parts or components list 32 10.6 Number of repetitions and replacements are extended. 33 10.7 New data field in parts and component lists 33 10.8 PLC list includes plc subname in the sorting *	8.2	Placing mechanical symbols	28
9 Linked data sheets can be zipped. 29 10 Something about lists – import and export 30 10.1 Load parts and component list using a format file 30 10.2 Assign data from an imported component list to the project 30 10.3 List export to Excel can write to an existing template or file 31 10.4 The Table of Contents can show pages changed after date. 32 10.5 Active hyperlinks to specific lines from a parts or components list 32 10.6 Number of repetitions and replacements are extended. 33 10.7 New data field in parts and component lists 33 10.8 PLC list includes plc subname in the sorting *	8.3	Changed shortcut	
10 Something about lists – import and export 30 10.1 Load parts and component lists using a format file 30 10.2 Assign data from an imported component list to the project 30 10.3 List export to Excel can write to an existing template or file 31 10.4 The Table of Contents can show pages changed after date 32 10.5 Active hyperlinks to specific lines from a parts or components list 32 10.6 Number of repetitions and replacements are extended 33 10.7 New data field in parts and component lists 33 10.8 PLC list includes plc subname in the sorting * 34 10.10 PDF-export with command line 35 10.11 The namelist in unit drawings are with hyperlinks 35 11 Mounting assistant 36 11.1 Two or more users on the same project 36 11.2 The connection can be selected in the list or in the diagram 36 11.3 All order numbers based in the project are in the dropdown list 36 11.5 Wire numbers in the wire list 36 11.5 Wire numbers in the wire list 37 11.6 Export to Excel 37 11.7 Possible to change status on more items in one operation 37 11.8 Connections can be partly mounted 38 </td <td>9 Link</td> <td>ked data sheets can be zipped</td> <td>29</td>	9 Link	ked data sheets can be zipped	29
10.1 Load parts and component lists using a format file 30 10.2 Assign data from an imported component list to the project 30 10.3 List export to Excel can write to an existing template or file 31 10.4 The Table of Contents can show pages changed after date 32 10.5 Active hyperlinks to specific lines from a parts or components list 32 10.6 Number of repetitions and replacements are extended. 33 10.7 New data field in parts and component lists 34 10.9 Export to Cablemanager. 34 10.10 PDF-export with command line 35 10.11 Two or more users on the same project. 36 11.1 Two or more users on the same project are in the diagram 36 11.2 The connection can be selected in the list or in the diagram 36 11.3 All order numbers based in the project are in the dropdown list 36 11.4 The Overview window has a big Mounted button 36 11.5 Wire numbers in the wire list 36 11.6 Export to Excel 37 11.7 Possible to change status on more items in one operation 37	10 Sor	nething about lists – import and export	
10.2 Assign data from an imported component list to the project	10.1	Load parts and component lists using a format file	
10.3 List export to Excel can write to an existing template or file	10.2	Assign data from an imported component list to the project	
10.4 The Table of Contents can show pages changed after date 32 10.5 Active hyperlinks to specific lines from a parts or components list 32 10.6 Number of repetitions and replacements are extended 33 10.7 New data field in parts and component lists 33 10.8 PLC list includes plc subname in the sorting * 34 10.9 Export to Cablemanager 34 10.10 PDF-export with command line 35 11.1 The anelist in unit drawings are with hyperlinks 35 11.1 Two or more users on the same project 36 11.2 The connection can be selected in the list or in the diagram 36 11.3 All order numbers based in the project are in the dropdown list 36 11.4 The Overview window has a big Mounted button 36 11.5 Wire numbers in the wire list 37 11.6 Export to Excel 37 11.7 Possible to change status on more items in one operation 37 11.8 Connections can be partly mounted 37 12.4 Object lister – all symbol types can be shown on the symbol tab * 38 12.3	10.3	List export to Excel can write to an existing template or file	
10.5 Active hyperlinks to specific lines from a parts or components list 32 10.6 Number of repetitions and replacements are extended 33 10.7 New data field in parts and component lists 33 10.8 PLC list includes plc subname in the sorting * 34 10.9 Export to Cablemanager. 34 10.10 PDF-export with command line 35 10.11 The namelist in unit drawings are with hyperlinks 35 11.1 Two or more users on the same project. 36 11.2 The connection can be selected in the list or in the diagram 36 11.3 All order numbers based in the project are in the dropdown list 36 11.4 The Overview window has a big Mounted button 36 11.5 Wire numbers in the wire list 36 11.6 Export to Excel 37 11.7 Possible to change status on more items in one operation 37 11.8 Connections can be partly mounted 37 11.8 Connections can be partly mounted 37 11.8 Connections can be scensories 39 12.1 Object lister - anew default setup *	10.4	The Table of Contents can show pages changed after date	
10.6 Number of repetitions and replacements are extended. 33 10.7 New data field in parts and component lists 33 10.8 PLC list includes plc subname in the sorting * 34 10.9 Export to Cablemanager. 34 10.10 PDF-export with command line 35 10.11 The namelist in unit drawings are with hyperlinks 35 11.1 Two or more users on the same project 36 11.2 The connection can be selected in the list or in the diagram 36 11.3 All order numbers based in the project are in the dropdown list 36 11.4 The Overview window has a big Mounted button. 36 11.5 Wire numbers in the wire list 36 11.6 Export to Excel 37 11.7 Possible to change status on more items in one operation 37 11.7 Possible to change status on more items in one operation 37 12.8 Connections can be partly mounted 37 12.9 Object lister – new default setup * 38 12.2 The Object lister on show accessories 39 12.4 The Object lister can show accessories	10.5	Active hyperlinks to specific lines from a parts or components list	
10.7 New data field in parts and component lists 33 10.8 PLC list includes plc subname in the sorting * 34 10.9 Export to Cablemanager. 34 10.10 PDF-export with command line 35 10.11 The namelist in unit drawings are with hyperlinks 35 11 Two or more users on the same project. 36 11.2 The connection can be selected in the list or in the diagram 36 11.3 All order numbers based in the project are in the dropdown list 36 11.4 The Overview window has a big Mounted button. 36 11.5 Wire numbers in the wire list 37 11.6 Export to Excel 37 11.7 Possible to change status on more items in one operation 37 11.8 Connections can be partly mounted 37 12.1 Object lister – new default setup * 38 12.2 The Object lister has a filter in all columns 38 12.3 Object lister an show accessories 39 12.4 The Object lister can show accessories 39 12.5 Object lister an show accessories 39	10.6	Number of repetitions and replacements are extended	
10.8 PLC list includes plc subname in the sorting *	10.7	New data field in parts and component lists	
10.9 Export to Cablemanager	10.8	PLC list includes plc subname in the sorting *	
10.10 PDF-export with command line 35 10.11 The namelist in unit drawings are with hyperlinks 35 11 Mounting assistant 36 11.1 Two or more users on the same project 36 11.2 The connection can be selected in the list or in the diagram 36 11.3 All order numbers based in the project are in the dropdown list 36 11.4 The Overview window has a big Mounted button 36 11.5 Wire numbers in the wire list 36 11.6 Export to Excel 37 11.7 Possible to change status on more items in one operation 37 11.8 Connections can be partly mounted 37 11.8 Connections can be partly mounted 37 12.1 Object lister – new default setup * 38 12.2 The Object lister in all columns 38 12.3 Object lister – all symbol types can be shown on the symbol tab * 38 12.4 The Object lister can show accessories 39 12.5 Objektlister kan vise stregart 40 13.1 New fixed symbol data fields 40 13.2 <td>10.9</td> <td>Export to Cablemanager</td> <td></td>	10.9	Export to Cablemanager	
10.11 The namelist in unit drawings are with hyperlinks 35 11 Mounting assistant 36 11.1 Two or more users on the same project 36 11.2 The connection can be selected in the list or in the diagram 36 11.3 All order numbers based in the project are in the dropdown list 36 11.4 The Overview window has a big Mounted button 36 11.5 Wire numbers in the wire list 36 11.6 Export to Excel 37 11.7 Possible to change status on more items in one operation 37 11.8 Connections can be partly mounted 37 12 More function in the Object lister (F7) 38 12.1 Object lister – new default setup * 38 12.2 The Object lister has a filter in all columns 38 12.3 Object lister – all symbol types can be shown on the symbol tab * 38 12.4 The Object lister can show accessories 39 12.5 Objektlister kan vise stregart 39 13 Extension to Symbol data fields 40 13.1 New fixed symbol data fields are by default only in the current project 40 13.3 Symbol data fields with formula 40 13.4 New formular editor for line and symbol data fields 41 14 Miscellanious new	10.10	PDF-export with command line	
11 Mounting assistant 36 11.1 Two or more users on the same project. 36 11.2 The connection can be selected in the list or in the diagram 36 11.3 All order numbers based in the project are in the dropdown list 36 11.4 The Overview window has a big Mounted button 36 11.5 Wire numbers in the wire list 36 11.6 Export to Excel 37 11.7 Possible to change status on more items in one operation 37 11.8 Connections can be partly mounted 37 12 More function in the Object lister (F7) 38 12.1 Object lister – new default setup * 38 12.2 The Object lister ne all symbol types can be shown on the symbol tab * 38 12.3 Object lister – all symbol types can be shown on the symbol tab * 38 12.4 The Object lister can show accessories 39 12.5 Objektlister kan vise stregart 39 13 Extension to Symbol data fields 40 13.2 Symbol data fields are by default only in the current project 40 13.3 Symbol data fields with formula 40 13.4 New formular editor for line and symbol data fields 41 14 Miscellanious news and improvements 42 14.1 Change Symbol med 'Ignore	10.11	The namelist in unit drawings are with hyperlinks	
11.1 Two or more users on the same project. 36 11.2 The connection can be selected in the list or in the diagram 36 11.3 All order numbers based in the project are in the dropdown list 36 11.4 The Overview window has a big Mounted button 36 11.5 Wire numbers in the wire list 36 11.6 Export to Excel 37 11.7 Possible to change status on more items in one operation 37 11.8 Connections can be partly mounted 37 12 More function in the Object lister (F7) 38 12.1 Object lister - new default setup * 38 12.3 Object lister - all symbol types can be shown on the symbol tab * 38 12.4 The Object lister can show accessories 39 12.5 Objektlister kan vise stregart 39 13 Extension to Symbol data fields 40 13.2 Symbol data fields are by default only in the current project 40 13.3 Symbol data fields with formula 40 13.4 New formular editor for line and symbol data fields 41 14 Miscellanious news and improvements	11 Mo	unting assistant	
11.2 The connection can be selected in the list or in the diagram 36 11.3 All order numbers based in the project are in the dropdown list 36 11.4 The Overview window has a big Mounted button 36 11.5 Wire numbers in the wire list 36 11.6 Export to Excel 37 11.7 Possible to change status on more items in one operation 37 11.8 Connections can be partly mounted 37 12 More function in the Object lister (F7) 38 12.1 Object lister – new default setup * 38 12.2 The Object lister has a filter in all columns 38 12.3 Object lister can show accessories 39 12.4 The Object lister can show accessories 39 12.5 Objektlister kan vise stregart 39 13.1 New fixed symbol data fields 40 13.2 Symbol data fields 40 13.3 Symbol data fields with formula 40 13.4 New formular editor for line and symbol data fields 41 14 Miscellanious news and improvements 42 14.1 C	11.1	Two or more users on the same project	
11.3 All order numbers based in the project are in the dropdown list 36 11.4 The Overview window has a big Mounted button 36 11.5 Wire numbers in the wire list 36 11.6 Export to Excel 37 11.7 Possible to change status on more items in one operation 37 11.8 Connections can be partly mounted 37 12 More function in the Object lister (F7) 38 12.1 Object lister – new default setup * 38 12.2 The Object lister has a filter in all columns 38 12.3 Object lister – all symbol types can be shown on the symbol tab * 38 12.4 The Object lister can show accessories 39 12.5 Objektlister kan vise stregart 39 13.1 New fixed symbol data fields 40 13.2 Symbol data fields are by default only in the current project 40 13.3 Symbol data fields with formula 40 13.4 New formular editor for line and symbol data fields 41 14 Miscellanious news and improvements 42 14.1 Change Symbol med 'Ignore symbol path' 42 <td>11.2</td> <td>The connection can be selected in the list or in the diagram</td> <td></td>	11.2	The connection can be selected in the list or in the diagram	
11.4The Overview window has a big Mounted button3611.5Wire numbers in the wire list3611.6Export to Excel3711.7Possible to change status on more items in one operation3711.8Connections can be partly mounted3712More function in the Object lister (F7)3812.1Object lister – new default setup *3812.2The Object lister has a filter in all columns3812.3Object lister – all symbol types can be shown on the symbol tab *3812.4The Object lister can show accessories3912.5Objektlister kan vise stregart3913Extension to Symbol data fields4013.1New fixed symbol data field4013.2Symbol data fields are by default only in the current project4013.4New formular editor for line and symbol data fields4114Miscellanious news and improvements4214.1Change Symbol med 'Ignore symbol path'4214.3Select ref. designations with As page and Delete button *4214.4Settings for Insert ref.frame are saved *4314.5Export to DWG and DXF4314.6New letter codes from 81346-2 are in the program.4414.7Improved contact mirror44	11.3	All order numbers based in the project are in the dropdown list	
11.5Wire numbers in the wire list3611.6Export to Excel3711.7Possible to change status on more items in one operation3711.8Connections can be partly mounted3712More function in the Object lister (F7)3812.1Object lister – new default setup *3812.2The Object lister has a filter in all columns3812.3Object lister – all symbol types can be shown on the symbol tab *3812.4The Object lister can show accessories3912.5Objektlister kan vise stregart3913Extension to Symbol data fields4013.1New fixed symbol data fields4013.2Symbol data fields are by default only in the current project4013.3Symbol data fields with formula4013.4New formular editor for line and symbol data fields4114Miscellanious news and improvements4214.1Change Symbol med 'Ignore symbol path'4214.3Select ref.designations with As page and Delete button *4214.4Settings for Insert ref.frame are saved *4314.5Export to DWG and DXF4314.6New letter codes from 81346-2 are in the program4414.7Improved contact mirror44	11.4	The Overview window has a big Mounted button	
11.6Export to Excel3711.7Possible to change status on more items in one operation3711.8Connections can be partly mounted3712More function in the Object lister (F7)3812.1Object lister – new default setup *3812.2The Object lister has a filter in all columns3812.3Object lister – all symbol types can be shown on the symbol tab *3812.4The Object lister can show accessories3912.5Objektlister kan vise stregart3913Extension to Symbol data fields4013.1New fixed symbol data field4013.2Symbol data fields are by default only in the current project4013.3Symbol data fields with formula4013.4New formular editor for line and symbol data fields4114Miscellanious news and improvements4214.1Change Symbol med 'Ignore symbol path'4214.3Select ref.designations with As page and Delete button *4314.5Export to DWG and DXF4314.6New letter codes from 81346-2 are in the program44	11.5	Wire numbers in the wire list	
11.7 Possible to change status on more items in one operation 37 11.8 Connections can be partly mounted. 37 12 More function in the Object lister (F7) 38 12.1 Object lister – new default setup * 38 12.2 The Object lister has a filter in all columns 38 12.3 Object lister – all symbol types can be shown on the symbol tab * 38 12.4 The Object lister can show accessories 39 12.5 Object lister kan vise stregart 39 13 Extension to Symbol data fields 40 13.1 New fixed symbol data field 40 13.2 Symbol data fields are by default only in the current project 40 13.3 Symbol data fields with formula 40 13.4 New formular editor for line and symbol data fields 41 14 Miscellanious news and improvements 42 14.1 Change Symbol med 'Ignore symbol path' 42 14.2 Replace all symbols in the project 42 14.3 Select ref.designations with As page and Delete button * 42 14.4 Settings for Insert ref.frame are saved *	11.6	Export to Excel	
11.8Connections can be partly mounted.3712More function in the Object lister (F7).3812.1Object lister – new default setup *3812.2The Object lister has a filter in all columns3812.3Object lister – all symbol types can be shown on the symbol tab *3812.4The Object lister can show accessories3912.5Objektlister kan vise stregart3913Extension to Symbol data fields4013.1New fixed symbol data field4013.2Symbol data fields are by default only in the current project4013.3Symbol data fields with formula4013.4New formular editor for line and symbol data fields4114Miscellanious news and improvements4214.1Change Symbol med 'Ignore symbol path'4214.2Replace all symbols in the project4214.3Select ref.designations with As page and Delete button *4314.5Export to DWG and DXF4314.6New letter codes from 81346-2 are in the program4414.7Improved contact mirror44	11.7	Possible to change status on more items in one operation	
12 More function in the Object lister (F7)	11.8	Connections can be partly mounted	
12.1Object lister – new default setup *3812.2The Object lister has a filter in all columns3812.3Object lister – all symbol types can be shown on the symbol tab *3812.4The Object lister can show accessories3912.5Objektlister kan vise stregart3913Extension to Symbol data fields4013.1New fixed symbol data field4013.2Symbol data fields are by default only in the current project4013.3Symbol data fields with formula4013.4New formular editor for line and symbol data fields4114Miscellanious news and improvements4214.1Change Symbol med 'Ignore symbol path'4214.3Select ref.designations with As page and Delete button *4214.4Settings for Insert ref.frame are saved *4314.5Export to DWG and DXF4314.6New letter codes from 81346-2 are in the program4414.7Improved contact mirror44	12 Moi	re function in the Object lister (F7)	
12.2The Object lister has a filter in all columns3812.3Object lister – all symbol types can be shown on the symbol tab *3812.4The Object lister can show accessories3912.5Objektlister kan vise stregart3913Extension to Symbol data fields4013.1New fixed symbol data field4013.2Symbol data fields are by default only in the current project4013.3Symbol data fields with formula4013.4New formular editor for line and symbol data fields4114Miscellanious news and improvements4214.1Change Symbol med 'Ignore symbol path'4214.3Select ref.designations with As page and Delete button *4214.4Settings for Insert ref.frame are saved *4314.5Export to DWG and DXF4314.7Improved contact mirror44	12.1	Object lister – new default setup *	
12.3Object lister – all symbol types can be shown on the symbol tab *3812.4The Object lister can show accessories3912.5Objektlister kan vise stregart3913Extension to Symbol data fields4013.1New fixed symbol data field4013.2Symbol data fields are by default only in the current project4013.3Symbol data fields with formula4013.4New formular editor for line and symbol data fields4114Miscellanious news and improvements4214.1Change Symbol med 'Ignore symbol path'4214.3Select ref.designations with As page and Delete button *4214.4Settings for Insert ref.frame are saved *4314.5Export to DWG and DXF4314.6New letter codes from 81346-2 are in the program4414.7Improved contact mirror44	12.2	The Object lister has a filter in all columns	
12.4The Object lister can show accessories3912.5Objektlister kan vise stregart3913Extension to Symbol data fields4013.1New fixed symbol data fields4013.2Symbol data fields are by default only in the current project4013.3Symbol data fields with formula4013.4New formular editor for line and symbol data fields4114Miscellanious news and improvements4214.1Change Symbol med 'Ignore symbol path'4214.2Replace all symbols in the project4214.3Select ref.designations with As page and Delete button *4314.5Export to DWG and DXF4314.6New letter codes from 81346-2 are in the program4414.7Improved contact mirror44	12.3	Object lister – all symbol types can be shown on the symbol tab *	
12.5Objektlister kan vise stregart3913Extension to Symbol data fields4013.1New fixed symbol data fields4013.2Symbol data fields are by default only in the current project4013.3Symbol data fields with formula4013.4New formular editor for line and symbol data fields4114Miscellanious news and improvements4214.1Change Symbol med 'Ignore symbol path'4214.2Replace all symbols in the project4214.3Select ref.designations with As page and Delete button *4314.4Settings for Insert ref.frame are saved *4314.5Export to DWG and DXF4314.6New letter codes from 81346-2 are in the program4414.7Improved contact mirror44	12.4	The Object lister can show accessories	
13 Extension to Symbol data fields	12.5	Objektlister kan vise stregart	
13.1New fixed symbol data field4013.2Symbol data fields are by default only in the current project4013.3Symbol data fields with formula4013.4New formular editor for line and symbol data fields4114Miscellanious news and improvements4214.1Change Symbol med 'Ignore symbol path'4214.2Replace all symbols in the project4214.3Select ref.designations with As page and Delete button *4314.4Settings for Insert ref.frame are saved *4314.5Export to DWG and DXF4314.7Improved contact mirror44	13 Ext	ension to Symbol data fields	40
13.2Symbol data fields are by default only in the current project4013.3Symbol data fields with formula4013.4New formular editor for line and symbol data fields4114Miscellanious news and improvements4214.1Change Symbol med 'Ignore symbol path'4214.2Replace all symbols in the project4214.3Select ref.designations with As page and Delete button *4214.4Settings for Insert ref.frame are saved *4314.5Export to DWG and DXF4314.6New letter codes from 81346-2 are in the program4414.7Improved contact mirror44	13.1	New fixed symbol data field	40
13.3Symbol data fields with formula4013.4New formular editor for line and symbol data fields4114Miscellanious news and improvements4214.1Change Symbol med 'Ignore symbol path'4214.2Replace all symbols in the project4214.3Select ref.designations with As page and Delete button *4214.4Settings for Insert ref.frame are saved *4314.5Export to DWG and DXF4314.6New letter codes from 81346-2 are in the program4414.7Improved contact mirror44	13.2	Symbol data fields are by default only in the current project	
13.4New formular editor for line and symbol data fields4114Miscellanious news and improvements4214.1Change Symbol med 'Ignore symbol path'4214.2Replace all symbols in the project4214.3Select ref.designations with As page and Delete button *4214.4Settings for Insert ref.frame are saved *4314.5Export to DWG and DXF4314.6New letter codes from 81346-2 are in the program4414.7Improved contact mirror44	13.3	Symbol data fields with formula	40
14 Miscellanious news and improvements4214.1 Change Symbol med 'Ignore symbol path'4214.2 Replace all symbols in the project4214.3 Select ref.designations with As page and Delete button *4214.4 Settings for Insert ref.frame are saved *4314.5 Export to DWG and DXF4314.6 New letter codes from 81346-2 are in the program4414.7 Improved contact mirror44	13.4	New formular editor for line and symbol data fields	41
14.1Change Symbol med 'Ignore symbol path'4214.2Replace all symbols in the project4214.3Select ref.designations with As page and Delete button *4214.4Settings for Insert ref.frame are saved *4314.5Export to DWG and DXF4314.6New letter codes from 81346-2 are in the program4414.7Improved contact mirror44	14 Mis	cellanious news and improvements	42
14.2Replace all symbols in the project	141	Change Symbol med 'Ignore symbol path'	42
14.3Select ref.designations with As page and Delete button *	14.2	Replace all symbols in the project	
14.4Settings for Insert ref.frame are saved *	14.3	Select ref.designations with As page and Delete button *	
 14.5 Export to DWG and DXF	14.4	Settings for Insert ref.frame are saved *	43
14.6 New letter codes from 81346-2 are in the program	14.5	Export to DWG and DXF	43
14.7 Improved contact mirror	14.6	New letter codes from 81346-2 are in the program	44
	14.7	Improved contact mirror	44

1	4.8 More f	functionality to the Align function *	45
1	4.9 Desigr	n of symbol with the Symbol generator	45
1	4.10 Rotate	e an object with 10° *	46
1	4.11 The ic	on New and Files New has the same function *	46
1	4.12 The le	ngth of the list of last opened files can be changed *	46
1	4.13 Defaul	It cable quantity can be changed *	47
1	4.14 Lines	with article data	47
1	4.15 Shortc	cut to color settings from the vertical toolbar	48
1	4.16 Height	t can be assigned by the Copy/Transfer properties icons	48
1	4.17 Text p	roperties	48
1	4.18 Leade	rs – with or without arrow	49
1	4.19 User ir	nterface is now also in French	49
	14.19.1	Drawing headers are now also in Croatian	49
1	4.20 Direct	access to article data in right-click menu	50
1	4.21 Double	e click in the drawing header opens Project or Page data	50
1	4.22 Cleani	ing out superflous menu items and functions	50
4 -			
15	From old t	ext adjustments to new ones	.51
1	5.1 Load c	of list pages	51
16	Formula e	ditor for line and symbol data fields	52
1	6.1 Gener	al	52
1	6.2 Operation	tore	53
1	1621 Arith	iuis	53
	16.2.2 And	lean operators:	55
	16.2.3 Com	inarison operators:	54
	16.2.4 Equa	ality operators:	
	16.2.5 Strin	ng operator:	55
	16.2.6 Varia	able:	55
1	6.3 Functi	ons:	55
	16.3.1 Fund	ction: DATAFIELD	55
	16.3.2 Fund	ction: VAL	55
	16.3.3 Fund	ction: ISVAL	56
	16.3.4 Fund	ction: FORMAT	56
2	An optiona	al width specifier [width]	57
 2	An options	al provision specifier ["" prog]	57
э.	All options		
4.	The conve	rsion type character, type	57
	16.3.5 Fund	ction: EXP	58
	16.3.6 Fund	ction: POW	58
	16.3.7 Fund	ction: SQRT	58
	16.3.8 Fund	ction: SIN	59
	16.3.9 Fund	ction: COS	59
	16.3.10	Function: TAN	59
	16.3.11	Function: ASIN	60
	16.3.12	Function: ACOS	60
	16.3.13	Function: ATAN	61
	16.3.14	Function: ABS	61
	16.3.15		D⊥ ∠1
	16317	Function: TRUNC	OL 60
	16318	Function: ROUND	UZ 60
	16319	Function: IF	UZ 62
	±0.0.±/	r Griedeni, 11	02

1 NEW LOGOS

Hard to hide: our programs have new logos:

Automation







Database



License Manager



Installer



License Manager Config



We are implementing the new logos in our programs, on our website, in advertissements etc.. Our other programs also have new logos.

Our company logo and website also changes. Look and read much more on www.pcschematic.com.

2 PREPARING FOR A NEW COMPONENT DATABASE

At the user meeting held in October and November 2019, we announced that we are making a new structure for our component database. And in that also means that we will 'tidy up' in some functions.

Generally, you are going to work more component oriented, when you use the database. And this will lead to changes in symbols and projects as described below.

The changes that we make in this version, and that you can read more about in the chapters below, have the following headlines:

- We make limitations to what can be changed on a component on the project
- Symboltype 2 is discontinued

i.

• We have made a major restructuring of functions and types of connection points

When you load an existing project in to ver. 22 and/or fetch a component from the database, we convert the connection points in the project according to the rules described in this chapter.

The easiest way of seeing the changes is by making a new installation, instead of an update. You can make the update later, after the inspection.

The Component Portal is not yet ready for release, but when it happens, we introduce more changes, and they will be described at that time.

3 CHANGES IN SYMBOLS AND CON. POINTS

3.1 The symbol type cannot be changed in the project

When you place a symbol, it has been possible to change the symbol type.

This is not possible from ver. 22.

It was useful earlier, if you needed to have the component's conncetion ofn the terminal list: Earlier you would change symbol type 1 to terminal and then selected the proper symbol type 2 and then changed the connection points. According to some not-so-obvious rules.

Compone	ent data [-P1]					>
	- 18					Qk
Name:	-P1				Visible	All
Eype:	PCSWHLAMP	'1			ΣΣΜΟ	Cancel
Article no:	PCS500004					Unit
unction:						Database
General Ref	. <u>d</u> esign. S <u>y</u> mb	ol data fields	Reference Conns.	Accessory		
Quantity:	1,0	Symbol type	Normal ~			
Scale:	1,0		Relay			
Angle: (),0)9,10801		Open Close			
Symbol: (☐ Include in ☐ The PLC c	Mechanical Load	i ment	Switch Master reference With reference Terminal PLC PLC reference Non conducting			

This is changed now!

In the following, you can read what this means for all symbol types and connection point types.

3.1.1 Reference cross can be deselected for Relay symbols

Because it is not possible to change symbol types in the projects, you can now show the relay symbol without reference cross.

On the Reference tab you choose how to treat the references; you probably want to use the coil as Main reference. ⁱⁱ

Mark Mark Roof 1	- 20						Ok
Name:					2	Visible	All
Type:	PCSCON1	6			T = i		<u>C</u> ancel
Type.	Pescola						Unit
Arucie no:	PCS2250	116			L		Database
Punction:	Kentelsten		- 1		Τ		komponent
General Ref Quantity: [Scale: : Angle: () Symbol: () ☑ Include in ☐ The PLC c	.design. Sy 1,0 1,0 0,0 07-15-01 Mechanical L onnected cor	mbol data fields Symbol type [oad nponent	Reference Co Normal Skip refere Visible Mechanical Electrical	nne cross			

3.2 Symbol states on component symbols cannot be changed

When a component is created in the database, the creator has chosen the right symbol(s) for it. That also means, that if the symbol has various states, it is no longer possible to change the symbol state in the project.



If the symbol is in state 0, it is stil possible to change it.

3.3 Symbol type 2 is discontinued

In connection with optimizing symbol types, we discontinue Symbol type $2^{{\scriptstyle,}\ensuremath{\text{iii}}\xspace}$

Symbol type 2 has only existed to make it possible to show the component's connections on the terminal list. This is now solved in a different way, which you can read more about later in the next chapter.



3.4 A simpler definition of terminals

Until now, we have had many different definitions of terminals, and we have used symbol type 2 for this. The purpose has been making it possible to show connections on the terminal list, so that the list could show all connections that should be mounted.

3.5 Terminals are ALWAYS through terminals

In the future, the following is valid for terminals:

- Components with the symbol type Terminals, which we hereafter call Terminals, are ALWAYS through terminals, meaning that you have the same potential on both sides of the component!
- All connections have the same name.
- There is minimum one connection on side 1 and side 2, respectively, of the component.
- All connections are by default on the terminal list.

The rule, that all connections on a terminal have the same name means, that a terminal block with prenamed connections will be treated as a NORMAL component and not a TERMINAL component!

It also means that the old types, like plc-terminal, relay-terminal etc are discontinued. Read more about this later, and see how to get their connections on the terminallist (it will be easier ②).

3.5.1 Conversion of connection points

As a consequence of discontinuing symbol type 2, many combinations of connections' main type and sub type are irrelecant.

Below you can see, how the combinations are converted. $^{\text{iv}\,\text{v}}$



3.5.2 Change of syntaxes

Symbol types can still be controlled by the database. The following changes to the syntax have been made:

Old syntax	New syntax
Syntax=T,O (Terminal, Open)	Symboltype1 = Open
Syntax=T,C (Terminal, Closed)	Symboltype1 = Closed
Syntax=T,S (Terminal, Switch)	Symboltype1 = Switch
Syntax=T,P (Terminal, PLC)	Symboltype1 = PLC
Syntax=T,N (Terminal, Normal)	Symboltype1 = Normal
Syntax=T,R (Terminal, Relay)	Symboltype2 = Relay
Syntax *M (Symboltype = Master Reference)	Syntax is not changed, but it will be read as Symboltype1 = Normal, with Reference as Master reference
	General Ref.design. Symbol data fields Reference Reference With reference Master reference
Syntax *W (Symboltype = WithReference) ^{vi}	Syntax is not changed, but it will be read as Symboltype1 = Normal, with Reference as Master reference
	General Ref.design. Symbol data fields Reference Reference Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbol data fields Image: Comparison of the symbo
Not found	Syntax=/I:IJ – connection point for jumper only. Side 1, that is the internal side
Nout found	Syntax=/I:EJ – connection point for jumper only. Side 2, that is the external side.

3.6 Overview of changes to connection points

Earlier (until and including ver. 21)	Now (from ver. 22)
IO status Main type input ~ Extension TERM ~ In the terminal list, there is a data field for connection points, input side.	The internal side of the terminal is now called Side 1, and its connections are on the terminal list, when the check mark is set in the 'On terminal list'. The terminal side is indicated as earlier. On terminal list is shown as a square. Connection details On terminal list On terminal list Is jumper
IO status Main type output V Extension TERM V In the terminal list, there is a data field for connection points, output side.	The external side of the terminal is now called Side 2, and its connections are on the terminal list, when the check mark is set in the 'On terminal list'. The terminal side is indicated as earlier. On terminal list is shown as a square. Connection details On terminal list Is jumper
If you didn't want the connection on the terminal list, you needed to change the symbol type to Normal and change the connection point to None/None. Nothing was indicated in the diagram.	If you DON'T wish to show the connection on the terminal list: Side 1 is not on the terminal list, and this is indicated with the normal diamond. The side of the terminal is kept.
If you didn't want the connection on the terminal list, you needed to change the symbol type to Normal and change the connection point to None/None. Nothing was indicated in the diagram.	If you DON'T wish to show the connection on the terminal list: Side 2 is not on the terminal list, and this is indicated with the normal diamond. The side of the terminal is kept. -Connection details On terminal list Is jumper Side 2 (ext)

Earlier (until and including ver. 21)	Now (from ver. 22)
Not possible.	When you have a component, you might have a connection point only for jumpers. This is indicated with a small triangle. The side of the terminal is kept. Only jumpers are allowed to connect to this type of connection point. Connection details On terminal list On terminal list Is jumper
Not possible.	When you have a component, you might have a connection point only for jumpers. This is indicated with a small triangle. The side of the terminal is kept. Only jumpers are allowed to connect to this type of connection point. Connection details On terminal list On terminal list Is jumper
Symbol type 1: Terminal Symbol type 2: selected Individual setting on the connection point.	For symbols of types Normal, Relay, Open, Close, Switch, it is now possible to select per symbol to have its connections on the terminal list. Non-selected connections are indicated as previously.
Symbol type 1: Terminal Symbol type 2: selected Individual setting on the connection point.	For symbols of types Normal, Relay, Open, Close, Switch, it is now possible to select per symbol to have its connections on the terminal list. Selected connections are indicated with a filled-out square, as they are considered to be on side 2 of the terminal row. Connection details ☑ On terminal list

Earlier (until and including ver. 21)	Now (from ver. 22)
Same symbol's connection points in ver. 21: Connection point 1: IO status Main type input V Extension PLC V I/O Status type Analog V	Here you see a PLC input symbol. If you want to have the connection points on the terminal list, you simply tick the box 'On terminal list'.
If you want to see the connections to this address on the terminal list, you need to do the following:	You can also see, whether you have an IO connection or not. It is also easy to select status type.
Change the symbol type: <u>General Ref.design. I/O address Symbol data fields Referen</u> Quantity: <u>1,0</u> Symbol type Terminal Scale: <u>1,0</u> Symbol type2 PLC Make settings to connection point 1: IO status Main type <u>ext/input</u> <u>Extension</u> <u>TERM/PLC</u>	Connection point1: Connection details On terminal list Is I/O connection I/O direction I/O direction Output Output Vii
I/O Status type Analog ~	Connection point 2: Connection details On terminal list
and to connection point 2: IO status Main type none V Extension TERM/PLC V I/O Status type none V	Is I/O connection I/O status type I/O direction Analog Input Digital Output Generic

Tips:

If you want to select more connection points in one operation:

Drag the mouse across the select, hold down the Ctrl-button when you finish the selection. And use the button Object data in the Toolbar to select the desired connection details.



3.7 Indication for parked lines

We have made a lot of changes of how we show connection point statuses.

The 'old' way of showing a parked line (notconnected, conducting line) looks very much like a terminal, side 1.

Therefore, we have made a new marking of parked lines. This marking becomes smaller, the more you zoom in the page



3.8 Symbol editor will check for inconsistencies

From ver. 22, the symbol editor will make sure, that symbols aren't created with incorrect functionalities on connection points. viii

The old syntaxes are kept on your existing components, but they are converted as explained in the table above. We have added two new syntaxes, and they are also explained in the table above.

3.9 More functionality in Designcheck

As a consequence of the new jumper connection option, Design check will check for illegal connections to such a connection point.



4 TRIM YOUR DATABASE 🕹

Remember, the truth about components is found in the database!

That also means, that many functions in the program depend on the quality of your database; is its setup ok, does it have the database fields that are necessary for various modules like the Component Wizard?

4.1.1 Do it this way - create your own database

The database, we deliver with the program, contains all necessary fields.

In the database program (not Automation), you can create your own database:

- Go to Files|New
- Make a new database as a copy of our database. Give it a good name.
- Check that the menu file is from the new database!
- If you need to add extra database fields, go to Files|Properties, and add/insert the desired data fields.
- Import your existing components into your new database.
- Go to Automation.
- Go to settings|Database and select it as your new database.

Ready to go 😂

ix



4.2 Component Wizard

We are improving the Component Wizard continiously and we recommend that you use it when you create new components in the database. Below

4.2.1 Warning for non-mapped fields in database setup

The Component Wizard requires that some database fields are mapped correctly. If one of them is mapped, you can't open the wizard, and you get a warning during startup, telling

you about the missing fields.

Apart from those fields, the database contain the CWCODE data fields.

ver22		×
8	These databasefields must be mapped in order to make the componentguide work: Article, Type, Diagram symbol, Mechanical sym., Pin names, Table code.	

4.2.2 Letter codes from 81346-2 are also in the Component Wizard

When you create new components by using the Component Wizard, we have updated the list of code letters. The standard was updated in 2019.

Now you can choose to use 1, 2 or 3-letter codes for your components.



4.2.3 Selecting diagram symbols shows alternatives

When looking for the correct diagram symbols, the window will now show alternatives.



4.2.4 Changes regarding connection points

All describes changes regarding connection points that are described in this document, are also valid in the Component Wizard.

4.2.5 Mechanical symbols in the Component Wizard

When you want to create a mechanical symbol for your component, we have removed Automec in the standard setup. That means, that when you use our standard database, it is gone.

Instead we have adjusted the Symbol Generator in the following way:

- you can't select connection points: earlier you could select them, but we removed them when saving the symbol
- component name shows your selection from RefID
- the 'Mechanical symbol' is already selected.

 Rectangular 	Width (mm)	Height (mm)	
O Circular	20,00 🖨	27,50	
Line color			
~	Filled		B
			Design. char B Machanical sum
			Medianicai syni

4.2.6 You can change table codes on components in the database

If you have created components with the wrong table code (often blank), you can now

I. Start creating	2. Basic component data	3. Choose diagram symbols	4. Mechanical symbol	5. Other diagram symbols	6. Accessories	7. External fil
			Table code			6

move them by using the Component Wizard:*

- If you edit one component, simply change the table code on the first tab
- If you change more components, you change the table code in the Diagram symbol tab next to RefID.

4.2.7 Adjustable Help pane

The width of the Help section can now be adjusted – simply drag the splitter to the desired position.

4.2.8 Automec and prices are now longer mapped in new installations

We are going to replace Automec with something else in the coming up database. It is not our impression that the Automec function has been used widely? But if you did, we didnt delete it, we just hid it.

The same goes for prices. We don't maintain any price information in the system. If you want to do that, you can still do so.

Did you know.... The data fields can be used for summing other units, ie kW eller kg. If you do so, however, you must be consequent about units when creating your components.

5 USAGE OF SUBNAMES - CLARIFICATION

Subnames is a concept in PCSCHEMATIC Automation, and it has been there in many program versions.

The function was made to be able to show subdivisions of a component, is a switchbutton with a lamp indicator, which consists of a function for the switch button itself and a function for the lamp. The component is called S1!

Another usage of the function could be a disconnector with two coils, in which the internal connections and activations are clearly indicated. The component is called Q1!

What the two examples have in common, is that the subname is part of the component, that means a part of a certain article, and that the subname is fixed for this article and that it is controlled by the database.





Another common thing is, that the component is not divided into parts, and in the diagram you only show and name the components main function, which are S and Q respectively.

That also means, that in the Component menu, we only show the *Component name* and not the *symbol name*.

That also means that when you take a relay from the database, that was created *without* subnames, and give it a subname in the project – which is not according to the rules according to above – then you only see the main name of the relay. And that is exactly the meaning.

Dividing components into part and subnames as such are practical tools when you want to show the internal functions – in the contactor – or if you need to replace one component with several components – as in the switchbutton with lamp indicator. However, you might also use the reference designations, that is the product aspect.

You can find the switch in the pickmenu, and if you want to create your own, simply use the Component Wizard.

5.1 Naming convention of cards in a plc

We have – unfortunately – told everyone, that you can use subnames to indicate slot numbers on plcs. That should not be done. Anymore.

Instead, you should name the cards in the diagram in this way:

Card for Slot 1: -K1.1

Card for Slot 2: -K1.2

Visuallly, in the diagram, there is no difference at all. But naming the card in this way means, that the program works correctly: The Component Menu shows the right IOs, and import of IOdata works correctly.

Compor	nent data [-K1	.1]	×
h a x	🖫 🕶		Qk
Name:	-K1.1	Visible	<u>C</u> ancel
Type:	PCS-PLC-	COMPACT1-230V-1	Unit
Article no:	PCS89201		Database
Function:			components
Description:	Compact p	c: 8 OUT 12 IN common PSU 230V TYPE1	
Ceneral p		Control data Beldi Briffingur Control Association	
Quantitic	1.0		
Scale:	1.0	Symbol type, red reference	
Angle:	0,0	Visible	
Symbol:	PLCREF8-		
🗹 Include i	in Mechanical Lo	oad 🛛 Electrical	
		Name protected	

If you do it the 'old' way everything except the Component menu works.

Unfortunately, we also need to edit our Tutorials and YouTube-videos.

6 HOW TO WORK WITH ACCESSORIES?

How to work with accessories changed from ver. 20 and we have also come up with a few extra changes in versions 21 and 22, so below you get a 'guided tour' through the accessory function in the program.

6.1 Purpose of changing work process and method

- 1. As a user, I wish to have overview of selected accossories for a given component.
- 2. As a user, I wish that it is easy to select the correc accesory for a component.
- 3. As a user, I wish to make a copy of a component including its accessories.

6.1.1 Better overview

When you open Component Data on a master component, you can see all fixed and optional and maybe selected accessories. If the accessories have been created with a picture in our database, you can see the picture, when you select the article on this tab.

When you have seleced accessories for at component, the Component menu will show a tree structure – the branches show the accessories. Fixed accessories will not show if you don't place it.

You will get the most out of the accessory function if all optional accessories are created in the database.

6.1.2 Electrical accessories

Are selected in the Component menu on DIA-pages. Electrical accessories have their own diagram symbols.

If you don't select the accessory through the Component menu, you won't get the tree structure and it won't be regarded as accessory by the program.

6.1.3 Mechanical accessories

The easiest way to select mechanical accessories is to select it on the Accessory tab.

In that way, all selected accessories are included in the parts and components lists and if it has a mechanical symbol, you can – optionallly – place it on the GRP-page, by using the Component menu's available symbols.

You can also place mechanical accessories directly on the GRP-page, as long as it has mechanical symbols.

ame:	-X			$+=?\Sigma\Sigma$	Cancel	
ype:						
rticle no:	PCS212001				Database	
unction:				+=Σ 🖸 🗆	componen State:0	
eneral Ref.	esign. Symbol d	ata fields <u>R</u> eferenc	e Conns_ Accessory		9	
General Ref.g	lesign. Symbol da	ata fields <u>R</u> eferenc	e Conns. Accessory Description (UKDESCRIPT)	MANUFACTUR	9	
eneral Ref. <u>c</u> Count Placed	lesign. Symbol da Article ories	ata fields <u>R</u> eferenc	e Conns. Accessory Description (UKDESCRIPT)	MANUFACTUR	9	
ieneral Ref.g Count Placed Fixed access	lesign. Symbol d Article ories ctrical accessori	ata fields <u>R</u> eferenc Type	e Conns ₁ Accessory Description (UKDESCRIPT)	MANUFACTUR	6	
eneral Ref.g Count Placed Fixed access Selected elec	esign. Symbol da Article ories ctrical accessori	ata fields <u>R</u> eferenc Type	e Conns, Accessory Description (UKDESCRIPT)	MANUFACTUR	0	
eneral Ref. <u>c</u> Count Placed Fixed access Selected elector Optional med	esign. Symbol da Article ories ctrical accessori	tata fields <u>R</u> eference Type	e Conns, Accessory Description (UKDESCRIPT) Divider for PCSXX1	MANUFACTUR	6	
eneral Ref.g Count Placed Fixed access Selected elected Optional med 0	Article ories ctrical accessori chanical accessori 0 PCS217001 0 PCS217002	tata fields Reference Type	e Conns, Accessory Description (UKDESCRIPT)	MANUFACTUR PCS PCS	0	

6.1.4 Fixed accessories

Fixed accessories are defined in the database and can only be changed there.

6.1.5 Copy a component with mechanical accessories

Accessories are connected to the main component.

When the program can't see, which component the accessory is connected to, it will not be copied.

This is relevant, when you copy and you don't rename the components.

Be aware, that this is also done, when you work with naming according to page and current path, no matter whether or not your terminals follow the naming convention.

Do NOT rename Symbols		
Rename Symbols		<u>C</u> ancel
Start No. (0=Next avail.):	0	
O Do NOT rename Terminals		
Rename Terminals		
O Rename terminal Connection Points		
Rename Wire Numbers		
Talahan adaptat	when renaming)	

6.1.6 Copy and reference designations

When you work with ref. designations, the program will help you select a new designation for the copied parts.

If you don't know which designation to apply, use a temporary one, which is easy to change at a later stage.

Jesignation	Description	New designation	<u>O</u> k
£ +2	Outside building	(Unchanged)	Cancel
-UC3	External control 2	(Unchanged)	
			Create ne
			Create Ten

Remember

'Like' doesn't mean 'the same'!

Same article number doesnt mean same component name.

Same component name doesn't means same reference designaiton.

6.2 The accessory tab is configurable

You can adjust the width of columns on the accessory tab.

If you rightclick in the top row, you can select which database fields you want to see for the accessory. The setting is for all component data dialogs.

Remember, that the data you select to show in this way, is also seen in the small popup-info, so don't select too many.

					D	KDESCRIDT	
Compone	nt data [-X1]				~ 11		
						EDESCRIPT	k
	1200				RI	EMARKS	
<u>l</u> ame:	-X1				 с 	ATALOGUE	
ype:	PCSXX1GY					DURCE	icel
urticle no:	PCS212001				M	IANUFACTUR	iit
, ucie no.	FC3212001				U	NITPRPACK	has
unction:					P	RICE	
escription:	Through terminal	- 1 in 1 out GY			D	ISCOUNT	ne
Seneral Pof	design Symbol d	ata fields Reference	Conns Accessory		N	ETPRICE	
			C. Addina.	Torigona and	T/	AX	
Count Placed	Article	Туре	Description (UKDESCRIPT)	CATALOGUE	W	(EIGHT	
rixed acces	sories				P	CSTYPE	
Selected ele	ectrical accessor	ies			P	NDATA	
					M	IECTYPE	
Optional me	chanical access	ories			С	ONPLAN	
0	0 PCS217001	PCSXXSK1	Divider for PCSXX1		B	USSYMBOL	
1	0 PCS2250401	PCSPB01	Push button NO	pushbutton.pdf	н	EIGHT	
-1					W	IDTH	
					D	EPTH	
					SI	NGLELINESYMBOL	
					IN	ISTTYPE	
					0	PT_ACCESSORY	
					0	PT_ADDON	
					А	CCESSORY	
					P	CTURE	
						and the second	

Some data fields can contain links, if so, you can open the link directly from here.

And remember, links to the main component are found through the Folder icon in the top of the Component data dialog.

6.3 Any pictures can be viewed on the tab

If your accessory – optional or selected – has a pictoure connected in the database, you can view it, when the mouse comes over the row.^{xi}

Your component data dialog must be tall enough to allow space for the picture!

Count Place	d Article	Туре	Description (UKDESCRIPT)	MANUFACTUR	CATALOGUE
Fixed acco	ssories				
Selected	lectrical accessori	ies			
Optional r	echanical accesso	ories		4	
0	0 PCS217001	PCSXXSK1	Divider for PCSXX1	PCS	
0	0 PCS217002	PCSXXEN1	Endplate for PCSXX1	PCS	
1	0 PCS2250401	PCSPB01	Push button NO	PCS	pushbutton.pdf

6.4 Support symbols and accessory

Support symbols are the 'old' way of working with accessories. What happened with them?

6.4.1 Support symbols in existing projects

Support symbols in existing projects work as always. That means that if you have an existing project where optional mechanical accessory is added by using support symbols, they are also part of the project in ver. 21 and 22.

However, you should know, that it is not recognized as accessory, meaning that it will not be shown as *accessory* on the tab or as a branch in the Component menu.

It also means, that if you copy the main component, the accessory is not automatically includes, because the program doesn't know that it is accessory.

It still included in the parts and component lists.

6.4.2 Support symbols are ignored in the Component menu from ver. 21

If a component's only diagram symbol is a support symbol, this symbol will be ignoret in the Component menu from ver. 21.

That means, that you won't find any 'available' support symbols in this way, thus rminimizing the risk of selecting too much accessory.

Still, if the support symbol is only one of more diagram symbols, it is still shown as a reminder of possible accessories for the component.

7 TERMINALS IN COMP.GROUP 0 AND ACCESSORIES *

We have changed the rules about accessories slightly, in general and particularly regaring terminals.

That means, that it is not possible to have accessories on terminals in component group 0.

If you haven't thought deeply about component gropus earlier, then simply skip the rest of this section. 😨

7.1.1 A little history

In older versions, symbols – and among them terminals – were placed in the project in component group 0. That simply meant that in the project you hadn't decided which components to use. Yet.

When – later – you selected your article numbers, all components – except multi-layer terminals – could keep this component group and your parts list would count correctly. Almost always.

For normal, one-layer through terminal, it meant that every symbol counted as one component, meaning that the parts list was ok, but when you placed the mechanical symbols for the components, the program couldn't keep track of which symbols belonged to which components, meaning that the right-click function Go to symbol didn't work.

For several versions, the program hasn't assigned component group 0, but there are still many project 'out there' that use component group 0, simply because you reuse (parts of) your old projects.

What the program has done in the later versions is, that components get consequent component group numbers, which means that it is possible to track the individual terminal on all pages in the project; this simply means that all components have a unique ID. And then you can use the rightclick function to go to the component's symbols on various pages.

Still, there are more challenges to 'guessing right' and most of the challenges are related to accessories. And that is the reason why we are phasing out component group 0.

7.1.2 Terminals with accessories and they are not placed mechanically

Here are no problems. The parts and the components lists are correct, so continue the good work.

But, if you want to continue working with the terminal row, either by clicking on the component on the diagram page to open the Component data dialog or if you want to place the components on the mechanical page, you must use the Change function, simply click the button in the Component menu.

You can't edit the terminal row when its symbols are in component group 0.

When you click the button, all previously selected accessories to the terminal

Symbols for component -X1 (Alt+F9)		
Name	Connections	
This windows functionality is not ava	ilable for terminals with component group number 0	
This windows functionality is not ava	ilable for terminals with component group number 0	
This windows functionality is not ava	ilable for terminals with component group number 0	

row will be added to one of terminals in the terminal row, and their components groups will become 1, 2, 3, etc.. The parts list will be correct, and you can place the components freely on the mechanial page.

In ver. 22 you can change all terminal rows in the project at once.

Change		×
?	Component group numbers in -X2 will be changed	
	NO UNDO option on this function.	

7.1.3 Terminals with accessories and they are placed mechanically

When you have terminals with accessories and they are placed mechanically, you might experience incorrect parts lists. It depends on how you selected the accessories and how you placed the mechanical symbols.

7.1.3.1 Accessories selected with support symbols

This is the oldest way of selecting accessories. Still, sometimes, you see an incorrect parts list.

7.1.3.2 Accessories selected on the (Mechanical) Accessory tab

Since ver. 18 it has been possible to select accessories on the Accessory tab. That works perfectly, unless you have set the terminal row back to component group 0!

7.1.4 The easiest way to correct my project's terminal rows when my parts list is incorrect due to component group 0

The easiest and simplest way may sound drastic! But it works.

- 1. Delete the terminal row on the mechanical page!
- 2. Go to the diagram page and use the Change button.
- 3. Go back to the mechanical page and place the terminal row again
 - a. Rightclick on one of terminals, select Component name, and in the symbol window you can select all symbols in the terminal row, all in the right order Finally, place the selected accessories.

And now, the lists are correct, and you can go from diagram to mechanical and back again on a selected component's symbols.

8 SMALL CHANGES TO THE COMPONENT MENU

The Component Menu now remembers size etc.:

- The menu's width
- Each window's size
- Symbol size
- Stacked symbols or not-stacked

8.1.1 Branches are closed

When you have components with alternative symbols, the alternative's braches are closed as soon as they become irrelevant.

8.1.2 The menu stays closed

If you choose to close the Component menu, it stays closed in most cases:

If you scroll through your project or if you add a component with only one symbol.

The menu opens automatically, if you add a component with more than one symbol – as this is where you select the symbols for the diagram.^{xii}

8.1.3 Popup on optional accessories

Optional accessories has a popup that shows article no., type and description.

On the Accessory tab you can also see more info, among it a picture, if one was added, link to data sheet etc

8.1.4 Select columns in the symbol window

When you press the settings icon at the buttom (the cogwheel) you can select which columns to show. Some columns are only relevant for plcs, and will be dimmed for other components.^{xiii}

	Symbol height
	Columns
~	Name
	Subname
	PLC address
	Label
~	Description
~	Connections
~	10



Output Lamp 1 Output	Y0,Y1,Y2,Y3,Y4,Y5,Y6,Y7	Ref	
Input Pushbutton 1 Inp	X0,X1,X2,X3,X4,X5,X6,X7	Ref	
Output Lamp 1	YO	Out	
Output Lamp 2	Y1	Out	
Output Lamp 3	Y2	Out	
Output Lamp 4	Y3	Out	
Output Lamp 5	Y4	Out	
Output Lamp 6	Y5	Out	
Output Lamp 7	Y6	Out	
Output Lamp 8	Y7	Out	
Input Pushbutton 1	XO	In	
Input Pushbutton 2	X1	In	
Input Pushbutton 3	X2	In	
Input Pushbutton 4	X3	In	
Input Pushbutton 5	X4	In	
Input Pushbutton 6	X5	In	
Input Pushbutton 7	X6	In	
Input Pushbutton 8	X7	In	
Input Pushbutton 9	X8	In	4
Input Pushbutton 9	X8	In	
0.02 0.03	0.04 0.05		1
12 13 14	15		1
	Output Lamp 1 Output Input Pushbutton 1 Inp Output Lamp 2 Output Lamp 3 Output Lamp 4 Output Lamp 5 Output Lamp 7 Output Lamp 7 Output Lamp 7 Output Lamp 7 Output Pushbutton 1 Input Pushbutton 3 Input Pushbutton 5 Input Pushbutton 5 Input Pushbutton 6 Input Pushbutton 7 Input Pushbutton 7 Input Pushbutton 8 Input Pushbutton 9 000 00000 00000 0000 00000 0000 0000 0000 00000 00000 0000	Output Lamp 1 Output . Y0,Y1,Y2,Y3,Y4,Y5,Y6,Y7 Input Pushbutton 1 . N0,X1,X2,X3,X4,X5,X6,X7 Output Lamp 1 Y0 Output Lamp 2 Y1 Output Lamp 3 Y2 Output Lamp 4 Y3 Output Lamp 5 Y4 Output Lamp 6 Y5 Output Lamp 7 Y6 Output Lamp 8 Y7 Input Pushbutton 1 X0 Input Pushbutton 3 X2 Input Pushbutton 5 X4 Input Pushbutton 5 X4 Input Pushbutton 7 X6 Input Pushbutton 8 X7 Input Pushbutton 9 X8	Output Lamp 1Output Y0,Y1,Y2,Y3,Y4,Y5,Y5,Y7 Ref Input Pushbutton 1Inp X0,X1,X2,X3,X4,X5,X5,X7 Ref Output Lamp 1 Y0 Output Output Lamp 2 Y1 Output Output Lamp 3 Y2 Output Output Lamp 4 Y3 Output Output Lamp 5 Y4 Output Output Lamp 6 Y5 Output Output Lamp 7 Y6 Output Output Lamp 7 Y6 Output Input Pushbutton 1 X0 In Input Pushbutton 5 X4 In Input Pushbutton 5 X4 In Input Pushbutton 7 X6 In Input Pushbutton 8 X7 In Input Pushbutton 9 X8 In

8.2 Placing mechanical symbols

On the GRP-page. when you double-click on a component name, where the mechanical symbol isn't placed yet, you will get the symbol in the crossh hair.

In this way you will save clicks and make it easy to place the symbol.

8.3 Changed shortcut

The new function above means, that the 'old' shortcut 'Double-click to select component name' is discontinued.

Double-click on a component in the Component menu is changed in the following way:

- On DIA-pages: nothing happens
- On GRP-pages: if the mechanical symbol isn't placed, you get it in the cross-hair
- Select component name is still there in the right-click menu as earlier. The function is very practical, particularly when you place terminal rows.

9 LINKED DATA SHEETS CAN BE ZIPPED

From version 22, you can create a zip-file with linked data sheets.

The function is a tool which can be found in the Tools menu.

The function selects the files that are linked by the 'Preferred link field' and packs the files into a zip-file. It also creates a list of components without linked files.^{xiv}



Generate project from selected options

The zip-file is saved in the same folder as the project itself, and it has the same name as the pro-file, ie PCSDEMO3_documents.zip. ^{xv}

PCS212001 PCS212003		^	<u>C</u> lose
PCS330002 PCS500001 PCS500003			Print
PCS600005 PCS2250001			Save
PCS2250106 PCS2250124 PCS2250301	Pcselcad Zip file created Zip file location: C\PCSELCAD\22 dk_BM2019\PCSELCAD\PROJEKT\\PC	SDEMO3_documen	× ts.zip
		0	

In this setup, we link to the database field CATALOGUE.

The module will only select files that it finds in the Alias folder, and not files that are linked to a www-address. ^{xvi}

ield setup Componer	nt data Component accessories Component search Database Menu Url Links Component
Preferred Link field	CATALOGUE
Thumbnails field	PICTURE ~
Sub-drawing	SUBDRAWING ~
File Link Alias	Path
PIC	C:\PCSELCAD\21uk_20190916\PCSELCAD\DATABASE\PICTURES
DOC	C:\PCSELCAD\21uk_20190916\PCSELCAD\DATABASE\CATALOGUE

10 SOMETHING ABOUT LISTS – IMPORT AND EXPORT

Being able to import and export lists to and from projects is a key function.

That also means that there are many wishes to functionality in this area, and also the reason why we almost always have new functions here.

10.1 Load parts and component lists using a format file

When you load a parts or component list, the program will now ask for the format file, that can interpret it.

That means, that when you load a list, you now select a format file, that defines which data is in which column. Earlier, parts and components lists had a fixed format, now it is possible how to read the lists in different formats.

When you place a component from the list it works like before.

10.2 Assign data from an imported component list to the project

You can import a component list that contains component names and data and assign this data to already placed symbols in an existing project.

The component list can also contain data in symbol data fields.

It works the following way:

Start by creating a component list in Excel. It might look like the example below. The list's format follows a format file, in the same way as we define othe import and export formats in the program.

	23	53		8	ж	13	23	×	ile.	80 B	10 N	а	13 U.	rs Pag	
2	8	2		85	2	8	2	2	Compone	nts List - Comp-lis	t_with_settings	.xls			×
8	2	-P20	Ê	-P1	+	-P2	+	-P	Name 3 🔳 -P20	Article No. PCS500001	Function Stop	Setting a			
a)	9	Stop ⁺	₩ A	8	œ _₽	12	₩ T		-P30 -P4 -P5	Place Assign	Wait Go! Stop	c d			24
0	22	15		22	1	82	25		-P6u	PC300002	Go!	e f			
21	æ	50		82			5								
8	8	10	12	85	11	92 -	10	2	: 5	:1					ja,

- 1. Select which list to import
- 2. Select the format file, that interprets it
- 3. Mark a symbol in the project, right-click on the row with the relevant data
- 4. Click Assign
- 5. Click OK in the Component data dialog. xvii

You can use the two new files 'Comp-list_with_settings', one is an Excel-file and one is a format file. They are both in the List folder.

10.3 List export to Excel can write to an existing template or file

When you export your lists to Excel, you often do it, because you want to reuse data for something else, ie for labelling.

List export is enhanced to that when you export to Excel you can select to export to an existing file/template, on a specific sheet and starting in a specific cell.

In this wat you can have several lists in the same Excel file without having to 'cut and paste' manually.

The function is only available when exporting to Microsoft Excel.^{xviii}

You can use the function in this way:

In the List folder, you find the file 'Lists for Project xyz'. Use this file as template for the first 'List-to-file' from the project.

rts List File	
ist file 刁 Save in same folder as proiect	Ok
file name	Browse Close
C: \PCSELCAD \PCSELCAD \PROJECT \DEMO \Lists	for PCSDEMO2.XLSX
Template ∑Use template Template	Browse
C:\PCSELCAD\22 uk 2020-04-14\PCSELCAD\LIS	T\Lists for Project xyz.xlsx
Sheet Top left cell	Save
PartsList V A5	Save as
ormat of created file format file C:\PCSELCAD\22 uk 2020-04-14\PCSELCAD\Pa	Insert in Tools menu rtsList_template.pff
List Helds File Header Fields in Fields in Fields F	o file
D Characteristic constraints of the constraint of the constraints of the constraint	No. FACTUR Ity ption
File format: Comma separated Column Column File form File form File form File form File form	ep line break (^) Header nat: 007 ~
MICrosoft Excel(R) Conv Conv Conv OXML Open	vert line breaks n list file.

- You can as before save the file with your own file name. Default file names indicate list type, but when you use this function, you will probably want to rename the file 'Lists for project abc'.
- For the next 'List-to-file' from this project, simply select 'Lists for project abc' as your template.
- The template contains a sheet for every list type. It is also possible to select a starting cell.xix
- All selections can as earlier be saved in a format file.
- All 'List-to-files' can be saved in the project folder.**

The file Lists for Project xyz is included with ver 22.

10.4 The Table of Contents can show pages changed after date

The Table of Contents setup has a new function:

It is now possible to show only the pages that have been changed after a selected date.

That gives you the option to quickly list changed pages.

Change date, month or year by selecting the section and use the arrows. ^{xxi}

Title	Revision Last edit	Page
Front page	27/03/2020 12.41.40	1
Index - horizontal	27/03/2020 12.45.14	2
Table of Contents	27/03/2020 12.45.14	3
Diagram	28/02/2018 16.04.42	4
Diagran Table of contents setup	×	
-Diagran		5
Diagran	OK	6
Control Include only pages from chapter	Cancel	7
Control Include all pages		8
Layout Indent pages in chapter	Update	
Arrange Show only page titles at Dividers		9
Arran of From date		10
Lists 14 12 2020		
Parts is		11
Comportente let	21/03/2020 12:43.14	12
Terminal list - External connections	27/03/2020 12.45.14	14
Cable plan	27/03/2020 12.45.14	15

10.5 Active hyperlinks to specific lines from a parts or components list

If you include lists in your parts and components lists, it is now possible to jump directly to a specific line, in the same way as you can with a component. ^{xxii}

	Component	Article no.	Туре	
	LINE 1	asdf	Line	
	LINE 2	sdfg	Line	
-	LINE 3	dfgh	Line	
-				-

Note: If you load an old project, the list MUST be updated before this works!

10.6 Number of repetitions and replacements are extended

It is possible to decide how many repetitions and replacements you want to make in a list.

The 'Add' button has been added on both tabs. xxiii

General Sort by	Criteria Repetitions Replaces	<u>O</u> k
# Field	Text	Cancel
1.	~	
2.	~	Update
3.	~	
4.	~	
5.	~	
6.	~	
7.	~	
Add		

10.7 New data field in parts and component lists

Push button NO PCS2250411 PCSPB NC 01

Push button NC

The parts/components list section contains a new data field that can contain thumbnail pictures.

Below you can see an example of a parts list that contains article no., type, manufacturer, descriptiona and the new thumbnail picture.

contains a	Datafield	그는 사람 것은 것 같은 것 같아.	×
mhnail	Data type		<u>O</u> k
monan	Component picture from th	e DataBase	Cancal
	⊖ System Data	User name v	Gancel
	O Project Data	Project number v	
a parts list	O Page Data	Approved by 🕓	
ufacturer	O Symbol Data Field	Segregation 🗸	
unacturer,	O Line Data Field	RoutingClass	
ail picture.	O Table of Contents	Approved by	
	Parts/Components List	Thumbnails field 🗸 🗸	
	O reminais List	T.hame	
	Cables List	Cb.name ~	
PCS2250106 PCS Contactor 3POL 1NO 2NC typ PCS2250124 PCSCON-AUX04	vet		
Aux contacts 2NO 2NC type1	1		
PCS2250401			-
PCSPB01			
Push button NO			
PCS2250411			
DOCDD NO M			And the second se

10.8 PLC list includes plc subname in the sorting *

The PLC-list now includes the plc subname in its sorting and other views. This applies when you look for an address with the IO-button:

a a	13				a a 2	•	ax ⊗ -				Ok
		•			-K1.2*	Nam	e: K	_		Visible + = ? Σ Σ/ Σ	Cancel
0.00	-	🚽 Outp	uts:					-		ΣΣΜΟ	Unit
0.01	0.1	Name	Function	Connection point	Description	Label	I/O Status type	۸	Ok		Database
	12	-K1.1	0.00	1							components
	12	-K1.1	0.01	2					Cancel		
0.03		-K1.1	0.02	3					-к v		
	18	-K1.1	0.03	4					*		
1.04		-K1.1	0.04	5					-K1.1	ta fields Reference Conns.	
0.05		-K1.1	O.05	6					-K1.2		
	1	-K1.1	0.06	7					-61.5	1	
		-K1.1	0.07	8							
0.07		-K1.2	0.00	1							T/O addr
	-	-К1.2	0.01	2							1/0 auu
12 E4		-K1.2	0.02	3							
		-K1.2	0.03	4							
5 SL	•	-K1.2	0.04	5							
		-K1.2	0.05	6							
		-K1.2	0.06	7					I/O		
$\alpha = \alpha$	- 6	-K1.2	0.07	8					All		
		-K1.3	0.00	1					0+		

And it applies in the PLC-list.

Before you start using (or continue using) subnames, you should read about Subnames and plc on page 19.

xxiv

Name	I/O	Description
-K1.1:1	0.00	Slot 1 - addr. 0.00 - 0.07
-K1.1:2	0.01	
-K1.1:3	0.02	
-K1.1:4	0.03	
-K1.1:5	0.04	
-K1.1:6	0.05	
-K1.1:7	0.06	
-K1.1:8	0.07	
 -K1.2:1	0.00	Slot 2 - addr. 0.00 - 0.07
-K1.2:2	0.01	
-K1.2:3	0.02	
-K1.2:4	0.03	
-K1.2:5	0.04	
-K1.2:6	0.05	
-K1.2:7	0.06	
-K1.2:8	0.07	

10.9 Export to Cablemanager

This new button makes it possibel to export data directly from Automation to Cablemanager.



To make it work, you must have a Symbol data field called Segregation.

The field is created in a new installation, but you have to create it manually if you update your installation.

Cables that you want to export to Cablemaanger MUST have data in this field, otherwise they are not included in the export.

10.10PDF-export with command line

You can start a PDF-export with a command line, and you have been able to do that in many versions.

The new part is, that the command can use the settings in the Quick setup file.

The Quick setup example here simply contains the settings that you see above.I have made it by pressing Save and giving it a name. A practical function if you need different PDF-formats for different purposes.

DF Export		
Select pages	Setup	<u>O</u> k
Filename	C:\PCSELCAD\22 uk 2020-04-14\PCSELCAD\PROJECT\DE	Cancel
	Use PDF export folder	_
	Active Reference links	
	Jump to zoom	
	O Jump to full page	
	Symbol popup information	
	Line data popup information	
	Black/White	
	Replace PCSCHEMATIC Font with	
	No replacement \checkmark	
Resolution	300 🗸 dpi	
Page size	Automatic ~	
	Show layer settings Dim inactive layers	
🗹 Open PDF	file	Update <u>A</u> ll Lists
Quick setup		
pdf-expo	vrt type 1.pdfset 🗸 🗸 🖷	

The Quick setup default saved in xx\PCSELCAD.

The command file format is:

FILESAVEAS.PDF pdf-export type 1.pdfset c:\pcselcad\Project\MyProject.pro

10.11 The namelist in unit drawings are with hyperlinks

When you click the namelist in unit drawings, they are with hyperlinks, which means that you will jump directly to the selected component in the project.

xxv



11 MOUNTING ASSISTANT

There are new functions to the Mounting Assistant:

11.1 Two or more users on the same project

If the project is saved on a common drive, then more users can open the same project and Order No.



There is always a Refresh button, and you get a message when the number of concurrent users change.

11.2 The connection can be selected in the list or in the diagram

The Mounting Assistant is based on the project's connection list, and for that reason all connections are presented in the same order as they are in the project.

As an alternative to finding the connection in the list, it is possible to select it directly in the diagram, and then the selected connection will be seen in the window.

11.3 All order numbers based in the project are in the dropdown list

All created order numbers on the current project are now seen in the dropdown list when you open the Mounting Assistant.

Mou	inting assistant: PCSDEMO3.pro	\$7977		×
	Select or create file order number:			
007				~
001 002				
		UK .	Ca	ICEI

11.4 The Overview window has a big Mounted button

If you use the Mounting Assistant on a tablet or any type of touch screen, you can done touch the Mounted button at the far right of the Overview window.

Display window for: 007			
=1/+1.10.1/-UC2.S3:3			~
Cable name =SYS0/+1.1/-UC1.W3	Potential Wire number	Wire data	

11.5 Wire numbers in the wire list

Wire numbers have their own column in the list.

1/1 ~ 12	🛃 (7) 🔤
	/// <u>*</u>

11.6 Export to Excel

You can export directly to Excel from the Connections and the Component tabs.

You export the selected list – 'What you see is what you get'.^{xxvi}

|--|--|--|--|--|--|--|--|

11.7 Possible to change status on more items in one operation

When you rigthclick you can change status on all connections on one operation.

There is a similar function on the Components tab.

				1	s 🖓 🗠
From	То	Potential	Wire	State	~
-UC1.T1:L1	=SYS0/+1.1/-	L1		8	<u>✓</u>
=SYS0/+1.1/-	=SYS0/+1.1/-	L1		8	×
=SYS0/+1.1/-	=SYS0/+1.1/-	L1		8	12
=SYS0/+1.1/-	=SYS0/-	Manualati		8	<i>9</i> 0
=SYS0/+1.1/-	=SYS0/-	wount all		8	
=SYS0/+1.1/-	=SYS0/- 💥	Unmount all		8	
=SYS0/+1.1/-	=SYS0/-	Ignore all		8	
=SYS0/+1.1/-	=SYS0/-			8	
-UC1.T1:L2	=SYS0/-	Stuck all		8	000
=SYS0/+1.1/-	=SYS0/+1.1/-	L2		8	Zoom
=SYS0/+1.1/-	=SYS0/+1.1/-	L2		8	122%
=SYS0/+1.1/-	=SYS0/+1.1/-	L2		8	+
=SYS0/+1.1/-	=SYS0/+1.1/-	L2		8	-

11.8 Connections can be partly mounted

When you work on a large project, you will sometimes need to only mount one end of the connection.

In the list of connections, you can select the From or To end, and mark it as Partly mounted.

Mounting	assistant for: 0	07				×
Connections	Components	■ 🖉			5 1) 🛃
From	То	Potential	Wire	State		
-UC1.T1:L1	=SYS0/+1.1/-	L1		(I)		\checkmark
=SYS0/+1.1/-	=SYS0/+1.1/-	L1		Q		×
=SYS0/+1.1/-	=SYS0/+1.1/-	L1		•		12
=SYS0/+1.1/-	=SYS0/+1.1/-	L1		Q		40
=SYS0/+1.1/-	=SYS0/+1.1/-	L1		O		0
=SYS0/+1.1/-	=SYS0/+1.1/-	L1		¥		0
=SYS0/+1.1/-	=SYS0/+1.1/-	L1		Mark	as partly	moun
=SYS0/+1.1/-	=SYS0/+1.1/-	L1		8	, as pare	
eventer at	eventual at	1.4		-		

12 MORE FUNCTION IN THE OBJECT LISTER (F7)

The Object Lister is a tool that can be used in many ways in the program. That also means, that some functionality is improved on request.

12.1 Object lister – new default setup *

When you install Automation (not update), the Object lister has had a new default setup.

The setup includes a Component function – see the two pictures on this page.

Remember, you can always make your own setup: Rightclick in the headline and select the columns you want, and drag them to the position you want.

12.2 The Object lister has a filter in all columns

Youcan set a filter in all columns in the Object lister. It works in the same way as in eg. Excel, so type a part of the contents in a columnm and see only the objects that has this part.

Object Lister Symbols Signals WireN Other	umbers <u> C</u> al r symb ~	bles Termina	als PLC I/O PLC I/O (ref.)	<u>T</u> exts Re	ference frames Pages	Lines
Component /	Name	Conns.	Article 🍸	Type	Function	Symbol
=SYS0/+1.1/-UC1.F1(1)	-F1	96,95	P662250001	PCSMV001A		07-09KB3
•	-F1	1,2,3,4,5,6,	PCS2250001	PCSMV001A		#PCSMV1
	-F1	98,97	PCS2250001	PCSMV001A		07-09KS3
	-F1	1,2,3,4,5,6	PCS2250001	PCSMV001A		H7315-21
=SYS0/+1.1/-UC1.F2(1)	-F2	96,95	PCS2250001	PCSMV001A		07-09KB3
	-F2	1,2,3,4,5,6	PCS2250001	PCSMV001A		H7315-21

12.3 Object lister – all symbol types can be shown on the symbol tab *

You can choose to show all symbol types on the symbol tab, which means that info on eg terminals and cables can be shown together with info on 'ordinary' symbols.

) -+ +-	Termin	als	/ DB		А т.	A - A							
	Cables	umbere	2 0		u¢ ···					10.11			
Component	PLCs	unders	Conns.	Article	Type	Function	Symbol	Page No.	Cmp. group	visible	Electrical	Mechanical	Mec.acc r
-0C1.11(0)	✓ Other :	symbols	L1,L2,L3,N,	FSupply	Supply		#x35mmy2C	15	0				
	-	14	L1,L2,L3,N,	F Supply	Supply		#x35mmy20	5	0	\leq			
=1/+1.10.1/-UC2.P	1 (1) +	P1	X1,X2	PCS500001	PCSRDLAMP		#PCSLAMPE	16	1	~	~	~	
	4	P1	X1,X2	PCS500001	PCSRDLAMP	Emergency stop/Fault	08-10B01	8	1	\sim	\sim		
=1/+1.10.1/-UC2.P	2 (1) +	P2	X1,X2	PCS500003	PCSGNLAMP	Door up	08-10801	8	1	\sim	\sim	\sim	
	4	P2	X1,X2	PCS500003	PCSGNLAMP		#PCSLAMPE	16	1	\leq		\checkmark	
=1/+1.10.1/-UC2.P	3 (1) +	P3	X1,X2	PCS500003	PCSGNLAMP		#PCSLAMPE	16	1	~	1	~	
	4	Р3	X1,X2	PCS500003	PCSGNLAMP	Door down	08-10801	8	1	\sim	\sim	2	
=1/+1.10.1/-UC2.S	1 (1) -	51	1,2	PCS2250411	PCSPB NC 0		#PCSPB_NC	16	1	~	2	~	
		S1	1,2	PCS2250411	PCSPB NC 0	Emergency stop	07-07NB2	7	1	\sim		\checkmark	
=1/+1.10.1/-UC2.S	2 (1) -	52	3,4	PCS2250401	PCSPB01		#PCSPB_NC	16	1	~	1	~	
	-	S2	3,4	PCS2250401	PCSPB01	Door up	07-07-02	7	1	2	2	~	
=1/+1.10.1/-UC2.S	3 (1) -	S3	3,4	PCS2250401	PCSPB01	Door down	07-07-02	7	1	~	2	\checkmark	
	-	\$3	3,4	PCS2250401	PCSPB01		#PCSPB_NC	16	1		2	~	
=1/+1.10.2/-M1(1)) 4	M1	U,V,W,PE	PCS600005	PCSMOTOR:		06-08301	6	1		2	~	
=1/+1.10.3/-S1 (0)	-	S1	1,2				07-02-03	7	0	~	2	~	
=1/+1.10.4/-S2 (0)	-	52	1,2				07-02-03	7	0		~	~	
=1/+2.1/-UC3.P1 (1	1) 4	P1	X1,X2	PCS500001	PCSRDLAMP		#PCSLAMPE	16	1	~		~	
	4	P1	X1,X2	PCS500001	PCSRDLAMP	Emergency stop/Fault	08-10801	8	1		2	~	
=1/+2.1/-UC3.P2 (3	1) -	P2	X1,X2	PCS500003	PCSGNLAMP	Door up	08-10801	8	1	2	2	~	
	5	0.0		00000000							102		~

12.4 The Object lister can show accessories

The Object lister can show all mechanical and fixed accessories.^{xxvii}

PLC I/O (ref.)	Texts Re	ference frames Pag	es Lines					
	1.	🖓 - 🖧			_			
Y	Туре	Function	Fixed accessories	Mec.accessories	Pane	No. Cmp. group Visible	Electrical	
	PCSMV001A				7	Name		
	PCSMV001A				15	 Conns. 		
	PCSMV001A				8	✓ Type		
	PCSMV001A				6	 Article 		
	PCSMV001A				10	 Function 		
	PCSMV001A				9	 Symbol 		
	PCSMV001A				15	Page No.		
	PCSMV001A				11	Position		
	PCSMV001A				13	Layer		
	PCSMV001A				17	Quantity		
	PCSMV001A				12	 Mec.accessories 		
	PCSMV001A				5	 Fixed accessories 		
	PCSCON06				7	Path		
	PCSCON06				7	Symbol type		
	PCSCON06				7	 Cmp. group No. 		
	PCSCON06				15	✓ Visible		
					-	Page type	100	

12.5 Objektlister kan vise stregart

The Object lister can show the line kind, which will make it easy to find 'clouds'.

Clouds are round lines. xxviii

Page No.	Name	Article	Line kind /	
• 1	3	c	Curved lines	
1	2	b	Round lines	
1	5	e	Straight lines	
1	4	d	Straight lines	
1	1	a	Straight lines	

13 EXTENSION TO SYMBOL DATA FIELDS

13.1 New fixed symbol data field

The data field Segregation is a fixed data field in all new installations. The data field is intented to be added to all cables, that is to be exported to Cablemanager.

A segregation is a name / code for the track in the cableway.

See also the section about export to the Cablemanager on page

34.

You assign the field to the desired cables.

	3 +	10.41	Qk
<u>N</u> ame:	-W1	$+ = ? \Sigma \square$	Cancel
Type:	PCSCBL01	ΣΣΙΔΟ	Unit
Article no:	PCS330001		Database
			component
Description: <u>G</u> eneral Ref	3 conductors without screen	Reference Accessory	
Description: <u>G</u> eneral Ref Datafield	3 conductors without screen design. Symbol data fields	Reference Accessory	
Description: <u>G</u> eneral Ref Datafield Segregation	3 conductors without screen design. Symbol data fields	Reference Accessory Value D	

13.2 Symbol data fields are by default only in the current project

When you create a symbol data field from now on, it will only be present in the current project, and not in all projects, as it has been until now.

If you want to have the data field in all projects, simply save it as

Oprettelse af

symboldatafelter er nu pr projekt og ikke som tidligere i hele programmet!

ıbol defaults Primary header	Symbol data fields	
Secondary header	Save as default	
signal symbols	test	
Signal names		
loin signal symbols		
	Details for selected data field	
symbol data nelds		Characterized and a strand and the strain of
ine data fields	\square \bigcirc fx	Only exists in the project!

Hvis du ønsker at feltet skal

være der altid, så skal du klikke på ikonet Gem som standard.

13.3 Symbol data fields with formula

Symbol data fields can have formulars in the same way as line data fields.

Formulars are made up of Symbol data (eg Name, Type) your own Symbol data fields and Static texts.

The contents of the data field is treated like all other texts, which means that you can control font, color, adjustment etc..

13.4 New formular editor for line and symbol data fields

In case you need to make logical, mathematical expression in your line and symbol data fields, we have now made a Formula editor for this.

In case you need the full documentation for the function, please refer to the last chapter in this document.

Formula editor for	r data field: Test_d	ata_field_expressions				×
Formula						
						< >
Edit formula man	nually					
Symbol data		Symbol data fields	Static text		Functions	
Name	~	Segregation ~			ABS()	~
Арр	end	Append	Ap	pend	ABS() ACOS() ASIN()	<u>^</u>
Result				Test f	ATANO COSO EXPO FORMAT() FORMAT(,) ormula with test of	ata
Test data						
Symbol data			ymbol data fields			
Name	Name		Datafields Value			
Туре	Туре					
Article	Article					
Function	Function					
					<u>O</u> k	<u>C</u> ancel

14 MISCELLANIOUS NEWS AND IMPROVEMENTS

Also this year, a collection of minor news and changes in the program.

14.1 Change Symbol med 'Ignore symbol path'

When you select All in project or All on page, you get the option to 'Ignore symbol path'.

That means that the function replaces all occurences of the symbol, no matter where it originates from.

rrent Symbol					<u>O</u> k
7513-02.511		Value	Position	Visibility	Cancel
200	Name:				
Va Va Va	Type:				
1-4-1	Article:				
	Function:			\checkmark	
	Connections:	\square			
Replace all in project	I/O Status:				
]Replace all on page	Reference:				
] Ignore symbol path	Symbol type:				

14.2 Replace all symbols in the project

A small repetition of a function that was launched ver 21:

You can replace all symbols in a project in one operation. The function finds the symbols according to your ALIAS list.

Replace all symbols
The symbols are replaced due to your Alias-list Folder names are ignored Generation names(?) are ignored Save your project Do you want to continue?
<u>Y</u> es <u>N</u> o

14.3 Select ref.designations with As page and Delete button *

In order to make it easier to select reference designations on components, we have added an 'As page' button and a 'Delete' button on the Ref.designation tab. ^{xxix}

	Visible	
ame:	-M1 + = ? Σ Σ 🗹	All
ype:		<u>C</u> ancel
rticle no:	PCS600005	Unit
unction:		Database
eneral Re Reference d	f.design. Symbol data fields <u>R</u> eference Conns <u>.</u> Accessory esignation	
ieneral Re Reference d	f.design. Symbol data fields <u>Reference</u> Conns. Accessory esignation	
eneral Re Reference d Function: Location:	f.design. Symbol data fields <u>R</u> eference Conns <u>.</u> Accessory esignation • =2 (System 2) • +1.20.2 (Motor position)	
eneral Re Reference d Function: Location: Product:	f.design. Symbol data fields Reference Conns, Accessory esignation • =2 (System 2) • +1.20.2 (Motor position) •	
eneral Re Reference d Function: Location: Product:	f.design. Symbol data fields <u>Reference</u> Conns <u>.</u> Accessory esignation • =2 (System 2) • +1.20.2 (Motor position) • In Reference designation Select	
eneral Re Reference d Function: Location: Product: Show fu Referen	f.design. Symbol data fields Reference Conns. Accessory esignation v =2 (System 2) v +1.20.2 (Motor position) v Il Reference designation Select ce designation with line break: Project controlled	

14.4 Settings for Insert ref.frame are saved *

Reference frames also have an 'As page' and a 'Delete' button.

As an improvement, the last selection of settings in the red frame are saved, and will be used for the next frame you insert. ^{xxx}

Ref. <u>d</u> esign.			<u>O</u> k
Reference de Function:	signation + =2 (System 2)		All
Location: Product:	+1.20.2 (Motor pos	ition)	<u>C</u> ancel
	Reference designation	Select	
Show Fur	ction description Show Pro	oduct description	

14.5 Export to DWG and DXF

When you export to DWG or DXF you can now call your layer setting, so that you can change those before the export. ^{xxxi}

Man file		
acad.map		~ .
Show laver settings	Ok	Cancel

14.6 New letter codes from 81346-2 are in the program

On the Name tab, you can now find a list if all letter codes from IEC ISO 81346-2 which are used for component designations in the projects.

The new edition of the standard contains 1, 2 and 3 letter codes, and they are all on the list.

When you place a symbol, which designation is e.g. F, then the list will open from 'F'. If you select the code FCC the program will – as always – help you find the next available number.

		T	_										1												
	33	1	Component da	ta [-F]]							×	22			33			53	25		10	23	8	
ŝ.	\sim		B BX B	Ŧ								Ok	- 3	10	8	-	$\mathbf{\hat{s}}$	8	-85	$\left \mathbf{x} \right $	82	23	15	82	23
1	15		Name:							_	Visible	AÎI	8	21	12	15	1	12	15	4	82	27	9	82	25
	-53	1	Turnet	SMV00	110							Cancel	22	8		53	3.5	2	53	2	12	20	1	12	20
5	22	\sim	Type,	51-1000	110									1.1		22	2		22	11	12	10	12	8	12
12	15	2	Article no: P(Name	2								\times	23	33	15	23	33	135		82	10		82	23
2	-10	10	Eunction:	Funct	ion as	hect								e	3	53	83	8	53	8	12		12	83	20
-F	5		Description: The	(none	e)	Jeer							~	2		28	21	3	28	33	12	10	32	12	12
	014	9		<u> </u>																					
38	12	2	General Ref.desi	Locati	ion asp	pect								-	12	122	1	12	122	2	12	10	15	11	
8	-0	×	Reference design	(none	e)								~	÷		-	8	12	-93	8	8	53	12	83	0
82	32	2	Location:	Produ	ict asn	ect								12	15	22		82	32	12	85	10	33	8	10
			Dradusta T	(none	e)								~												
10	13	•			~									-	80	18	1	10	18	15		10	155		10
88	-93		Show full Refi	Name					- 1	<u>C</u> ode	letter: <u>S</u> u	o name:		÷	18	-92	•	12	-	35	10	83		13	83
52	32	2	Reference de	-FCC	1		+ -	= ? :	ΣΣ	FCC	~	+ =	22	.3	10	22	12	10	32	12	8	18	53	8	18
				-					_	>	E : emitting object (object	for emitting)							54 W		120				^
	10			1	Refere	nce de	esigna	tions		ľ	F : protecting object (obje	ct for protecting a acting object (prote	gainst t	he eff	relate	t dang	erou	Is or u	ndesir	able	conditi	ions)			-
8	-33										FB : earth fault current	t protecting object	(protei	cting o	bject	relate	d to e	earth f	ault c	urren	nts)				
3	35	2									✓ FC : overcurrent prote	cting object (prote	ecting of	bject	related	to o	ercu	rrents)		1				
		-									- FCA : fuse (overci	urrent protecting o	bject th	at by	fusing	open	s the	circuit	t in wh	hich it	is inse	erted	by br	eaking	
	-53		0 0 0 0	20	13	82	<u>s</u> .)	1	10 1		FCB : miniature cir	cuit breaker (overo	urrent	protec	ctina o	biect	apat	ole of	makin	a, ca	rving	and b	reaki	na curr	6
	22		a a a a	22	12	82			22 - 3		> FE : field protecting of	rearrent protecting	j object	ated t	opens to elec	tric an	d/or	magne	etic fie	inser	ted by	yinter	rupti	ng the	
3	35			12		78		3	8 8		FL : pressure protectir	ng object (protectin	ng objec	t rela	ted to	press	ure)	magin	Luc III						
											> FM : fire protecting ob	ject (protecting ob	ject rela	ated t	o fire)										
3	53		0.01	53	13	82		2	$S_{2}^{2} = 3$		> FN : mechanical force	protecting object (protect	ing ob	ject re	lated	to me	echani	cal for	rce)					
	22	53		20	12	85	20	3	28 - 3		> FQ : preventive prote	ting object (prote	cting ob	ject b	y barr	ier or	obsta	acle)	10						
											> FR : environment prot	ecting object (prot	ecting o	bject	relate	d to t	ne loc	alen	ronm	ent)					~
12	122	33	Si 18 (5 (6	10	15	35	3 3	3	22 - 1	<														>	

14.7 Improved contact mirror

The contact mirror – another kind of reference cross – now uses the same font and color as other connections and cross references. Above, I have moved the reference symbol (right-click command).

It is possible to control the size of the letters and numbers in Project data.



xxxii

14.8 More functionality to the Align function *

The Align function can now align symbols on the same page and across pages:

- 1. Select the symbol with the right position, that makes it to the symbol that 'decides'.
- Now select the other symbols that are to be aligned. The symbols don't need to be on the same page; the program remembers the position – the 'pointing line' occurs on the page.
- 3. The symbols will align wiht the first selected symbol.

Align can also be made in this way:

- 1. Select the symbol that is going to be aligned.
- 2. Now Ctrl+click on the symbol that has the right alignment the one that 'decides'.
- 3. The first selected symbol now moves and aligneds with the last symbol.

Ctrl+click only works on the same page and not across pages. xxxiii

Remember: The Align function always finds the easiest way to alighn – vertical or horisontal.

14.9 Design of symbol with the Symbol generator

When you type width and height for a new symbol, the preview window is updated dynamically.^{xxxiv}

Rectangular	Width (mm) 20,00	Height (mm) 30,00 🖨				
Line color	Filled			B ₊	*	
Connections at top	6		None			
Connections at bot	tom		None			
Connections at left	: side		None			
Connections at right	nt side		None	B	Mechanical s	symbol



14.10 Rotate an object with 10°*

When you select an object and press Space, the object rotates 90 °.

If you hold down Ctrl and Space the object rotates with 10 °. $^{\mbox{\tiny XXXV}}$



14.11 The icon New and Files|New has the same function *

When you press the icon you open the dialog with all templates. Same function as with Files|New. ^{xxxvi}

erminals Lists	Cables Lists	PLC Lists	Connect	ions Lists	Ignore page	es Divider	00 99- 1=
Projects	Normal Pages	Table of C	ontents	Parts Li:	sts Cor	mponents Lists	
Blank Project							Qk
PCS22_ML_grap	ph-plans						Cancel
PCS22_ML_lists							_
PCS22_ML_star	rt						Create:
PCS22_start_in	ist						Tamplata
							OTempiate

14.12The length of the list of last opened files can be changed *

You can change the length of the list. Go to the ini-file, and in the section [SystemData], you can write:

MaxPickFiles=20 to get a list of 20 files.

Modules...

1 C:\PCSELCAD\22 uk 2020-04-14\PCSELCAD\PROJECT\DEMO\PCSDEMO2.pro 2 C:\PCSELCAD\22 uk 2020-04-14\PCSELCAD\PROJECT\DEMO\PCSDEMO3.pro 3 C:\PCSELCAD\22 uk 2020-04-14\PCSELCAD\PROJECT\DEMO\PCS_PANELROUTER1.PRO 4 C:\PCSELCAD\22 uk 2020-04-14\PCSELCAD\PROJECT\DEMO\PCSINSTDEMO.PRO 5 C:\PCSELCAD\22 uk 2020-04-14\PCSELCAD\PROJECT\DEMO\PCSINSTDEMO.PRO 6 C:\PCSELCAD\22 uk 2020-04-14\PCSELCAD\PROJECT\DEMO\PCSDEMO1.pro

14.13 Default cable quantity can be changed *

It is possible to change the default cable quantity.

The setting is a system settings, which means that it follows the program not the project.

The selected setting is valid for all new cables that are added to the project.

Nothing is changed in existing projects. xxxviii

Symbol ● Free text Connection Reference Uine Datafield All Symbol defaults Symbol defaults Symbol defaults Ormany header Signal symbols Signal symbols Secondary header Signal symbols Secondary header O all Secondary header Signal symbols Secondary header Signal symbols Secondary header Signal symbols Secondary header Signal symbols Secondary header O all annes Details for selected data field Prince symbols Perials for selected data field Prince to bottom Image: Secondary field Price text Image: Secondary field Details for selected data field Image: Secondary field Image: Symbol data fields Image: Secondary field Image: Secondary field Image: Secondary field Image: Symbol data fields Image: Secondary field Image: Secondary field Image: Secondary field Image: Symbol data fields Image: Secondary field Image: Secondary field fields Image: Secondary field field <th>Text/Symbol defaults</th> <th>Text defaults</th> <th>Free</th> <th></th> <th>Free text Displayed in project</th> <th></th> <th></th> <th></th>	Text/Symbol defaults	Text defaults	Free		Free text Displayed in project			
Symbol defaults Symbol data fields Primary header Signal symbols Signal symbols Segregation Join signal symbols Details for selected data field Unit signal symbols Details for selected data field Unit signal cable direction: ♥ from left to right ● From left to right ● from left to right ● From bottom to top ♥ from left to right ● From left to right ● 1		Symbol Connection Reference Line	Free text		Text height: 2	2,50 mm	X 🛛 🔗	2 @
Signal names > Join signal symbols > Symbol data fields > Line data fields > Priorantia cable direction: @ From top to bottom @ From hottom to top @ From right to left @ Activate Follow connected on symbols		Symbol defaults Primary header Secondary header Signal symbols Join signal symbols Symbol data fields Line data fields Reference symbols		Symbol dat	a fields			~
Horizontal cable direction:				Segregation Details for selected data field $\boxed{\blacksquare} \mid \bigvee f \hat{x}$				
Activate Follow connected on symbols		Horizontal cable of From top to be From bottom to	direction: ottom to top	Vertica	al cable direction: om left to right om right to left	Default cable	quantity	
		Activate Follo	w connected on sy	ymbols				

14.14 Lines with article data

You can draw a line with article data (if you pick a line with data from the pickmenu).

If you later makes this line longer by drawing another line at the end of it – a line with no article data – then the resulting line will inherit the line article data from the original line. In previous versions, the visually single line consisted of two segments, which created trouble for the Panelrouter.

The line type and color must be the same to make this function work, ie red line, conducting, same line type.



14.15Shortcut to color settings from the vertical toolbar

When you rightclick on the icon for ref.symbols, you can select Colors ...

The menu opens the basic color setup, making it fast to change colors in the program.

The function is also available in the Automation Service program. $^{\mbox{\tiny XXXIX}\ xl}$



14.16Height can be assigned by the Copy/Transfer properties icons

If you have placed a component in a certain height on a mechanical page, it is now possible to change the height by using the properties icons.



Ealier, you needed to Move the symbols to another height.

14.17Text properties





14.19User interface is now also in French

The user interface is now also supported in French.

'Our' drawing header, however, has not yet been translated, but if someone out there could help ...

Système					
Licence	Nom de société :	Firmanavn			
	Nom d'utilisateur				
	Fichiers du projet : ☑ Sauvegarder les ☐ Sauvegarde com	informations de récupération automat pressée	iqui 30 🌘 min.	nalisation type	e de fich
	✓ Mettre à jour les Charger le projet Øuvrir un nouve:	liens vers les objets à l'ouverture t précédent au démarrage du progr au projet au démarrage du prograr	Sélectionner la langue	UNICODE : ver. fichie	ers 1.0-1 ons
			Vérifica 22. Au	ation automatique pour :- XX mettre à jour cunes nouvelles versions	trou
			Ver Au	sion la plus récente sunes nouvelles versions	trouvée
			⊡ Inf	ormations	¢
				receiver des version	
				OK	Annule

14.19.1 Drawing headers are now also in Croatian

A very big thank you to one of our customers for helping 🐵

14.20 Direct access to article data in right-click menu

When you right-click on a symbol (old function) or on a line with article data (new function), you can open article data in either a unit drawing or a record in the database.

Line article data Information Open ✓ Move ✓ Cut Ctrl+X ✓ Cut Ctrl+X ✓ Copy Ctrl+C ➡ Paste Ctrl+V ✓ Delete Del Place signal symbol

The function first searches in the project (unit drawings) then in the database.^{kli}

14.21 Double click in the drawing header opens Project or Page data

.

If you Hvis du dobbeltklikker on a link in the drawing header, project or page data (which ever is relevant) os automatically opened, and the selected data field is in focus.^{xlii}

10	2	2	2	ii.	12	15	
10	5	6	5	a.	2	a (
	-						
dRDS	Proj	ect	no.:			002	Pr
- 63	DCC	2	35	18	12	-&FS	
	Dwg	. no					Pa
	Eng	(pr	oj/pag	e):	- 31	kh	La
	Appr	. (da	ate/init):			La

,	rol panel)	rol panel)	rol panel)

14.22 Cleaning out superflous menu items and functions

The menu items Show net and Highlight net have been deleted from the right-clcik menu. Simply, because the same functions are in the Netnavigator, and it is also possible to print the selected netlist from the Netnavigator.^{xliii}



15 FROM OLD TEXT ADJUSTMENTS TO NEW ONES

We have converted text adjustments in the following way:

We have moved all +'s to the top, and the text are placed in the same position as before.

Connection names are still adjusted at the buttom, as the must adjust with the line on which they are standing,

If your lists have different text heights, this means that you might have to adjust the list, as the data fields are no longer aligned.

We have made some finer adjustments, so that you only very rarely need to adjust the list symbol itself.

15.1 Load of list pages

When you design a list (drawing header), you must follow some rules:

- All data fields for one set of data MUST be aligned (in the examples below, a data set is different data for the same name: article no., type, manufacturer etc.)
- The data fields are aligned when the +'s are aligned
- The first data fields must have the property 'Activate next)
- Data fields can be from the project and from the database

Read here, if you want the old list to work as before:

See the +'s in the picture: This is the old list and at a first glance it works fine (the +'s are at the bottom of the data field).

The list designer thought that data could be on one line only. If the data is more than one line, then contents will move upwards – because the + is at the bottom.

That's why we move all +'s to the top: we want multi-line data to grow downwards.

Article No.	+I ype			Function
Article No.	₊ Туре			Function
Article No.	_Type	10	12	Function
Article No.	"Туре	20	4	Function
Article No.	₊ Туре			Function
Article No.	₊ Type			Function
Article No.	_Туре	25	92	Function
	Article No. Article No. Article No. Article No. Article No. Article No. Article No.	Article No. Type Article No. Type	Article No. Type Article No. Type	Article No. Type Article No. Type

Name	⁺ Article No.	Туре	Function
Name	⁺ Article No.	Туре	Function
Name	⁺ Article No.	Туре	⁴ Function
Name	Article No.	Туре	Function

16 FORMULA EDITOR FOR LINE AND SYMBOL DATA FIELDS

16.1 General

An expression may consist of constants (texts, numbers or Boolean constants), variables and functions.

Supported are, arithmetic operators, boolean operators, comparison operators, equality operators, and string operator.

All function names, variable names, constant names and operators are case insensitive.

Please note that the expression must return a text value to be valid.

In order to do expressions with arithmetic sub expression, where data fields are included, one must convert the content of the data field to a **numeric value**, before it could be used in a sub arithmetic expression.

E.g. if the data field named: **'Diameter'** contains the text: **'4'**, this text value must be converted to a number before using it in a sub arithmetic expression.

So, a sub arithmetic expression like:

3.141 * VAL(DATAFIELD('Diameter'))

is valid, but:

3.141 * DATAFIELD('Diameter')

is invalid since one cannot multiple 3.141 with the text '3'.

Since the result of a data field expression must be a text, all results of sub arithmetic expressions **must be converted from numbers to texts**, if they are going to be part of the result.

So, a data field expression like:

'Area: ' + FORMAT(POW(VAL(DATAFIELD('Diameter')) / 2, 2) * 3.141) + ' mm2' is valid, but:

'Area: ' + POW(VAL(DATAFIELD('Diameter')) / 2, 2) * 3.141 + ' mm2' is invalid, since only element of same type could be added together.

Predefined Boolean constants:

TRUE : Boolean true value

FALSE : Boolean false value.

Character strings must be encapsulated be the character: ' if a ' is to use in a text it must be done by specifying two ' in sequence.

So, a result test like: Don't do this should be specified as: 'Don''t do this'

Numbers are implemented as **floating point value**. The decimal separator must be . (a period).

The range support is: **-1.79e-308** to **-1.79e+308**, with 15 to 16 significant digits.

16.2 Operators

Operators behave like predefined functions that are part of the data field expression language.

For example, the expression: **1** + **2**, is build from two number: **1** and **2** and the + operator. This expression would return the number **3**.

All operators except +, -, and **not** are demanding two operands, the + and – and **not** may be used as unary operator in from of expressions or numbers.

So: -(7 + 1) would return the value --8 and **not (1 < 2)** would return **false**.

To prioritize certain section of an equation one may use (..) to encapsulate sections which needs higher priority.

So, an expression like 1 + 2 * 3 would result in the number 7, where as (1 + 2) * 3 would result in the number 9.

So, for expressions with arithmetic operators: ***** and **/** are always solved before: **+** and **–** operators.

Boolean operator **and** is solved before **xor** which is solved before **or**.

The operator groups are solved in the following sequence: arithmetic operators, comparison operators, equality operators and last Boolean operators.

Operator	Operation	Operand type	Example
+	Addition	Number	1.2 + 5
-	Subtraction	Number	3.5 -2.1
*	Multiplication	Number	1.21E3 * 12
/	Division	Number	355 / 113

16.2.1 Arithmetic operators:

Example for addition (+):

FORMAT(VAL(DATAFIELD('Custom 1')) + VAL(DATAFIELD('Custom 2')))

The calculation result will be displayed as text in the data field where this formula is created for.

Example for subtraction (-):

FORMAT(VAL(DATAFIELD('Custom 1')) - VAL(DATAFIELD('Custom 2')))

The calculation result will be displayed as text in the data field where this formula is created for.

Example multiplication (*):

FORMAT(VAL(DATAFIELD('Custom 1')) * VAL(DATAFIELD('Custom 2')))

The calculation result will be displayed as text in the data field where this formula is created for.

Example division (/):

FORMAT(VAL(DATAFIELD('Custom 1')) / VAL(DATAFIELD('Custom 2')))

The calculation result will be displayed as text in the data field where this formula is created for.

16.2.2 Boolean operators:

Operator	Operation	Operand type	Example
not	Negation	Boolean	Not A
and	Conjunction	Boolean	A and B
or	Disjunction	Boolean	A or B
Xor	Exclusive disjunction	Boolean	A xor B

Expressions with Boolean operators **and** and **or** are always short circuited.

So, an AND expression like: (7 < 2) and (3 < 4) would only solve the first part (1 < 2) and since this is false it would skip the remaining part.

Likewise, an **OR** expression like: (7 > 3) OR (1 < 2) would only solve the first part (7 < 3) and since this is true it would skip the remaining part.

16.2.3 Comparison operators:

Operator	Operation	Operand type	Result type	Example
>	Greater than	String or Number	Boolean	233 > 122
>=	Greater than or equal to	String or Number	Boolean	'ABC' >= 'ABCD'
<	Less than	String or Number	Boolean	Name < 'HELLO'
<=	Less than or equal to	String or Number	Boolean	VAL('1212') <= 2

Both side of a comparison operator must be of same type.

16.2.4 Equality operators:

Operator	Operation	Operand type	Result type	Example
=	Equality	String or Number	Boolean	233 = 122
<>	Inequality	String or Number	Boolean	'ABC' <> 'ABCD'

Both side of an equality operator must be of same type.

16.2.5 String operator:

Operator	Operation	Operand type	Example
+	Concatenation	String	'Hello ' + 'world'

16.2.6 Variable:

The number of variables is fixed to 4 predefined variables.

For a symbol expression it is the default symbol fields (Name, ...).

For a line expression it is the default line fields (Name, ...).

In the formula editor one can select the valid ones from the combo box in the group **Symbol data** for symbol expression or **Line data** for line expression.

16.3 Functions:

The expression editor supports the following functions:

16.3.1 Function: DATAFIELD

Returns a text value of a used defined data field.

Syntax: DATAFIELD('name'), where name is a text constant.

Example: If a data field named **Diameter** contains the value text **123**, the **DATAFIELD('Diameter')** would return the text value **123**. **The name of the data field is case insensitive.**

Exceptions: If the name is not a valid data field name an **Undefine data field error** will returned.

16.3.2 Function: VAL

Returns the number of a text value if possible.

The VAL function accepts either comma or point as decimal separators, but not any thousand separators. The exponential notation is support as well.

Syntax: VAL(value), where value is a string.

Examples:

- VAL('-123,3') or VAL('-123.3') would both return the number -123.3
- VAL(DATAFIELD('Pressure')) would, if the value of data field 'Pressure' is the text 16 return the number 16.

- VAL(DATAFIELD('Pressure')) would, if the value of data field 'Pressure' is the text 16bar raise a Not a valid number exception.

Exceptions: If the specified text value is not a valid number or is out of supported number range.

16.3.3 Function: ISVAL

Returns a boolean true value if the value could be converted to a number and a Boolean false value otherwise.

The **ISVAL** function accepts either comma or point as decimal separators, but not any thousand separators. The exponential notation is support as well.

Please notice that the result of this function can only be used in Boolean sub equations. Boolean values cannot be converted to texts.

Syntax: **ISVAL(value)**, where value is a string.

Examples:

- ISVAL('-123,3') would return a Boolean true value, but ISVAL('HELLO') would return Boolean false value.
- ISVAL(DATAFIELD('Pressure')) would, if the value of data field 'Pressure' is the text 16, return a logical true value.
- ISVAL(DATAFIELD('Pressure')) would, if the value of data field 'Pressure' is the text 16bar, return a logical false value.
- IF(ISVAL(DATAFIELD('Pressure')), 'A number', 'Not a number'), would, if the value of data field 'Pressure' is the text 16, return 'A number'.
 If the value of data field 'Pressure' is the text 16bar, the result would be 'Not a number'.

Exceptions: None

16.3.4 Function: FORMAT

Returns a string with the specified format.

Syntax: **FORMAT(number)** or **FORMAT(format, number)**, where number is the number to format and format is a string with the desired format.

If the format is not included, the format is %g

The allowed format is:

"%" ["-"] [width] ["." prec] type

A format specifier begins with a **%** character. After the percent sign come the following elements, in this order:

1. An optional left justification indicator, ["-"]

- 2. An optional width specifier, [width].
- 3. An optional precision specifier, ["." prec].
- 4. The conversion type character, type.

The following types are possible:

Value	Meaning
е	Scientific
	The argument must be a floating-point value.
	The value is converted to a string of the form "-d.dddE+ddd".
	The resulting string starts with a minus sign if the number is negative. One digit always precedes the decimal point. The total number of digits in the resulting string (including the one before the decimal point) is given by the precision specifier in the format string; a default precision of 15 is assumed if no precision specifier is present.
	The " E " exponent character in the resulting string is always followed by a plus or minus sign and at least three digits.
f	Fixed
	The argument must be a floating-point value.
	The value is converted to a string of the form "-ddd.ddd".
	The resulting string starts with a minus sign if the number is negative. The number of digits after the decimal point is given by the precision specifier in the format string—a default of 2 decimal digits is assumed if no precision specifier is present.
g	General
	The argument must be a floating-point value.
	The value is converted to the shortest possible decimal string using fixed or scientific format. The number of significant digits in the resulting string is given by the precision specifier in the format string; a default precision of 15 is assumed if no precision specifier is present.
	Trailing zeros are removed from the resulting string, and a decimal point appears only if necessary. The resulting string uses the fixed-point format if the number of digits to the left of the decimal point in the value is less than or equal to the specified precision, and if the value is greater than or equal to 0.00001.
	Otherwise the resulting string uses scientific format.

Examples:

- FORMAT(123.3) would return the string 123,3 or 123.3 depending on the region settings in windows.
- FORMAT('%.4f', 123.3) would return the string 123,3000 or 123.3000 depending on the region settings in windows.
- FORMAT('%.0f', 123.5) would return the string 124.
- FORMAT('%e', 122.5) would return the string 1,225000000000E+002 or 1.225000000000E+002 depending on the region settings in windows.

Exceptions: None

16.3.5 Function: EXP

Returns the exponent of the value where the base is **e**.

Syntax: **EXP(value)**, where value is a number.

Example:

- **EXP(1)** would return the number **2.71828182845905** If the result is too big, an infinite number would be returned.
- FORMAT(EXP(VAL(DATAFIELD('Diameter'))))
 The value of data field 'Diameter' will be used as base of e.
 The calculation result will be displayed as text in the data field where this formula is created for.

Exceptions: None

16.3.6 Function: POW

Returns base raised to the exponent.

Syntax: **POW(base, exponent)**, where base and exponent are both numbers.

Example:

- POW(10, 2) would return the number: 100
- FORMAT(POW(VAL(DATAFIELD('Diameter')), VAL(DATAFIELD('Custom 1')))) For base the value of data field 'Diameter', and for exponent the value of data field 'Custom 1' will be used. The calculation result will be displayed as text in the data field where this formula is created for.

Exceptions: If the result is too big, a positive or negative infinite number would be returned, based on the sign of the base.

16.3.7 Function: SQRT

Returns the square root of the value.

Syntax: SQRT(value), where value is a number.

Example:

- SQRT(81) would return the number: 9
- FORMAT(SQRT(VAL(DATAFIELD('Diameter')))) Here, the value from data field 'Diameter' will be used for calculation of square root.

- FORMAT(SQRT(VAL(DATAFIELD('Diameter'))) * VAL(DATAFIELD('Custom 3'))) Here, the result of SQRT from data field 'Diameter' is directly multiplied with value from data field 'Custom 3', and the calculation result is displayed as text in the data field where this formula is created for.

Exceptions: if value is negative a NaN (Not a Number) number would be returned.

16.3.8 Function: SIN

Returns the sine of the value in degrees.

Syntax: **SIN(value)**, where value is a number.

Example:

- SIN(45) would return the number 0.707106781186547
- FORMAT(SIN(VAL(DATAFIELD('Angle'))))

The value from data field 'Angle' will be used for sine calculation, and for display of calculation result as text in the data field where this formula is created for.

Exceptions: None

16.3.9 Function: COS

Returns the cosine of the value in degrees.

Syntax: **COS(value)**, where value is a number.

Example:

- COS(45) would return the number 0.707106781186547
- FORMAT(COS(VAL(DATAFIELD('Angle')))) The value from data field 'Angle' will be used for cosine calculation, and for display of calculation result as text in the data field where this formula is created for.

Exceptions: None

16.3.10 Function: TAN

Returns the tangent of the value in degrees.

Syntax: **TAN(value)**, where value is a number.

Example:

- TAN(45) would return the number 1

- FORMAT(TAN(VAL(DATAFIELD('Angle'))))

The value from data field 'Angle' will be used for tangent calculation, and for display of calculation result as text in the data field where the formula is created for.

Exceptions: None

16.3.11 Function: ASIN

Returns the principal angle in degrees of the inverse sine of the value in the range -1 to 1, both included.

Syntax: ASIN(value), where value is a number.

Example:

- ASIN(0.707106781186547) would return the number 45
- FORMAT(ASIN(VAL(DATAFIELD('Angle')))) The value from data field 'Angle' will be used for inverse sine calculation, and for display of calculation result as text in the data field where the formula is created for.

Exceptions: If value is outside the range -1 to 1 a NaN (Not a Number) number would be returned.

16.3.12 Function: ACOS

Returns the principal angle in degrees of the inverse cosine of the value in the range -1 to 1, both included.

Syntax: **ACOS(value)**, where value is a number.

Example:

- ACOS(0.707106781186547) would return the number 45

- FORMAT(ACOS(VAL(DATAFIELD('Angle')))) The value from data field 'Angle' will be used for inverse cosine calculation, and for display of calculation result as text in the data field where the formula is created for.

Exceptions: If value is outside the range -1 to 1 a NaN (Not a Number) number would be returned.

16.3.13 Function: ATAN

Returns the principal angle in degrees of the inverse tangent of the value.

Syntax: ATAN(value), where value is a number.

Example:

- ATAN(1E100) would return the number 90

Exceptions: None.

16.3.14Function: ABS

Returns the absolute value of the value.

Syntax: **ABS(value)**, where value is a number.

Example:

- ABS(-10) would return the number 10

Exceptions: None.

16.3.15 Function: LN

Returns the natural logarithm of the value.

Syntax: LN(value), where value is a number.

Example:

- LN(2.71828182845905) would return the number 1

Exceptions: if value is negative a NaN (Not a Number) number would be returned, if value is zero an infinite negative number would be returned.

16.3.16 Function: LOG

Returns the logarithm with base 10 of the value.

Syntax: LOG(value), where value is a number.

Example:

- LOG(100) would return the number 2

Exceptions: if value is negative a NaN (Not a Number) number would be returned, if value is zero an infinite negative number would be returned.

16.3.17 Function: TRUNC

Returns the truncated number.

Syntax: **TRUNC(value)**, where value is a number.

Example:

- TRUNC(100.999) would return the number 100
- FORMAT(TRUNC(VAL(DATAFIELD('Custom 5')))) The value from data field 'Custom 5' will be used for truncation, and for display of result as text in the data field where the formula is created for.

Exceptions: None.

16.3.18 Function: ROUND

Returns the rounded value.

Syntax: **ROUND(value)**, where value is a number.

Example:

- ROUND(100.5) would return the number 101
- FORMAT(ROUND(VAL(DATAFIELD('Custom 5')))) The value from data field 'Custom 5' will be used for rounding, and for display of result as text in the data field where the formula is created for.

Exceptions: None.

16.3.19 Function: IF

Return either the true or false result based on the condition

Syntax: **IF(condition, true_expression, false_expression)**, where condition is a Boolean expression and **true_value** and **false_value** is either text or number values.

Examples:

IF(ISVAL(DATAFIELD('Test1')) AND VAL(DATAFIELD('Test1')) > 100, 'Yes', 'No') would return the text value 'Yes', if the data field contains the text value 101, but if the data field contained the text value 100, the result would be the text value 'No'. Likewise the result would be 'No', if the data field contained a text value which could not be converted to a valid number, like e.g. 'hello'

If the order of the elements in the condition part is switched like:

IF(VAL(DATAFIELD('Test1')) > 100 AND ISVAL(DATAFIELD('Test1')), 'Yes', 'No') the expression is only valid, if the data field 'Test1' contained a text value which could be converted to a valid number, like e.g. 123
 So if the data field contained the value 'ABC', the result would be !Invalid!, since the VAL(DATAFIELD('Test1')) function would throw a Not a valid number expression.

This is not the case in the first example, since a logical AND operator is short circuited, when the first Boolean **false** result is met, and therefore the VAL(DATAFIELD('Test1')) part is never executed.

This short circuit also applies for the **IF** function.

So, if the condition is **true**, only the **true_expression** would be executed and if the condition is **false**, only the **false_expression** would be executed.

So, if one wants to ensure that the value of a given data field is only used in an arithmetic sub expression, if it contains a valid text, which could be converted to a number, one could specify a data field expression like:

IF(ISVAL(DATAFIELD('Test1')), FORMAT(VAL(DATAFIELD('Test1')) * 2), 'Invalid number in data field: Test1')

So if the value of the data field named 'Test1' contains the text value 4, the result would be 4, and if the data field contained a text value which could not be convert to a number, the result would be 'Invalid number in data field: Test1'.

Exceptions: None.