

AutoCAD Electrical Advanced : Looking Under the HOOD

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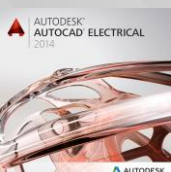
AutoCAD Electrical

Top reasons to use AutoCAD Electrical:

- More consist, professional looking designs
- Eliminate errors
- Minimize missing Bill of Material items
- Reduce design time

Autodesk Efficiency Study

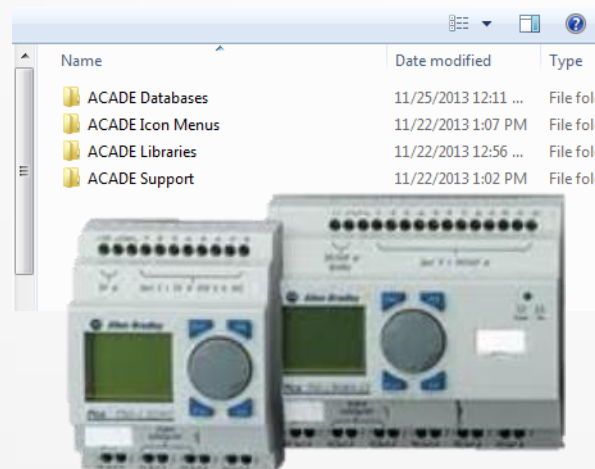
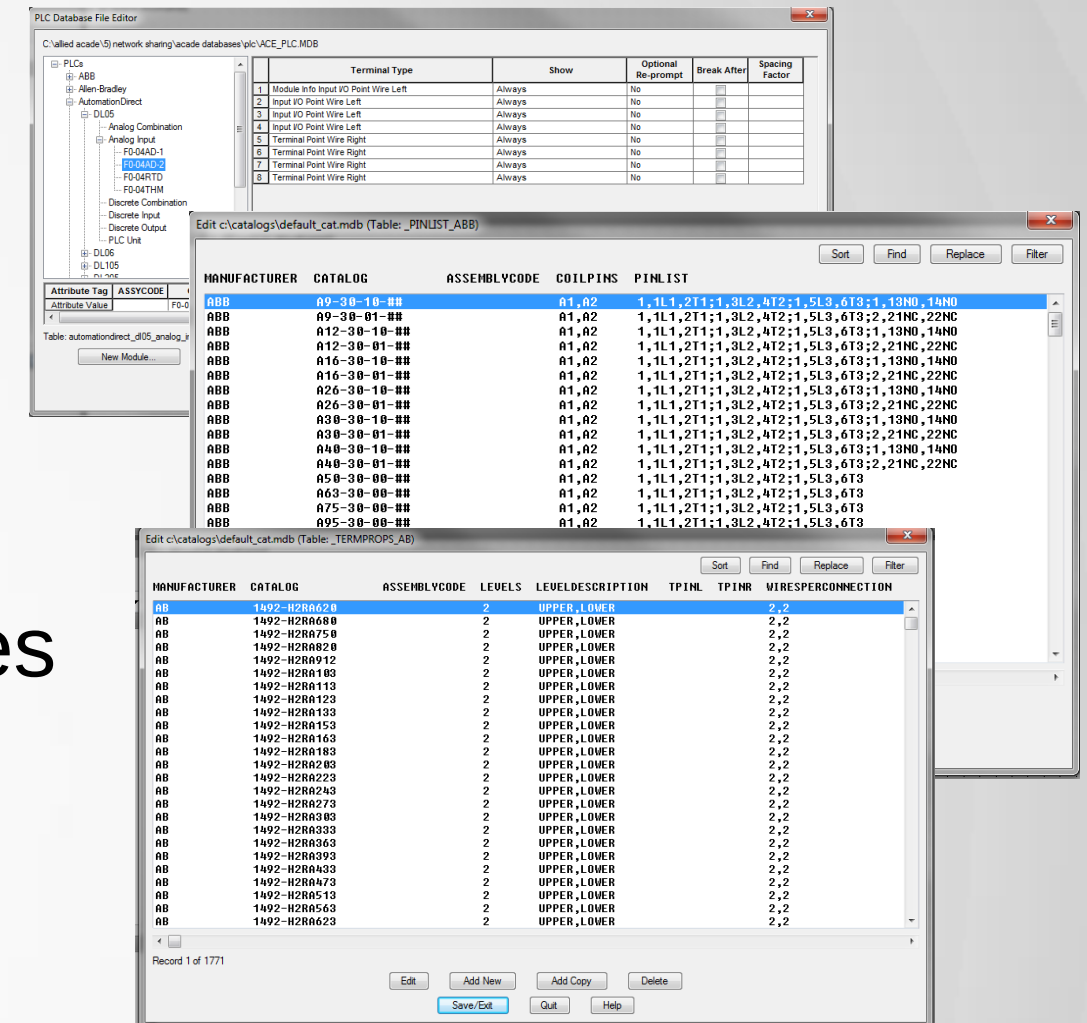
	AutoCAD (minutes and seconds)	AutoCAD Electrical (minutes and seconds)	Time Savings with AutoCAD Electrical
1. Inserting Two Interlock References into an Existing Electrical Schematic	1:33	0:16	83%
2. Re-tagging a Copied Circuit Drawing	1:10	0:20	71%
3. Automatic Contact Pin Assignment and Contact Count Check	1:46	0:19	82%
4. Contact and Cross-Reference Update across Multiple Drawings	6:44	0:22	95%
5. Tasks that Include Multi-bus Wiring, Connectors, and Rearranging Circuits	8:07	1:13	85%
6. Turning a Listing of I/O Assignments and Connected Devices into a Drawing Set	~2:00	0:30	N/A
7. Panel Layout from a Schematic Drawing	6:37	2:35	61%
8. Automatic Update of BOM Table	4:25	0:47	82%
9. Detect Changes Made	N/A	0:30	N/A
10. Copy an Existing Project Drawing Set and Automatically Update Title Blocks	6:30	1:45	73%
Total Times	3:15:38	0:8:07	
Time Savings with AutoCAD Electrical			80%



Key learning objectives

At the end of this class, you will be able to:

- Create a Fixed-Unit PLC
- Create more advanced blocks
- Describe the purpose for each of the databases
- Network your AutoCAD Electrical installation



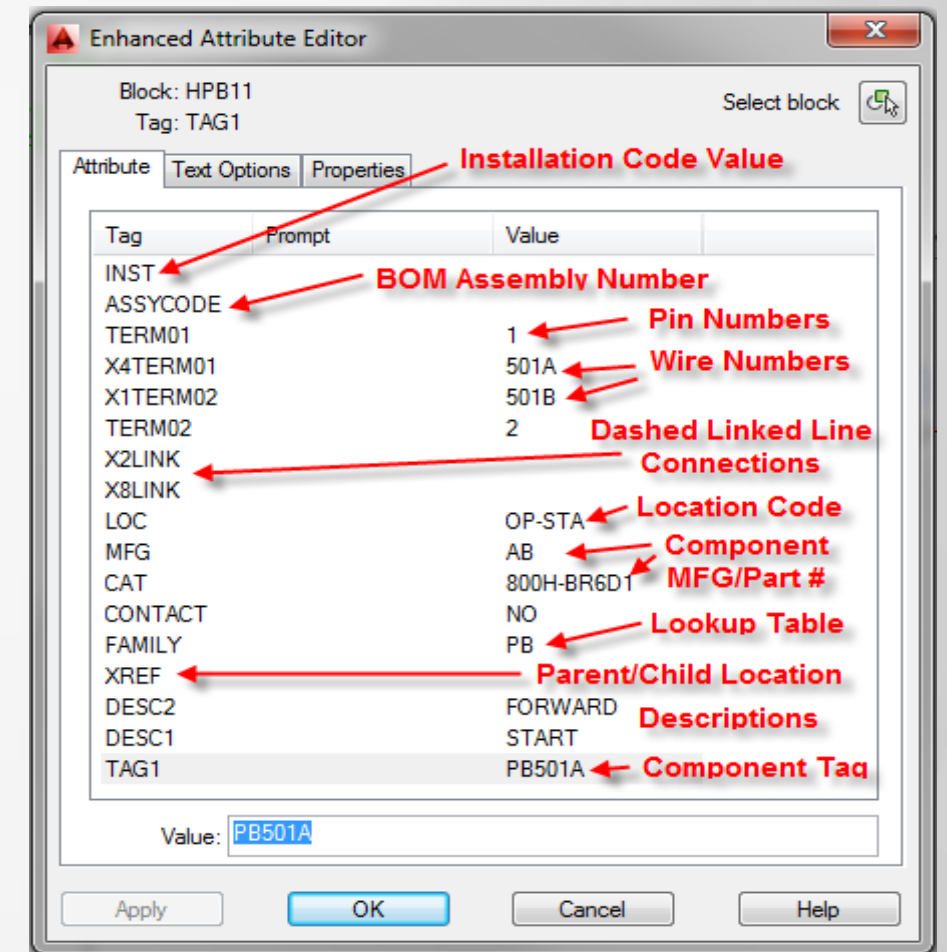
Intelligent Blocks



Intelligent Blocks

What are Intelligent Blocks?

- Blocks (electrical symbols) with attributes to:
 - Store BOM data
 - Keep track of parent/children relationships
 - Connection points for wire trimming



Fixed Unit PLC



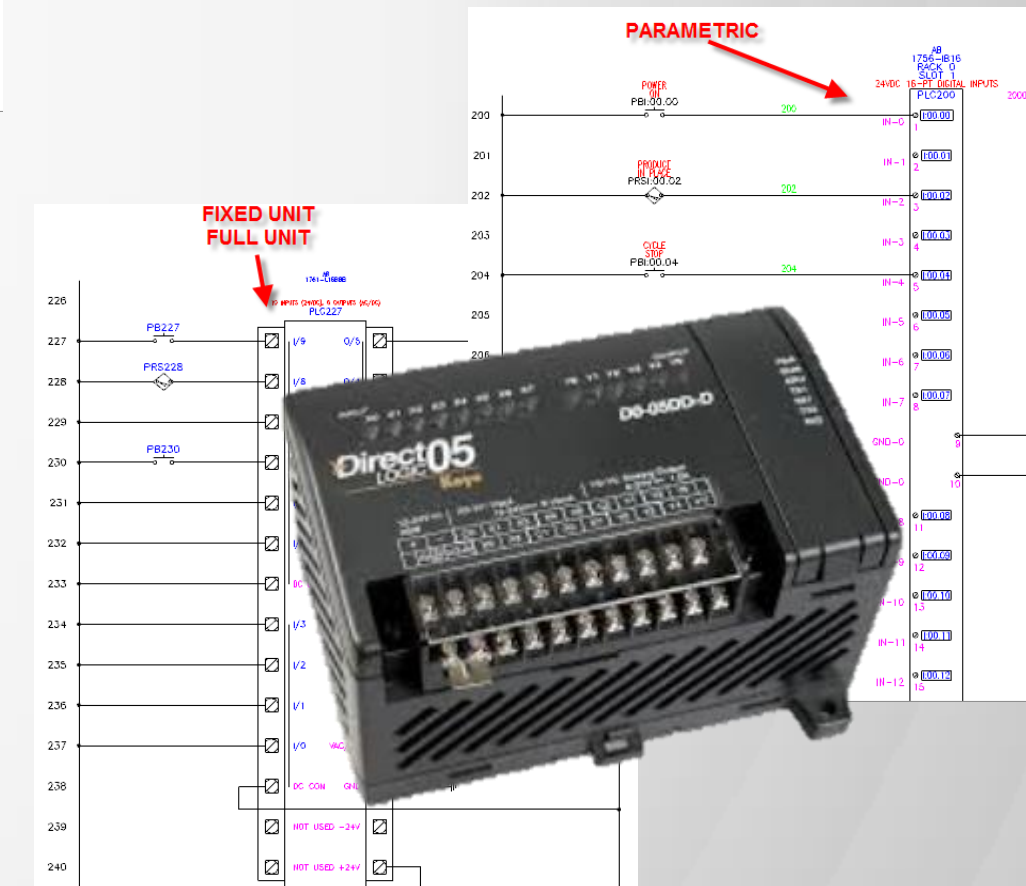
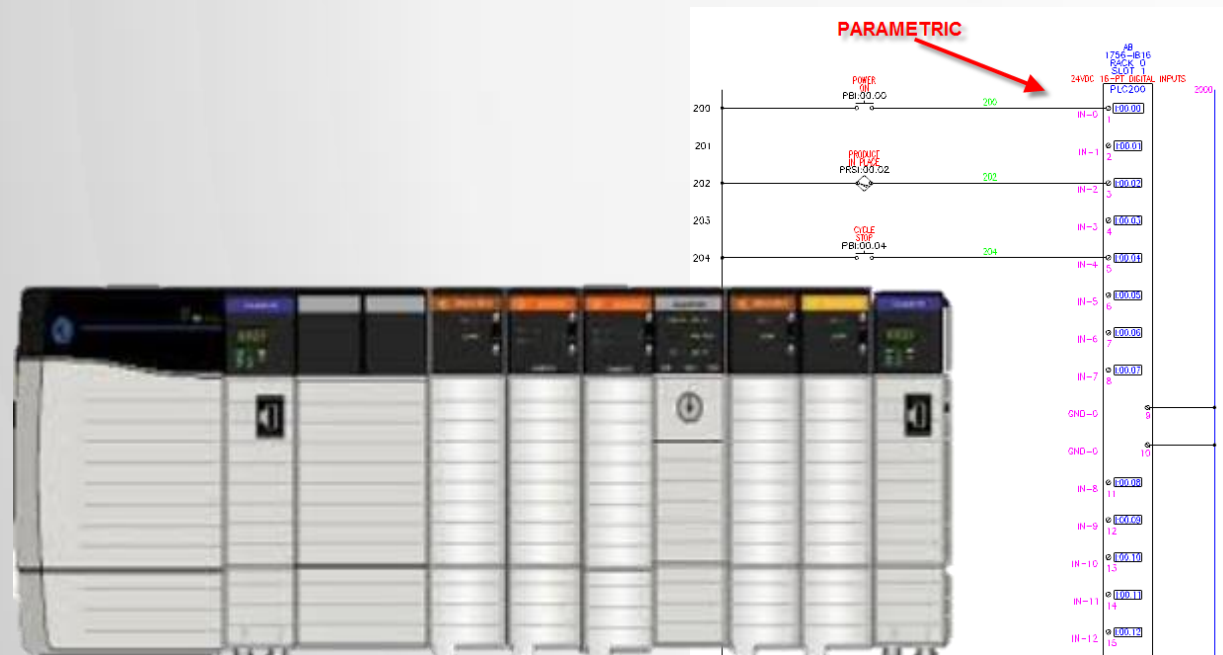
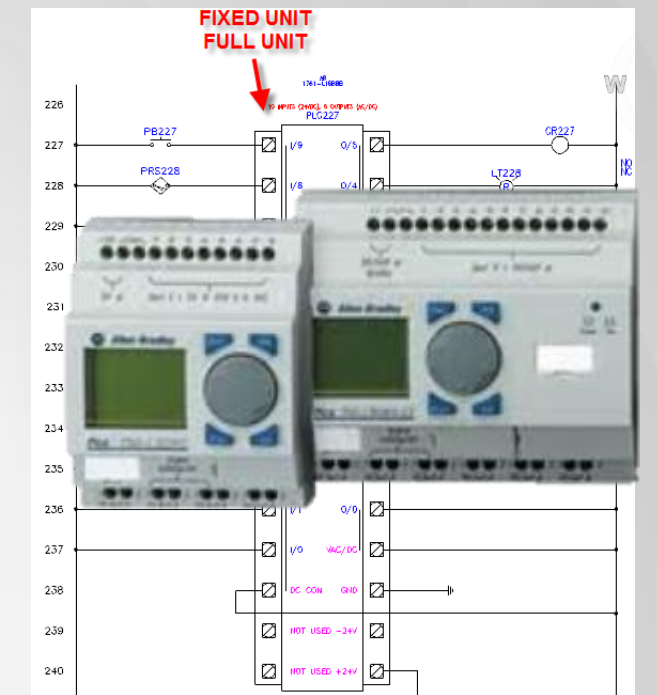
Fixed Unit PLC

- What is a PLC??
 - Acronym for Programmable Logic Controller
 - Similar to the function of a desktop computer
 - Inputs for sensors (similar to keyboard and mouse inputs)
 - Outputs for creating an action (similar to using a printer)
- Types of PLC's??
 - Standalone
 - Brick
 - Rack based



Fixed Unit PLC

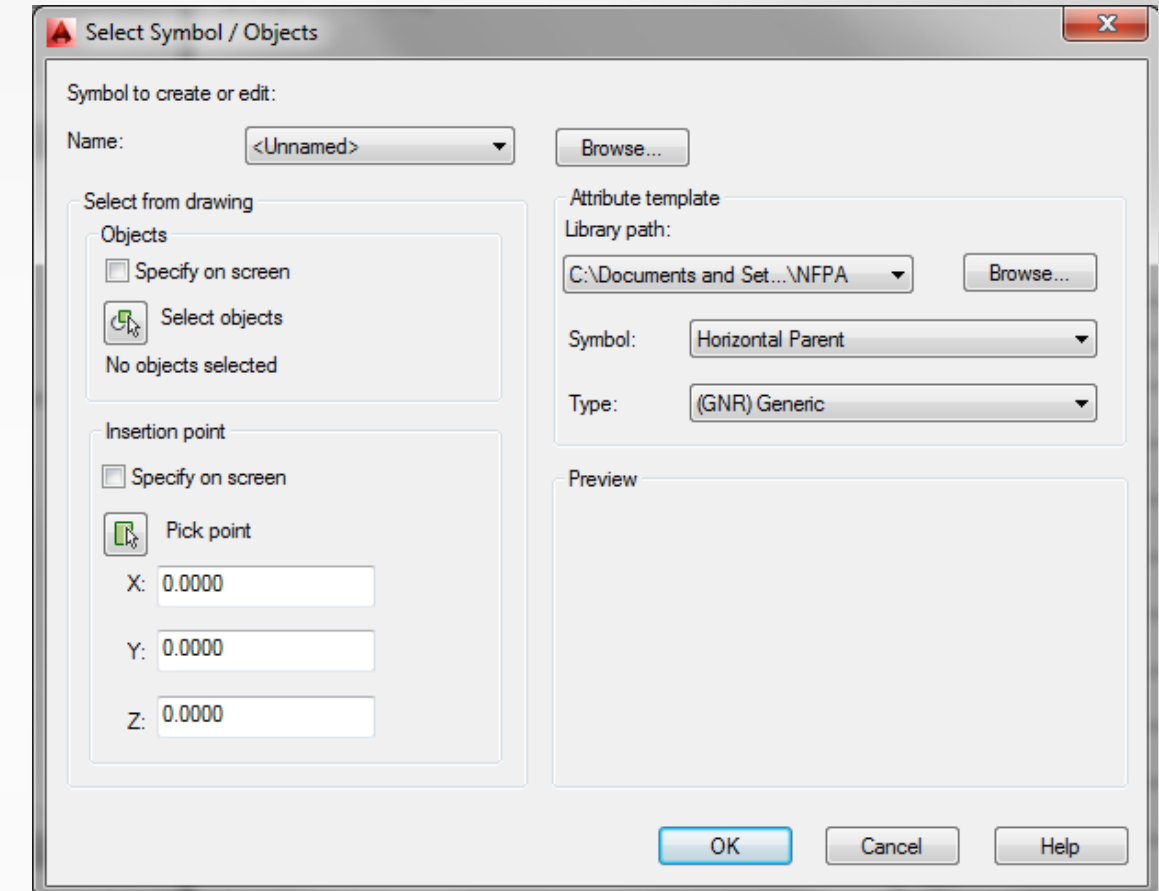
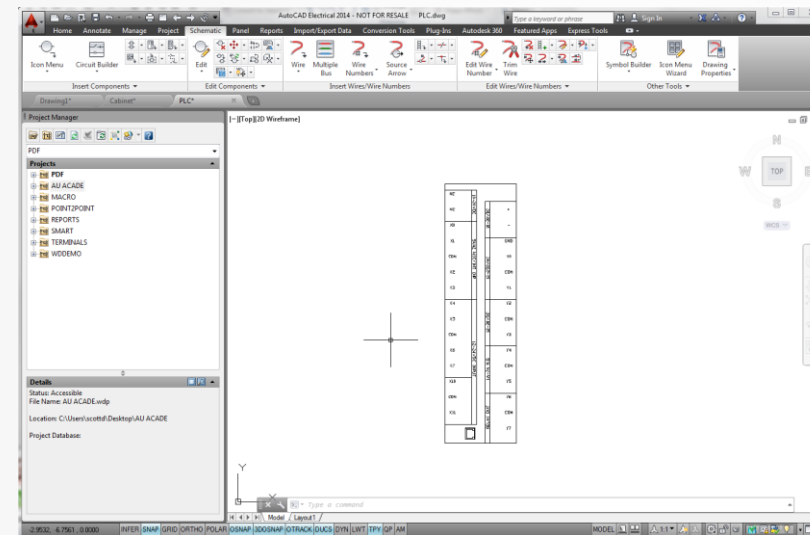
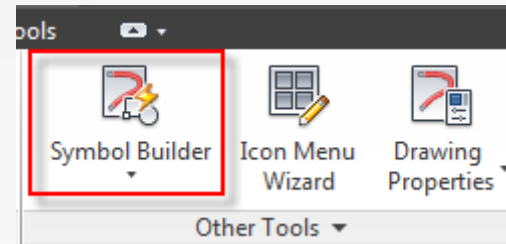
- AutoCAD Electricals PLC abilities
 - Parametric
 - Very easy to create, modify, and use
 - Used for most rack mount PLC's
 - Fixed Units (Full Units)
 - More complicated to create
 - Use mostly on standalone and brick designs
 - Also can be used on remote I/O designs



Fixed Unit PLC

- Create Needed Geometry

- Inputs to the left
- Outputs to the right
- Snaps on
- Start symbol builder
 - Horizontal Parent
 - Generic



CREATE
NEEDED
GEOMETRY

ASSIGN FAMILY
CODE AND
ATTRIBUTES

INSERT
TERMINAL WIRE
CONNECTIONS

INSERT PLC I/O
WIRE
CONNECTIONS

FILE NAMING
CONVENTION

Fixed Unit PLC

- Assign Family Code/Tag1 and Add Attributes

- TAG1 attribute insert PLC
- FAMILY attribute insert PLCIO
- Add LINE1 & LINE2
- Insert all needed attributes

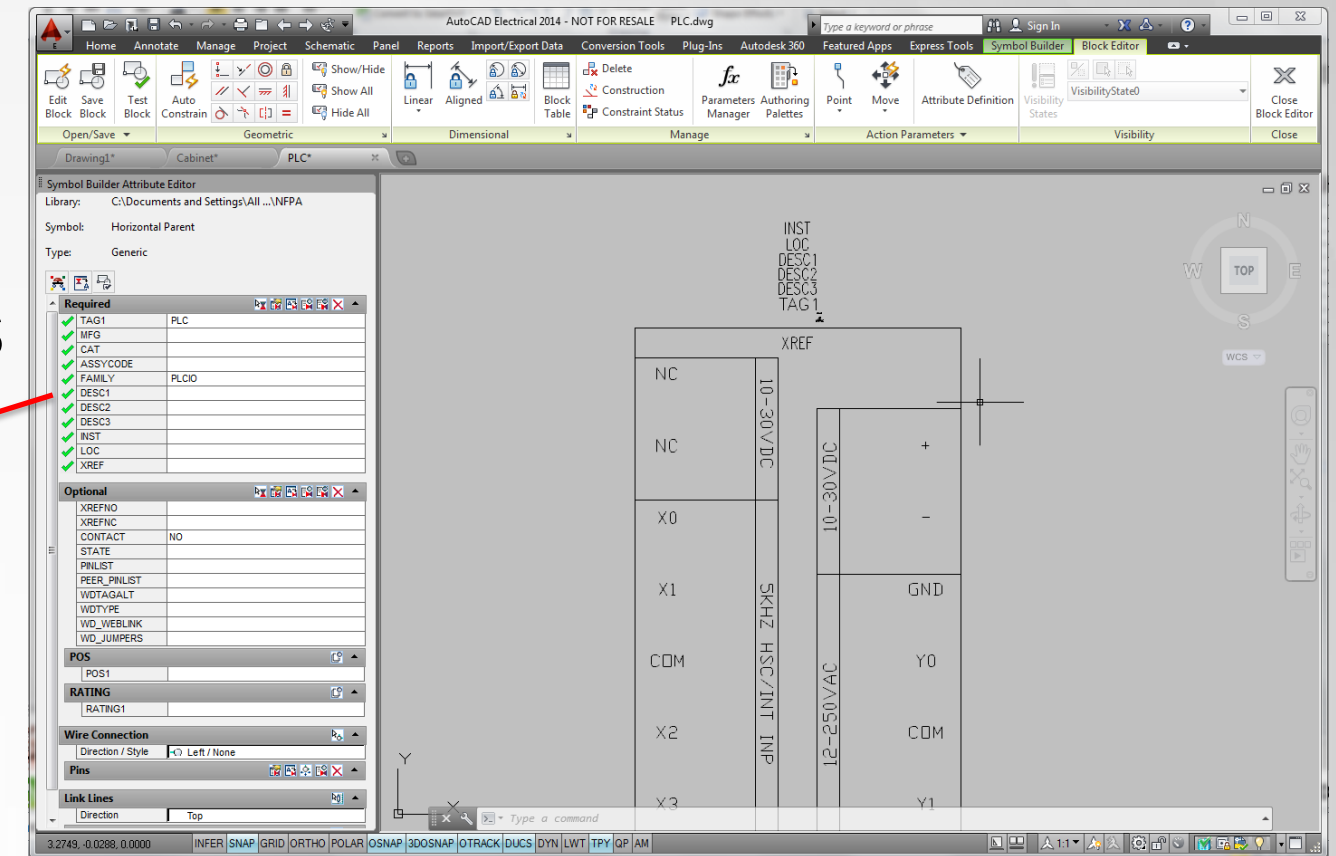
Symbol Builder Attribute Editor

Library: C:\Documents and Settings\All ... \NFPA

Symbol: Horizontal Parent

Type: Generic

Required	
✓ TAG1	PLC
✓ MFG	
✓ CAT	
✓ ASSYCODE	
✓ FAMILY	PLCIO
✓ DESC1	
✓ DESC2	
✓ DESC3	
✓ INST	
✓ LOC	
✓ XREF	



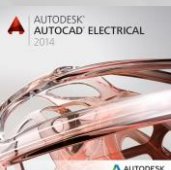
CREATE
NEEDED
GEOMETRY

ASSIGN FAMILY
CODE AND
ATTRIBUTES

INSERT
TERMINAL WIRE
CONNECTIONS

INSERT PLC I/O
WIRE
CONNECTIONS

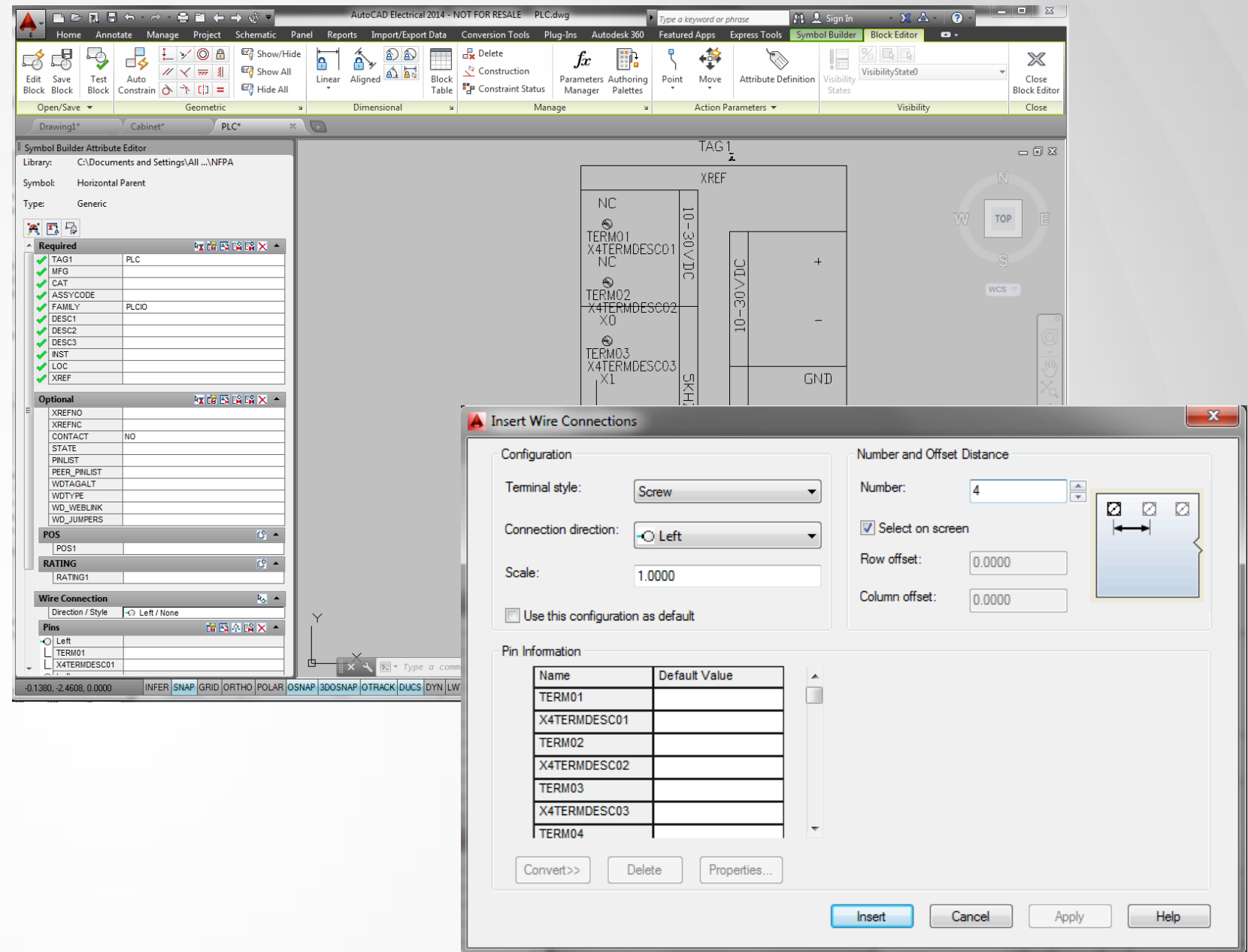
FILE NAMING
CONVENTION



Fixed Unit PLC

■ Insert Terminal Wire Connections

- Snaps on
- Wire connection “others..”
- Select screw terminal style
- Connection Left or Right
- Number of connections
- Insert all needed attributes



CREATE
NEEDED
GEOMETRY

ASSIGN FAMILY
CODE AND
ATTRIBUTES

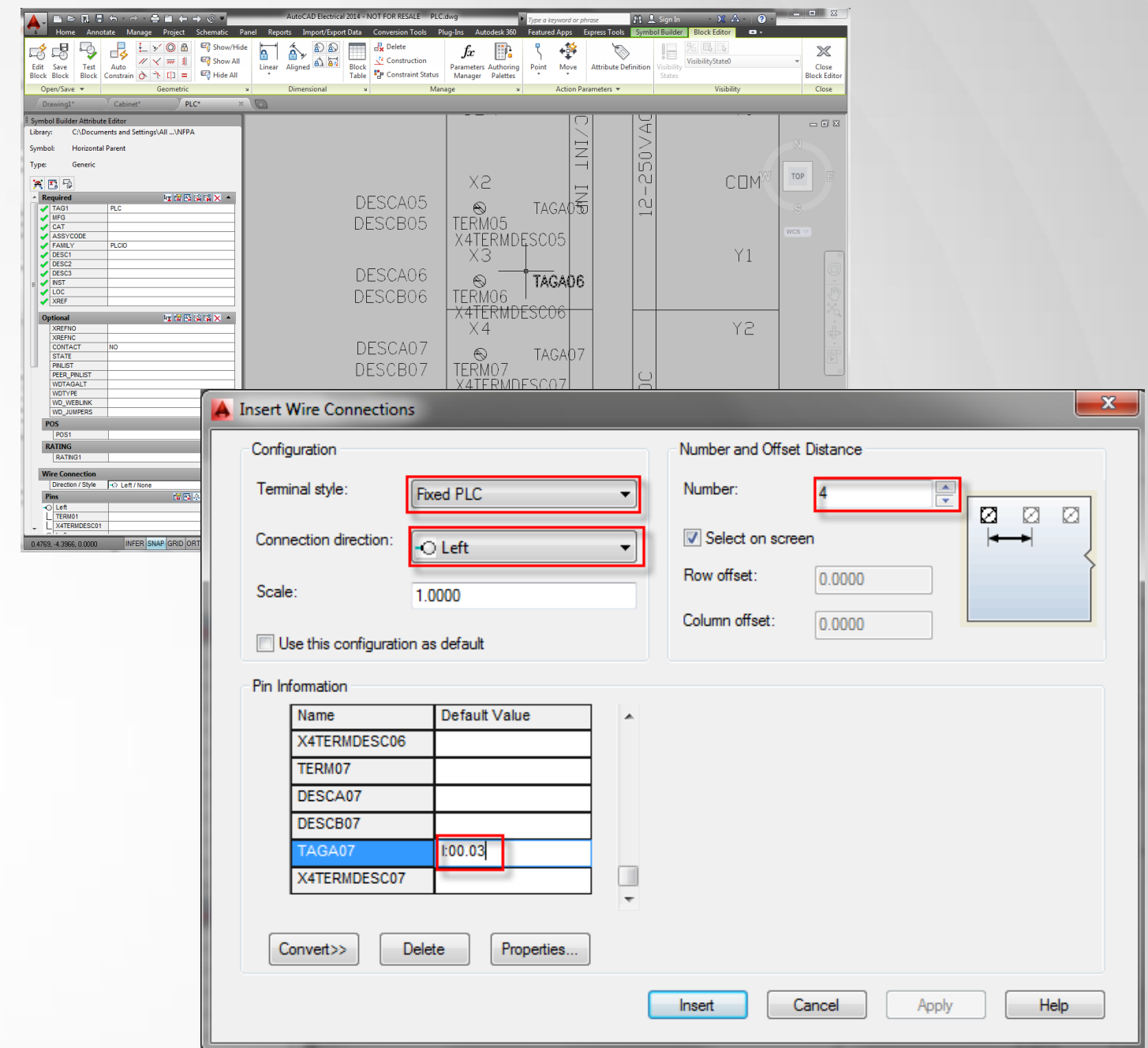
INSERT
TERMINAL WIRE
CONNECTIONS

INSERT PLC I/O
WIRE
CONNECTIONS

FILE NAMING
CONVENTION

Fixed Unit PLC

- Insert PLC I/O Wire Connections
 - Snaps on
 - Wire connection “others..”
 - Select Fixed PLC
 - Connection Left or Right
 - Number of connections
 - Correct TAG attributes
 - Insert and arrange



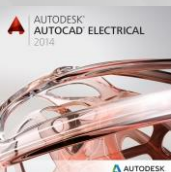
CREATE
NEEDED
GEOMETRY

ASSIGN FAMILY
CODE AND
ATTRIBUTES

INSERT
TERMINAL WIRE
CONNECTIONS

INSERT PLC I/O
WIRE
CONNECTIONS

FILE NAMING
CONVENTION



Fixed Unit PLC

- File Naming Convention
 - Symbol Name doesn't following standard naming
 - Must start with PLCIO
 - Select a file path

Close Block Editor: Save Symbol

Symbol

☐ Block ☒ Wblock

Orientation: <User defined>

Catalog lookup

Symbol name: (LC) Light Curtain

WDBLKNAME: HAM

Type: <User defined>

Contact: <Not Applicable>

Unique identifier: O_AD100

Symbol name: PLCIO_AD100

File path: C:\Documents and Settings\All Users\Doc

Base point

☐ Specify on screen

☒ Pick point

X: 0.0000

Y: 0.0000

Z: 0.0000

Image

☐ Icon image

Name (.png): PLCIO_AD100

File path: C:\Users\scottd\AppData\Roaming\Autodesk\

1 error(s) found in the symbol

Details...

OK No Cancel Help

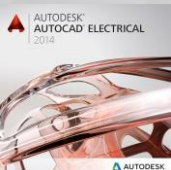
CREATE
NEEDED
GEOMETRY

ASSIGN FAMILY
CODE AND
ATTRIBUTES

INSERT
TERMINAL WIRE
CONNECTIONS

INSERT PLC I/O
WIRE
CONNECTIONS

FILE NAMING
CONVENTION

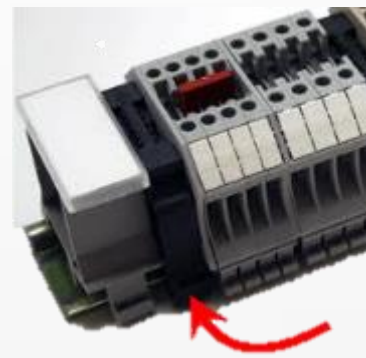


An aerial perspective of a cityscape. In the foreground, a multi-lane bridge with a rainbow-colored line along its edge spans a wide river. The riverbank is landscaped with green grass, trees, and a small garden bed. In the middle ground, a large, circular stadium with a white roof is visible. The background features a dense urban skyline with various skyscrapers under a clear blue sky.

Advanced Block Creation

Advanced Block Creation

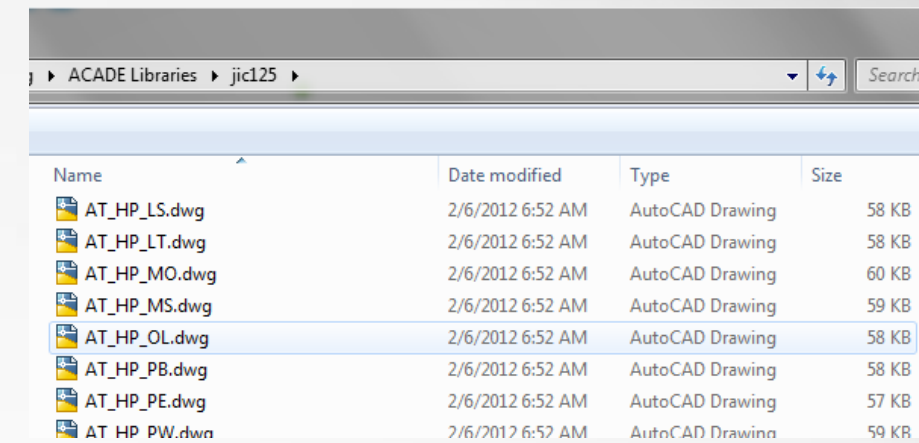
- Create New Families
 - Light Curtains
 - Safety Relays
 - Power Distribution Block
- Create a block with WDJUMPER attribute
 - Power Distribution Block
- Create terminal block accessories
 - End Barrier



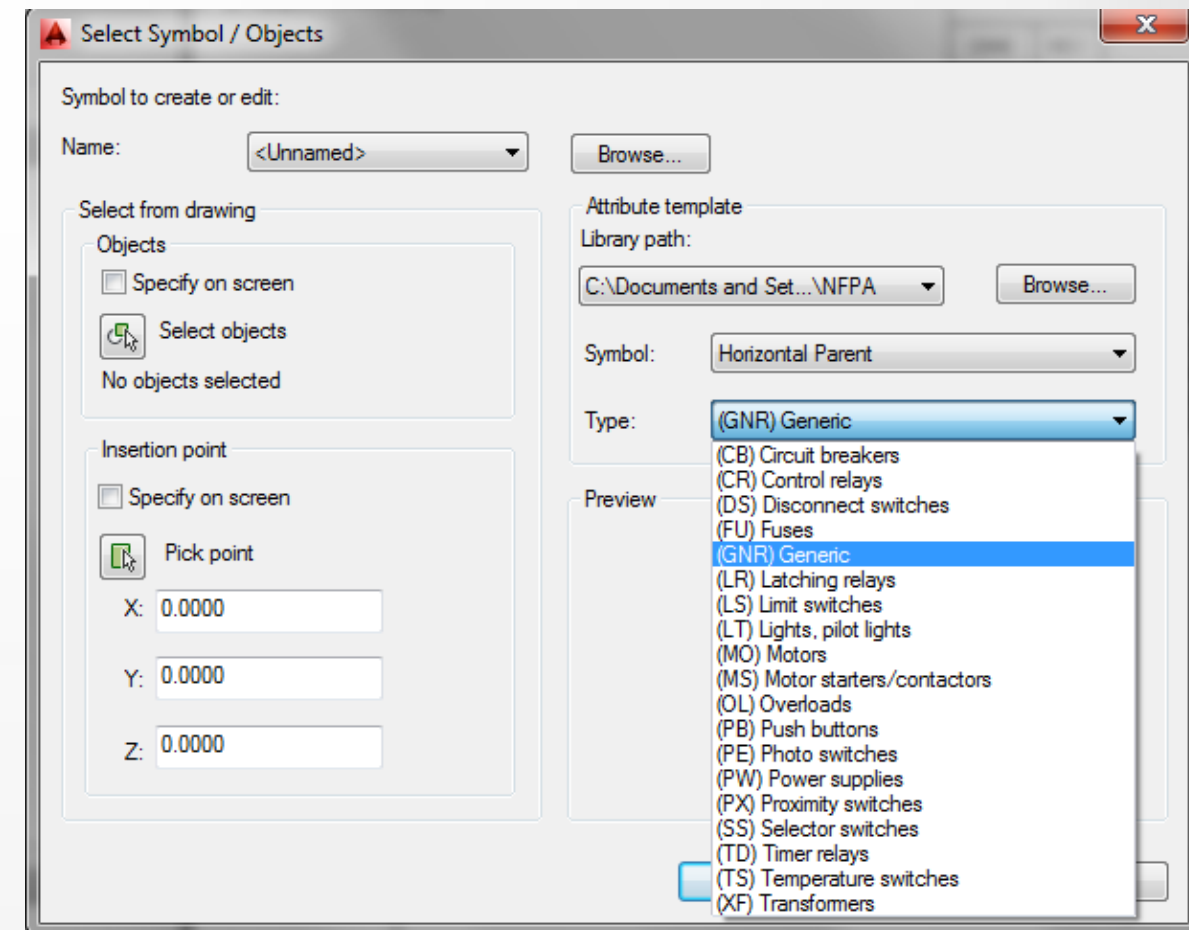
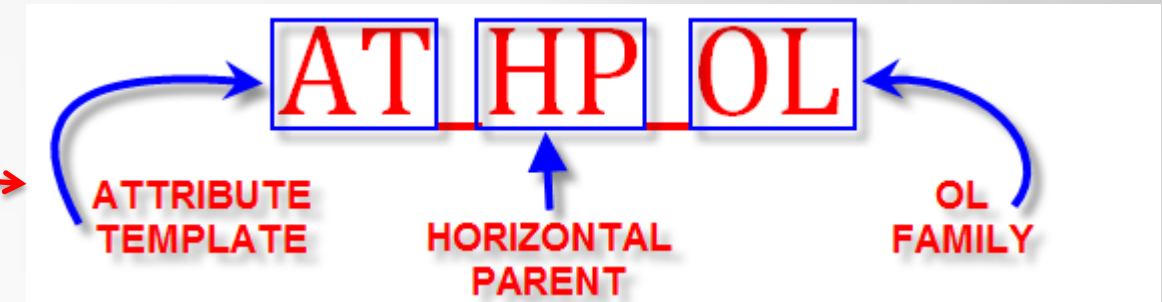
Create New Families

■ Create New Attribute Template

- Attribute templates reside in the standard library for a project
- Attribute templates naming
- Copy and rename to match new table

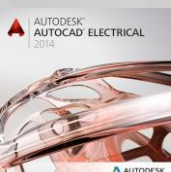


Name	Date modified	Type	Size
AT_HP_LS.dwg	2/6/2012 6:52 AM	AutoCAD Drawing	58 KB
AT_HP_LT.dwg	2/6/2012 6:52 AM	AutoCAD Drawing	58 KB
AT_HP_MO.dwg	2/6/2012 6:52 AM	AutoCAD Drawing	60 KB
AT_HP_MS.dwg	2/6/2012 6:52 AM	AutoCAD Drawing	59 KB
AT_HP_OL.dwg	2/6/2012 6:52 AM	AutoCAD Drawing	58 KB
AT_HP_PB.dwg	2/6/2012 6:52 AM	AutoCAD Drawing	58 KB
AT_HP_PE.dwg	2/6/2012 6:52 AM	AutoCAD Drawing	57 KB
AT_HP_PW.dwg	2/6/2012 6:52 AM	AutoCAD Drawing	59 KB



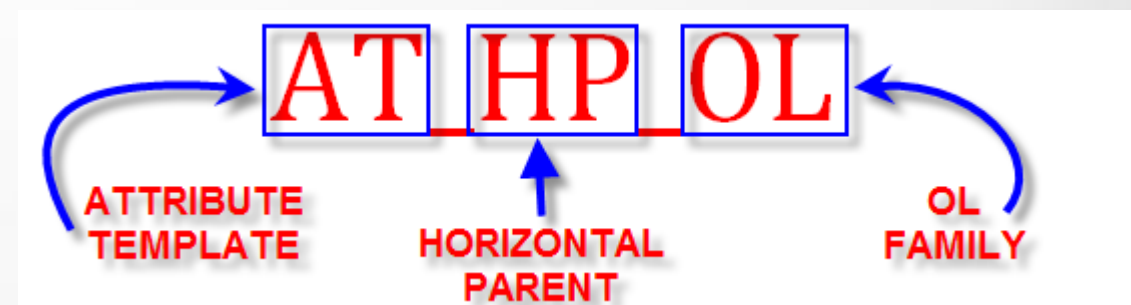
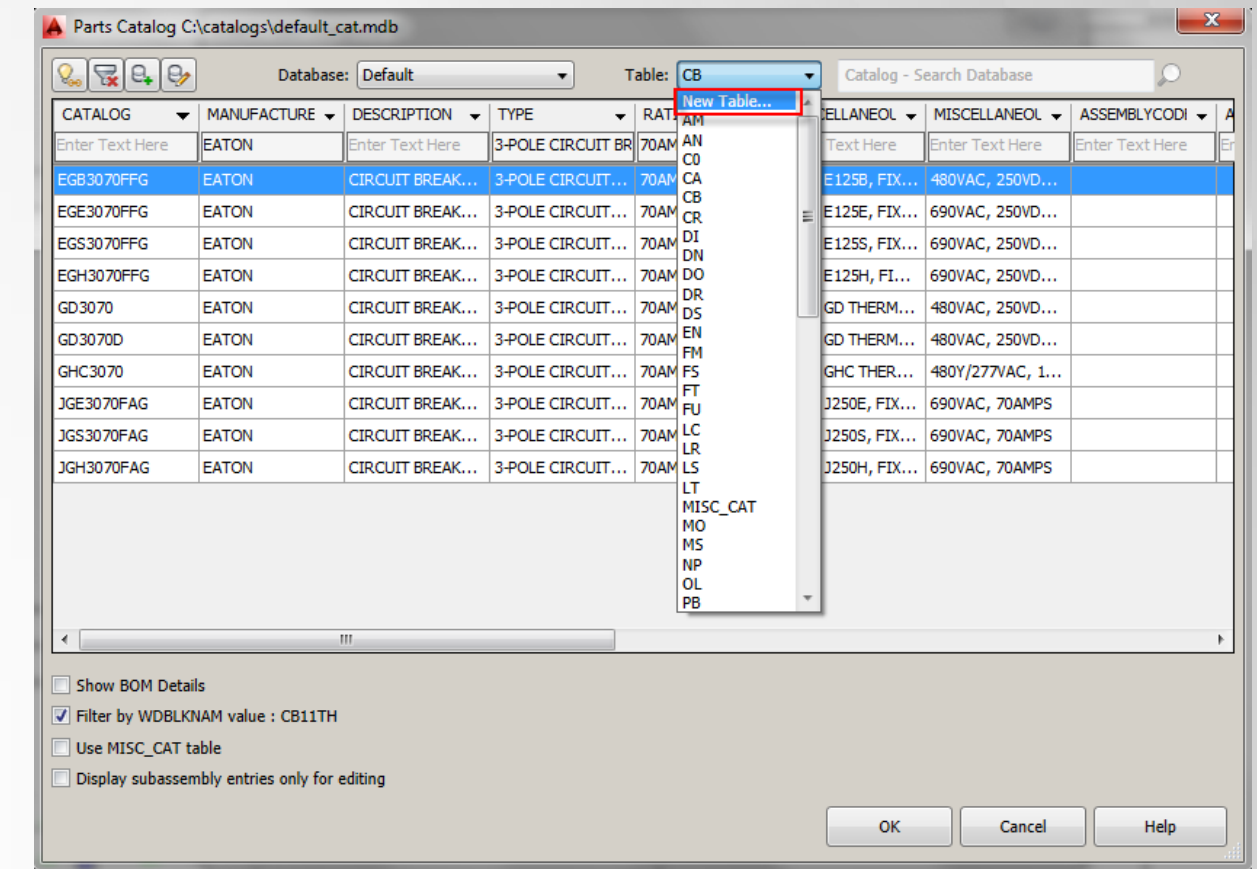
Create New
Attribute
Template

Create New Table



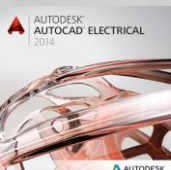
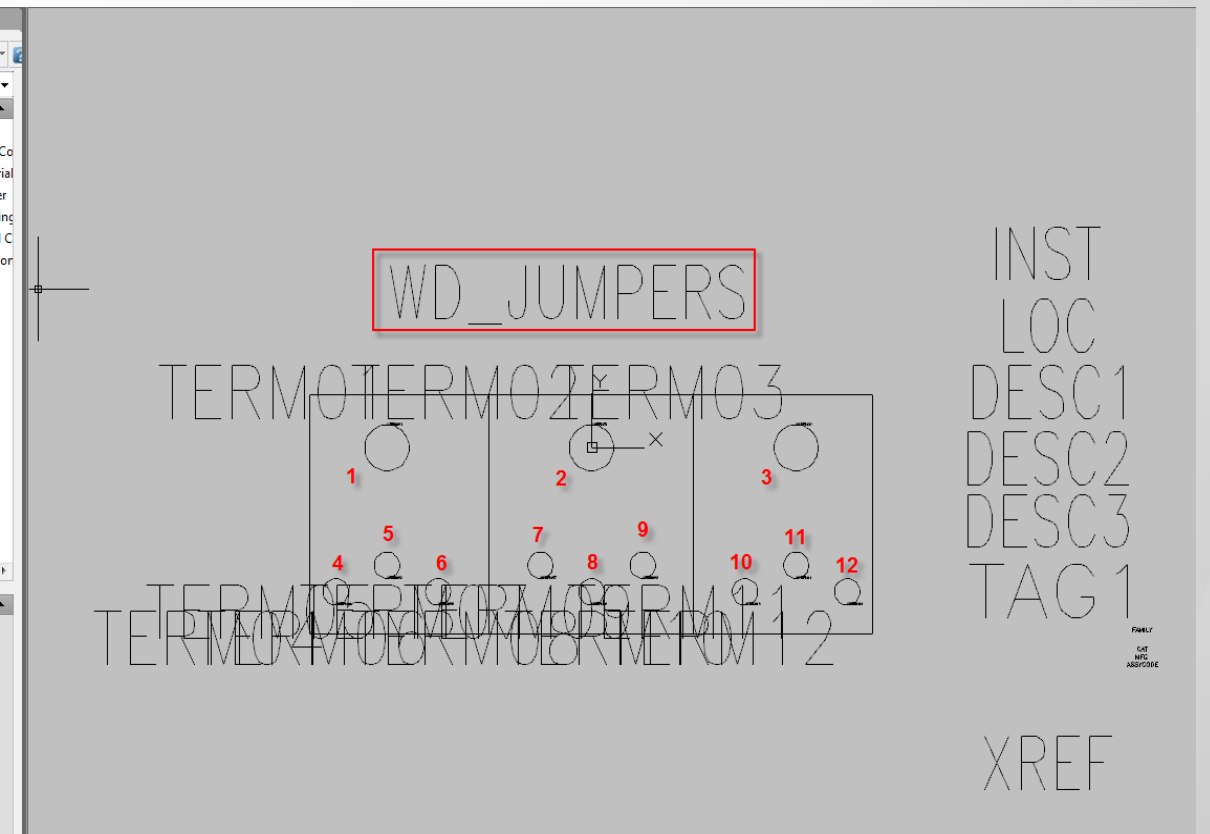
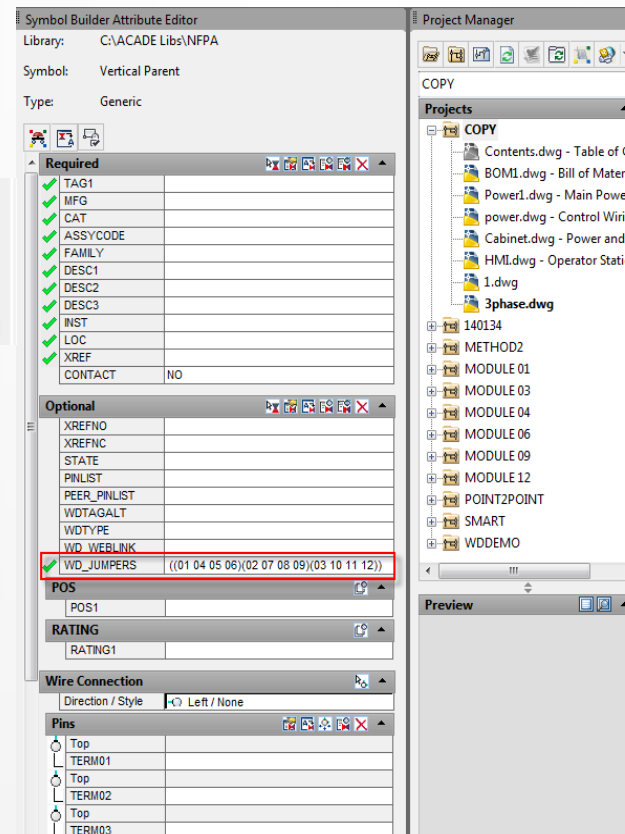
Create New Families

- Create New Table
 - Catalog lookup on any electrical symbol
 - From table choose “New Table”
 - Create a table that matches the attribute template created
 - Last two letters



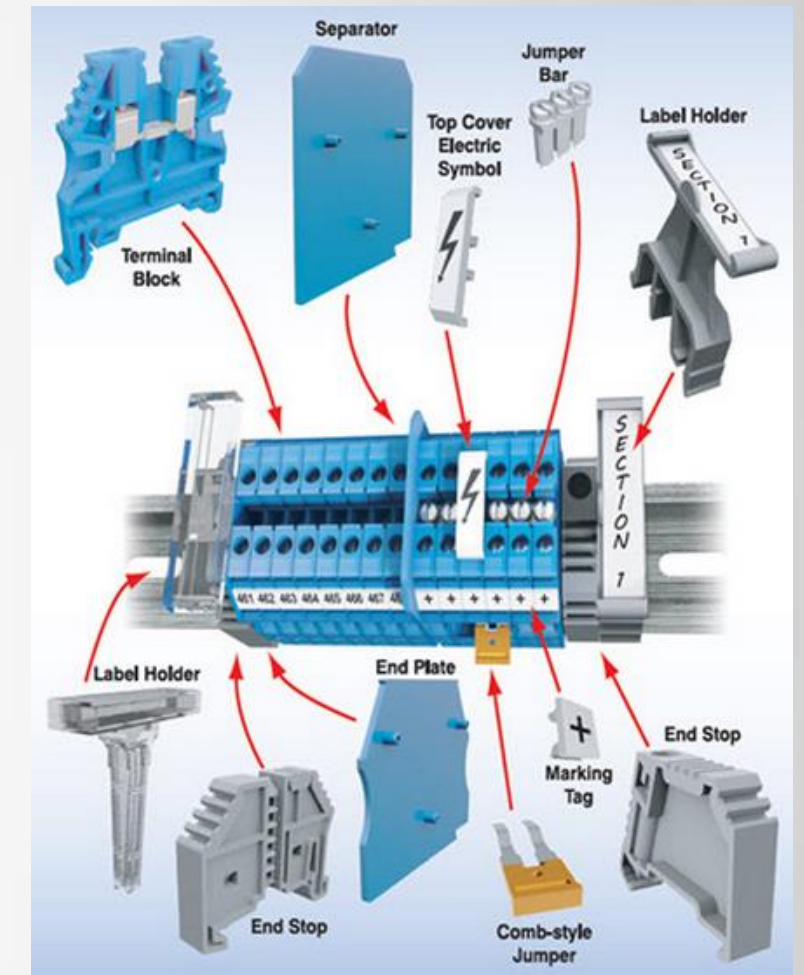
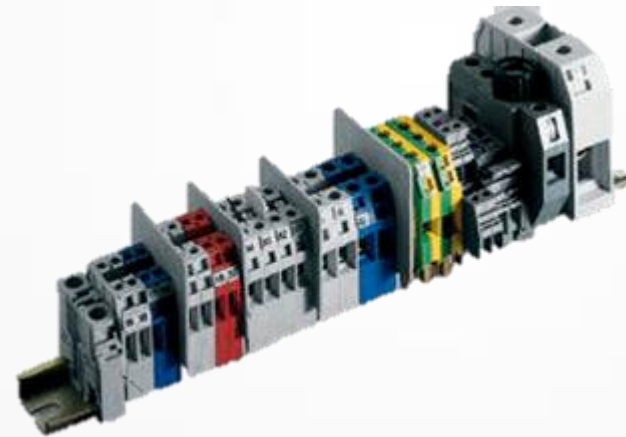
WDJUMPER

- Purpose of the Attribute
 - Keeps wire numbers from changing across connections
 - Items such as Power Distribution Blocks
- How to use it
 - Attribute has to be added to the symbol
 - Simple mapping in the attribute to link terminals



Terminal Accessories

- Why?
 - AutoCAD Electrical has a limited number of accessories
 - We need them on our Bill of Materials



Terminal Accessories

- Create New Part in the Database
 - Pick a similar component to copy
 - Verify that required fields are populated

Add Catalog Record (table TRMS)

CATALOG* AU-BARRIER Count

MANUFACTURER* AUTODESK

DESCRIPTION END ANCHOR

TYPE* HARDWARE

RATING* END ANCHOR

MISCELLANEOUS1 END ANCHOR IEC, BULLETIN 1492, DIN RAIL, NORMAL

MISCELLANEOUS2

ASSEMBLYCODE ☐ As main -> subassembly

ASSEMBLYLIST ☐ As subassembly

USER1

USER2

USER3

TEXTVALUE

WEBLINK http://www.ab.com/industrialcontrols/products/terminal_blocks_and_wiring/i

WDBLKNAM

☐ Force text to uppercase

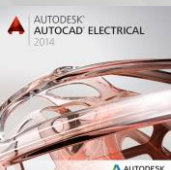
* = required field

OK Cancel Help

Create New Part
in the Database

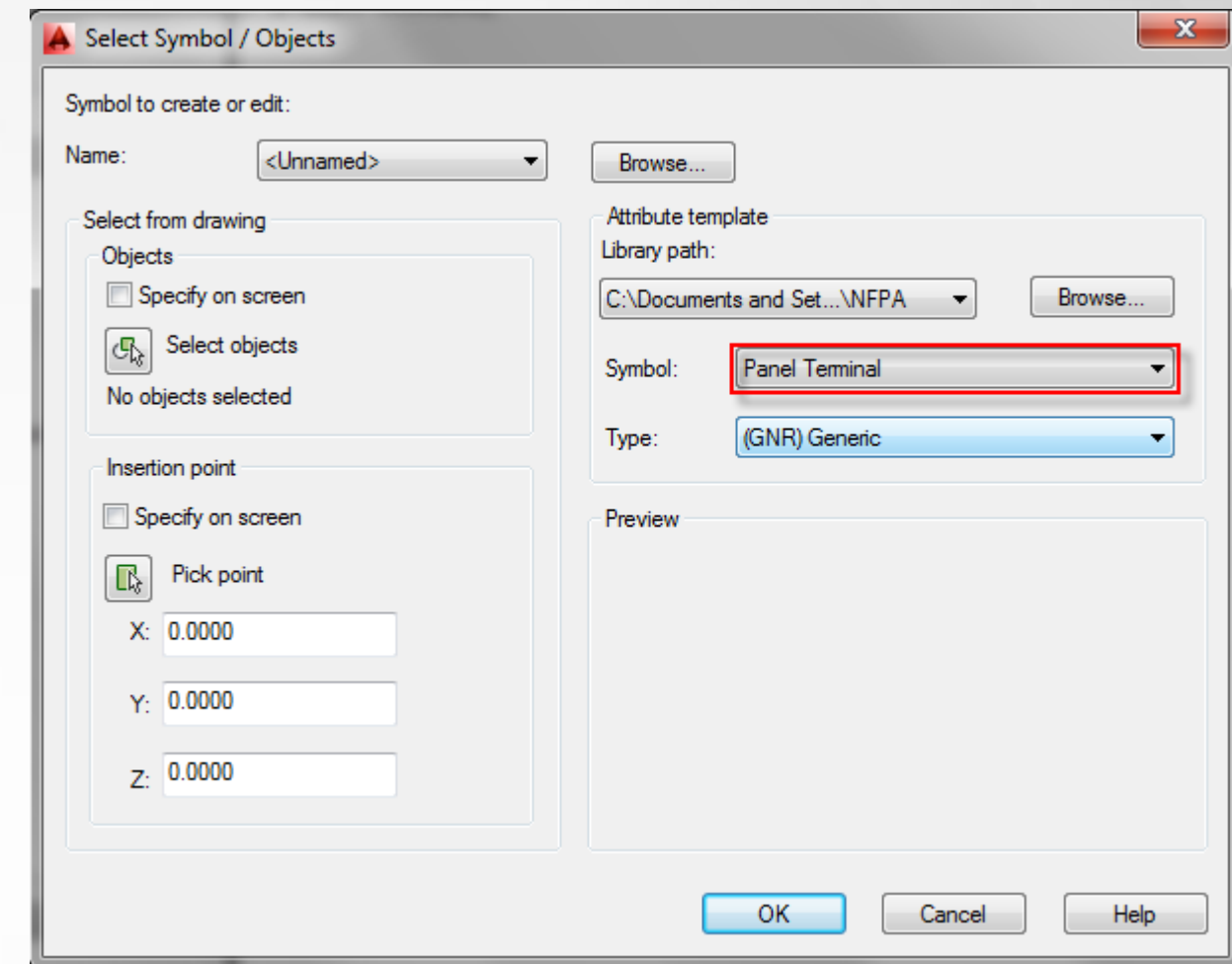
Create New
Footprint

Add Entry to
Footprint
Database



Terminal Accessories

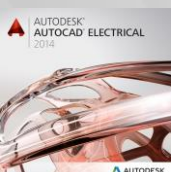
- Create New Footprint
 - Create geometry required
 - Start symbol builder
 - Select Panel Terminal for “Symbol”
 - Pick point selection is critical
 - Add attributes and save file



Create New Part
in the Database

Create New
Footprint

Add Entry to
Footprint
Database



Terminal Accessories

- Add Entry to Footprint Database
 - Record is linked by Manufacture and Catalog Number
 - View button use
 - Can use wild cards
 - Browse to new footprint
 - Absolute File Path??

Add footprint record (table: AUTODESK)

Catalog Number (Wild cards allowed)

Assembly Code (optional)

Footprint block name* (or geometry definition or icon menu call)

Use file dialog to find block ".dwg" file

Get block name by picking on active drawing

* include the path for the block name if it is not in an AutoCAD Electrical search path.

No block, just define footprint outline

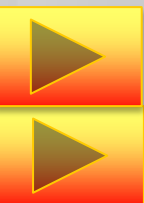
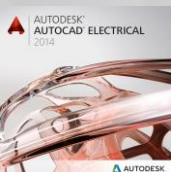
Trigger icon menu page for user pick of block to use

Comment (optional)

Create New Part
in the Database

Create New
Footprint

Add Entry to
Footprint
Database

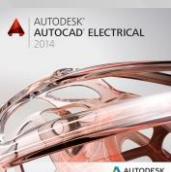
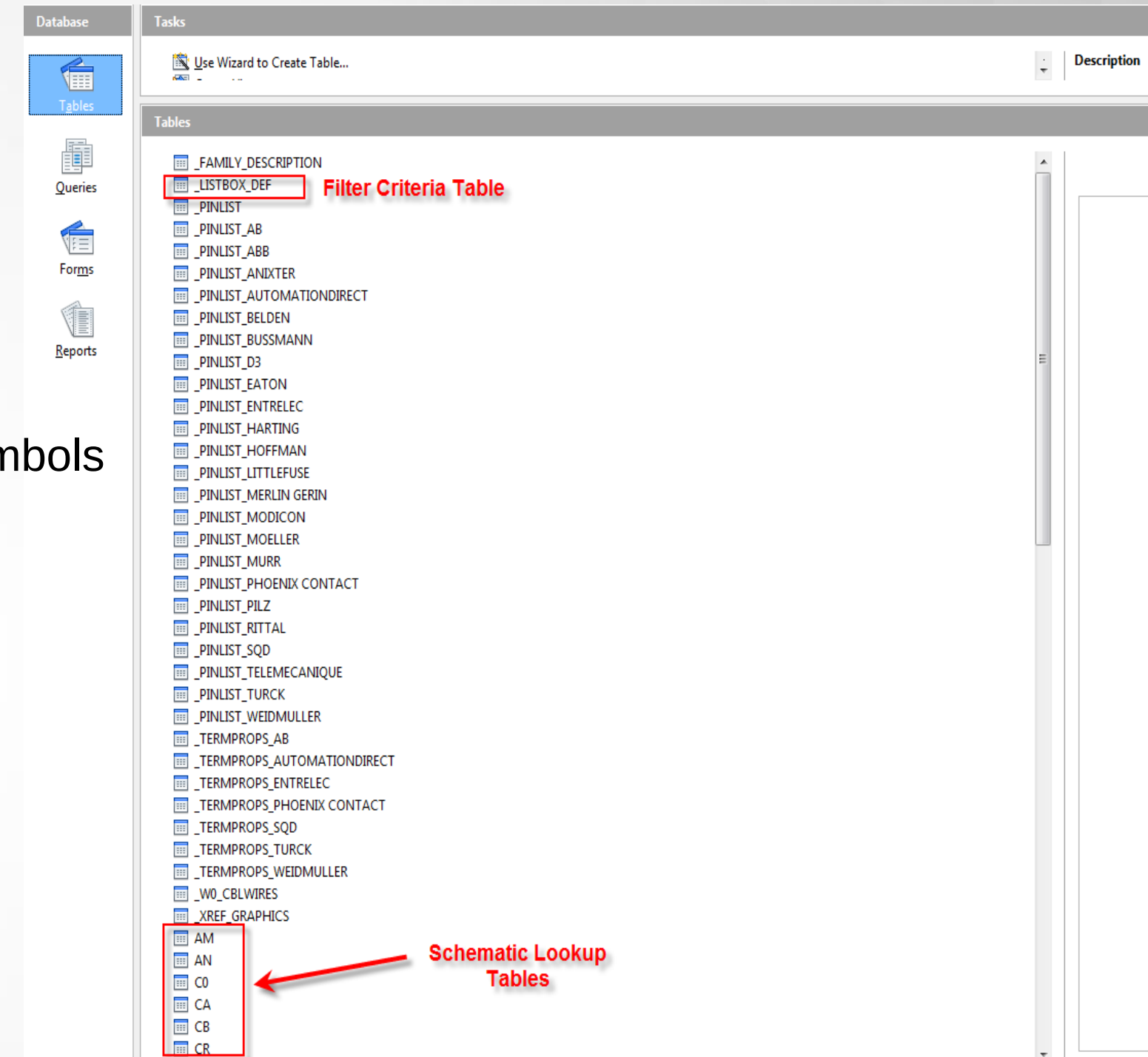
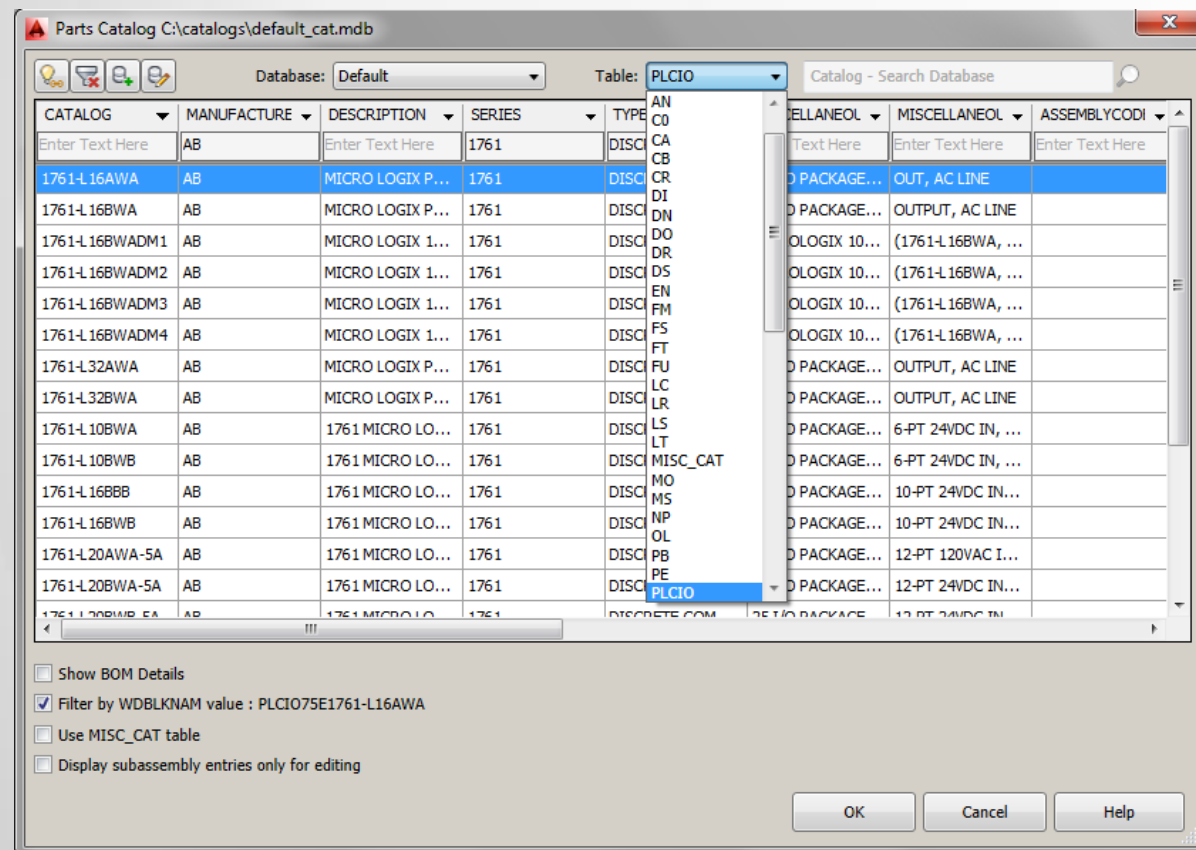


Databases



Databases

- Schematic Part Number Tables
 - Tables internal to default_cat.mdb
 - Each table is named from family code
 - Used for adding BOM information to schematic symbols
 - Can be filtered to customer needs



Databases

- PLC Database
 - Database ace_plc.mdb
 - Used for parametric PLC creation
 - Tables are based off Manufacture and Series

Tables

- allen-bradley_1746_discrete_input
- allen-bradley_1746_discrete_input_Data
- allen-bradley_1746_discrete_output
- allen-bradley_1746_discrete_output_Data
- allen-bradley_1746_power_supply
- allen-bradley_1746_power_supply_Data
- allen-bradley_1746_special
- allen-bradley_1746_special_Data
- allen-bradley_1747_L20fc
- allen-bradley_1747_L20fc_Data
- allen-bradley_1747_L30fc
- allen-bradley_1747_L30fc_Data
- allen-bradley_1747_L40fc
- allen-bradley_1747_L40fc_Data
- allen-bradley_1747_special
- allen-bradley_1747_special_Data
- allen-bradley_1756_analog_combination
- allen-bradley_1756_analog_combination_Data
- allen-bradley_1756_analog_input
- allen-bradley_1756_analog_input_Data
- allen-bradley_1756_analog_output
- allen-bradley_1756_analog_output_Data
- allen-bradley_1756_discrete_input
- allen-bradley_1756_discrete_input_Data
- allen-bradley_1756_discrete_output
- allen-bradley_1756_discrete_output_Data
- allen-bradley_1756_power_supply
- allen-bradley_1756_power_supply_Data
- allen-bradley_1756_special
- allen-bradley_1756_special_Data
- allen-bradley_1761_micrologix_I10

allen-bradley_1746_discrete_input - PLC_Catalogs - OpenOffice.org Base: Table Data Vi...

	CODE	POINTS	TYPE	DESCRIPTION	RATING	ADDRESS_BASE	ADDRESS_FORMAT	B
	1746-IA16	16	AC	16-POINT INPUT	120VAC			
	1746-IA4	4	AC	4-POINT INPUT	120VAC			
	1746-IA8	8	AC	8-POINT INPUT	120VAC			
	1746-IB16	16	DC	16-POINT SINKIN	24VDC			
	1746-IB32	32	DC	32-POINT SINKIN	24VDC			
	1746-IB8	8	DC	8-POINT SINKING	24VDC			
	1746-IC16	16	DC	16-POINT SINKIN	48VDC			
	1746-IG16	16	DC	16-POINT SOURC	5VDC TTL			
	1746-IH16	16	DC	16-POINT SINKIN	125VDC			
	1746-IM16	16	AC	16-POINT INPUT	240VAC			
	1746-IM4	4	AC	4-POINT INPUT	240VAC			
	1746-IM8	8	AC	8-POINT INPUT	240VAC			
	1746-IN16	16	Combo	16-POINT SINKIN	24VAC/DC			
	1746-ITB1	16	DC	16-POINT SINKIN	24VDC			
	1746-ITV1	16	DC	16-POINT SOURC	24VDC			
	1746-IV16	16	DC	16-POINT SOURC	24VDC			
	1746-IV32	32	DC	32-POINT SOURC	24VDC			
	1746-IV8	8	DC	8-POINT SOURC	24VDC			

Record 1 of 18

PLC Database File Editor

C:\valled acad\5) network sharing\acad databases\plc\ACE_PLC.MDB

Allen-Bradley

- 1734
- 1746
- 1747
- 1756
 - Analog Combination
 - Analog Input
 - Analog Output
 - Discrete Input
 - 1756-IA16
 - 1756-IA16I
 - 1756-IA32
 - 1756-IA8D
 - 1756-IB16
 - 1756-IB16D
 - 1756-IB16I
 - 1756-IB16ISOE
 - 1756-IB32

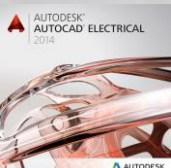
	Terminal Type	Show	Optional Re-prompt	Break After	Sp F
1	Module Info Input I/O Point Wire Left	Always	No		
2	Input I/O Point Wire Left	Always	No		
3	Input I/O Point Wire Left	Always	No		
4	Input I/O Point Wire Left	Always	No		
5	Input I/O Point Wire Left	Always	No		
6	Input I/O Point Wire Left	Always	No		
7	Input I/O Point Wire Left	Always	No		
8	Input I/O Point Wire Left	Always	No		
9	Terminal Point Wire Right	Always	No		
10	Terminal Point Wire Right	Always	No		
11	Input I/O Point Wire Left	Always	No		
12	Input I/O Point Wire Left	Always	No		
13	Input I/O Point Wire Left	Always	No		
14	Input I/O Point Wire Left	Always	No		
15	Input I/O Point Wire Left	Always	No		

Attribute Tag	ASSYCODE	CAT	DESC	DESCA_	DESCB_	DESCC_	DESCD_	DESCE_	INST	LINE1	LINE2	LOC	MFG
Attribute Value		1756-IB16	24VDC 16-P							RACK %%1	SLOT %%2		AB

Table: allen-bradley_1756_discrete_input

New Module... Module Specifications... Save Module Style Box Dimensions... Settings...

Done Done / Insert Help



Databases

- Electrical Standards
 - ace_electrical_standards.mdb
 - Used for Circuit Builder configurations

Tables	
	AMP_AL_AWG_NEC
	AMP_AL_MM2_NEC
	AMP_CU_AWG_NEC
	AMP_CU_MM2_NEC
	AMPG_AL_AWG_NEC
	AMPG_AL_MM2_NEC
	AMPG_CU_AWG_NEC
	AMPG_CU_MM2_NEC
	CATALOGSEL
	FEED
	FILL
	FILL_NEC
	INSUL_AL_AWG_NEC
	INSUL_AL_MM2_NEC
	INSUL_CU_AWG_NEC
	INSUL_CU_MM2_NEC
	MOTOR
	MOTOR_I_CALC_NEC
	MOTOR_I_DESC_NEC
	MOTOR_I_MAP_NEC
	OPT
	OPT_NEC
	XL&R_AL_AWG_NEC
	XL&R_AL_MM2_NEC
	XL&R_CU_AWG_NEC
	XL&R_CU_MM2_NEC
	XL&R_DESC

Circuit Configuration

Circuit: 3ph Motor Circuit Name: Horizontal - FVNR - non reversing (006)

Type: Horizontal - FVNR - non reversing

Circuit Elements Select

- Motor Setup
- Motor symbol
- Disconnecting means
- Control transformer and circuit - n
- Power Factor correction
- Overloads
- Motor terminal connections
- Cable marker
- Safety disconnect at the load

Setup & Annotations

Motor Setup

Type	
Load	
Units	
Voltage (V)	
Phase	
Frequency (Hz)	
Speed (RPM)	
FLA (A)	
FLA Multiplier	

Wire Setup

W1 - Size	
W1 - Layer	BLK_14AWG
W2 - Size	
W2 - Layer	BLK_14AWG
W3 - Size	
W3 - Layer	BLK_14AWG

Done Cancel Help

Databases

■ Pin List Database

- Tables in default_cat.mdb
- Based off of Manufacturer and Catalog number
- Used for relay pin assignments
- Notifies user if exceeding number of contacts

Tables	
	_FAMILY_DESCRIPTION
	_LISTBOX_DEF
	_PINLIST
	_PINLIST_AB
	_PINLIST_ABB
	_PINLIST_ANIXTER
	_PINLIST_AUTOMATIONDIRECT
	_PINLIST_BELDEN
	_PINLIST_BUSSMANN
	_PINLIST_D3
	_PINLIST_EATON
	_PINLIST_ENTRELEC
	_PINLIST_HARTING
	_PINLIST_HOFFMAN
	_PINLIST_LITTLEFUSE
	_PINLIST_MERLIN GERIN
	_PINLIST_MODICON
	_PINLIST_MOELLER
	_PINLIST_MURR
	_PINLIST_PHOENIX CONTACT

Insert / Edit Component

Component Tag: CR159 ☐ fixed

Use PLC Address

Tags Used: Schematic Panel

External List Options

Catalog Data

Manufacturer: AB

Catalog: 700-CFZ1330KJ

Assembly:

Item: Count: 22

Next>> Previous

Lookup Drawing Project

Multiple Catalog

Catalog Check

Ratings

Rating:

Show All Ratings

Description

Line 1: EMERGENCY

Line 2: STOP

Line 3:

List: Drawing Project Defaults Pick

Cross-Reference

☐ Component override Setup

Reference NO: 201,213 NO/NC Setup

Reference NC: 155,254

Installation code

Drawing Project

Location code

CABINET

Drawing Project

Show/Edit Miscellaneous

OK-Repeat OK Cancel Help

Pins

1 A1 < >

2 A2 < >

X < >

Edit c:\catalogs\default_cat.mdb (Table: _PINLIST_AB)

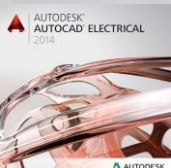
Sort Find Replace Filter

MANUFACTURER	CATALOG	ASSEMBLYCODE	COILPINS	PINLIST
AB	1492-HJ86			4,1;4,2;4,3;4,4;4,5;4,6
AB	1492-HJ812			4,1;4,2;4,3;4,4;4,5;4,6;4,7;4,8;4,9;4,10;4,11;4,
AB	100-B*		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;1,13,14,*NO AUX
AB	100-C09*01		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;2,21,22,*NC AUX
AB	100-C09*10		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;1,13,14,*NO AUX
AB	100-C09*200		A1,A2	1,L1,T1;1,L2,T2;2,L3,T3;2,L4,T4
AB	100-C09*300		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;2,L4,T4
AB	100-C09*400		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;1,L4,T4
AB	100-C12*01		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;2,21,22,*NC AUX
AB	100-C12*10		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;1,13,14,*NO AUX
AB	100-C12*200		A1,A2	1,L1,T1;1,L2,T2;2,L3,T3;2,L4,T4
AB	100-C12*300		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;2,L4,T4
AB	100-C12*400		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;1,L4,T4
AB	100-C16*01		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;2,21,22,*NC AUX
AB	100-C16*10		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;1,13,14,*NO AUX
AB	100-C16*200		A1,A2	1,L1,T1;1,L2,T2;2,L3,T3;2,L4,T4
AB	100-C16*300		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;2,L4,T4
AB	100-C16*400		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;1,L4,T4
AB	100-C23*01		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;2,21,22,*NC AUX
AB	100-C23*10		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;1,13,14,*NO AUX
AB	100-C23*200		A1,A2	1,L1,T1;1,L2,T2;2,L3,T3;2,L4,T4
AB	100-C23*300		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;2,L4,T4
AB	100-C23*400		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;1,L4,T4
AB	100-C30*00		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3
AB	100-C30*01		A1,A2	1,L1,T1;1,L2,T2;1,L3,T3;2,21,22,*NC AUX

Record 1 of 1298

Edit Add New Add Copy Delete

Save/Exit Quit Help



Databases

- Terminal Properties Database
 - Tables in default_cat.mdb
 - Based off of Manufacturer & Catalog Number
 - Used to define the properties of the Terminals

Edit c:\catalogs\default_cat.mdb (Table: _TERMPROPS_AB)

MANUFACTURER	CATALOG	ASSEMBLYCODE	LEVELS	LEVELDESCRIPTION	TPINL	TPINR	WIRESPERCONNECTION
AB	1492-H2RA620		2	UPPER, LOWER			2,2
AB	1492-H2RA680		2	UPPER, LOWER			2,2
AB	1492-H2RA750		2	UPPER, LOWER			2,2
AB	1492-H2RA820		2	UPPER, LOWER			2,2
AB	1492-H2RA912		2	UPPER, LOWER			2,2
AB	1492-H2RA103		2	UPPER, LOWER			2,2
AB	1492-H2RA113		2	UPPER, LOWER			2,2
AB	1492-H2RA123		2	UPPER, LOWER			2,2
AB	1492-H2RA133		2	UPPER, LOWER			2,2
AB	1492-H2RA153		2	UPPER, LOWER			2,2
AB	1492-H2RA163		2	UPPER, LOWER			2,2
AB	1492-H2RA183		2	UPPER, LOWER			2,2
AB	1492-H2RA203		2	UPPER, LOWER			2,2
AB	1492-H2RA223		2	UPPER, LOWER			2,2
AB	1492-H2RA243		2	UPPER, LOWER			2,2
AB	1492-H2RA273		2	UPPER, LOWER			2,2
AB	1492-H2RA303		2	UPPER, LOWER			2,2
AB	1492-H2RA333		2	UPPER, LOWER			2,2
AB	1492-H2RA363		2	UPPER, LOWER			2,2
AB	1492-H2RA393		2	UPPER, LOWER			2,2
AB	1492-H2RA433		2	UPPER, LOWER			2,2
AB	1492-H2RA473		2	UPPER, LOWER			2,2
AB	1492-H2RA513		2	UPPER, LOWER			2,2
AB	1492-H2RA563		2	UPPER, LOWER			2,2
AB	1492-H2RA623		2	UPPER, LOWER			2,2

Record 1 of 1771

Edit Add New Add Copy Delete Save/Exit Quit Help

Tables

- _PINLIST_MURR
- _PINLIST_PHOENIX CONTACT
- _PINLIST_PILZ
- _PINLIST_RITTAL
- _PINLIST_SQD
- _PINLIST_TELEMECANIQUE
- _PINLIST_TURCK
- _PINLIST_WEIDMULLER**
- _TERMPROPS_AB
- _TERMPROPS_AUTOMATIONDIRECT
- _TERMPROPS_ENTRELEC
- _TERMPROPS_PHOENIX CONTACT
- _TERMPROPS_SQD
- _TERMPROPS_TURCK
- _TERMPROPS_WEIDMULLER
- _W0_CBLWIRES
- _XREF_GRAPHICS
- AM
- AN
- CO
- CA
- CB
- CR
- DI
- DN
- DO
- DR
- DS
- EN
- FM
- FS

Insert / Edit Terminal Symbol

Terminal

Symbol Name: HT0002

Installation: Browse...

Location: Browse...

Tag Strip: TB-1 < >

Number: 5 < > Pick>>

Modify Properties/Associations

Add/Modify... Pick>>

Break Out Block Properties...

Properties/Associations

Levels: 1

Label	Number	PinL	PinR	Reference
???	5			03,153
Panel				06,

Project List

Installation	Location	Tag Strip	Numbers Used
	CABINET	TB	3
	CABINET	TB-1	7
			9
			11
			12

Catalog Data

Manufacturer: AUTOMATIONDIRECT

Catalog: DN-T10

Assembly:

Item:

Next>> 21

Catalog Lookup...

Drawing... Project...

Multiple Catalog...

Catalog Check...

Descriptions

Line 1:

Line 2:

Line 3:

Browse... Defaults... Pick>>

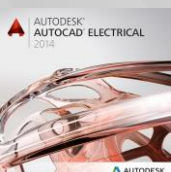
Ratings

Rating:

Show All...

Show/Edit Miscellaneous...

OK-Repeat OK Cancel Help Details <<



Databases

- Schematic Database File Editor
 - Database schematic_lookup.mdb
 - Based off of Manufacturer & Catalog Number
 - Used to assign schematic symbol to part number
 - Used when creating schematics for existing layout

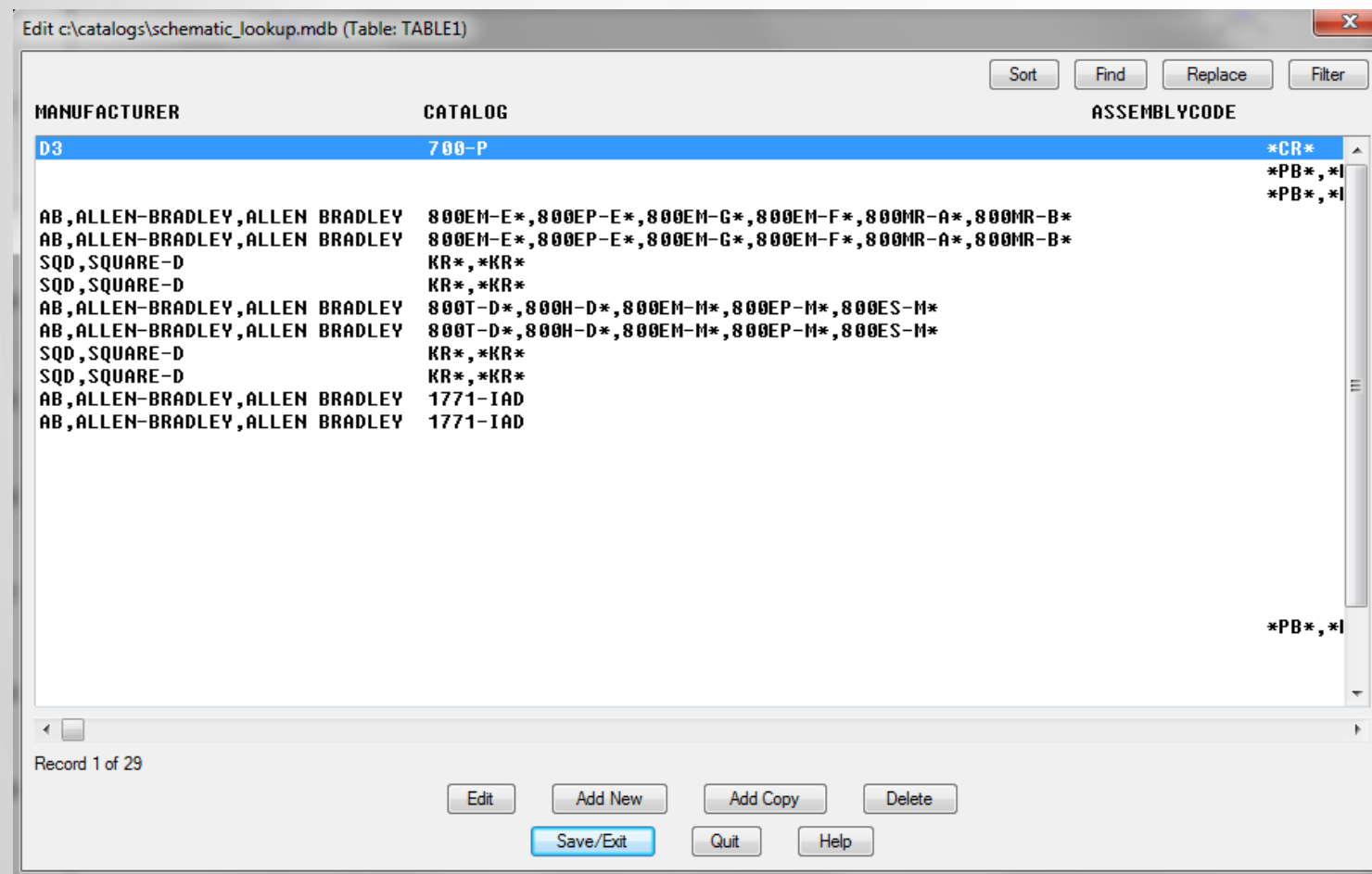
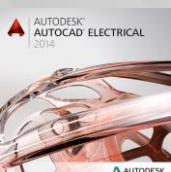
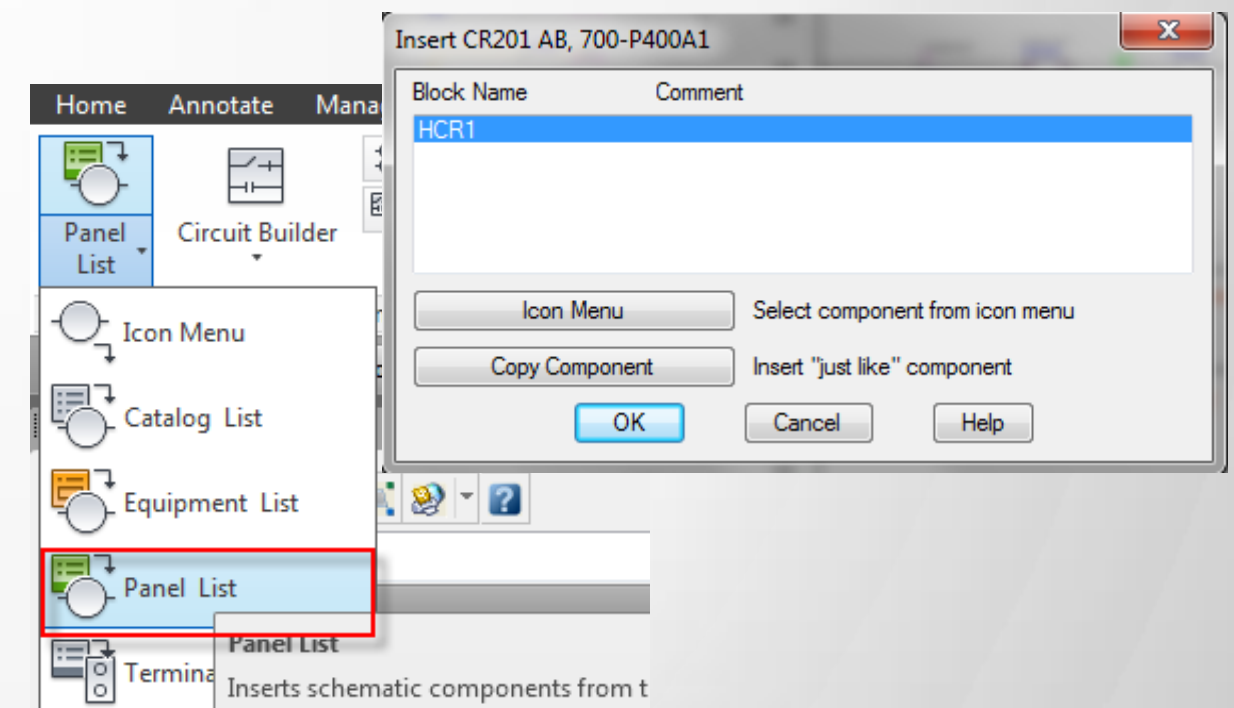
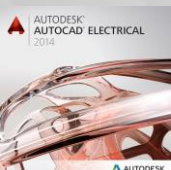
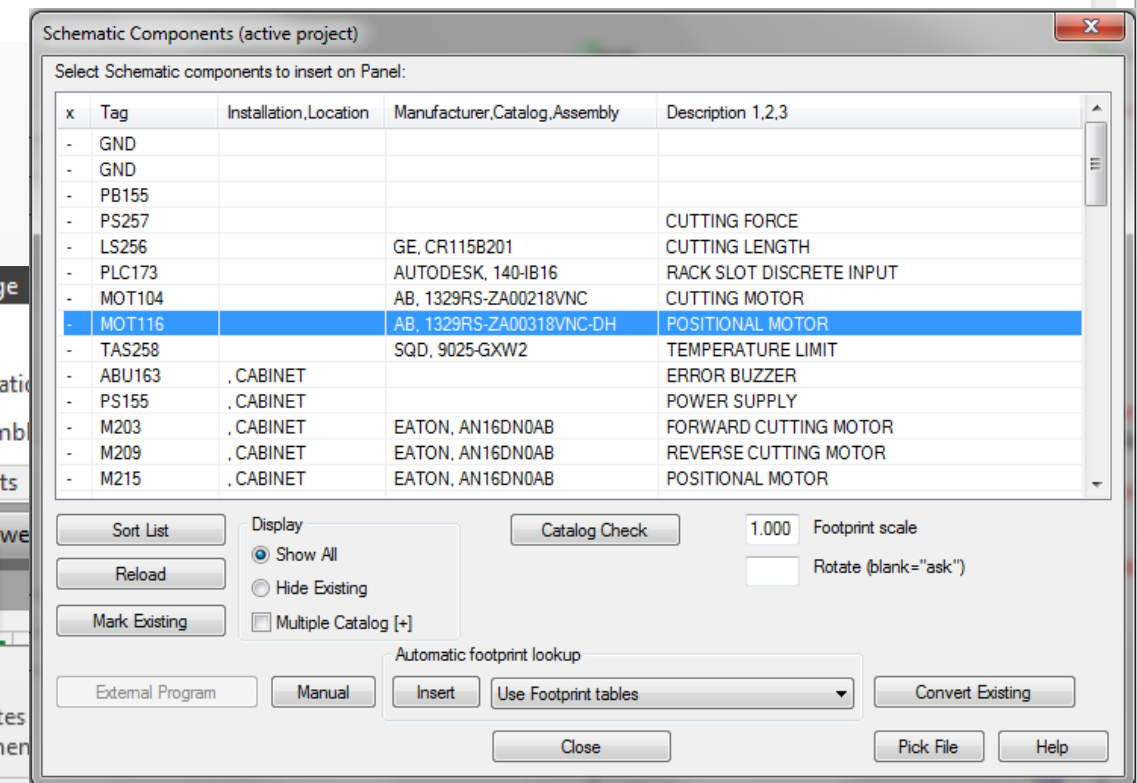
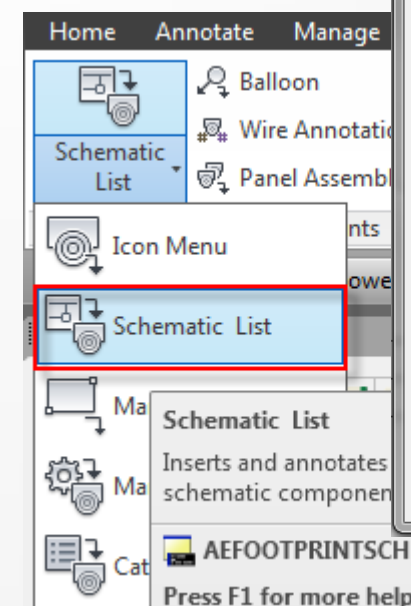
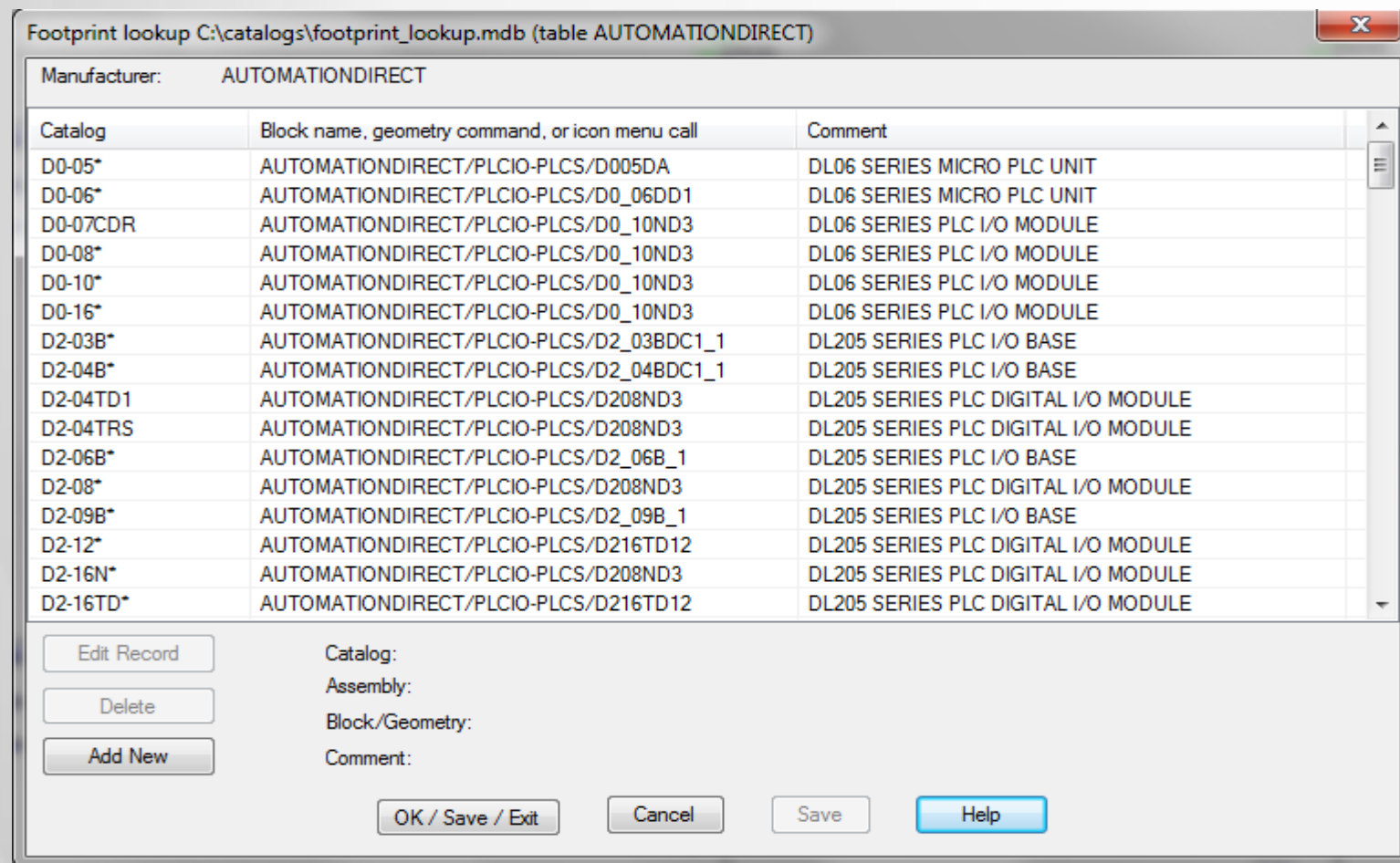


TABLE1 - SchematicLookup_C_Catalogs - OpenOffice.org Base: Table Data View									
	MANUFACTURER	CATALOG	ASSEMBLYCODE	FUNCTION_DESCRIPTION	PANEL_BKNAME	CATEGORY	WDBLKNAME	SCHEMATIC_BKNAME	COMMENTS
1	D3	700-P		*CR*			CR*	HCR1T	CONTROL
2				*PB*,*Push Button*,*			PB*	HPB11M	Mushroom
3				*PB*,*Push Button*,*			PB*	HPB12M	Mushroom
4	AB, ALLEN-BRADLEY, ALLEN BRADLEY	800EM-E*,800						HPB11	Push button -
5	AB, ALLEN-BRADLEY, ALLEN BRADLEY	800EM-E*,800						HPB12	Push button -
6	SQD, SQUARE-D	KR*,*KR*						HPB11	Push button -
7	SQD, SQUARE-D	KR*,*KR*						HPB12	Push button -
8	AB, ALLEN-BRADLEY, ALLEN BRADLEY	800T-D*,800H						HPB11M	Mushroom
9	AB, ALLEN-BRADLEY, ALLEN BRADLEY	800T-D*,800H						HPB12M	Mushroom
10	SQD, SQUARE-D	KR*,*KR*						HPB11M	Mushroom
11	SQD, SQUARE-D	KR*,*KR*						HPB12M	Mushroom
12	AB, ALLEN-BRADLEY, ALLEN BRADLEY	1771-IAD						SC=PLC 1771-IAD	1771-IAD
13	AB, ALLEN-BRADLEY, ALLEN BRADLEY	1771-IAD						PLC101771-IAD	1771-IAD
14						T		HT0001	Square with
15						T		HT0002	Round with
16						T		HT0003	Hexagon with
17						T		HT0004	Diamond with
18						T		HT0005	Triangle with



Databases

- Footprint Database File Editor
 - Database footprint_lookup.mdb
 - Based off of Manufacturer & Catalog Number
 - Used to assign layout (footprint) blocks
 - Size of tables can be large and difficult to edit

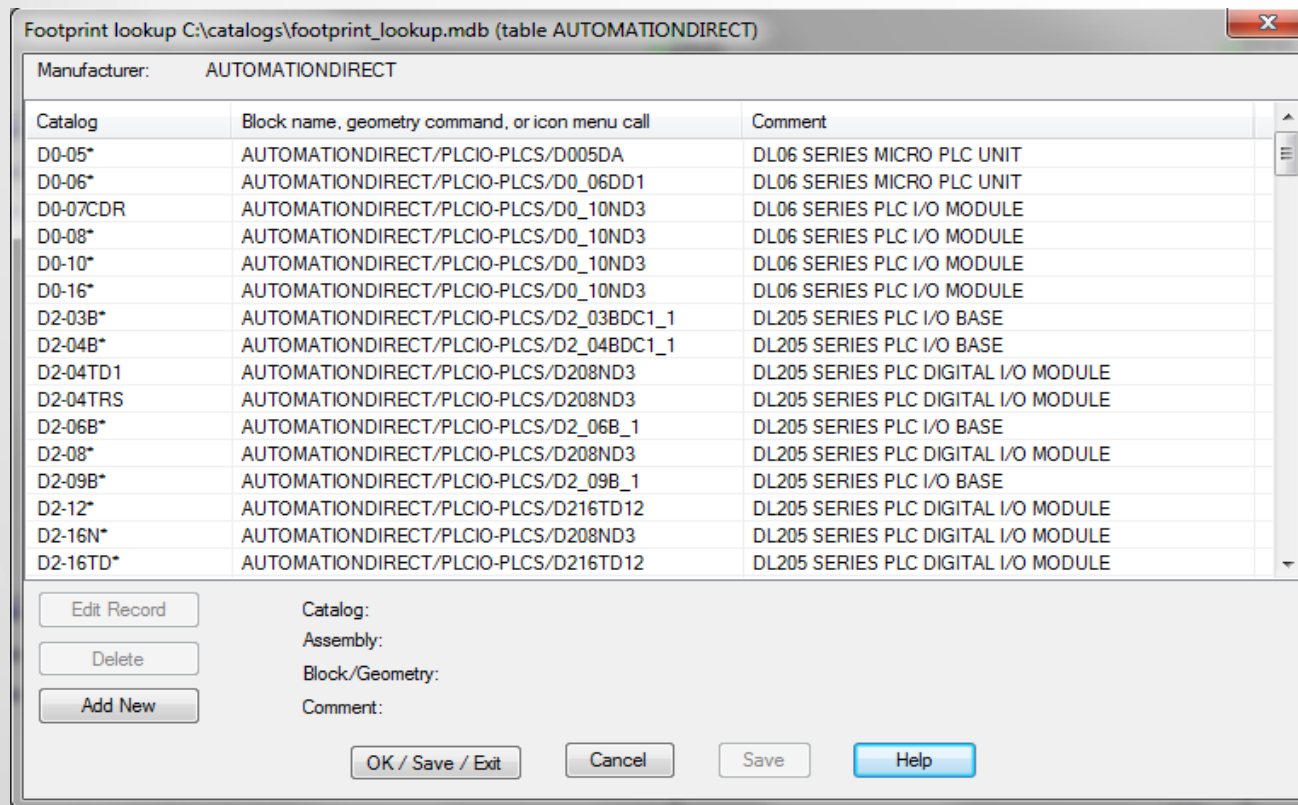
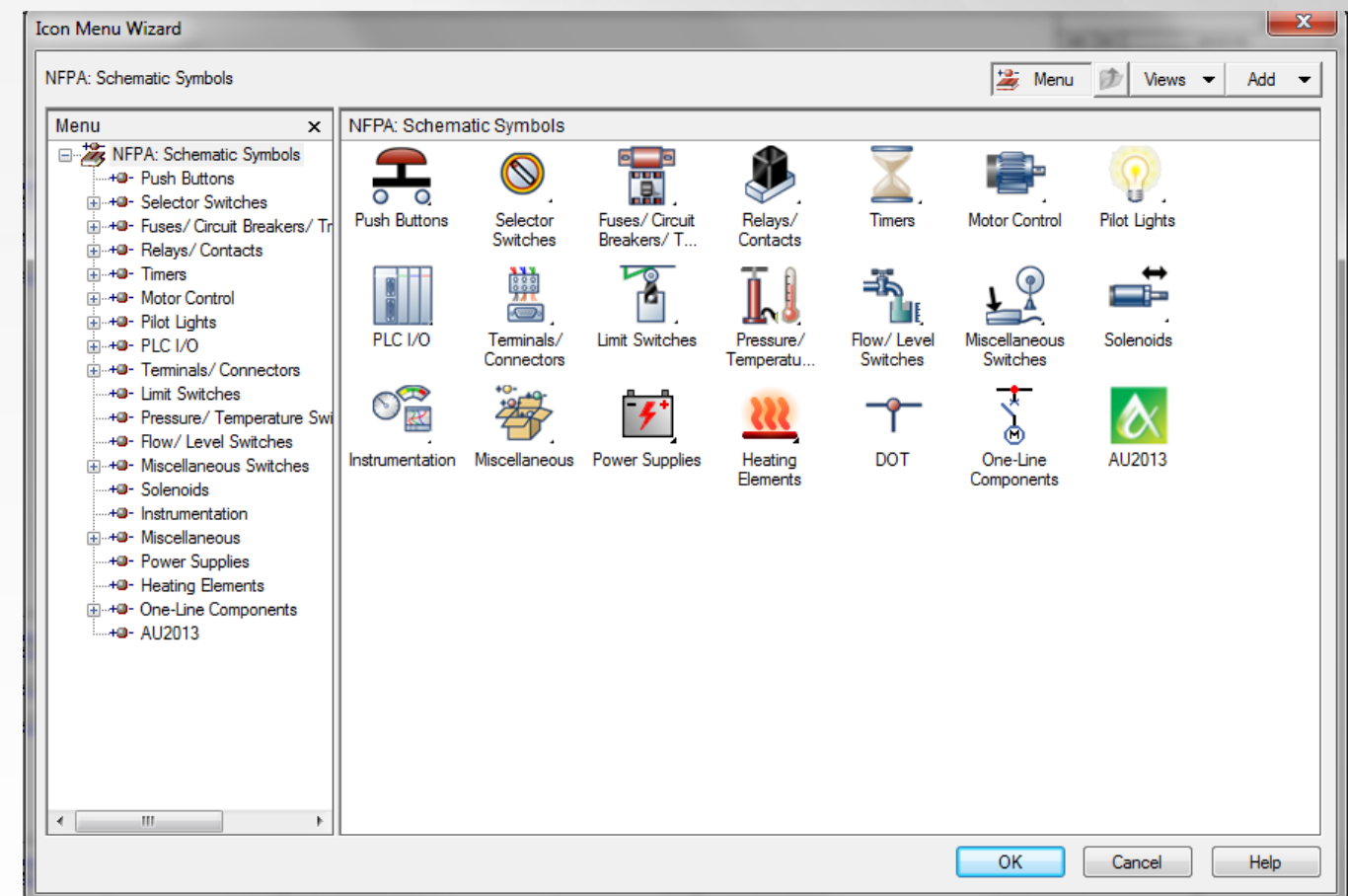


Networking

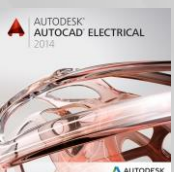


Networking

- Why to Network the Install?
 - Users can share customized Icon Menu
 - Users can share custom libraries
 - Users can share customized databases



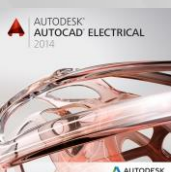
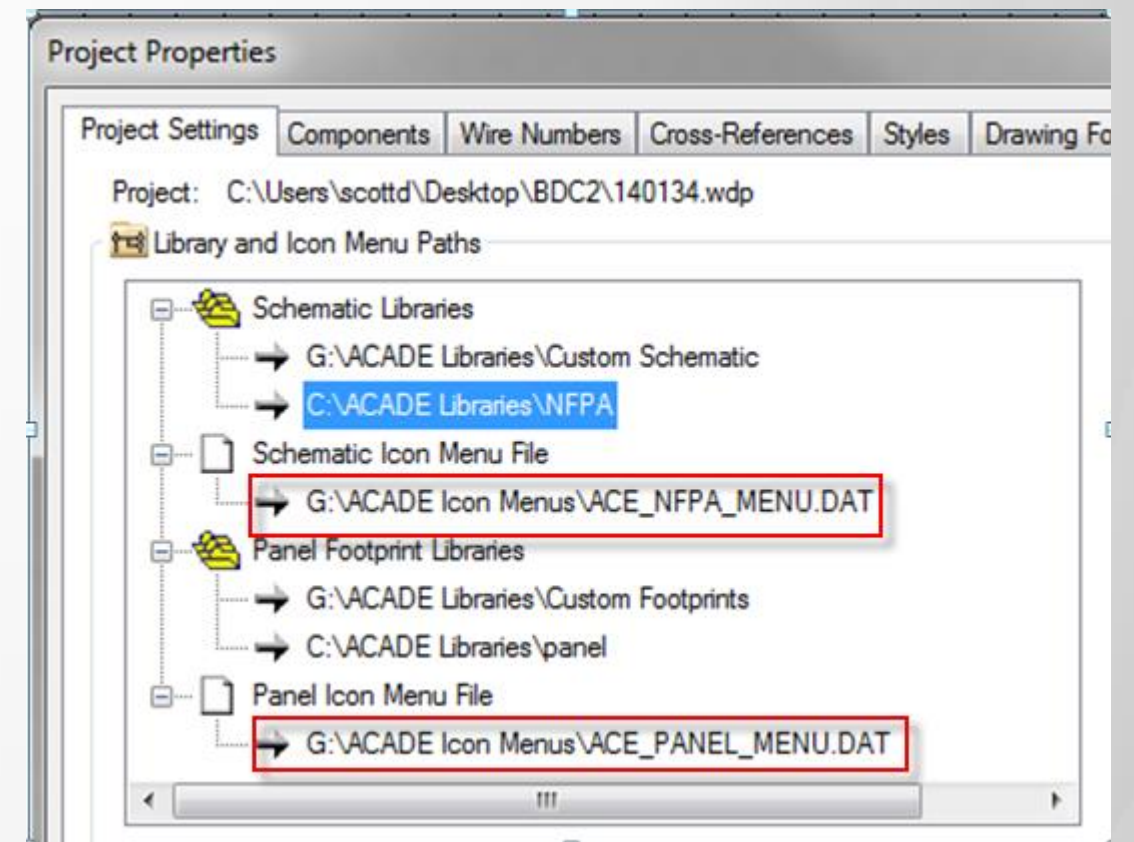
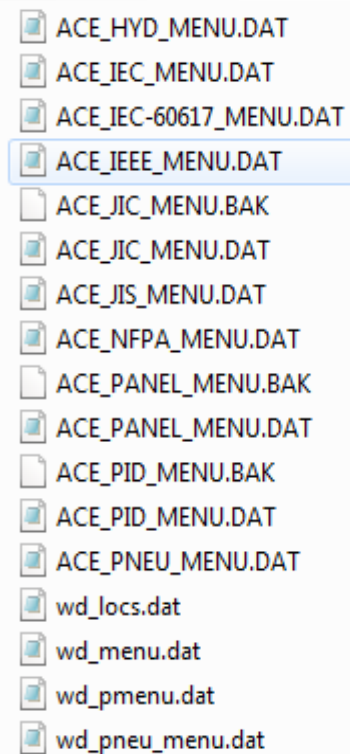
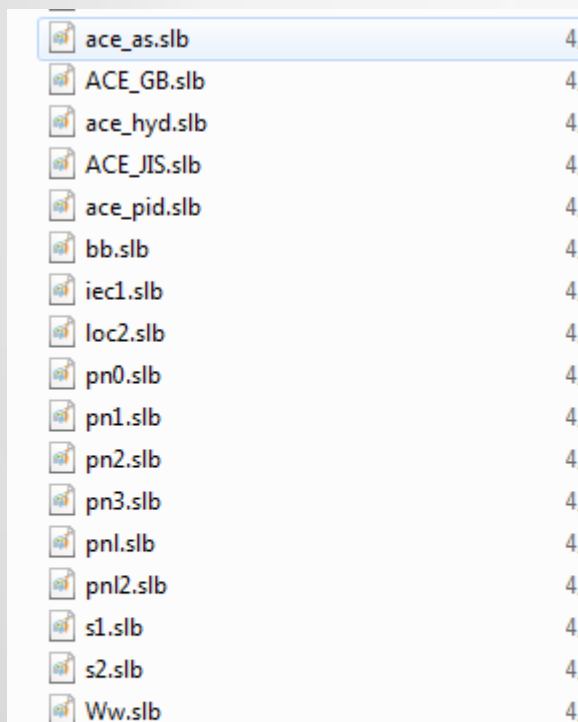
Name	Date modified	Type
AU Custom Panel	5/31/2013 1:45 PM	File
AU Custom Schematics	11/25/2013 2:27 PM	File
Hyd_Iso125	9/4/2012 12:43 PM	File
iec2	9/4/2012 12:43 PM	File
iec4	5/9/2013 11:07 AM	File
jic1	9/4/2012 12:43 PM	File
jic125	11/21/2013 10:26 ...	File
NFPA	11/14/2013 12:57 ...	File
Panel	5/3/2013 11:57 AM	File
pid	9/4/2012 12:44 PM	File
pneu_iso125	9/4/2012 12:44 PM	File
SymLib.ini	9/4/2012 12:44 PM	Co



Networking

■ Icon Menus

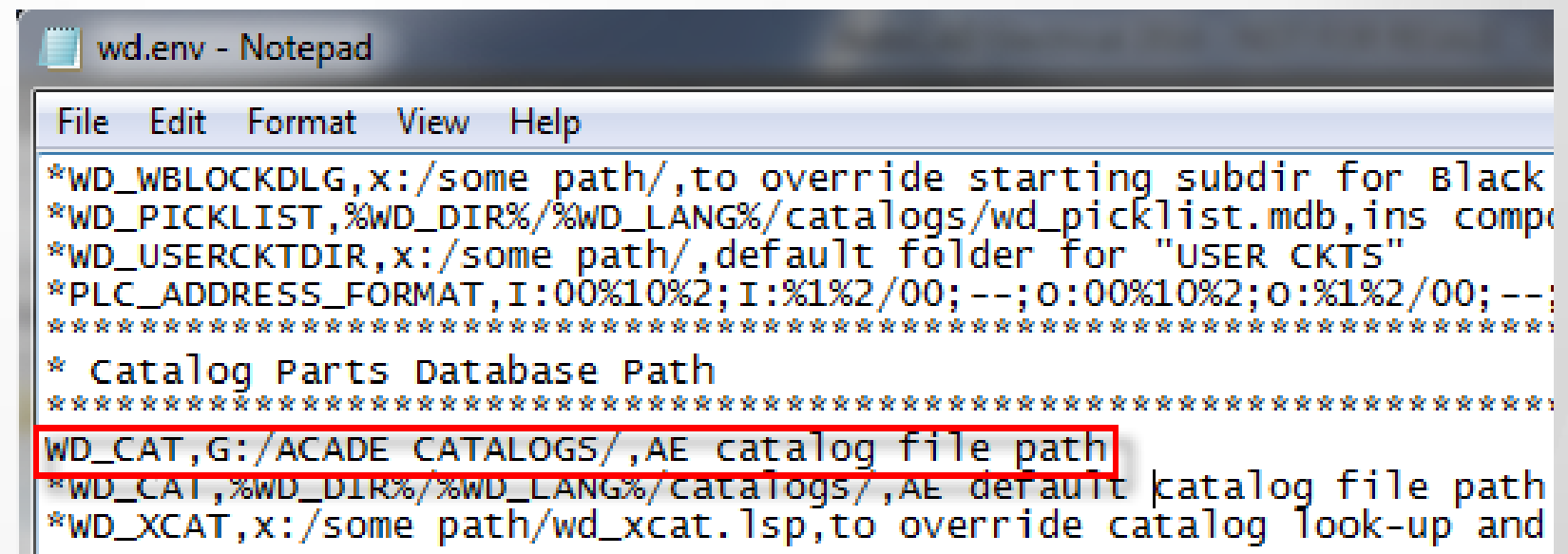
- Path is stored in each .wdp (Project File)
- Standard Installation Path:
 - C:\Users\{username}\AppData\Roaming\Autodesk\AutoCAD Electrical{version}\{release}\{country code}\Support
- Slide Images should be moved along with them



Networking

■ Databases

- Path for all databases except PLC is stored in the environment file
- Use forward slashes /
- AutoCAD must be restarted after changing
- Each machine has an environment file (wd.env)

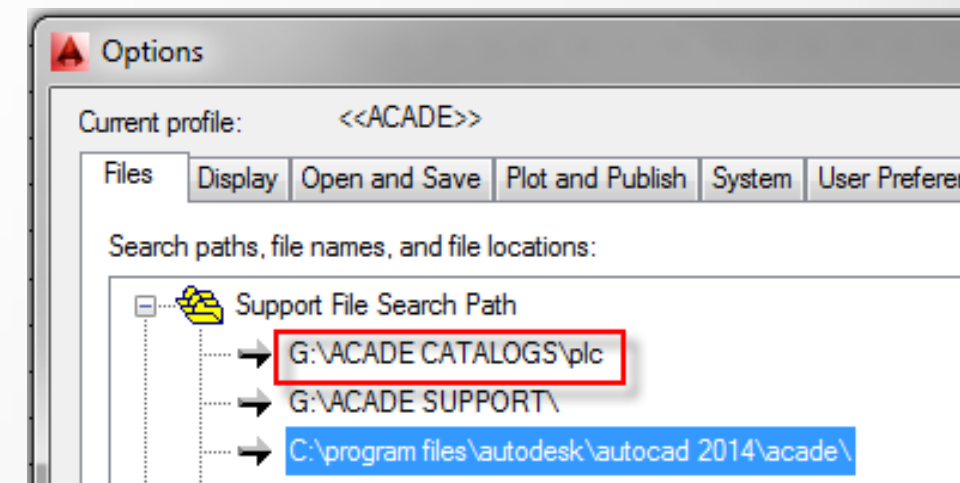


```
wd.env - Notepad
File Edit Format View Help
*WD_WBLOCKDLG,x:/some path/,to override starting subdir for Black
*WD_PICKLIST,%WD_DIR%/ %WD_LANG%/catalogs/wd_picklist.mdb,ins compo
*WD_USERCKTDIR,x:/some path/,default folder for "USER CKTS"
*PLC_ADDRESS_FORMAT,I:00%10%2;I:%1%2/00;--;O:00%10%2;O:%1%2/00;--;
*****
* catalog Parts Database Path
*****
*WD_CAT,G:/ACADE CATALOGS/,AE catalog file path
*WD_CAT,%WD_DIR%/ %WD_LANG%/catalogs/,AE default catalog file path
*WD_XCAT,x:/some path/wd_xcat.lsp,to override catalog look-up and
```

Networking

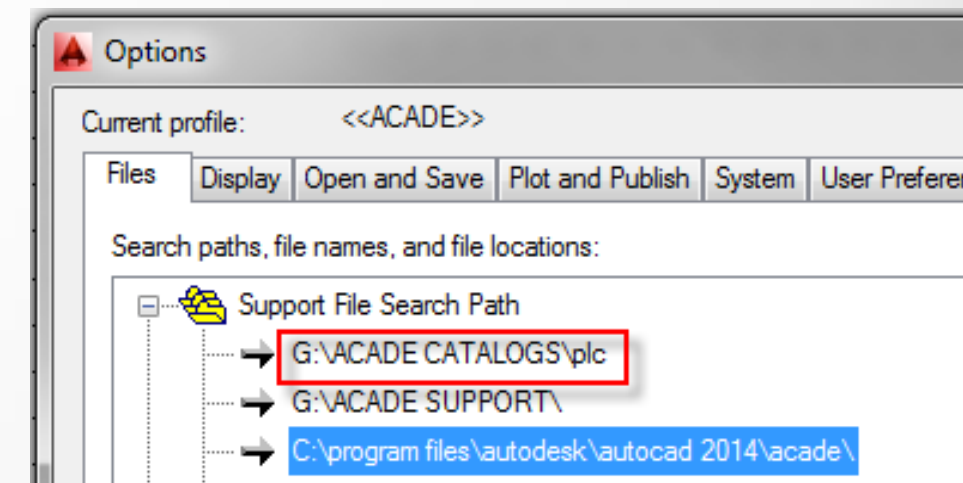
- PLC Database

- Path for the PLC is mapped under the AutoCAD Support
- Map to the PLC folder
 - Caution: AutoCAD will remove unresolved network path at startup



Networking

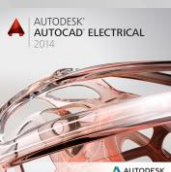
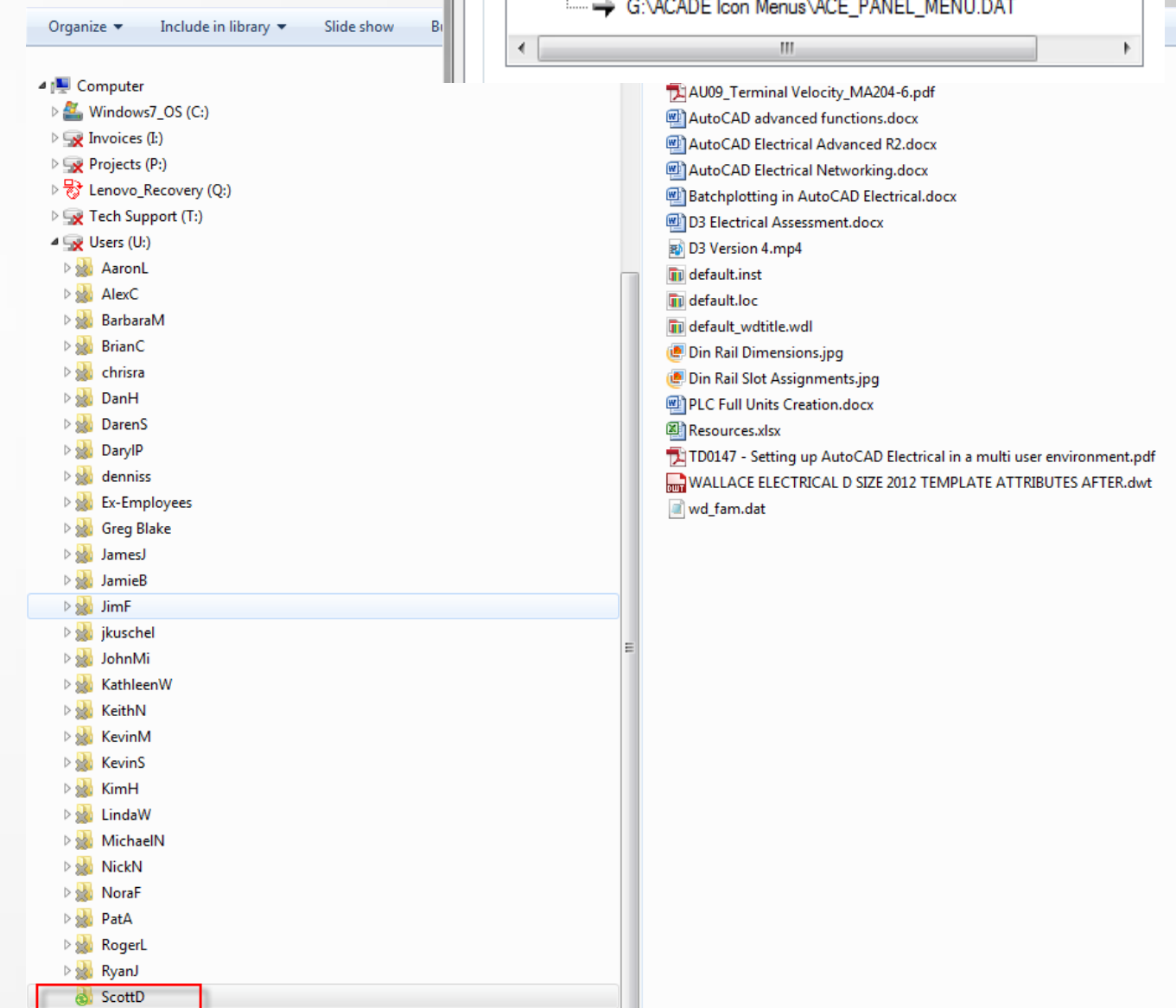
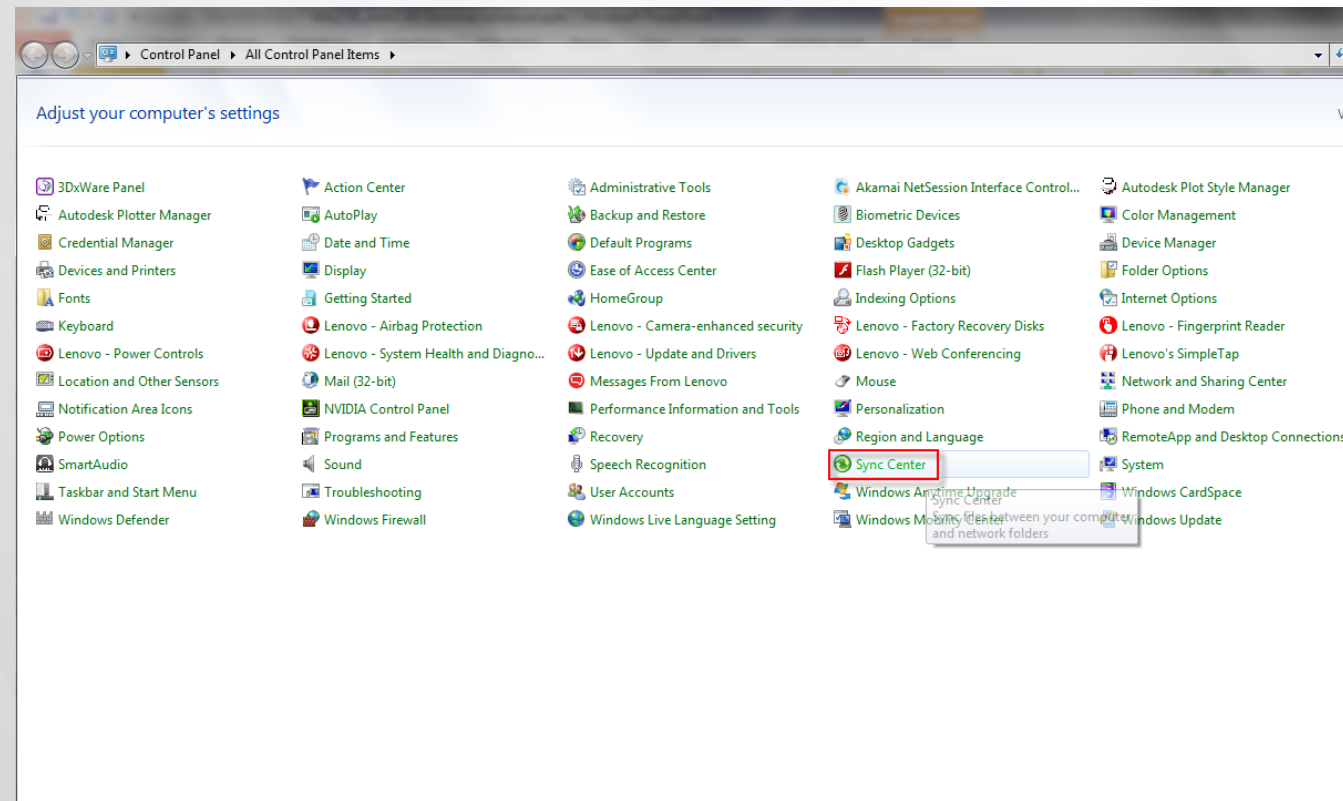
- Additional Support Paths
 - Map any additional support paths for the following
 - Default.inst
 - Default.loc
 - Default_wdtitle.wdl
 - Wd_fam.dat
 - Default.wdt



Networking

■ Suggestions

- Retain standard libraries on local hard drive
- Place custom panel & custom schematic symbols on network drive
- Map custom library paths before standard library paths
- Use offline folders



Class summary

Top reasons to use AutoCAD Electrical:

- More consist, professional looking designs ← **New Families**
Networked Install
- Eliminate errors ← **Pin List Database**
- Minimize missing Bill of Material items ← **Terminal Accessories**
- Reduce design time ← **Networked Install**

